DWL-3200AP manual

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Table of Contents

lable of Contents2
Package Contents3
Introduction4
Features and Benefits6
Wireless Basics7
Three Operational Modes
Getting Started
Using the Configuration Menu
Using the AP Manager41
Networking Basics
Troubleshooting
Technical Specifications
Contacting Technical Support
Warranty
Registration

Package Contents



- D-Link AirPremier[™] DWL-3200AP Wireless Access Point with PoE
- Power over Ethernet base unit
- Power Adapter-DC 48V, 0.4A
- Power Cord
- Manual and Warranty on CD
- Quick Installation Guide
- Ethernet Cable

Note: Using a power supply with a different voltage than the one included with the **DWL-3200AP** will cause damage and void the warranty for this product.

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

Minimum System Requirements

- Computers with Windows, Macintosh, or Linux-based operating systems with an installed Ethernet Adapter
- Internet Explorer version 6.0 or Netscape Navigator version 7.0 and above

Introduction

At up to fifteen times the speed of previous wireless devices (maximum wireless signal rate of up to 108Mbps* in Super G mode), you can work faster and more efficiently, increasing productivity. With the DWL-3200AP, bandwidth-intensive applications like graphics or multimedia will benefit significantly because large files are able to move across the network quickly.

The DWL-3200AP is capable of operating in one of 3 different modes to meet your wireless networking needs. The DWL-3200AP can operate as an access point, or in access point-to-access point bridging mode, or in access point-to-multipoint bridging mode.

Use less wiring, enjoy increased flexibility, save time and money with PoE (Power over Ethernet). With PoE, the DWL-3200AP shares power and data over the CAT5 cable, making the setup of your network less expensive and more convenient.

An ideal solution for quickly creating and extending a wireless local area network (WLAN) in offices or other workplaces, trade shows and special events, the DWL-3200AP provides data transfers at up to 108Mbps in Super G mode when used with other D-Link *Air*Premier products. (The 802.11g standard is backwards compatible with 802.11b devices.)

WPA is offered in two flavors:

WPA-Personal is directed at home users who do not have the server based equipment required for user authentication. The method of authentication is similar to WEP because you define a "Pre-Shared Key" on the wireless router/AP. Once the pre-shared key is confirmed and satisfied on both the client and access point, then access is granted. the encryption method used is referred to as the Temporal Key Integrity Protocol (TKIP), which offers per-packet dynamic hashing. It also includes an integrity checking feature which ensures that the packets were not tampered with during wireless transmission.

*Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors lower actual data throughput rate.

WPA-Enterprise is ideal for businesses that have existing security infrastructures in place. Management and security implementation can now be centralized on a server participating on the network. Utilizing 802.1x witha RADIUS (Remote Authentication Dial-in User Service) server, a network adminstrator can define a list of authorized users who can access the wireless LAN. When attempting to access a wireless LAN with WPA-Enterprise configured, the new client will be challenged with a username and password. If the new client is authorized by the administration, and enters the correct username and password, then access is granted. In a scenario where an employee leaves the company, the network administrator can remove the employee from the authorized list and not have to worry about the network being compromised by a former employee.

802.1x: Authentication which is a first line of defense against intrusion. In the authentication process, the Authentication Server verifies the identity of the client attempting to connect to the network. Unfamiliar clients would be denied access.

Features and Benefits

- 3 Different Operation modes Capable of operating in one of three different operation modes to meet your wireless networking requirements: Access Point; AP-to-AP Bridging; or AP-to-Multipoint Bridging.
- Easy Installation with PoE (Power over Ethernet).
- Faster wireless networking with the 802.11g standard to provide a maximum wireless signal rate of up to 54Mbps* (maximum wireless signal rate of up to 108Mbps* in Super G mode).
- Compatible with the 802.11b standard to provide a wireless data rate of up to 11Mbps - that means you can migrate your system to the 802.11g standard on your own schedule without sacrificing connectivity.
- Better security with WPA The DWL-3200AP can securely connect wireless clients on the network using WPA (Wi-Fi Protected Access) providing a much higher level of security for your data and communications than has previously been available.
- AP Manager Setup Wizard The new Setup Wizard makes network configuration quick and simple.
- SNMP for Management The DWL-3200AP is not just fast but it also supports SNMP v.3 for a better network management. Superior wireless AP manager software is bundled with the DWL-3200AP for network configuration and firmware upgrade. Systems administrators can also setup the DWL-3200AP easily with the Web-based configuration. A D-Link D-View module will be downloadable for network administration and real-time network traffic monitoring with D-Link D-View software.
 - Utilizes OFDM technology (Orthogonal Frequency Division Multiplexing).
- Operates in the 2.4GHz frequency range.
- **Web-based interface** for managing and configuring.

*Maximum wireless signal rate based on IEEE Standard 802.11a/g specifications. Actual data throughput will vary.

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. D-Link wireless products will allow you access to the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking brings.

A Wireless Local Area Network (WLAN) is a computer network that transmits and receives data with radio signals instead of wires. WLANs 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.

People use WLAN technology for many different purposes:

Mobility - Productivity increases when people have access to data in any location within the operating range of the WLAN. Management decisions based on real-time information can significantly improve worker efficiency.

Low Implementation Costs - WLANs are easy to set up, manage, change and relocate. Networks that frequently change can benefit from WLANs ease of implementation. WLANs can operate in locations where installation of wiring may be impractical.

Installation and Network Expansion - Installing a WLAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings. Wireless technology allows the network to go where wires cannot go - even outside the home or office.

Inexpensive Solution - Wireless network devices are as competitively priced as conventional Ethernet network devices. The DWL-3200AP saves money by providing multi-functionality, configurable in one of four different modes.

Scalability - WLANs can be configured in a variety of ways to meet the needs of specific applications and installations. Configurations are easily changed and range from Peerto-Peer networks suitable for a small number of users to larger Infrastructure networks to accommodate hundreds or thousands of users, depending on the number of wireless devices deployed.

Standards-Based Technology The DWL-3200AP Wireless Access Point utilizes the 802.11b and the 802.11g standards. The IEEE 802.11g standard is an extension of the 802.11b standard. It increases the maximum wireless signal rate of up to 54Mbps* (maximum wireless signal rate of up to 108Mbps* in Super G mode) within the 2.4GHz band, utilizing **OFDM technology.** This means that in most environments, within the specified range of this device, you will be able to transfer large files quickly or even watch a movie in MPEG format over your network without noticeable delays. This technology works by transmitting highspeed digital data over a radio wave utilizing OFDM (Orthogonal Frequency Division Multiplexing) technology. OFDM works by splitting the radio signal into multiple smaller sub-signals that are then transmitted simultaneously at different frequencies to the receiver. OFDM reduces the amount of crosstalk (interference) in signal transmissions. The D-Link DWL-3200AP will automatically sense the best possible connection speed to ensure the greatest speed and range possible. 802.11g offers WPA, the most advanced network security features available today. *Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors lower actual data throughput rate.

Installation Considerations

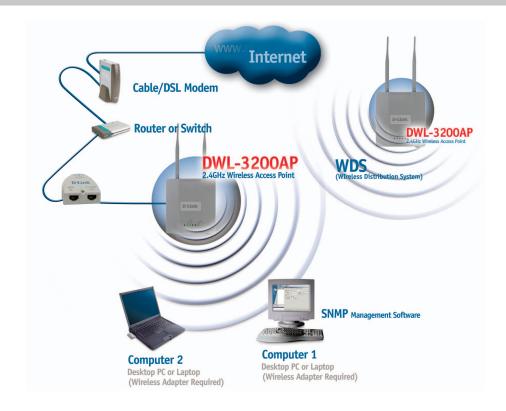
The D-Link *Air*Premier DWL-3200AP lets you access your network, using a wireless connection, from virtually anywhere within its operating range. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit 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 DWL-3200AP and other network devices to a minimum - each wall or ceiling can reduce your DWL-3200AP'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 can impede the wireless signal a solid metal door or aluminum studs may have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.
- 4 Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

Three Operational Modes

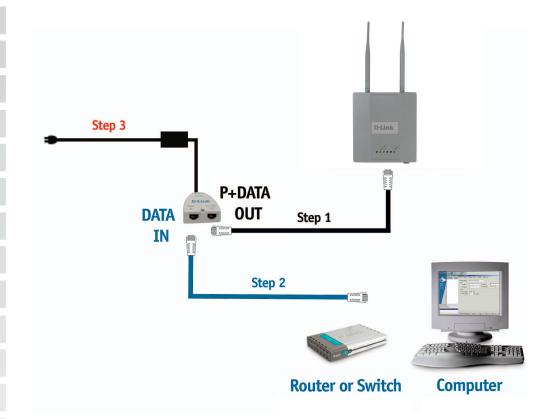
Operation Mode (Only supports 1 mode at a time)	Function
Access Point (AP)	Create a Wireless LAN
AP - to - AP Bridging	Wirelessly Connect 2 Networks
Point - to - Multipoint Bridging	Wirelessly Connect Multi Networks

Getting Started



- You will need broadband Internet access.
- 2 Consult with your Cable or DSL provider for proper installation of the modem.
- 3 Connect the Cable or DSL modem to a Router.
 (See the printed Quick Installation Guide included with your router.)
- 4 Connect the Ethernet Broadband Router to the PoE base unit. (See the printed Quick Installation Guide included with the DWL-3200AP.)
- 5 Connect the DWL-3200AP to the PoE base unit. (See the printed Quick Installation Guide included with the DWL-3200AP.)
- If you are connecting a desktop computer to your network, install the D-Link DWL-G520 wireless PCI adapter into an available PCI slot on your desktop computer.
 - (See the printed Quick Installation Guide included with the network adapter.)
- Install the drivers for the D-Link DWL-G650 wireless Cardbus adapter into a laptop computer.
 (See the printed Quick Installation Guide included with the DWL-G650.)

Connecting PoE (Power over Ethernet)



- Step 1 Connect one end of an Ethernet cable (included with your package) to the **LAN port** on the DWL-3200AP and the other end of the Ethernet cable to the port labeled **P+DATA OUT** on the PoE base unit.
- Step 2 Connect another Ethernet cable from the **DATA IN** port on the PoE base unit to your router/switch or to a PC.
- Step 3 Attach the power adapter to the connector labeled **POWER IN** on the PoE base unit. Attach the power cord to the power adapter and into an electrical outlet.

Using the Configuration Menu

To configure the DWL-3200AP, use a computer which is connected to the DWL-3200AP with an Ethernet cable (see the *Network Layout* diagram).

First, disable the *Access the Internet using a proxy server* function. To disable this function, go to **Control Panel > Internet Options > Connections > LAN Settings** and uncheck the enable box.

Start your web browser program (Internet Explorer, Netscape Navigator).

Type the IP address and http port of the DWL-3200AP in the address field (http://192.168.0.50) and press **Enter**. Make sure that the IP addresses of the DWL-3200AP and your computer are in the same subnet.



After the connection is established, you will see the user identification window as shown

Note: If you have changed the default IP address assigned to the DWL-3200AP, make sure to enter the correct IP address.

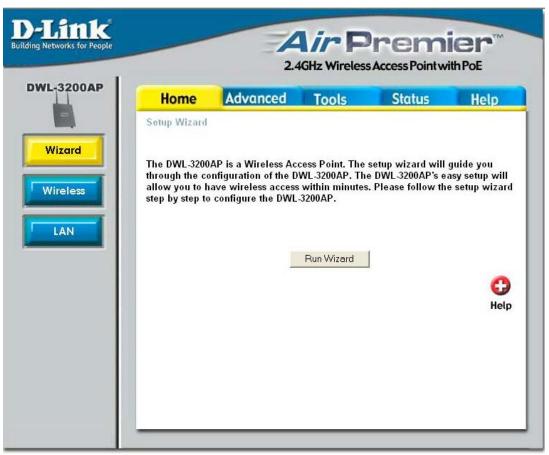
- Type admin in the User Name field
- Leave the Password field blank
- Click OK



Note: If you have changed the password, make sure to enter the correct password.

Home > Wizard

The Home>Wizard screen will appear. Please refer to the *Quick Installation Guide* for more information regarding the Setup Wizard.



These buttons appear on most of the configuration screens in this section. Please click on the appropriate button at the bottom of each screen after you have made a configuration change.



Clicking Apply will save changes made to the page



Clicking Cancel will clear changes made to the page

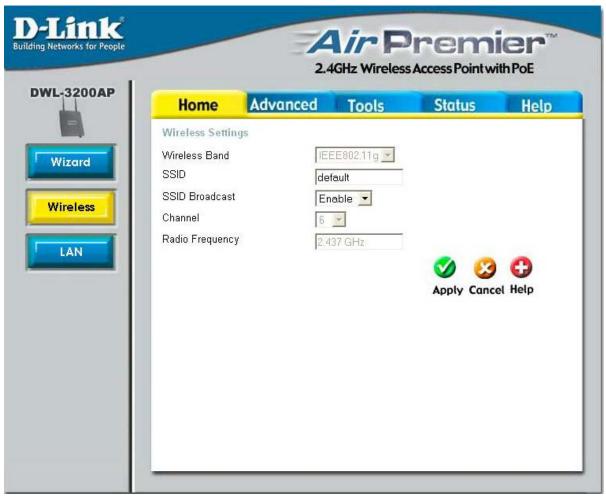


Clicking Help will bring up helpful information regarding the page



Clicking Restart will restart the router. (Necessary for some changes.)

Home > Wireless



Wireless Band: IEEE 802.11g

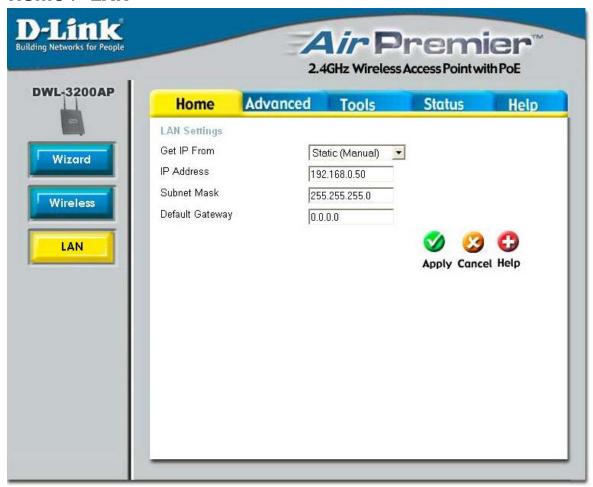
SSID: Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **default**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

SSID Broadcast: Enable or Disable SSID broadcast. Enabling this feature broadcasts the SSID across the network.

Channel: 6 is the default channel. All devices on the network must share the same channel. (Note: The wireless adapters will automatically scan and match the wireless setting.)

Radio Frequency: The radio frequency will vary depending on the wireless channel that is chosen. The frequency in channel 6 is 2.437GHz.

Home > LAN



LAN is short for Local Area Network. This is considered your internal network. These are the IP settings of the LAN interface for the DWL-3200AP. These settings may be referred to as private settings. You may change the LAN IP address if needed. The LAN IP address is private to your internal network and cannot be seen on the Internet.

Get IP From: Static (Manual) is chosen here. Choose this option if you do not have

a DHCP server in your network, or if you wish to assign a static IP address to the DWL-3200AP. When DHCP is selected the other fields

here will be greyed out.

IP Address: The default IP address is 192.168.0.50. Assign a static IP address

that is within the IP address range of your network.

Subnet Mask: Enter the subnet mask. All devices in the network must share the

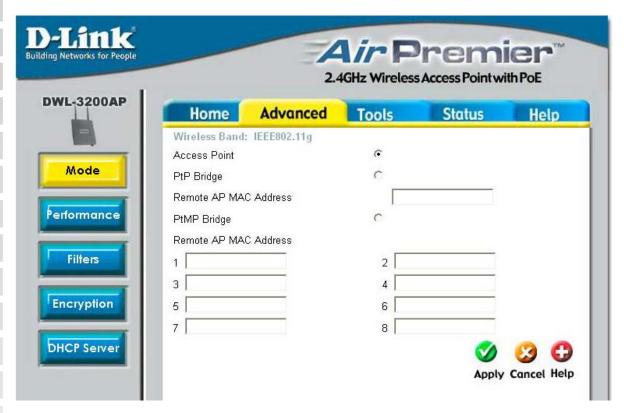
same subnet mask.

Default Gateway: Enter the IP address of the gateway in your network. If there isn't a

gateway in your network, please enter an IP address within the range

of your network.

Advanced > Mode



Wireless Band: IEEE 802.11g

The DWL-3200AP can be configured to perform in any of **three modes**: access point, point-to-point bridge, and point-to-multi-point bridge.

Access Point: Access Point is the default setting. This mode is used to create a

wireless LAN.

PtP Bridge: PtP Bridge will allow you to connect two LANs together. The wireless

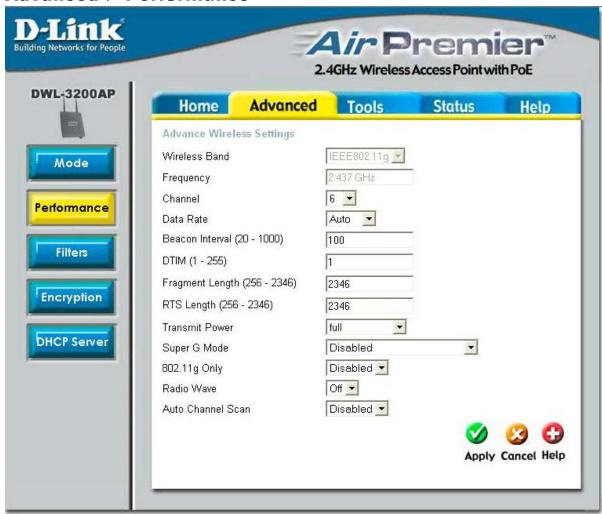
bridge mode will work only with another DWL-3200AP. Click to

enable and enter the MAC address of the remote bridge.

PtMP Bridge: PtMP Bridge will allow you to connect multiple wireless LANs

together. Other wireless LANs must be using DWL-3200APs. Click to enable and enter up to 8 remote AP MAC addresses.

Advanced > Performance



Wireless Band: IEEE 802.11g

Frequency: The frequency is 2.437GHz for channel 6.

Channel: The default channel is 6.

Data Rate:* The **Data Rates** are Auto, 1Mbps, 2Mbps, 5.5Mbps, 6Mbps, 9Mbps,

11Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps.

Beacon Interval: Beacons are packets sent by an access point to synchronize a

> network. Specify a beacon interval value. The default (100) is recommended.

*Maximum wireless signal rate derived from IEEE Standard 802.11g and IEEE Standard 802.11b specifications. Actual data throughput will vary. Network conditions and environmental factors lower actual data throughput rate.

	Soling the Configuration World
DTIM:	(Delivery Traffic Indication Message) - Select a setting between 1 and 255. 1 is the default setting. DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.
Fragment Length:	The fragmentation threshold, which is specified in bytes, determines whether packets will be fragmented. Packets exceeding the 2346 byte setting will be fragmented before transmission. 2346 is the default setting
RTS Length:	This value should remain at its default setting of 2346. If you encounter inconsistent data flow, only minor modifications to the value range between 256 and 2346 are recommended
Transmit Power:	Choose full, half (-3dB), quarter (-6dB), eighth (-9dB), minimum power.
Super G Mode:	Super G is a group of performance enhancement features that increase end user application throughput in an 802.11g network. Super G is backwards compatible to standard 802.11g devices. For top performance, all wirelss devices on the network should be Super G capable. Select either Disabled, Super G without Turbo, Super G with Dynamic Turbo, or Super G with Static Turbo.
	Disabled: Standard 802.11g support, no enhanced capabilities.
	Super G without Capable of Packet Bursting, FastFrames, Compression, Turbo: and no Turbo mode.
	Super G Capable of Packet Bursting, FastFrames, Compression, with and Dynamic Turbo. This setting is backwards compatible with non-Turbo (legacy) devices. Dynamic Turbo mode is only enabled when all devices on the wireless network are configured with Super G with Dynamic Turbo enabled.
	Super G Capable of Packet Bursting, FastFrames, Compression, with and Static Turbo. This setting is not backwards compatible Static with non-Turbo (legacy) devices. Static turbo mode is Turbo: always on and is only enabled when all the devices on the wireless network are configured with Super G with Static Turbo enabled.
802.11g only:	For increased speed in your network, enable this option. 802.11b devices will be excluded.
Radio Wave:	Select ON or OFF.
Auto Channel Scan:	Select Enable or Disable. (Enable this feature to auto-select the channel for best wireless performance.)

Advanced > Filters > Wireless Access Settings



Wireless Band: | IEEE 802.11g

Access Control: | Select **Disabled** to disable the filters function.

Select Accept to accept only those devices with MAC addresses in

the Access Control List.

Select **Reject** to reject the devices with MAC addresses in the Access

Control List.

MAC Address: Enter the MAC addresses that you wish to include in your filters list,

and click Save.

MAC Address List: When you enter a MAC address, it appears in this list. Highlight a

MAC address and click **Delete** to remove it from the list.

Advanced > Filters > WLAN Partition



Wireless Band:

IEEE 802.11g

Internal Station Connection:

Enabling this feature allows wireless clients to communicate with each other. If this is disabled, wireless stations of the selected band are not allowed to exchange data through the access point.

Ethernet to WLAN Access:

Enabling this feature allows Ethernet devices to communicate with wireless clients. If this is disabled, all data from the Ethernet to associated wireless devices is blocked. Wireless devices can still send data to the Ethernet.

Advanced > Encryption > Open System and/or Shared Key



When you select **Open System**, **Shared Key** or **Open System/Shared Key**, enter values for the fields that are shown here highlighted in blue.

Wireless Band: IEEE 802.11g.

Authentication: Select **Open System** to communicate the key across the network.

Select Shared Key to limit communication to only those devices

that share the same WEP settings.

Select Open System/Shared Key to communicate the key and re-

quire identical WEP settings to communicate.

Encryption: Select **Disabled** or **Enabled**.

Advanced > Encryption > Open System and/or Shared Key (continued)

Key Type:* | Select HEX or ASCII.

Key Size: | Select 64-, 128-, 152-bits.

Valid Key: Select the 1st through the 4th key to be the active key.

First through Input up to four keys for encryption. You will select one of these

Fourth keys: keys in the valid key field.

*Hexadecimal digits consist of the numbers 0-9 and the letters A-F

ASCII (American Standard Code for Information Interchange) is a code for representing English letters as numbers from 0-127

Advanced > Encryption > WPA-EAP



When you select **WPA-EAP**, you will configure the following properties.

Cipher Type: When you select WPA-EAP, you must select AES, AUTO or TKIP

from the pull down menu.

Group Key Update | Select the interval during which the group key will be valid.

Interval: 1800 is the recommended value. A lower interval may reduce data

transfer rate.

Radius Server: Enter the IP address of the Radius server.

Radius Port: Enter the Radius port.

Radius Secret: Enter the the Radius secret.

Encryption: | Select Enabled.

Advanced > Encryption > WPA-PSK



PassPhrase: | When you select WPA-PSK, please enter a PassPhrase in the

corresponding field.

Cipher Type: When you select WPA-PSK, please select AES, AUTO or TKIP from

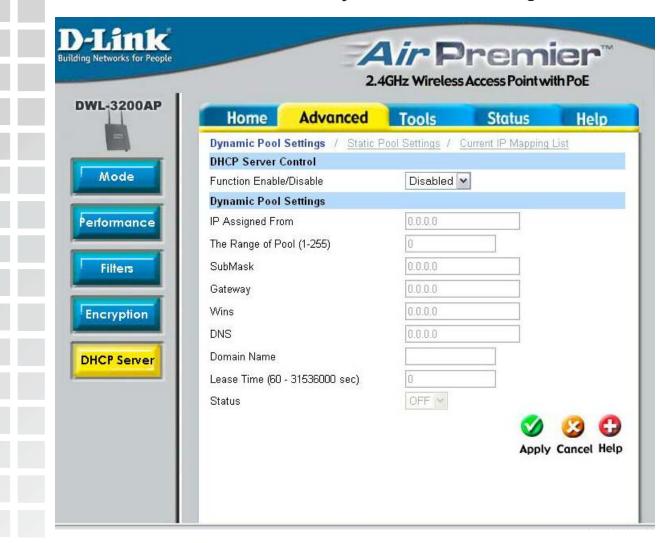
the pull down menu.

Group Key Update Select the interval during which the group key wll be valid. The default Interval:

value of 1800 is recommended.

Encryption: Select Enabled.

Advanced > DHCP Server > Dynamic Pool Settings



DHCP Server

Dynamic Host Configuration Protocol assigns dynamic IP addresses to devices on the network. This protocol simplifies network management and allows new wireless devices to receive IP addresses automatically without the need to manually assign new IP addresses.

Select **Enable** to allow the DWL-3200AP to function as a DHCP server.

IP Assigned From:

Input the first IP address available for assignment in your network.

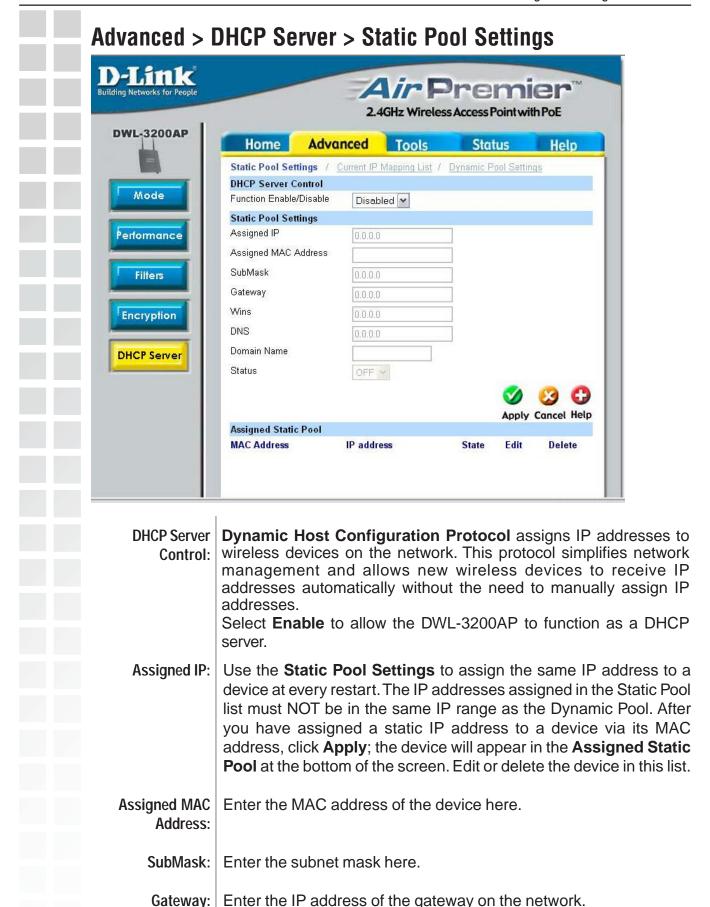
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The Range of Pool (1-255):

Enter the number of IP addresses available for assignment.

	2	
Advanced > DHCP Server > Dynamic Pool Settings (continued)		
SubMask:	All devices in the network must have the same subnet mask to communicate. Enter the submask for the network here.	
Gateway:	Enter the IP address of the gateway on the network.	
Wins:	Windows Internet Naming Service is a system that determines the IP address of a network computer that has a dynamically assigned IP address.	
DNS:	Enter the IP address of the DNS server. The DNS (Domain Name Server) translates domain names such as www.dlink.com into IP addresses.	
Domain Name:	Enter the domain name of the DWL-3200AP, if applicable. (An example of a domain name is: www.dlink.com.)	
	The Lease Time is the period of time before the DHCP server will assign new IP addresses.	

Status: Turn the **Dynamic Pool Settings ON** or **OFF** here.



Wins: Windows Internet Naming Service is a system that determines the IP address of a network computer with a dynamically assigned

IP address, if applicable.

DNS: Enter the IP address of the Domain Name Server, if applicable. The

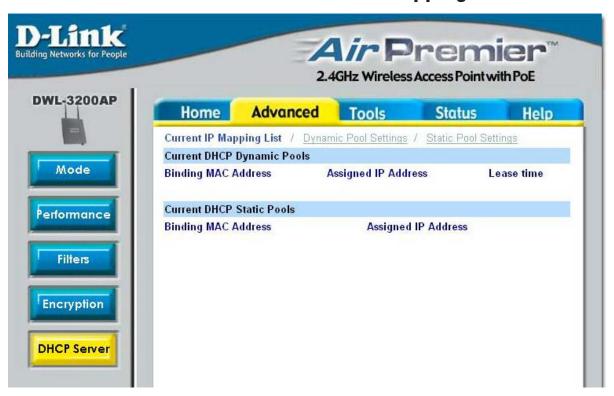
DNS translates domain names such as www.dlink.com into IP

addresses.

Domain Name: Enter the domain name of the DWL-3200AP, if applicable.

Status: This option turns the Static Pool settings ON or OFF.

Advanced > DHCP Server > Current IP Mapping List



This screen displays information about the current DHCP dynamic and static IP address pools. This information is available when you enable the DHCP function of the DWL-3200AP and assign dynamic and static IP address pools.

Current DHCP These are IP address pools to which the DHCP server function has **Dynamic Pools**: assigned dynamic IP addresses.

Advanced > DHCP Server > Current IP Mapping List (continued)

Binding MAC The MAC address of a device on the network that is within the DHCP address: dynamic IP address pool.

Assigned IP address: The current corresponding DHCP-assigned dynamic IP address of the device.

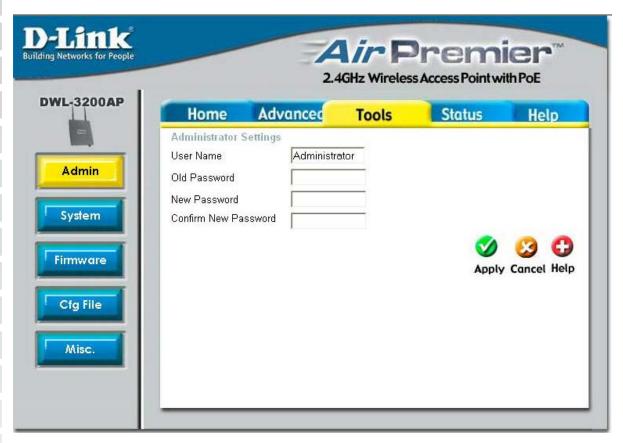
Lease Time: The length of time that the dynamic IP address will be valid.

Current DHCP Static These are IP address pools to which the DHCP server function has Pools: assigned static IP addresses.

Binding MAC The MAC address of a device on the network that is within the DHCP address: static IP address pool.

Assigned IP address: The current corresponding DHCP-assigned static IP address of the device.

Tools > Admin



User Name: Enter a user name. The default setting is admin.

Old Password: To change your password, enter the old password here.

New Password: Enter your new password here.

Confirm New

Password: Enter your new password again.

Tools > System



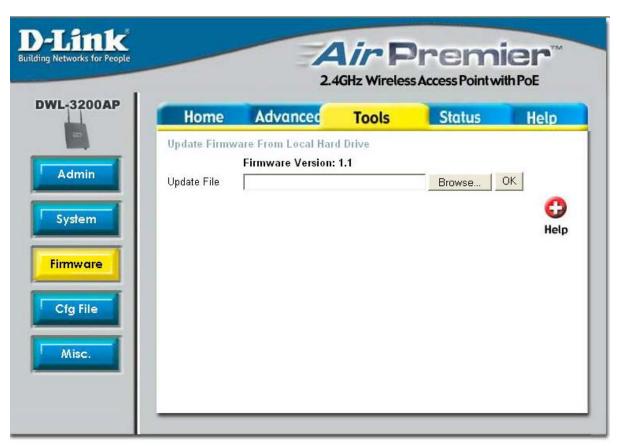
Apply Settings and Restart:

Click Restart to apply the system settings and restart the DWL-3200AP.

Restore to Factory
Default Settings:

Click Restore to return the DWL-3200AP to its factory default settings.

Tools > Firmware



Update File:

After you have downloaded the most recent version of the firmware from http://support.dlink.com to your hard drive, you can **Browse** your hard drive to locate the downloaded file. Select the file and click **OK** to update the firmware.

Tools > Cfg File



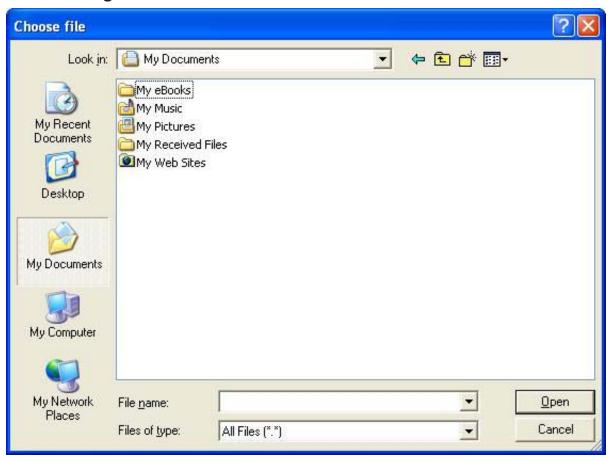
Update File:

Browse for the configuration settings that you have saved to your hard drive. Click OK after you have selected the settings file.

Load Settings to the Loacl Hard Drive:

Click OK to save the selected settings to your hard drive.

Tools > Cfg File > Choose file

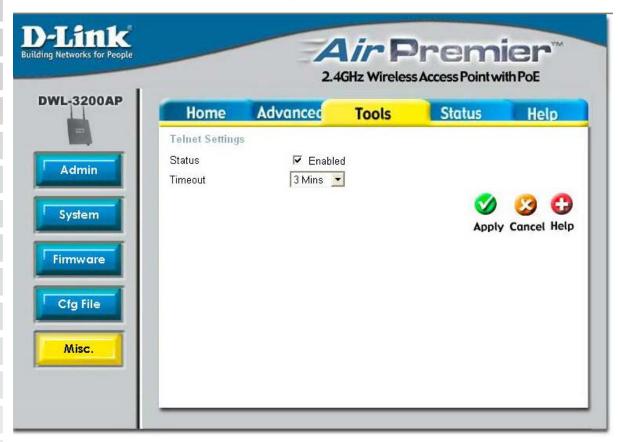


When you click **Browse** in the previous screen, the dialog box shown above appears. Select the file you wish to download and click **Open**.



The dialog box above will appear as the device restarts. Please wait for a few seconds.

Tools > Misc > Telnet Settings



Telnet is a program that allows you to control your network from a single PC.

Status: Telnet is enabled by default.

Timeout: Select a time period after which a session timeout will occur.