



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	<ul style="list-style-type: none">• 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	<p>Computer with the following:</p> <ul style="list-style-type: none">• Windows®, Macintosh, or Linux-based operating system• An installed Ethernet adapter <p>Browser Requirements:</p> <ul style="list-style-type: none">• Internet Explorer® 7 and higher• Mozilla Firefox 12.0 and higher• Google™ Chrome 20.0 and higher• Apple Safari 4 and higher <p>Windows® Users: Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.</p>

Introduction

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

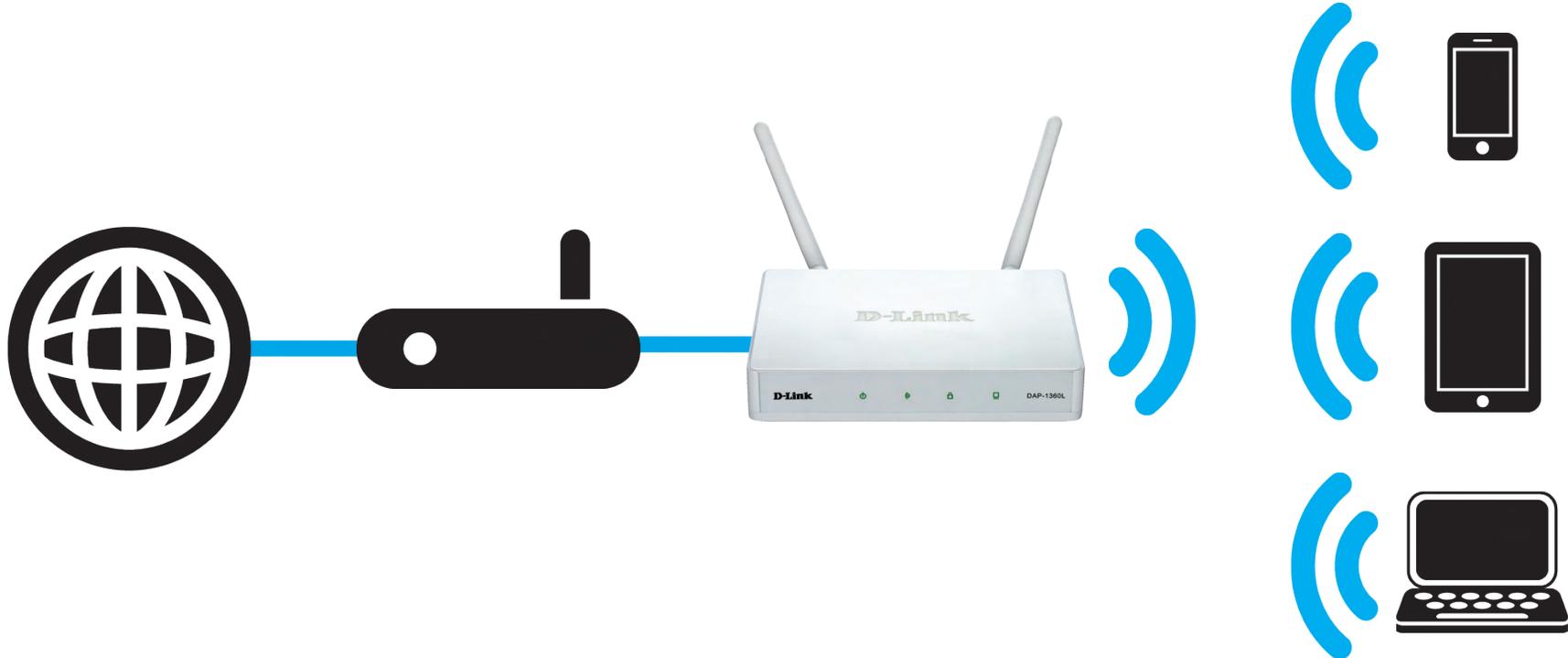


1	Power LED	A solid green light indicates a proper connection to the power supply. A blinking green light indicates the device is trying to establish a connection through WPS. A solid orange light indicates the device is rebooting or being reset to factory default. A blinking orange light indicates the 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.



Section 2 - Installation

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**.

MYDLINK REGISTRATION

To use the features of mydlink.com and the mydlink Lite app, you will need an account with mydlink.com. If you already have an account, select **Yes, I have a mydlink account** and click **Next** to register the router with mydlink.com. If you do not have an account, select **No, I want to register and login with a new mydlink account** and click **Next** to create an account. If you do not wish to sign up for the mydlink service, please click **Cancel**.

Do you have mydlink account?

Yes, I have a mydlink account.

No, I want to register and login with a new mydlink account.

Next **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.

MYDLINK REGISTRATION

E-mail Address (Account Name) :

Password :

Skip **Prev** **Sign up**

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.

MYDLINK REGISTRATION

Please fulfill the options to complete the registration.

E-mail Address (Account Name) :

Password :

Confirm Password :

First Name :

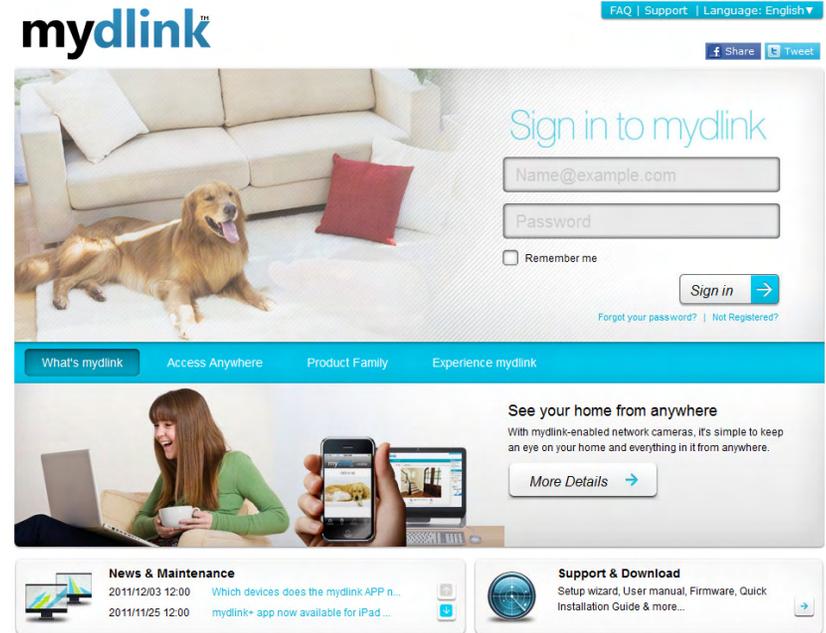
Last name :

[I Accept the mydlink terms and conditions.](#)

Skip **Prev** **Sign up**

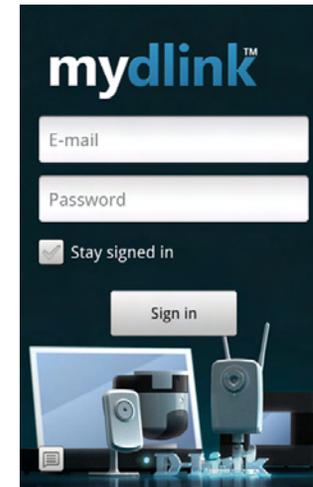
Section 2 - Installation

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.

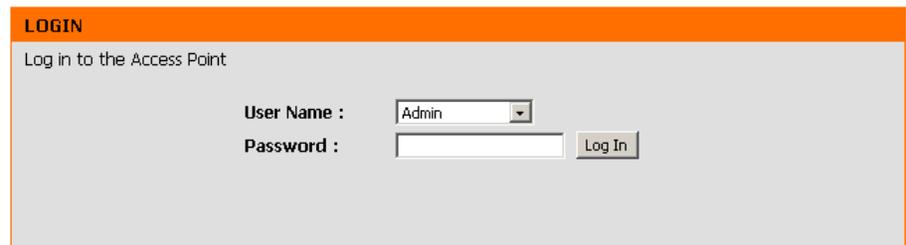
Web-based Configuration Utility

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.

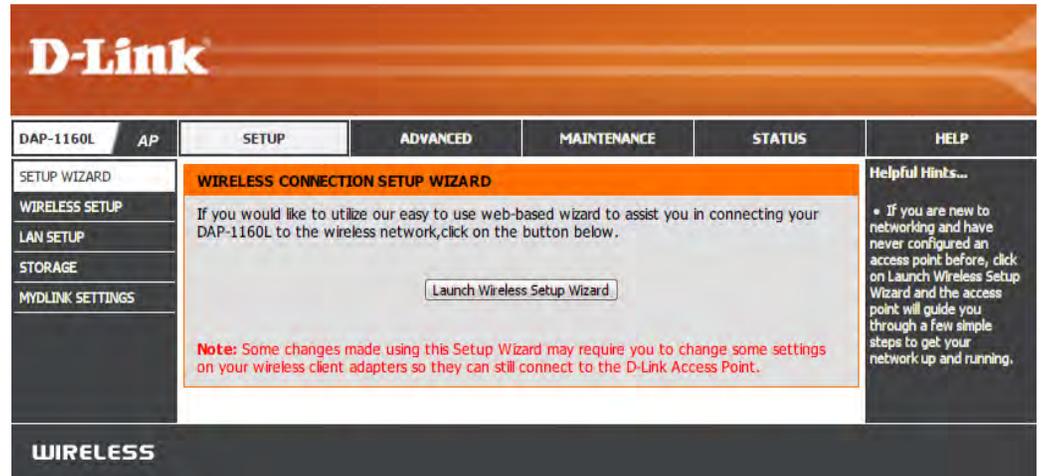
If you get a Page Cannot be Displayed error, please refer to the **Troubleshooting** section for assistance.



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.



The screenshot shows the D-Link web interface for the DAP-1160L AP. The top navigation bar includes tabs for SETUP, ADVANCED, MAINTENANCE, STATUS, and HELP. The left sidebar lists menu items: SETUP WIZARD, WIRELESS SETUP, LAN SETUP, STORAGE, and MYDLINK SETTINGS. The main content area is titled "WIRELESS CONNECTION SETUP WIZARD" and contains the following text:

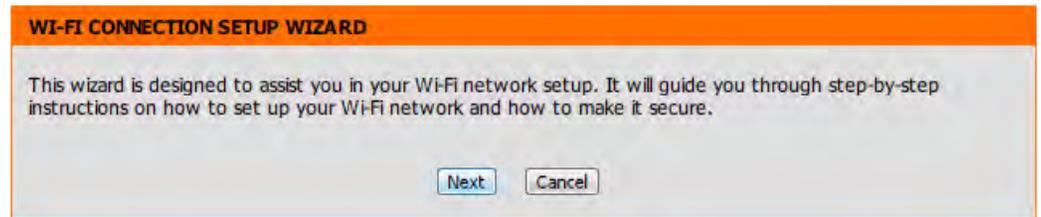
If you would like to utilize our easy to use web-based wizard to assist you in connecting your DAP-1160L to the wireless network, click on the button below.

Note: Some changes made using this Setup Wizard may require you to change some settings on your wireless client adapters so they can still connect to the D-Link Access Point.

Helpful Hints...
• If you are new to networking and have never configured an access point before, click on Launch Wireless Setup Wizard and the access point will guide you through a few simple steps to get your network up and running.

The bottom of the page features a "WIRELESS" section header.

Click **Next** to continue.



The screenshot shows a dialog box titled "WI-FI CONNECTION SETUP WIZARD". The text inside reads:

This wizard is designed to assist you in your Wi-Fi network setup. It will guide you through step-by-step instructions on how to set up your Wi-Fi network and how to make it secure.

At the bottom of the dialog box, there are two buttons: and .

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.



Section 3 - Configuration

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.

WELCOME TO THE D-LINK WI-FI SETUP WIZARD

Give your Wi-Fi network a name.

Wi-Fi Network Name (SSID):
 (using up to 32 characters)

Give your Wi-Fi network a password.

Wi-Fi Password:
 (Between 8 and 63 characters)

Enter your password and click **Next**.

SET YOUR PASSWORD

By default, your new D-Link AP does not have a password configured for administrator access to the Web-based configuration pages. To secure your new networking device, please set and verify a password below.

Password

Verify Password

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

SELECT YOUR TIME ZONE

Select the appropriate time zone for your location. This information is required to configure the time-based options for the router.

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

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

SETUP COMPLETE!

Please take a note of the following summary of your Wi-Fi security settings for future reference.

Wi-Fi Network Name (SSID) : dlink
Wi-Fi Password : password12

The Setup Wizard has completed. Click the Save button to save your settings and reboot the device.

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.

MYDLINK REGISTRATION

To use the features of mydlink.com and the mydlink Lite app, you will need an account with mydlink.com. If you already have an account, select **Yes, I have a mydlink account** and click **Next** to register the router with mydlink.com. If you do not have an account, select **No, I want to register and login with a new mydlink account** and click **Next** to create an account. If you do not wish to sign up for the mydlink service, please click **Cancel**.

Do you have mydlink account?

Yes, I have a mydlink account.
 No, I want to register and login with a new mydlink account.

Section 3 - Configuration

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.

MYDLINK REGISTRATION

E-mail Address (Account Name) :

Password :

MYDLINK REGISTRATION

Please fulfill the options to complete the registration.

E-mail Address (Account Name) :

Password :

Confirm Password :

First Name :

Last name :

[I Accept the mydlink terms and conditions.](#)

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.

DAP-1160L AP	SETUP	ADVANCED	MAINTENANCE	STATUS	HELP
SETUP WIZARD WIRELESS SETUP LAN SETUP STORAGE MYDLINK SETTINGS	WIRELESS NETWORK Use this section to configure the wireless settings for your D-Link router. Please note that changes made in this section may also need to be duplicated on your wireless client. To protect your privacy you can configure wireless security features. This device supports three wireless security modes including: WEP, WPA and WPA2. <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>				Helpful Hints... <ul style="list-style-type: none"> Changing your Wireless Network Name is the first step in securing your wireless network. We recommend that you change it to a familiar name that does not contain any personal information. Enable Auto Channel Scan let the AP can select the best possible channel for your wireless network to operate on. Visibility Status is another way to secure your network. With this option visible, no wireless clients will be able to see your wireless network when they perform a scan to see what's available. In order for your wireless devices to connect to your AP, you will need to manually enter the Wireless Network Name on each device. If you have enabled Wireless Security, make sure you write down the WEP Key or Passphrase that you have configured. You will need to enter this information on any wireless device that you connect to your wireless network.
	WIRELESS NETWORK SETTINGS Wireless Band : 2.4GHz Band Enable Wireless : <input checked="" type="checkbox"/> Always <input type="checkbox"/> New Schedule Wireless Network Name : dlink-8990 (Also called the SSID) 802.11 Mode : Mixed 802.11n, 802.11g and 802.11b Enable Auto Channel Scan : <input checked="" type="checkbox"/> Wireless Channel : 2.412 GHz - CH 1 Transmission Rate : Best (automatic) (Mbit/s) Channel Width : 20/40 MHz(Auto) Visibility Status : <input checked="" type="radio"/> Visible <input type="radio"/> Invisible				
	WIRELESS SECURITY MODE Security Mode : WPA-Personal				
	WPA Use WPA or WPA2 mode to achieve a balance of strong security and best compatibility. This mode uses WPA for legacy clients while maintaining higher security with stations that are WPA2 capable. Also the strongest cipher that the client supports will be used. For best security, use WPA2 Only mode. This mode uses AES(CCMP) cipher and legacy stations are not allowed access with WPA security. For maximum compatibility, use WPA Only. This mode uses TKIP cipher. Some gaming and legacy devices work only in this mode. To achieve better wireless performance use WPA2 Only security mode (or in other words AES cipher). WPA Mode : Auto(WPA or WPA2) Cipher Type : TKIP and AES				
	PRE-SHARED KEY Enter an 8- to 63-character alphanumeric pass-phrase. For good security it should be of ample length and should not be a commonly known phrase. Pre-Shared Key : abcde12345 <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>				
WIRELESS					
Copyright © 2008-2012 D-Link Corporation. All rights reserved.					

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.

The screenshot displays the D-Link configuration web interface. At the top, the D-Link logo is visible. Below it, a navigation bar includes tabs for 'DAP-1160L', 'AP', 'SETUP', 'ADVANCED', 'MAINTENANCE', 'STATUS', and 'HELP'. The 'SETUP' tab is selected, and a sidebar on the left lists menu items: 'SETUP WIZARD', 'WIRELESS SETUP', 'LAN SETUP', 'STORAGE', and 'MYDLINK SETTINGS'. The main content area is titled 'MYDLINK SETTINGS' and contains the following text: 'Setting and registering your product with mydlink will allow you to use its mydlink cloud services features, including online access and management of your device through mydlink portal website.' Below this, a section labeled 'MYDLINK' shows 'mydlink Service : Non-Registered' and 'mydlink Account :'. A 'REGISTER MYDLINK SERVICE' section contains a 'Register mydlink Service' button. At the bottom of the interface, the 'WIRELESS' section is partially visible.

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.

D-Link

DAP-1160L AP SETUP ADVANCED MAINTENANCE STATUS HELP

ACCESS CONTROL

The WLAN ACL Filtering section is used to control network access based on the MAC Address of the network adapter. A MAC address is a unique ID assigned by the manufacturer of the network adapter. This feature can be configured to ALLOW or DENY network/wireless access.

Save Settings Don't Save Settings

WIRELESS ACCESS SETTINGS

Configure Access Control below:
Turn Access Control OFF

	MAC Address		MAC List	
1	<input type="text"/>	<<	MAC Address	Clear
2	<input type="text"/>	<<	MAC Address	Clear
3	<input type="text"/>	<<	MAC Address	Clear
4	<input type="text"/>	<<	MAC Address	Clear
5	<input type="text"/>	<<	MAC Address	Clear
6	<input type="text"/>	<<	MAC Address	Clear

Helpful Hints...

- Create a list of MAC addresses and choose whether to allow or deny them access to your network.
- Computers that have connected to AP through wireless will be in the Wireless Client List. Select a device from the drop down menu and click the arrow to add that device's MAC to the list.

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 Coexistence: Check to enable or disable this feature.

The screenshot displays the D-Link web interface for the DAP-1160L AP. The main navigation tabs are SETUP, ADVANCED, MAINTENANCE, STATUS, and HELP. The current page is 'ADVANCED WIRELESS', which is highlighted in orange. Below the navigation, there are sections for 'ACCESS CONTROL', 'ADVANCED WIRELESS', and 'WI-FI PROTECTED SETUP'. The 'ADVANCED WIRELESS' section contains a warning message and two 'Save Settings' buttons. The 'ADVANCED WIRELESS SETTINGS' section includes the following options:

- Transmit Power: 100% (dropdown)
- WMM Enable:
- Short GI:
- Internal Station Connection: Allow (dropdown)
- Ethernet to WLAN Access: Allow (dropdown)
- HT20/40 Coexistence: Enable Disable

At the bottom of the settings section, there are two 'Save Settings' buttons. On the right side of the page, there is a 'Helpful Hints...' section with a warning: 'It is recommended that you leave these options at their default values. Adjusting them could negatively impact the performance of your wireless network. The options on this page should be changed by advanced users or if you are instructed to by one of our support personnel, as they can negatively affect the performance of your Access Point if configured improperly.'

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 PIN: 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.

' and 'Lock WPS-PIN Setup : '. Below this is a section titled 'PIN SETTINGS' with the text 'Current PIN : 33481234' and two buttons: 'Reset PIN to Default' and 'Generate New PIN'. Below this is a section titled 'ADD WIRELESS STATION' with a button: 'Add Wireless Device With WPS'. At the bottom of the page are two buttons: 'Save Settings' and 'Don't Save Settings'. On the right side of the page, there is a 'Helpful Hints...' section with two bullet points: '• Enable if other wireless devices you wish to include in the local network support Wi-Fi Protected Setup.' and '• Click Add Wireless Device With WPS to use Wi-Fi Protected Setup to add wireless devices to the wireless network.'"/>

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.

The screenshot displays the D-Link web interface for the DAP-1160L AP. The top navigation bar includes tabs for SETUP, ADVANCED, MAINTENANCE (selected), STATUS, and HELP. The left sidebar lists menu items: ADMIN, SYSTEM, FIRMWARE, TIME, SYSTEM CHECK, and SCHEDULES. The main content area is titled 'ADMINISTRATOR SETTINGS' and contains the following sections:

- ADMINISTRATOR SETTINGS:** A text box with instructions: "Enter the new password in the 'New Password' field and again in the next field to confirm. Click on 'Save Settings' to execute the password change. The Password is case-sensitive, and can be made up of any keyboard characters. The new password must be between 0 and 15 characters in length." Below this are 'Save Settings' and 'Don't Save Settings' buttons.
- PASSWORD:** A section with the instruction "Please enter the same password into both boxes, for confirmation." It contains two input fields: "New Password :" and "Verify Password :".
- ADMINISTRATION:** A section with a checkbox labeled "Enable Graphical Authentication". Below this are "Save Settings" and "Don't Save Settings" buttons.

On the right side, there is a 'Helpful Hints...' sidebar with the following text: "• For security reasons, it is recommended that you change the password for the Admin account. Be sure to write down the new password to avoid having to reset the AP or wireless client in case they are forgotten."

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.

The screenshot shows the D-Link web interface for a DAP-1160L AP. The top navigation bar includes 'DAP-1160L AP', 'SETUP', 'ADVANCED', 'MAINTENANCE', 'STATUS', and 'HELP'. The left sidebar contains 'ADMIN', 'SYSTEM', 'FIRMWARE', 'TIME', 'SYSTEM CHECK', and 'SCHEDULES'. The main content area is titled 'SAVE AND RESTORE' and contains the following text and buttons:

The current system settings can be saved as a file onto the local hard drive. You can upload any save settings file that was created by the DAP-1160L.

SAVE AND RESTORE

Save Settings To Local Hard Drive :

Load Settings From Local Hard Drive : No file chosen

Restore To Factory Default Settings :

Reboot The Device :

Remove Language Pack :

Helpful Hints...
 * Once your AP or wireless client is configured the way you want it, you can save these settings to a configuration file that can later be loaded in the event that the access point's default settings are restored. To do this, click the Save button next to where it says Save Settings to Local Hard Drive.

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.

The screenshot displays the D-Link web interface for a DAP-1160L access point. The top navigation bar includes 'DAP-1160L', 'AP', 'SETUP', 'ADVANCED', 'MAINTENANCE', 'STATUS', and 'HELP'. The 'FIRMWARE' option is selected in the left sidebar. The main content area is titled 'FIRMWARE UPDATE' and contains the following information:

- FIRMWARE UPDATE:** A message stating there may be new firmware for the DAP-1160L to improve functionality and performance, with a link to check for updates on the support site. It instructs users to click 'Browse' to find the file on their local hard drive and 'Upload' to update the firmware. A warning states: 'Do not update firmware through wireless network!!'
- FIRMWARE AND LANGUAGE PACK INFORMATION:** Shows the current firmware version as 1.00, dated Thu 11 Oct 2012. It includes a 'Check Now' button to check for the latest version.
- FIRMWARE UPGRADE:** A section with a note: 'Some firmware upgrades reset the configuration options to the factory defaults. Before performing an upgrade, be sure to save the current configuration from the Maintenance -> System screen.' It provides instructions to use a wired connection and includes an 'Upload' button with a 'Choose File' option (currently showing 'No file chosen').
- LANGUAGE PACK UPGRADE:** A section with an 'Upload' button and a 'Choose File' option (currently showing 'No file chosen').

The bottom of the interface features a 'WIRELESS' section and a copyright notice: 'Copyright © 2008-2012 D-Link Corporation. All rights reserved.'

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.

D-Link

DAP-1160L AP SETUP ADVANCED MAINTENANCE STATUS HELP

TIME

The Time and Date 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 you are in and set the NTP (Network Time Protocol) Server. Daylight Saving can also be configured to automatically adjust the time when needed.

Save Settings Don't Save Settings

TIME CONFIGURATION

Current Time : 2000/01/02 00:42:20
 Time Zone : (GMT-06:00) Central Time (US & Canada) ▼

Enable Daylight Saving :

Daylight Saving Offset : +1:00 ▼

Daylight Saving Dates : Month Week Day of Week Time

Dst Start Jan ▼ 1st ▼ Sun ▼ 12 am ▼

Dst End Jan ▼ 1st ▼ Sun ▼ 12 am ▼

AUTOMATIC TIME CONFIGURATION

Enable NTP Server :

NTP Server Used : << Select NTP Server ▼

SET THE TIME AND DATE MANUALLY

Date And Time : Year 2012 ▼ Month Nov ▼ Day 8 ▼

Hour 18 ▼ Minute 16 ▼ Second 23 ▼

Copy Your Computer's Time Settings

Save Settings Don't Save Settings

WIRELESS

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Helpful Hints...

- Either enter the time manually by clicking the **Copy Your Computers Time Settings** button, or use the **Automatic Time Configuration** option to have your AP or wireless client synchronize with a time server on the Internet.

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.

The screenshot shows the D-Link web interface for a DAP-1160L AP. The navigation menu includes DAP-1160L, AP, SETUP, ADVANCED, MAINTENANCE, STATUS, and HELP. The main content area is divided into three sections: PING TEST, IPV6 PING TEST, and PING RESULT. The PING TEST section contains a description: "Ping Test sends 'ping' packets to test a computer on the Internet." and a form with a text input field for "Host Name or IP Address" and a "Ping" button. The IPV6 PING TEST section contains a similar form with a text input field for "Host Name or IPv6 Address" and a "Ping" button. The PING RESULT section contains the instruction: "Enter a host name or IP address above and click 'Ping'". On the right side, there is a "Helpful Hints..." section with a bullet point: "• 'Ping' checks whether a computer on the Internet is running and responding. Enter either the IP address of the target computer or enter its fully qualified domain name."

DAP-1160L	AP	SETUP	ADVANCED	MAINTENANCE	STATUS	HELP
ADMIN	PING TEST					Helpful Hints... • "Ping" checks whether a computer on the Internet is running and responding. Enter either the IP address of the target computer or enter its fully qualified domain name.
SYSTEM	Ping Test sends "ping" packets to test a computer on the Internet.					
FIRMWARE	PING TEST					
TIME	Host Name or IP Address : <input type="text"/> <input type="button" value="Ping"/>					
SYSTEM CHECK	IPV6 PING TEST					
SCHEDULES	Host Name or IPv6 Address : <input type="text"/> <input type="button" value="Ping"/>					
PING RESULT						
Enter a host name or IP address above and click 'Ping'						

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 The list of schedules will be listed here. Click the

List: **Edit** icon to make changes or click the **Delete** icon to remove the schedule.

D-Link

DAP-1160L AP SETUP ADVANCED MAINTENANCE STATUS HELP

SCHEDULES

The Schedule configuration option is used to manage schedule rules for Wireless Lan Control features.

32 -- ADD SCHEDULE RULE

Name :

Day(s) : All Week Select Day(s)
 Sun Mon Tue Wed Thu Fri Sat

All Day - 24 hrs :

Time Format :

Start Time : : (hour:minute)

End Time : : (hour:minute)

SCHEDULE RULES LIST

Name	Day(s)	Time Frame

Helpful Hints...

- Schedules are used with a number of other features to define when those features are in effect.
- Give each schedule a name that is meaningful to you. For example, a schedule for Monday through Friday from 3:00pm to 9:00pm, might be called "After School".

Status

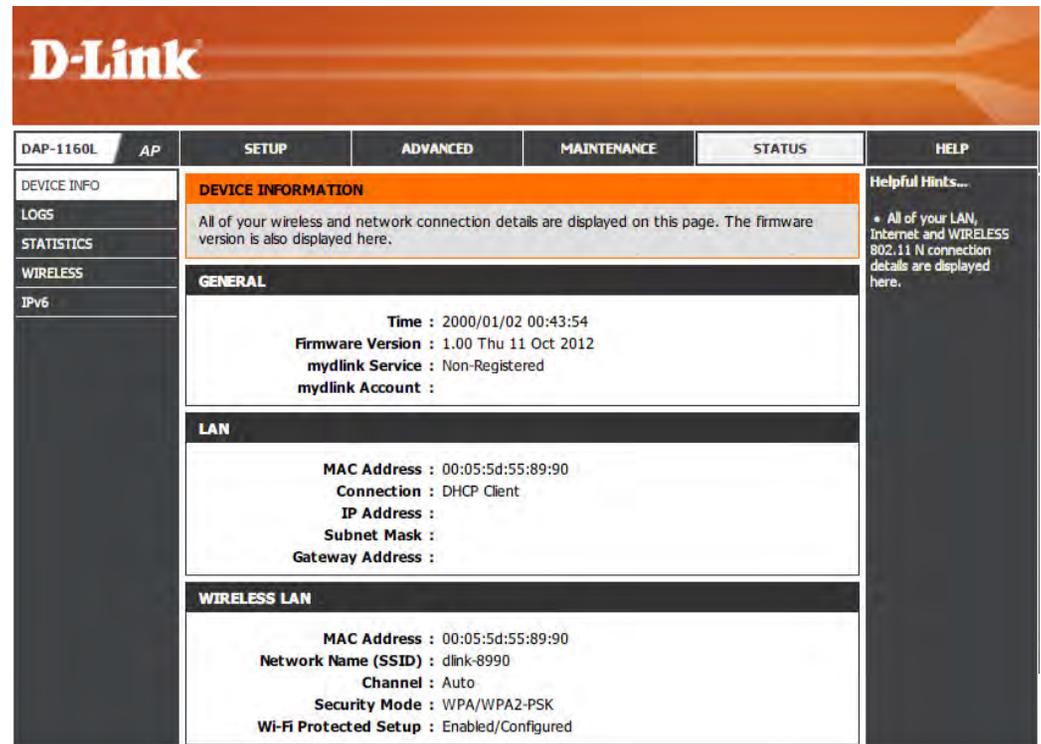
Device Info

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.



The screenshot shows the D-Link web interface for the DAP-1160L. The top navigation bar includes tabs for DAP-1160L, AP, SETUP, ADVANCED, MAINTENANCE, STATUS, and HELP. The main content area is divided into several sections:

- DEVICE INFORMATION:** A summary box stating, "All of your wireless and network connection details are displayed on this page. The firmware version is also displayed here."
- GENERAL:**
 - Time : 2000/01/02 00:43:54
 - Firmware Version : 1.00 Thu 11 Oct 2012
 - mydlink Service : Non-Registered
 - mydlink Account :
- LAN:**
 - MAC Address : 00:05:5d:55:89:90
 - Connection : DHCP Client
 - IP Address :
 - Subnet Mask :
 - Gateway Address :
- WIRELESS LAN:**
 - MAC Address : 00:05:5d:55:89:90
 - Network Name (SSID) : dlink-8990
 - Channel : Auto
 - Security Mode : WPA/WPA2-PSK
 - Wi-Fi Protected Setup : Enabled/Configured

On the right side, there is a "Helpful Hints..." section with a note: "• All of your LAN, Internet and WIRELESS 802.11 N connection details are displayed here."

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.

D-Link

DAP-1160L AP SETUP ADVANCED MAINTENANCE STATUS HELP

LOGS

Use this option to view the device logs. You can define what types of events you want to view and the event levels to view.

LOG OPTION

Log Type: System Activity Debug Information Attacks
 Dropped Packets Notice

LOG DETAILS

Page 1 of 8

Time	Message
Sun Jan 2 00:44:09 2000	DHCP: Client send DISCOVER.
Sun Jan 2 00:43:53 2000	DHCP: Client send DISCOVER.
Sun Jan 2 00:43:45 2000	DHCP: Client send DISCOVER.

Helpful Hints...

- Click on the Save button to save log file to local hard drive which can later send to the network administrator for troubleshooting. You can also select what type of event you would like to be logged from Log Type & Level.
- Check the log frequently to detect unauthorized network usage.

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.

D-Link

DAP-1160L	AP	SETUP	ADVANCED	MAINTENANCE	STATUS	HELP
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DEVICE INFO

LOGS

STATISTICS

WIRELESS

IPv6

TRAFFIC STATISTICS

Traffic Statistics displays Receive and Transmit packets passing through the device.

LAN STATISTICS

Sent: 3961	Received: 9290
TX Packets Dropped: 0	RX Packets Dropped: 0
Collisions: 0	Errors: 0

WIRELESS STATISTICS

Sent: 1468	Received: 218803
TX Packets Dropped: 0	RX Packets Dropped: 0
Collisions: 0	Errors: 2143

Helpful Hints...

- This is a summary displaying the number of packets that have passed between the Wireless and the LAN since the AP or wireless client was last initialized.

Wireless

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

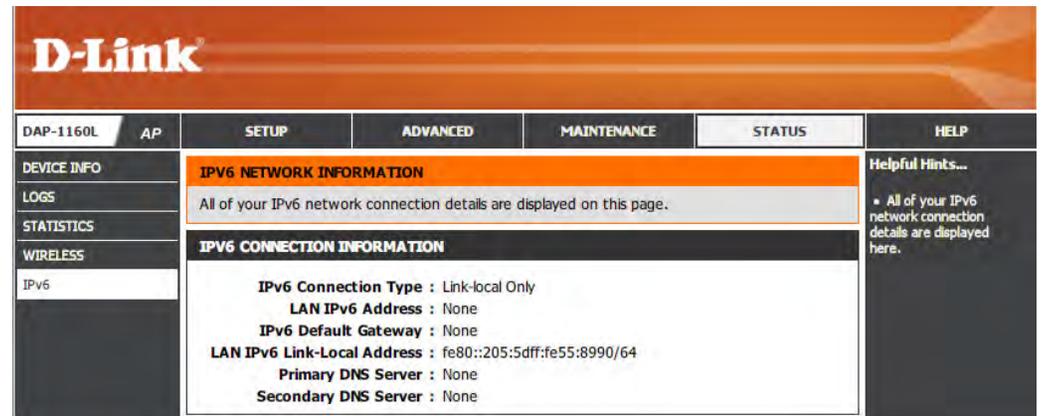
Connection Time: Displays the amount of time the wireless client has been connected to the access point.

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.



The screenshot shows the D-Link web interface for the DAP-1160L in AP mode. The main navigation bar includes tabs for SETUP, ADVANCED, MAINTENANCE, STATUS, and HELP. The left sidebar contains menu items for DEVICE INFO, LOGS, STATISTICS, WIRELESS, and IPv6. The main content area is divided into two sections: IPv6 NETWORK INFORMATION and IPv6 CONNECTION INFORMATION. The IPv6 NETWORK INFORMATION section contains a message: "All of your IPv6 network connection details are displayed on this page." The IPv6 CONNECTION INFORMATION section lists the following details:

- IPv6 Connection Type : Link-local Only
- LAN IPv6 Address : None
- IPv6 Default Gateway : None
- LAN IPv6 Link-Local Address : fe80::205:5dff:fe55:8990/64
- Primary DNS Server : None
- Secondary DNS Server : None

On the right side, there is a "Helpful Hints..." section with a note: "All of your IPv6 network connection details are displayed here."