D-Link®
Building Networks for People

DWL-8200AP

Release 2.20

*Air*Premier 802.11a/g Managed Dualband

Access Point

User Manual

Business Class Networking

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Product Overview

Package Contents

D-Link *Air* Premier® DWL-8200AP
Managed Dualband Access Point

- Power over Ethernet base unit
- Power Adapter-DC 48V, 0.4A
- Power Cord
- Manual and Warranty on CD
- Install Guide
- Ethernet Cable
- Mounting Plate

Note: Using a power supply with a different voltage than the one included with the **DWL-8200AP** 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®, Mac®, or Linux-based operating systems with an installed Ethernet Adapter
- Internet Explorer version 7.0 or Firefox 3.0 and above
- At least 128MB of memory and a 500MHz processor

Introduction

At up to fifteen times the speed of previous wireless devices (maximum wireless signal rate of up to 108Mbps* in Super A and Super G mode), you can work faster and more efficiently, increasing productivity. With the **DWL-8200AP**, bandwidth-intensive applications like graphics or multimedia will benefit significantly because large files are able to move across the network quickly.

Inclusion of all three standards (802.11a; 802.11b; 802.11g) means that the **DWL-8200AP** is versatile enough to allow connection to almost any 802.11 network or device.

The **DWL-8200AP** is capable of operating in one of 3 different modes to meet your wireless networking needs. The **DWL-8200AP** can operate as an access point, or in WDS (Wireless Distribution System) with AP, or in WDS mode.

Use less wiring, enjoy increased flexibility, save time and money with PoE (Power over Ethernet). With PoE, the **DWL-8200AP** 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-8200AP** provides data transfers at up to 108Mbps* in Super A and Super G mode when used with other D-Link ***Air*** **Premier®** or ***Air*** **Premier AG®** products (The 802.11g standard is backwards compatible with 802.11b devices).

WPA is offered in two flavors: **Enterprise** (used for corporations), and **Personal** (used for home users).

WPA-Personal and **WPA2-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. **WPA2-Personal** is far superior to **WPA-Personal**, because the encryption of data is upgraded with the Advanced Encryption Standard (AES).

*Maximum wireless signal rate derived from IEEE Standard 802.11a and 802.11g 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.

WPA-Enterprise and **WPA2-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 with a RADIUS (Remote Authentication Dial-in User Service) server, a network administrator can define a list of authorized users who can access the wireless LAN. When attempting to access a wireless LAN with either **WPA-Enterprise** or **WPA2-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. **WPA2-Enterprise** is far superior to **WPA-Enterprise**, because the encryption of data is upgraded with the Advanced Encryption Standard (AES).

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 & Benefits

- **3 Different Operation modes -** Capable of operating in one of three different operation modes to meet your wireless networking requirements: Access Point; WDS with AP; or WDS.
- **Easy Installation with PoE (Power over Ethernet).**
- **Faster wireless networking** speeds up to 108Mbps* in Super A and Super G mode.
- **Compatible with 802.11a, 802.11b and 802.11g Devices** that is fully compatible with the IEEE 802.11a, 802.11b and 802.11g standards, the **DWL-8200AP** can connect with existing 802.11b-, 802.11g- or 802.11a-compliant wireless network adapter cards.
- **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-8200AP** 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.
- **SNMP for Management -** The **DWL-8200AP** 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-8200AP** for network configuration and firmware upgrade. Systems administrators can also setup the **DWL-8200AP** 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 (**O**rthogonal **F**requency **D**ivision **M**ultiplexing).
- Operates in the 2.4GHz frequency range for an 802.11b/g network, and in the 5GHz frequency range for an 802.11a network.
- **Web-based interface** for managing and configuring.

*Maximum wireless signal rate derived from IEEE Standard 802.11a and 802.11g 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.

Wireless Basics

D-Linkwireless 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 to access 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.

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-8200AP** saves money by providing multi-functionality, configurable in one of three 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 Peer-to-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-8200AP** Wireless Access Point utilizes the **802.11a**, **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 high-speed digital data over a radio wave utilizing **OFDM** (**O**rthogonal **F**requency **D**ivision **M**ultiplexing) 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-8200AP** will automatically sense the best possible connection speed to ensure the greatest speed and range possible.

The **DWL-8200AP** offers the most advanced network security features available today, including WPA and WPA2.

In addition to its compatibility with 802.11g and 802.11a devices, the **DWL-8200AP** is compatible with 802.11b devices. This means that if you have an existing 802.11b network, or a network with a mixture of 802.11g, 802.11a and 802.11b, the devices in that network will be compatible with the **DWL-8200AP**.

*Maximum wireless signal rate derived from IEEE Standard 802.11a and 802.11g 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.

Installation Considerations

The D-Link *Air* Premier® **DWL-8200AP** 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-8200AP** and other network devices to a minimum - each wall or ceiling can reduce your **DWL-8200AP**'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.

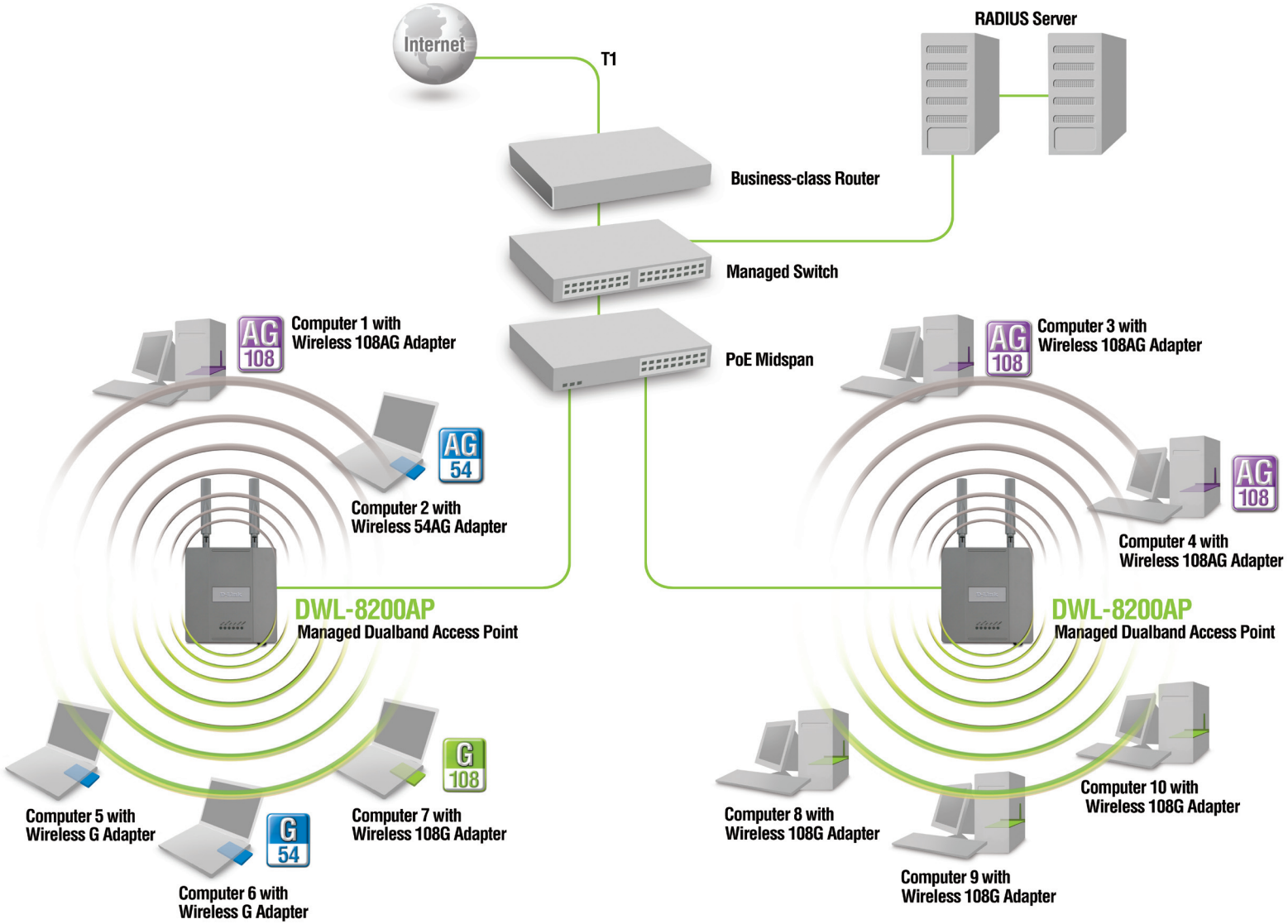
3. Building materials can impede the wireless signal - a solid metal door or aluminum studs may have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.

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	Function
Access Point (AP)	Create a wireless LAN (WLAN)
WDS with AP	Wirelessly connect multiple networks while still functioning as an access point.
WDS	Wirelessly connect multiple networks.

Installation



1. 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.
()

4. Connect the Ethernet Broadband Router to the PoE base unit.
(***DWL-8200AP***)

5. Connect the **DWL-8200AP** to the PoE base unit.
(***DWL-8200AP***)

6. If you are connecting a desktop computer to your network, install the D-Link DWL-AG530 wireless PCI adapter into an available PCI slot on your desktop computer.**7.** Install the drivers for the D-Link DWL-AG660 wireless Cardbus adapter into a laptop computer.
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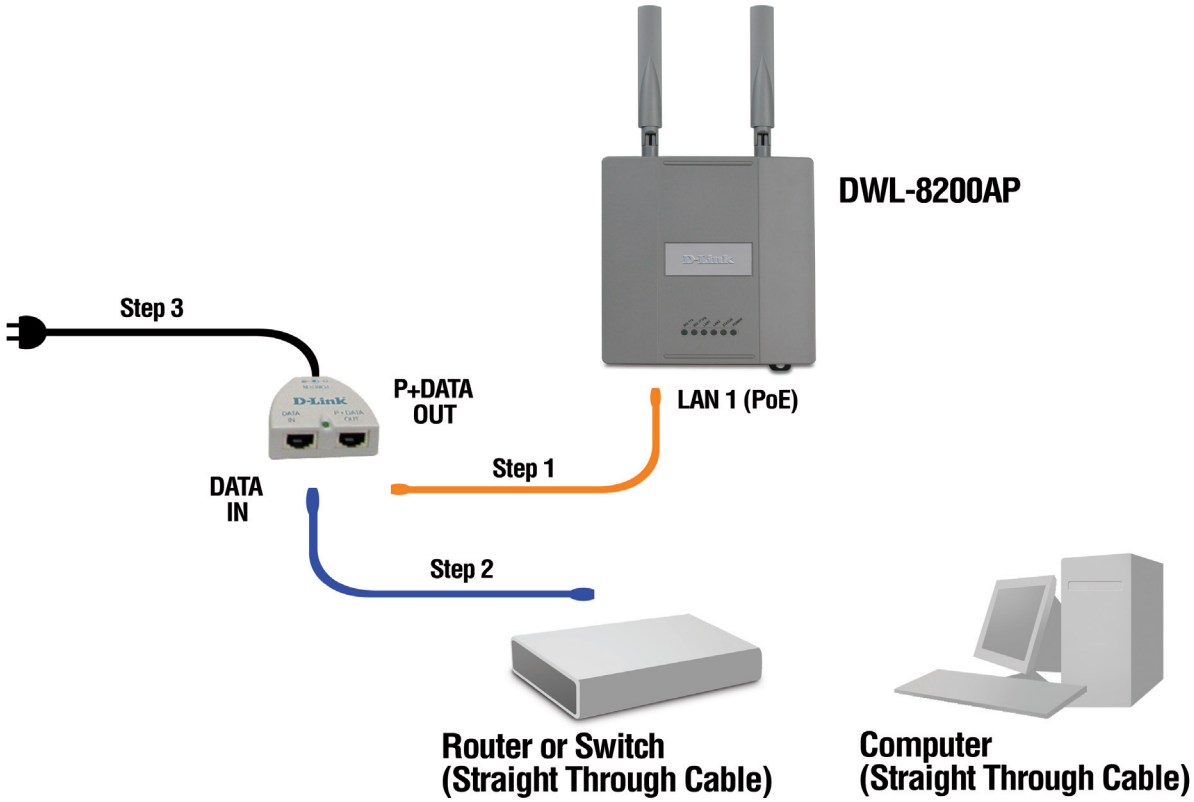
Connecting PoE (Power over Ethernet)

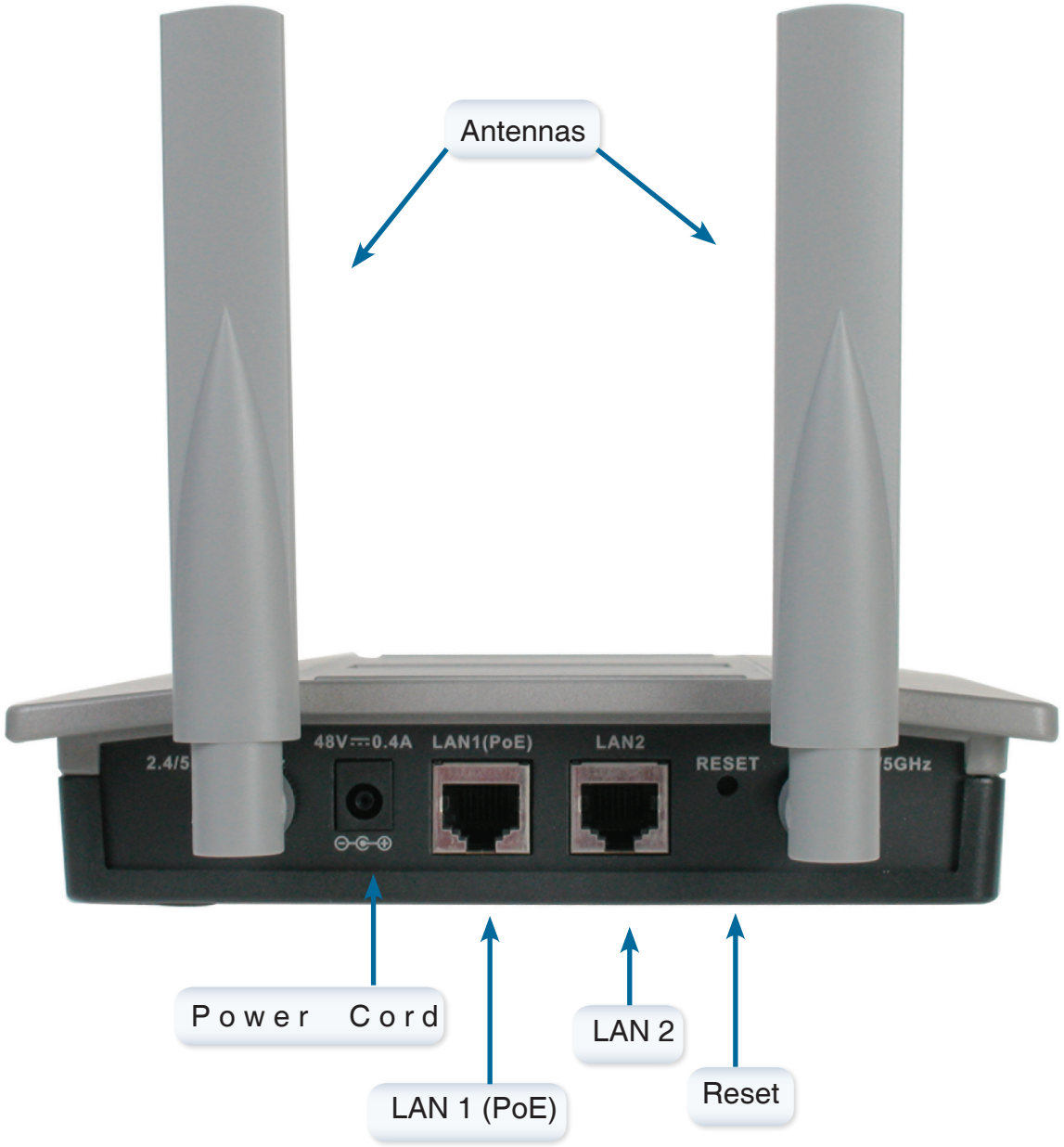


Step 1 Connect one end of an Ethernet cable (included with your package) to the **LAN port** on the **DWL-8200AP** and the other end of the Ethernet cable to the port labeled **P+DATA OUT** on the PoE base unit.

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 on the PoE base unit. Attach the power cord to the power adapter and into an electrical outlet.

Hardware Overview



Configuration

To configure the **DWL-8200AP**, use a computer which is connected to the **DWL-8200AP** 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 un-check the enable box.

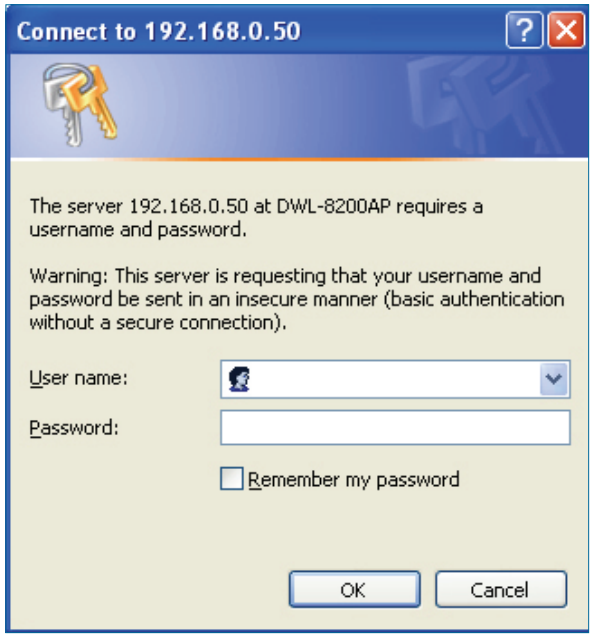
Logging In

Start your web browser program (Internet Explorer, Firefox).

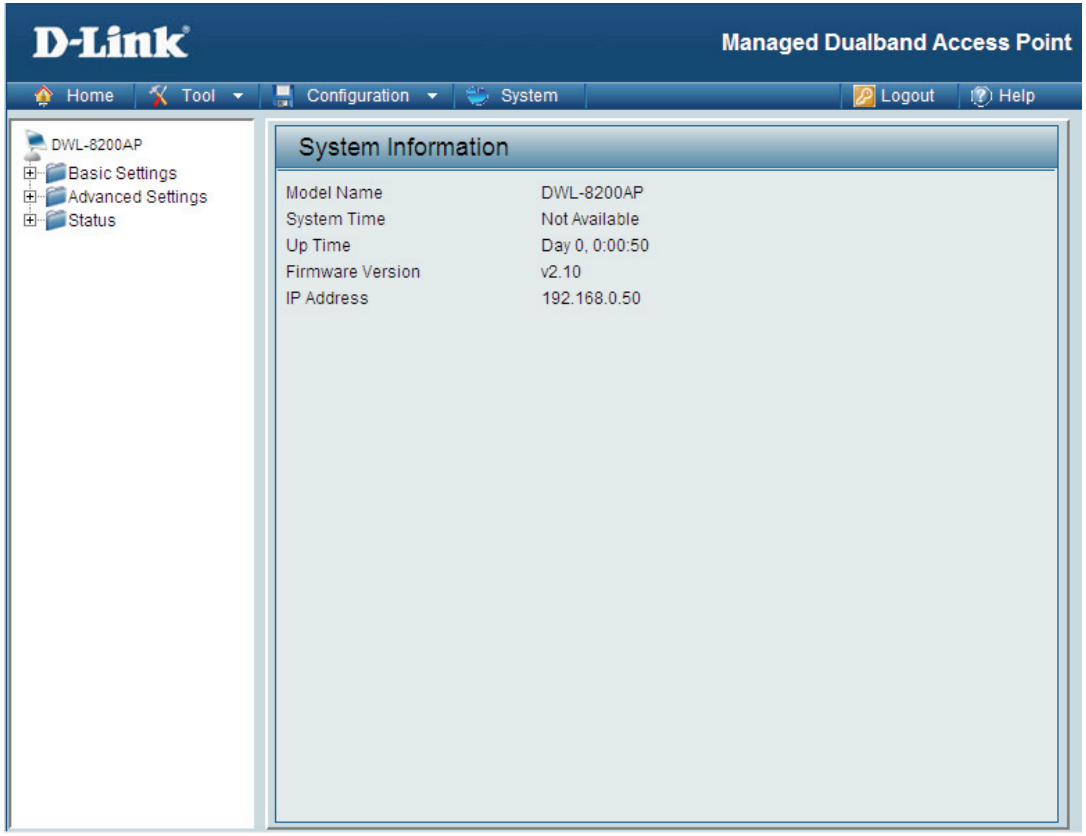
Type the IP address of the **DWL-8200AP** in the address field (http://192.168.0.50) and press **Enter**. Make sure that the IP addresses of the **DWL-8200AP** and your computer are in the same subnet. **DWL-8200AP** also supports HTTPS Browsing by using the Secure Socket Layer (SSL) Protocol. Just change your Browser's address line from "http://..." to "https://..." and log into the AP again.

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-8200AP, make sure to enter the correct IP address.



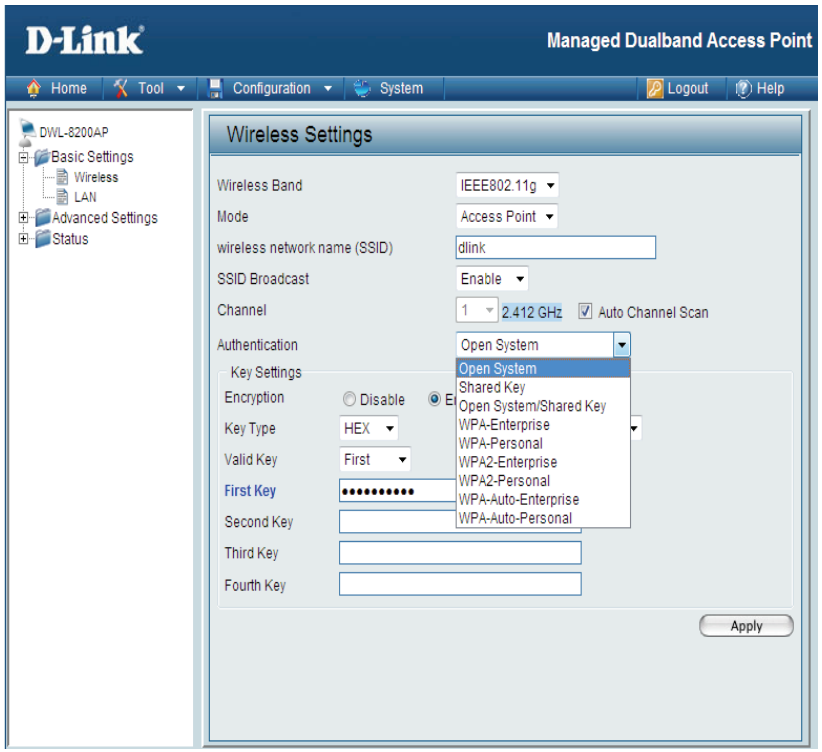
After successfully logging into the DWL-8200AP the following screen appears:



When making changes on most of the configuration screens in this section, use the Apply button at the bottom of each screen to save your configuration changes.

Click to **Apply** configuration changes.

Home > Basic Settings > Wireless



Wireless Band: Select either IEEE 802.11a or IEEE 802.11g

Mode: **Access Point** is selected from the pull-down menu.

SSID: Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **dlink**. 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: Displays the default channel for the wireless network. All devices on the network must share the same channel. The channel of an 802.11a network may not be set manually in certain regions (e.g. Europe and USA) in order to comply with DFS (Dynamic Frequency Selection).

Note: The wireless adapters will automatically scan and match the wireless setting.

Auto Channel Scan: Select Enable or Disable. Enable this feature to auto-select the channel for best wireless performance. To comply with DFS (Dynamic Frequency Selection), this function is not available to use in certain regions (e.g. Europe).

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 allow either form of data encryption.

Select **WPA-Enterprise** to secure your network with the inclusion of a RADIUS server.

Select **WPA-Personal** to secure your network using a password and dynamic key changes. (No RADIUS server required.)

Select **WPA2-Enterprise** to secure your network with the inclusion of a RADIUS server and upgrade the encryption of data with the Advanced Encryption Standard (AES).

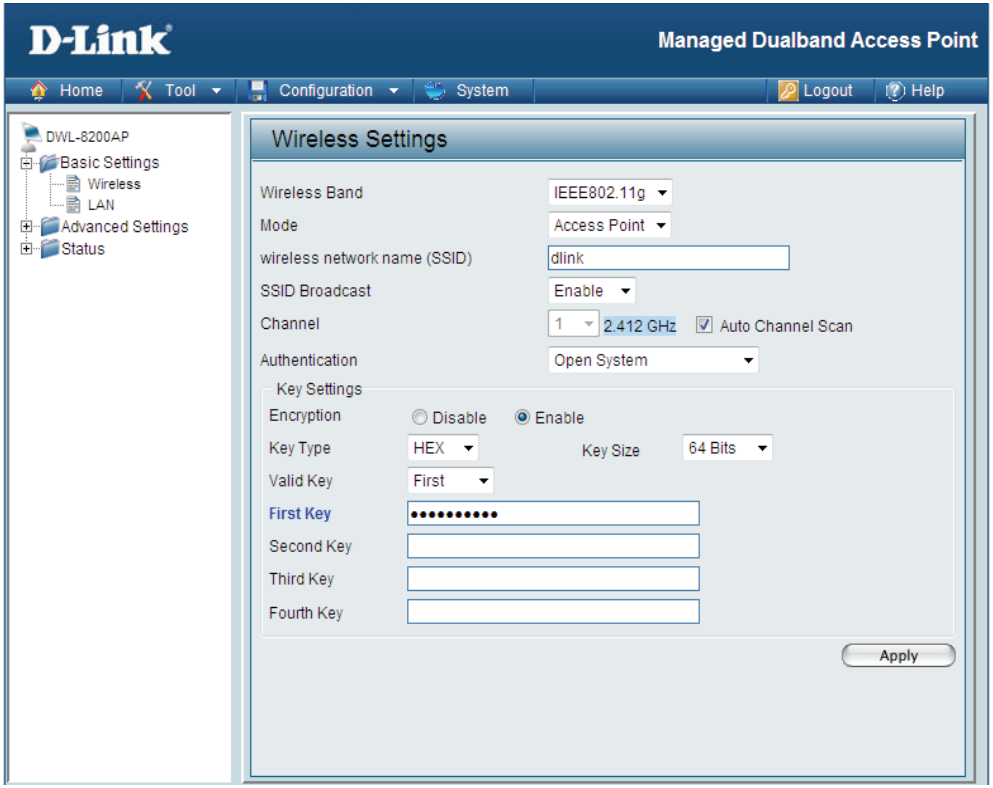
Select **WPA2-Personal** to secure your network using a password and dynamic key changes. No RADIUS server required and encryption of data is upgraded with the Advanced Encryption Standard (AES).

Select **WPA-Auto-Enterprise** to allow the client to either use **WPA-Enterprise** or **WPA2-Enterprise**.

Select **WPA-Auto-Enterprise** to allow the client to either use **WPA-Personal** or **WPA2-Personal**.

Radio: Select **On** or **Off**. Selecting Off will turn off all wireless functions.

AP Mode > WEP Encryption



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

Key Type: Select **HEX** or **ASCII.**

Key Size: Select **64-bit, 128-bit,** or **152 bits.**

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

First through Fourth keys: Input up to four keys for encryption. You will select one of these 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 0-127.

AP Mode > WPA-Enterprise, WPA2-Enterprise & WPA-Auto Enterprise

Cipher Type: When you select **WPA-Enterprise**, you must select **AUTO, AES**, or **TKIP** from the pull down menu.

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

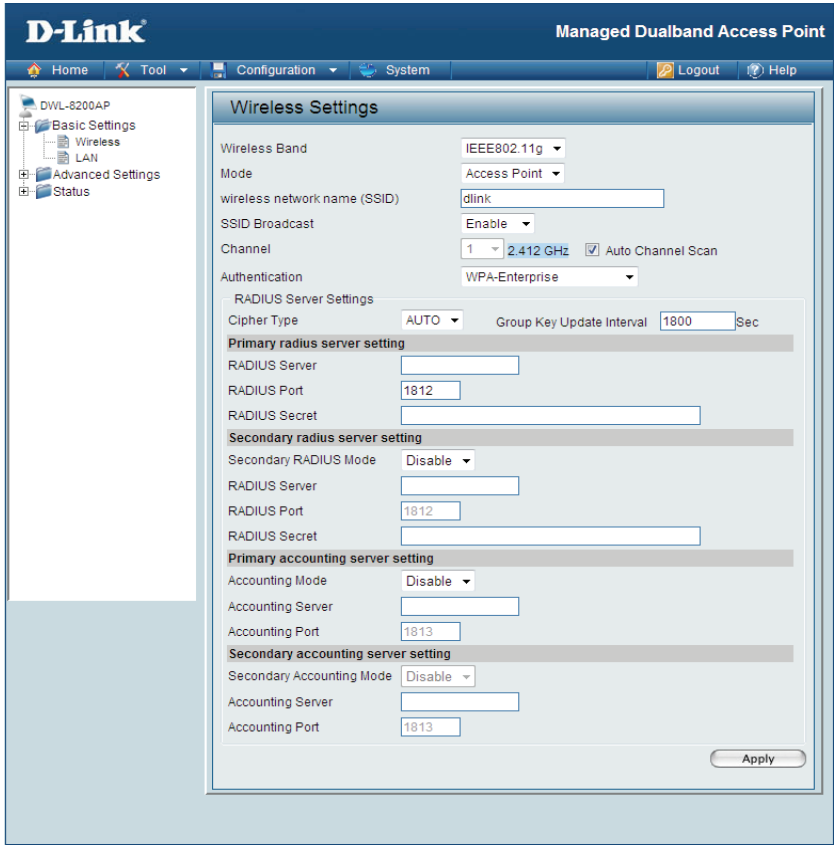
RADIUS Secret: Enter the RADIUS secret.

Accounting Mode: Select if you want to use a different server for accounting.

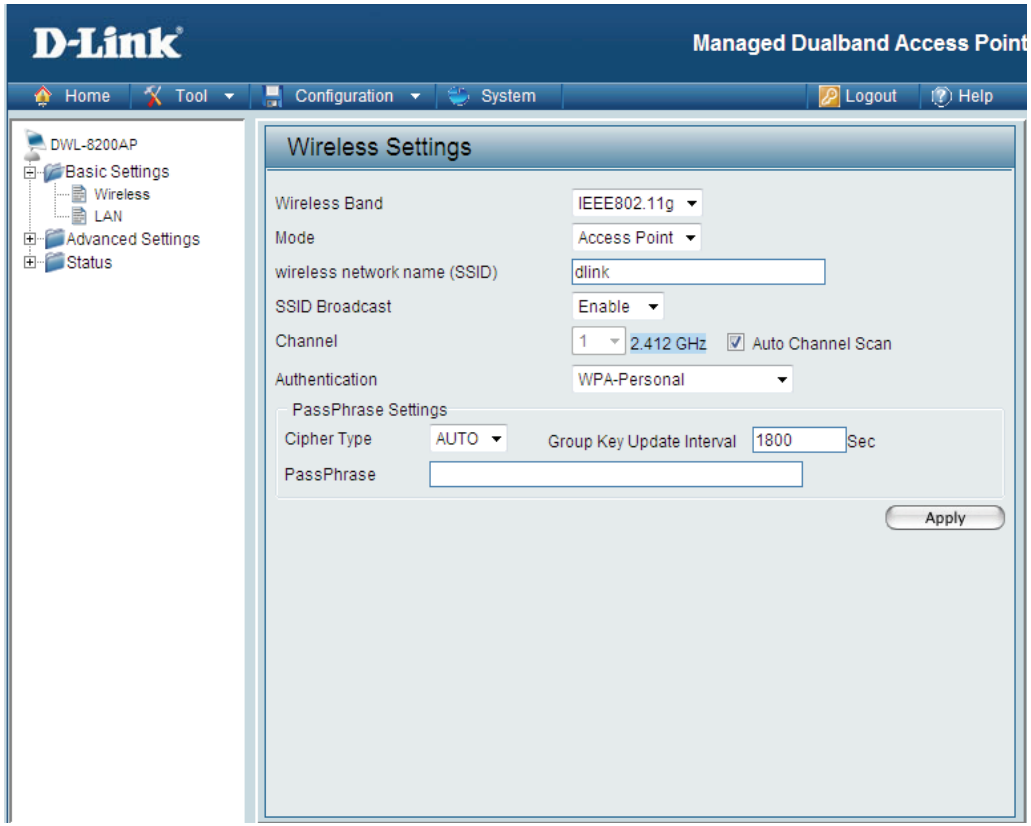
Accounting Server: Enter the IP address of the Accounting server.

Accounting Port: Enter the Accounting port (1813 is default).

Note: You may input the secondary RADIUS server and Accounting server settings if you have a backup RADIUS and Accounting server.



AP Mode > WPA-Personal, WPA2-Personal & WPA-Auto Personal

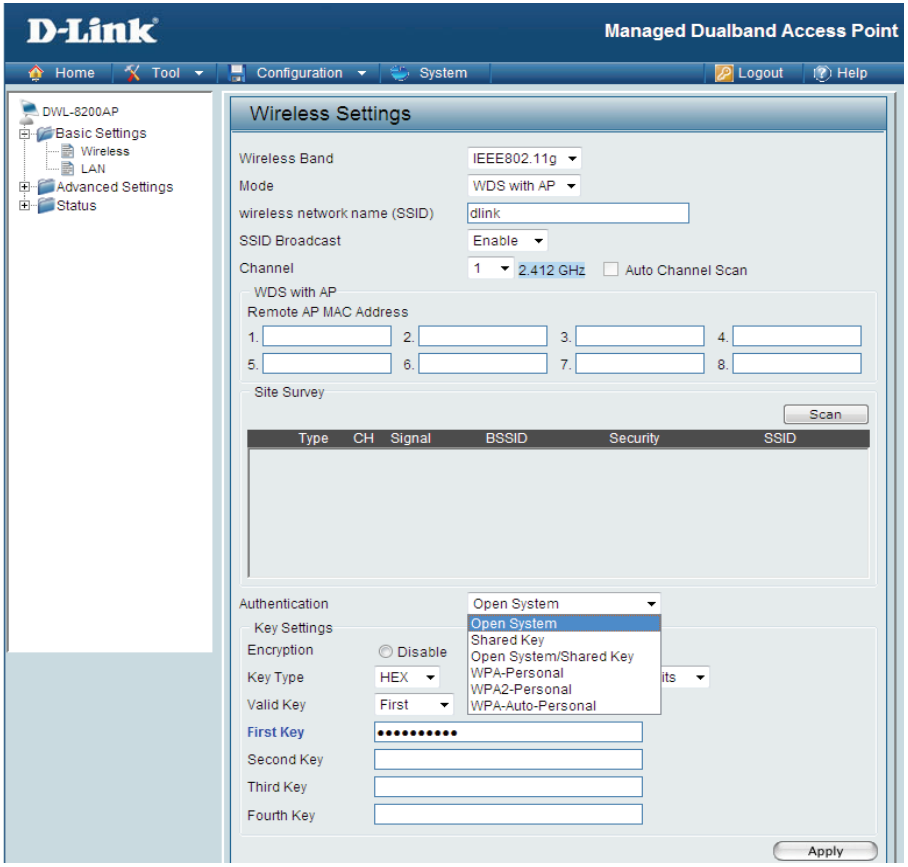


Cipher Type: When you select **WPA-Personal**, **WPA2-Personal,** or **WPA-Auto-Personal**, you must select **AUTO**, **AES**, or **TKIP** from the pull-down menu.

Group Key Update Interval: Select the interval during which the group key will be valid. The default value of 1800 is recommended.

PassPhrase: When you select **WPA-Personal**, **WPA2-Personal**, or **WPA-Auto-Personal**, please enter a **PassPhrase** in the corresponding field.

WDS with AP Mode



In WDS with AP mode, the **DWL-8200AP** wirelessly connects multiple networks, while still functioning as a wireless AP.

Wireless Band: Select either IEEE 802.11a or IEEE 802.11g

Mode: **WDS with AP** is selected from the pull-down menu.

SSID: Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **dlink**. 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: Displays the default channel for the wireless network. All devices on the network must share the same channel. The channel of an 802.11a network may not be set manually in certain regions (e.g. Europe and USA) in order to comply with DFS (Dynamic Frequency Selection).

Note: The wireless adapters will automatically scan and match the wireless setting.

Auto Channel Scan: This option is unavailable in WDS with AP mode.

Remote AP MAC Address: Enter the MAC addresses of the APs in your network that will serve as bridges to wirelessly connect multiple networks.

WDS Site Survey: Click on the **Scan** button to search for available wireless networks. Click on the network you want to connect to.

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 allow either form of data encryption.

Select **WPA-Personal** to secure your network using a password and dynamic key changes. (No RADIUS server required.)

Select **WPA2-Personal** to secure your network using a password and dynamic key changes. No RADIUS server required and encryption of data is upgraded with the Advanced Encryption Standard (AES).

Select **WPA-Auto-Personal** to allow the client to either use **WPA-Personal** or **WPA2-Personal**.

WDS with AP Mode > WEP Encryption

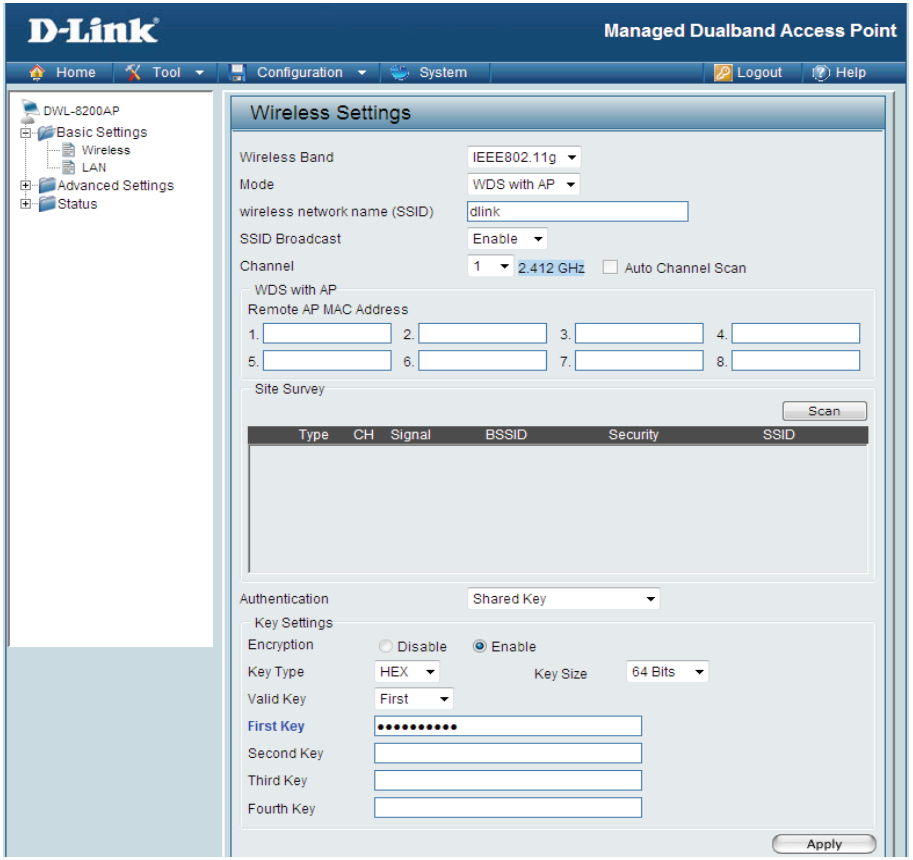
Encryption: Select **Disabled** or **Enabled**.

Key Type: Select **HEX** or **ASCII.**

Key Size: Select **64-bit, 128-bit,** or **152 bits.**

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

First through Fourth keys: Input up to four keys for encryption. You will select one of these keys in the valid key field.



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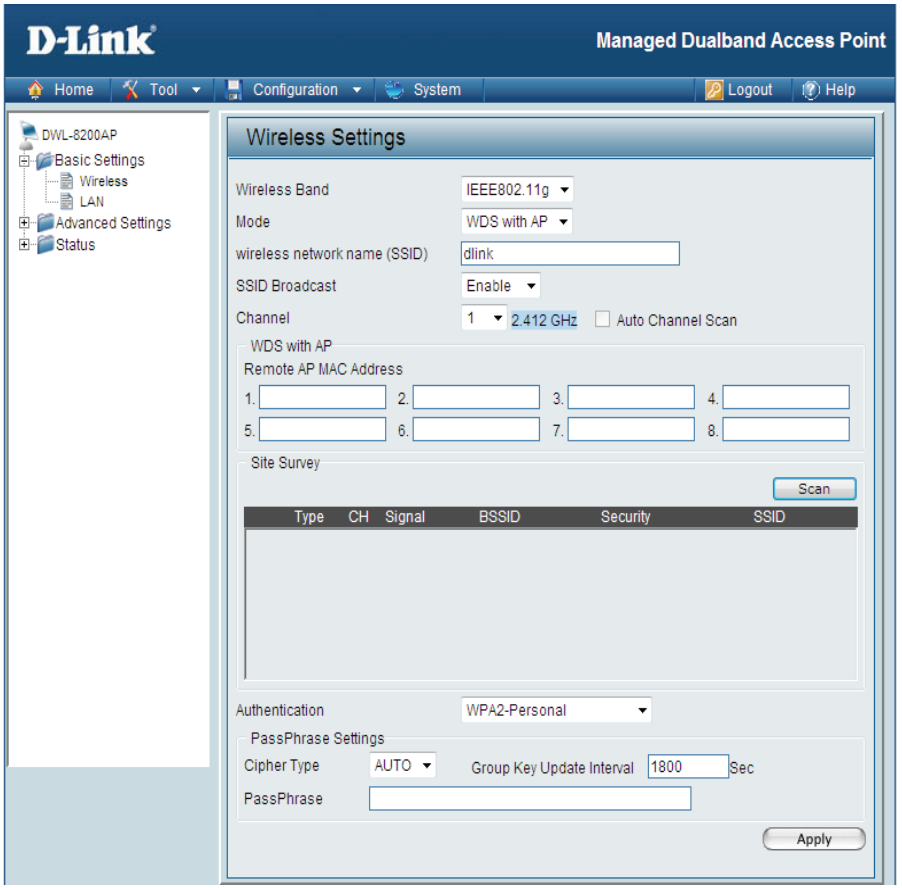
ASCII (American Standard Code for Information Interchange) is a code for representing English letters as numbers 0-127.

WDS with AP Mode > WPA-Personal, WPA2-Personal, WPA-Auto Personal

Cipher Type: When you select **WPA-Personal**, **WPA2-Personal**, or **WPA-Auto-Personal** you must select **AUTO** or **AES** from the pull-down menu.

Group Key Update Interval: Select the interval during which the group key will be valid. The default value of 1800 is recommended.

PassPhrase: When you select **WPA-Personal**, **WPA2-Personal**, or **WPA-Auto-Personal** please enter a **PassPhrase** in the corresponding field.



WDS Mode

In WDS, the **DWL-8200AP** wirelessly connects multiple networks, without functioning as a wireless AP.

Wireless Band: Select either IEEE 802.11a or IEEE 802.11g

Mode: **WDS** is selected from the pull-down menu.

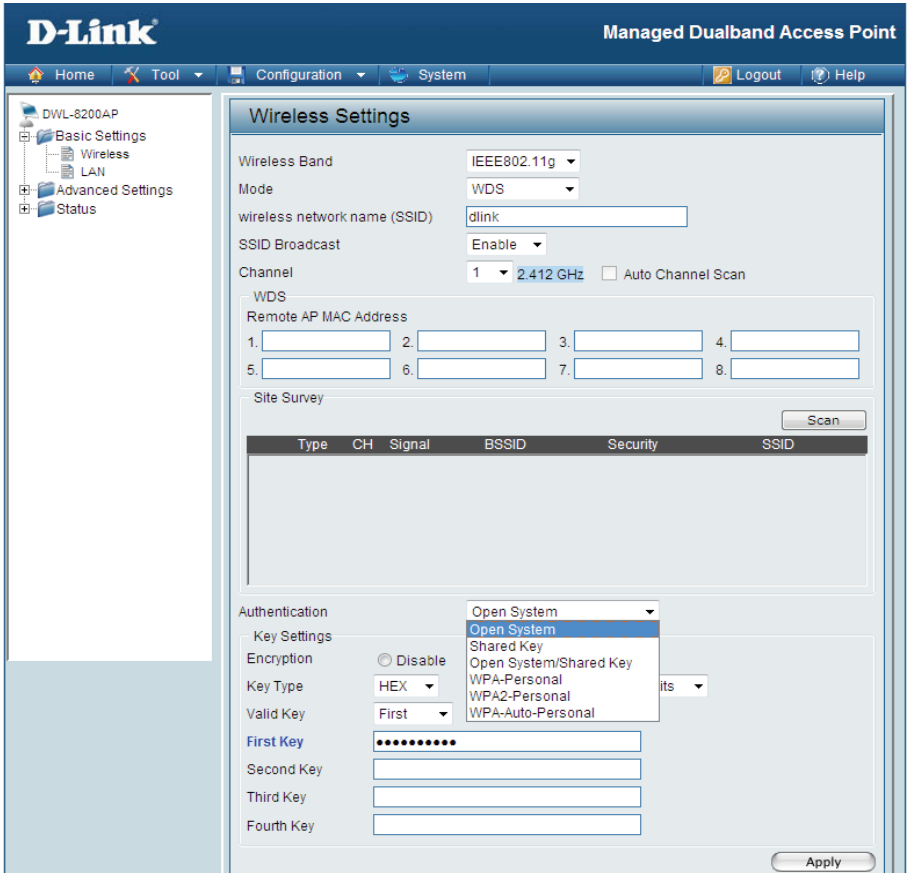
SSID: Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **dlink**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

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

Channel: Displays the default channel for the wireless network. All devices on the network must share the same channel. The channel of an 802.11a network may not be set manually in certain regions (e.g. Europe and USA) in order to comply with DFS (Dynamic Frequency Selection).

Auto Channel Scan: This option is unavailable in WDS mode.

Remote AP MAC Address: Enter the MAC addresses of the APs in your network that will serve as bridges to wirelessly connect



WDS Site Survey: multiple networks.
Click on the **Scan** button to search for available wireless networks. Click on the network you want to connect to.

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.

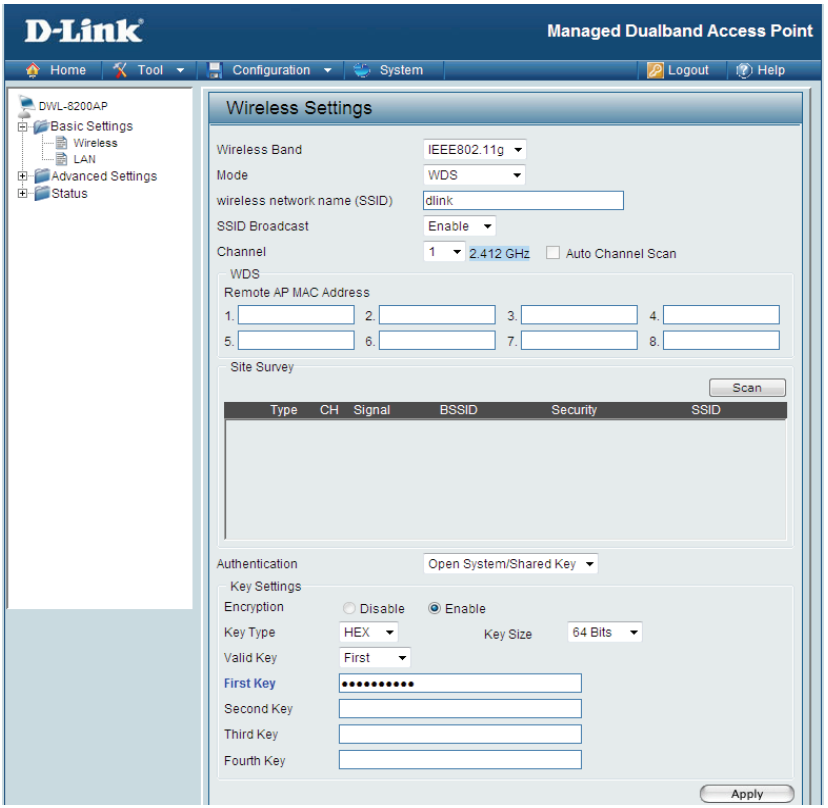
Select **Open System/Shared Key** to allow either form of data encryption.

Select **WPA-Personal** to secure your network using a password and dynamic key changes. (No RADIUS server required.)

Select **WPA2-Personal** to secure your network using a password and dynamic key changes. No RADIUS server required and encryption of data is upgraded with the Advanced Encryption Standard (AES).

Select **WPA-Auto-Personal** to allow the client to either use **WPA-Personal** or **WPA2-Personal**.

WDS Mode > WEP Encryption



Encryption: Select **Disabled** or **Enabled**. (**Disabled** is selected here).

Key Type: Select **HEX** or **ASCII.**

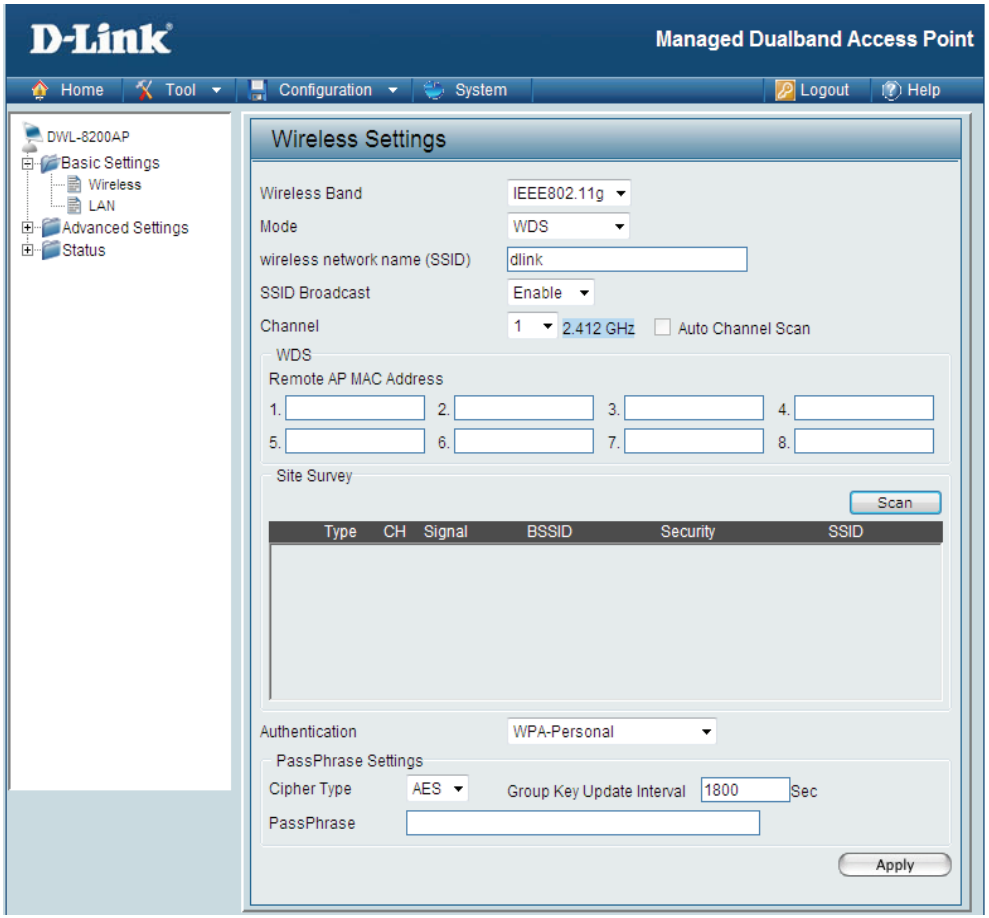
Key Size: Select **64-bit, 128-bit,** or **152 bits.**

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

First through Fourth keys: Input up to four keys for encryption. You will select one of these 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 0-127.

WDS Mode > WPA-Personal, WPA2-Personal, WPA-Auto Personal



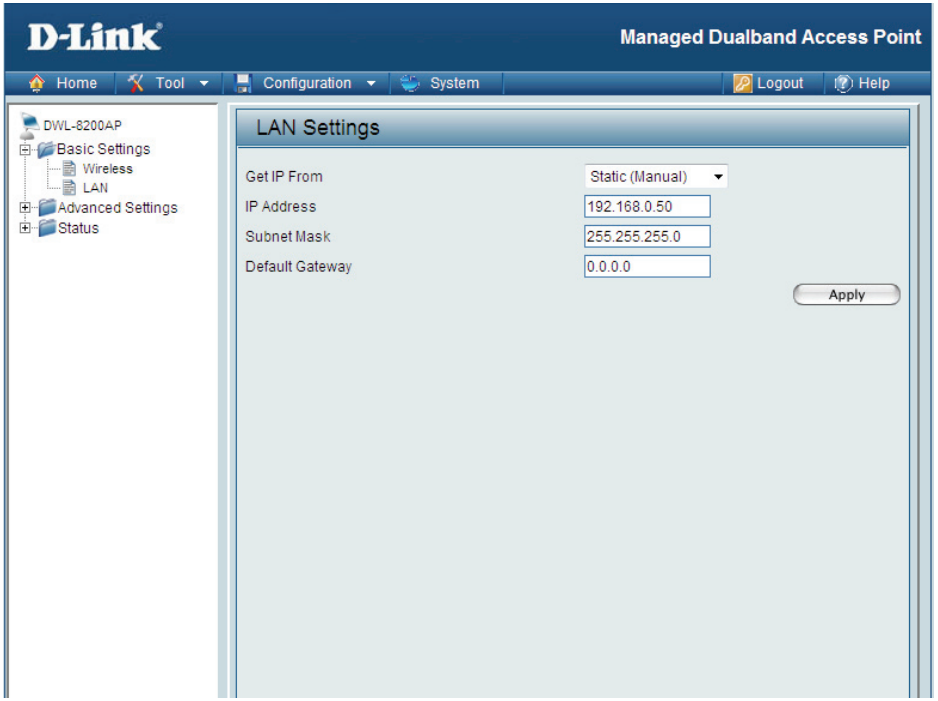
Cipher Type: AES is selected.

Group Key Update Interval: Select the interval during which the group key will be valid. The default value of 1800 is recommended.

PassPhrase: When you select WPA-Personal, WPA2-Personal, or WPA-Auto-Personal, please enter a PassPhrase in the corresponding field.

Mode	Authentication Available
Access Point	Open System Shared Key Open System/Shared Key WPA-Enterprise WPA-Personal WPA2-Enterprise WPA2-Personal WPA-Auto-Enterprise WPA-Auto-Personal
WDS with AP	Open System Shared Key Open System/Shared Key WPA-Personal WPA2-Personal WPA-Auto-Personal
WDS	Open System Shared Key Open System/Shared Key WPA-Personal WPA2-Personal WPA-Auto-Personal

Home > Basic Settings > 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-8200AP**. 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.

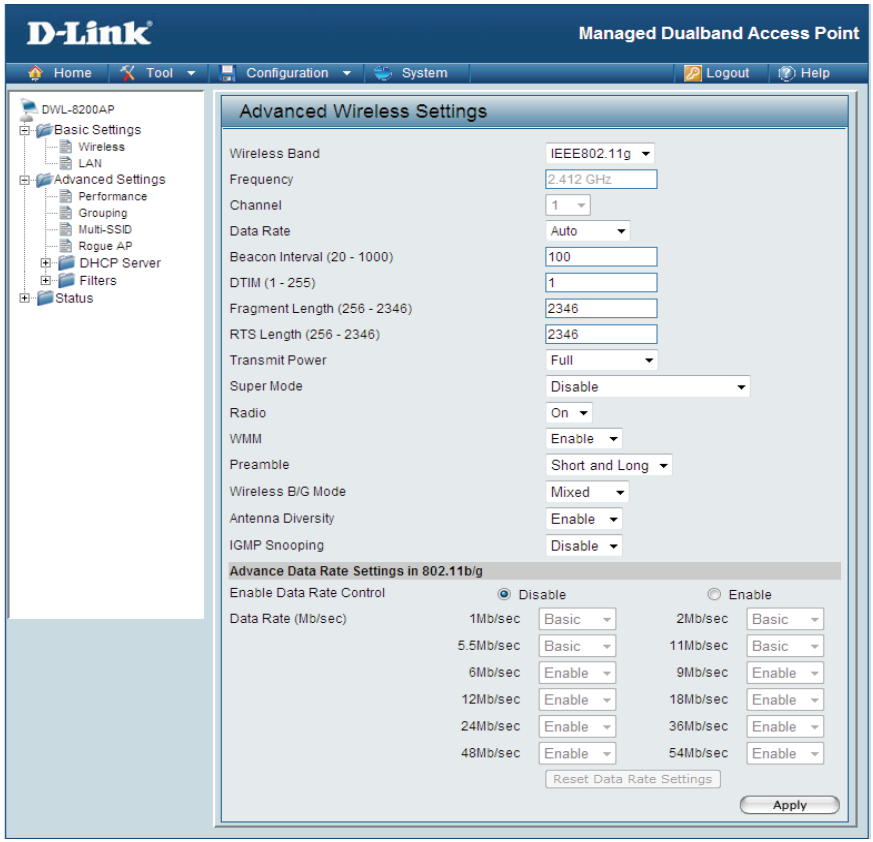
Get IP From: **Static (Manual)** is chosen here. Choose this option if you do not have a DHCP server in your network, or if you wish to assign a static IP address to the **DWL-8200AP**. When **Dynamic (DHCP)** is selected the other fields here will be greyed out.

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.

Home > Advanced Settings > Performance



By changing radio parameters in the performance section, you can customize the radio network to fit your needs. Performance functions are designed for more advanced users who are familiar with 802.11 wireless networks and radio configuration.

Wireless Band: Select IEEE 802.11a or IEEE 802.11g from this pull-down menu.

Frequency: Displays the current frequency for the wireless network. The frequency reflects the choice of the wireless band.

Channel: Indicates the channel setting for the **DWL-8200AP**. The channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network. The channel of an 802.11a network may not be set manually in certain regions (e.g. Europe and USA) in order to comply with DFS (Dynamic Frequency Selection).

Data Rate*: The default value is set to "**Auto**", which adjusts the base transfer rate depending on the base rate of the connecting device. The **Data Rates** are **Auto**, **6Mbps**, **9Mbps**, **12Mbps**, **18Mbps**, **24Mbps**, **36Mbps**, **48Mbps**, **54Mbps**.

Beacon Interval (20-1000): Beacons are packets sent by an Access Point to synchronize a wireless network. Specify a Beacon interval value between 20 and 1000. The default value is set to 100 milliseconds.

DTIM (1-255): *(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.

Fragmentation Length (256-2346): 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 (256-2346): 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 Mode: Super Mode is a group of performance enhancement features that increase end user application throughput in an 802.11a and 802.11g network. Super Mode is backwards compatible to standard 802.11g devices. For top performance, all wireless devices on the network should be Super Mode capable. Select either Disabled, Super Mode without Turbo, Super Mode with Static Turbo, or Super Mode with Dynamic Turbo.

Disabled: Standard 802.11a and 802.11g support, no enhanced capabilities.

*Maximum wireless signal rate derived from IEEE Standard 802.11a and 802.11g 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.

Super Mode without Turbo: Capable of Packet Bursting, FastFrames, Compression, and no Turbo mode.

Super Mode with Static Turbo: Capable of Packet Bursting, FastFrames, Compression, and Static Turbo. This setting is not backwards compatible with non-Turbo (legacy) devices. Static turbo mode is always on and is only enabled when all the devices on the wireless network are configured with Super Mode with Static Turbo enabled.

Note: *Super Mode with Static Turbo is only available for 802.11a.*

Super Mode with Dynamic Turbo: Capable of Packet Bursting, FastFrames, Compression, 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 Mode with Dynamic Turbo enabled.

WMM: (Wi-Fi Multimedia) Improves the user experience for audio, video, and voice applications over a Wi-Fi network. WMM is based on a subset of the IEEE 802.11e WLAN QoS standard.

Preamble (802.11g only): The Preamble Type defines the length of the CRC (Cyclic Redundancy Check) block for communication between the Access Point and roaming wireless adapters. The default setting is set to “Short and long” Preamble.

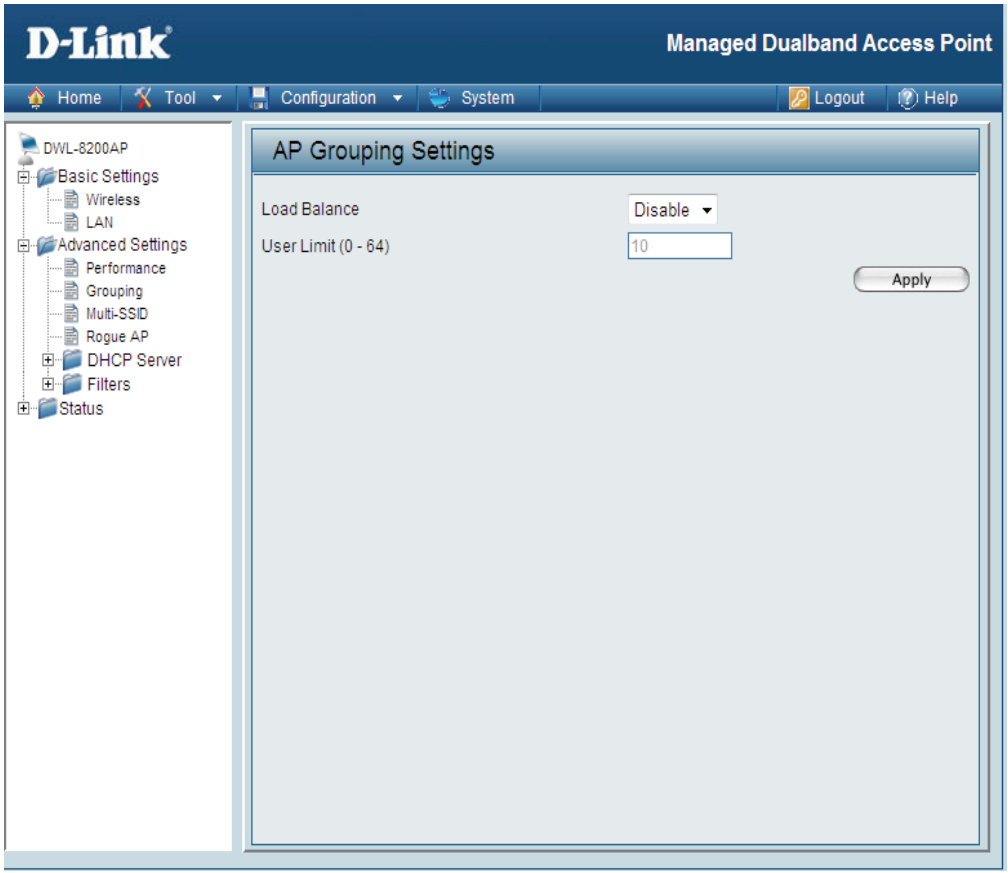
Note: High network traffic areas should use the shorter preamble type. CRC is a common technique for detecting data transmission errors.

Wireless B/G Mode (802.11g only): This function allows you to configure the wireless network with IEEE 802.11g only, IEEE 802.11b only, or IEEE 802.11g with backward interoperability with IEEE 802.11.

Antenna Diversity: This option is enabled by default. When enabled, each radio (5GHz/2.4GHz) will automatically switch to the antenna with the greatest RSSI value. When disabled, each radio will use its main antenna - when facing the AP, 5GHz will use the right antenna to transmit and receive packets while the 2.4GHz radio will use the left.

Data Rate Control: If you select enable, you will be able to set the AP to transmit only certain data rates.

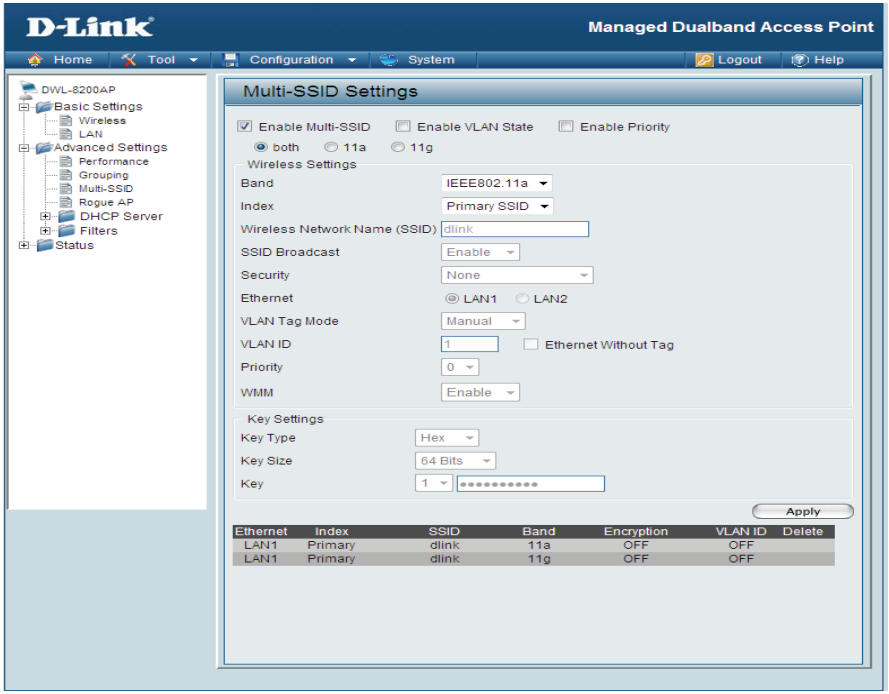
Home > Advanced Settings > Grouping



Load Balance: When **Enabled**, you allow several **DWL-8200AP**s to balance wireless network traffic and wireless clients among **DWL-8200AP**s in the network. Assign each access point a different **non-overlapping channel** (e.g., 1, 6, 11).

User Limit (0-64): Set the **User Limit** in this field (0-64).

Home > Advanced Settings > Multi-SSID



Enable Multi-SSID: When Multi-SSID is enabled, you can configure your SSIDs for either **both**, **11a** only, or **11g** only networks.

Enable VLAN Status: Check to use a VLAN.

Enable Priority: Allows you to prioritize per SSID.

Band: Select the wireless band (**IEEE802.11a** or **IEEE802.11g**).

Index: You can select up to 7 multi-SSIDs per band, the default multi-SSIDs is the primary, which puts the total to 8 multi-SSIDs per band.

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

SSID Broadcast: Select Disable to prevent the SSID name to be broadcast.

Security: The Multi-SSIDs security can be WPA/WPA2-Enterprise or WPA-Auto-Enterprise only when the Primary SSID's security is at the same security level. Also, they must connect to the same RADIUS server.

Ethernet: Select "**LAN1**" if you wish to configure the network on LAN 1 (PoE). Select "**LAN2**" to set up the network on LAN 2.

VLAN ID: Enter the VLAN ID you want to use (0 - 4094)

Key Type: Select **HEX** or **ASCII**.

Key Size: Select **64-bit**, **128-bit**, or **152-bit**.

Key: Select the 1st key all the way through the 4th key, to be set as the active key. Enter key here.

When Primary SSID is set to any of the following security levels:	Multi-SSID can use any of these security levels:
None Open System (WEP) Shared Key (WEP) WPA-Personal WPA2-Personal WPA-Auto-Personal	None Open System (WEP) Shared Key (WEP) WPA-Personal WPA2-Personal WPA-Auto-Personal
WPA-Enterprise WPA2-Enterprise WPA-Auto-Enterprise	None Open System (WEP) Shared Key (WEP) WPA-Personal WPA2-Personal WPA-Auto-Personal WPA-Enterprise WPA2-Enterprise WPA-Auto-Enterprise

Cipher Type: When you select **WPA-Personal**, please select **AUTO, AES,** or **TKIP** from the pull down menu.

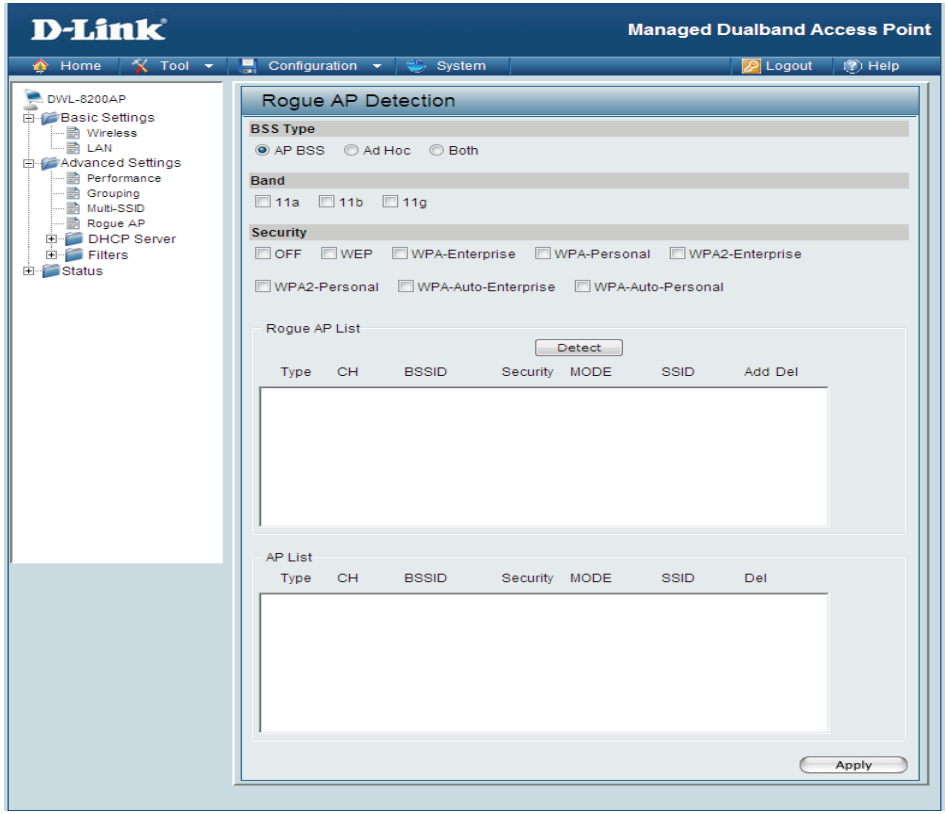
Group Key Update Interval: Select the interval during which the group key will be valid. The default value of 1800 is recommended.

PassPhrase: When you select **WPA-Personal**, please enter a **PassPhrase** in the corresponding field.

Note: If WPA or WPA2 is being used, it will occupy the key space 2 and 3, which will leave key 1 and 4 for other SSIDs to use for WEP.

When you configure one Multi-SSID, you must click **Save to Table** and then click **Apply** to save your settings.

Home > Advanced Settings > Rogue AP



BSS Type: The Basic Service Set Type allows you to select from **AP BSS**, **Ad Hoc**, or **Both**.

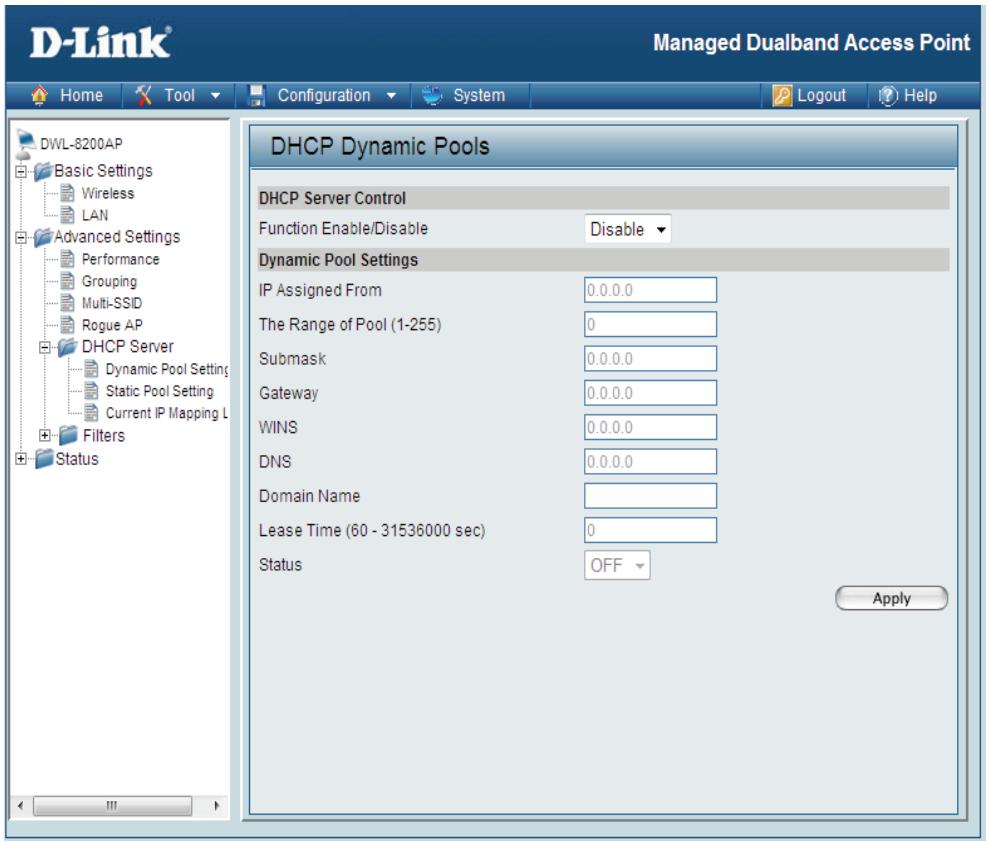
Band: Select the type of network (bands **11a**, **11b**, and **11g)** that you would like the AP detection to search on.

Security: Select the Security type (**Off**, **WEP**, **WPA, or WPA2)** that you would like to be consider during AP detection.

Rogue AP List: This window shows all of the neighbor APs detected, which is based on your criteria from above (BSS Type, Band, and Security). If the AP is in the same network, or if you know the AP, just click on "**Add**" to save it to the AP list.

AP List: This window shows all of the APs that are allowed access on the network.

DHCP Server > Dynamic Pool Settings



DHCP Server Control: **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-8200AP** to function as a DHCP server.

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

The Range of Pool (1-255): Enter the number of IP addresses available for assignment.

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.

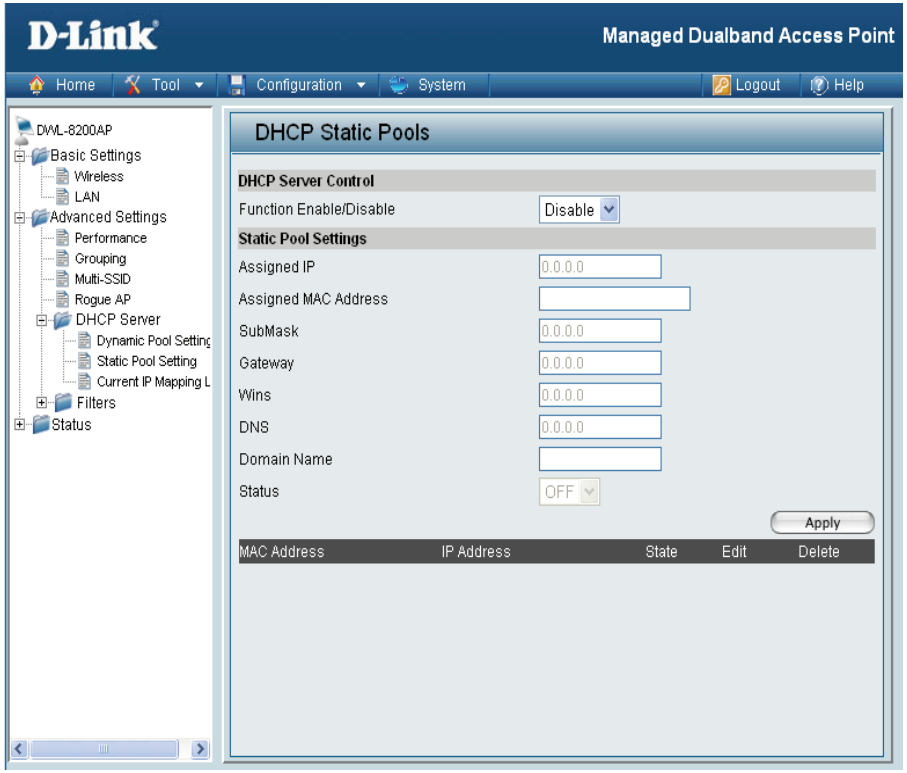
DNS: Enter the IP address of the DNS server. The DNS (Domain Name Server) translates domain names such as www.dlink.com into IP addresses.

Domain Name: Enter the domain name of the **DWL-8200AP**, if applicable. (An example of a domain name is: www.dlink.com.)

Lease Time: 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.

DHCP Server > Static Pool Settings



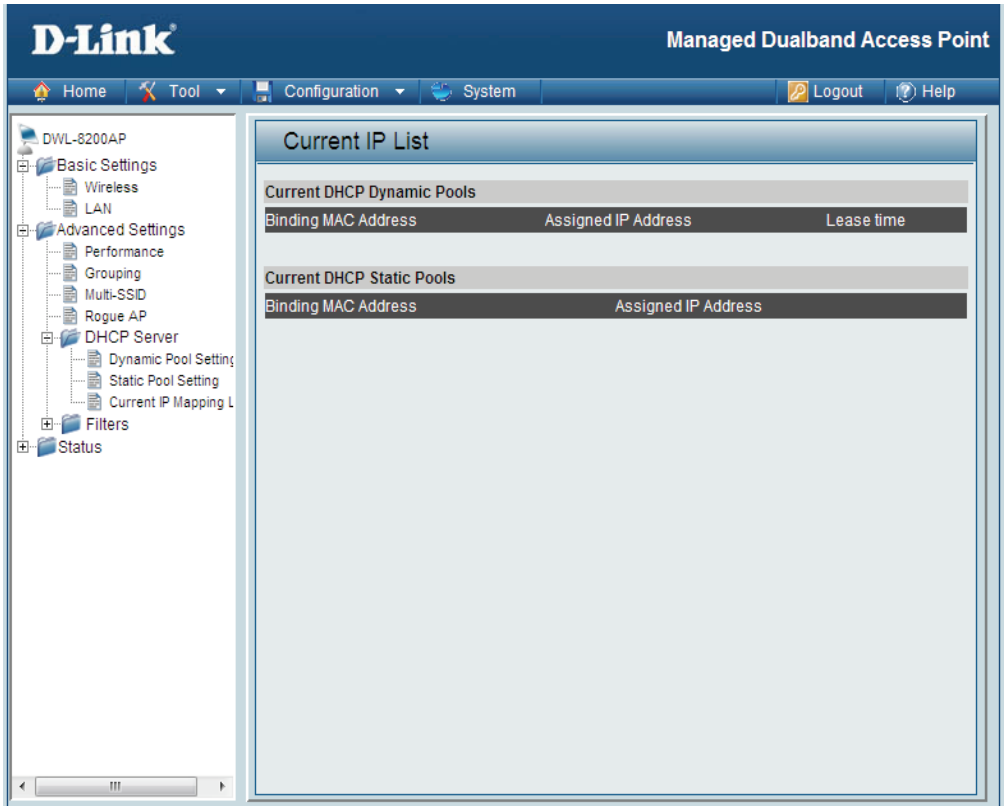
DHCP Server Control: **Dynamic Host Configuration Protocol** assigns IP addresses to wireless devices on the network. This protocol simplifies network management and allows new wireless devices to receive IP addresses automatically without the need to manually assign IP addresses.
Select **Enable** to allow the **DWL-8200AP** to function as a DHCP server.

Assigned IP: Use the **Static Pool Settings** to assign the same IP address to a device at every restart. The IP addresses assigned in the Static Pool list must NOT be in the same IP range as the Dynamic Pool. After you have assigned a static IP address to a device via its MAC address, click **Apply**; the device will appear in the **Assigned Static Pool** at the bottom of the screen. Edit or delete the device in this list.

Assigned MAC Address: Enter the MAC address of the device here.

DHCP Server > Current IP 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-8200AP** and assign dynamic and static IP address pools.



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

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

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

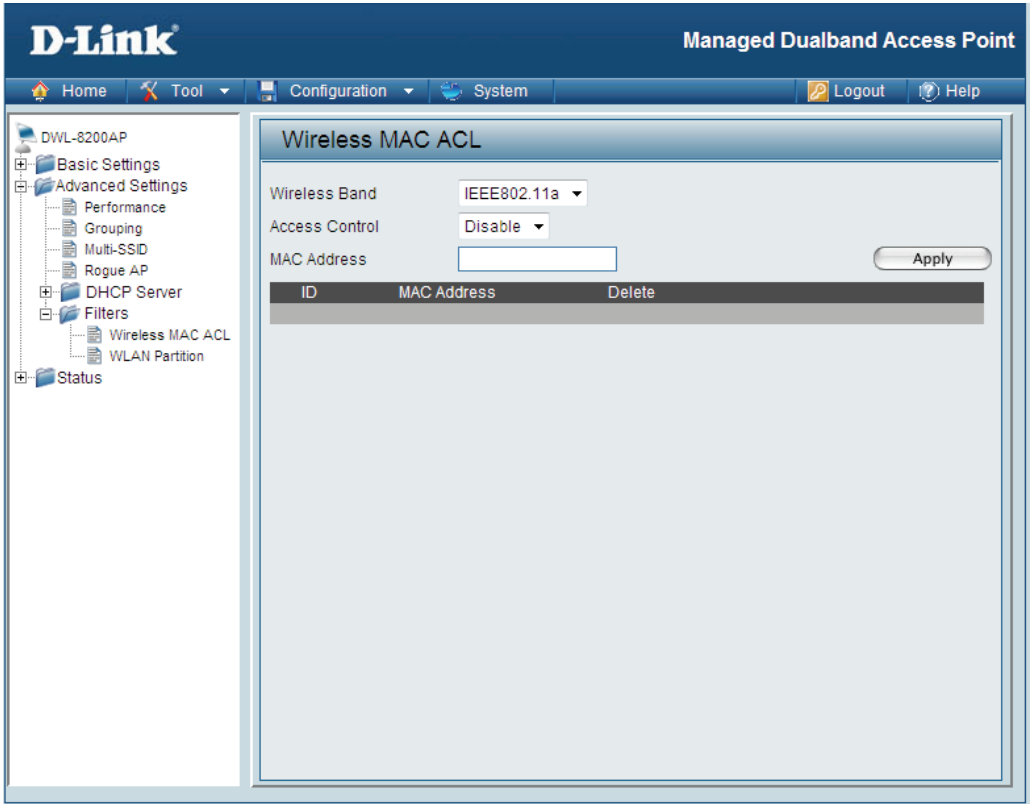
Lease Time: The length of time that the dynamic IP address will be valid.

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

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

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

Filters >Wireless MAC ACL



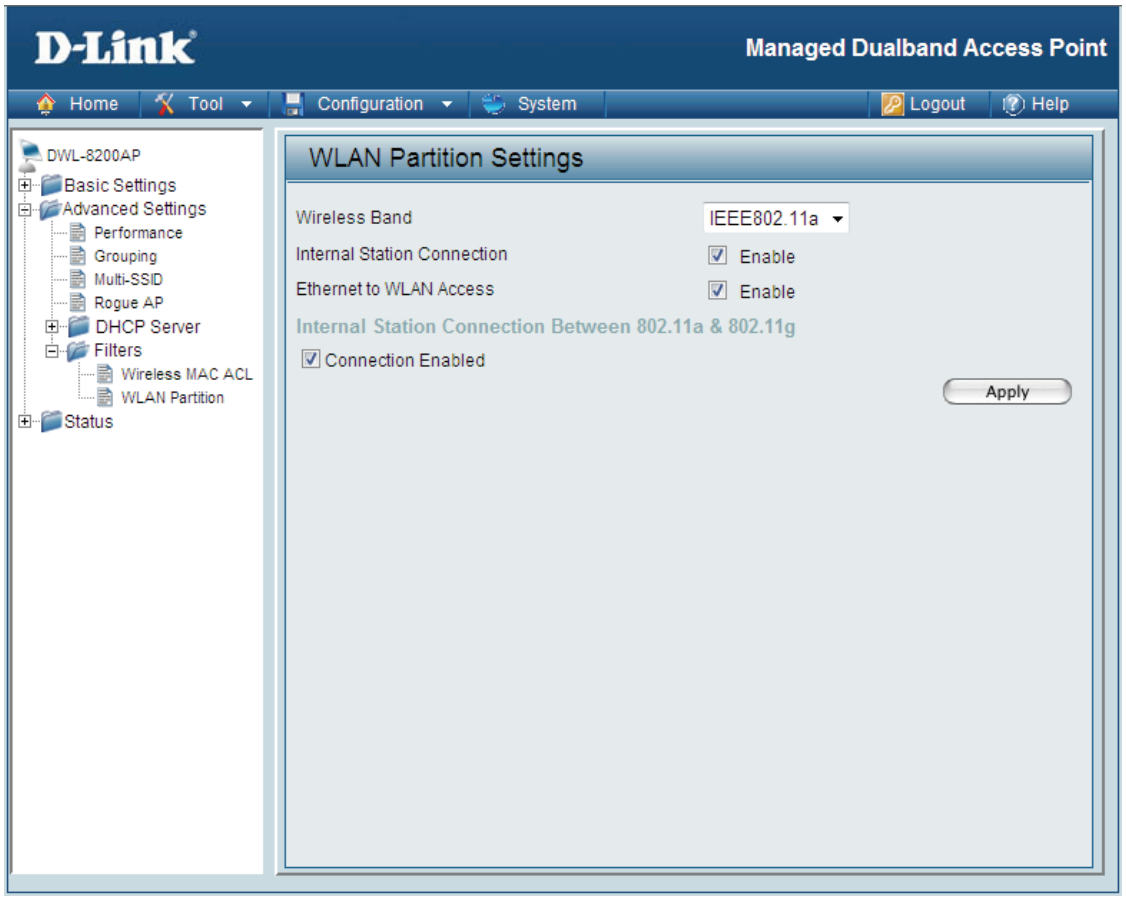
Wireless Band: Select IEEE 802.11a or IEEE 802.11g.

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.

Filters > WLAN Partition

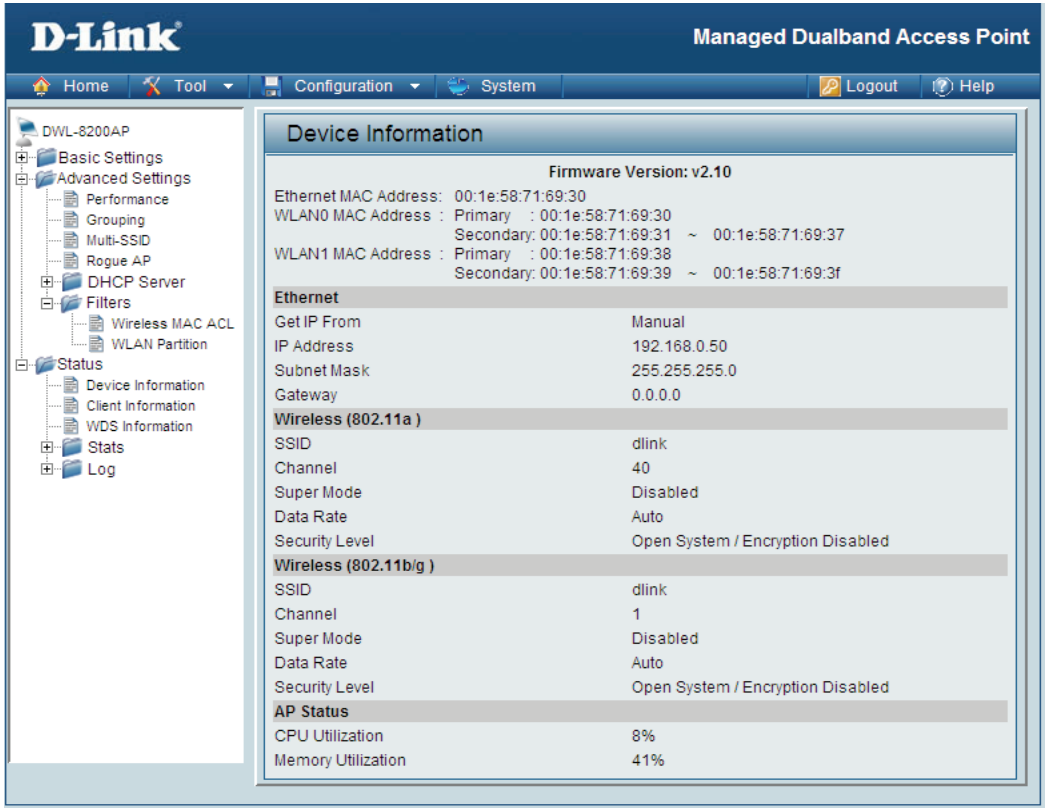


Wireless Band: Select IEEE 802.11a or IEEE 802.11g from the pull-down menu.

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.

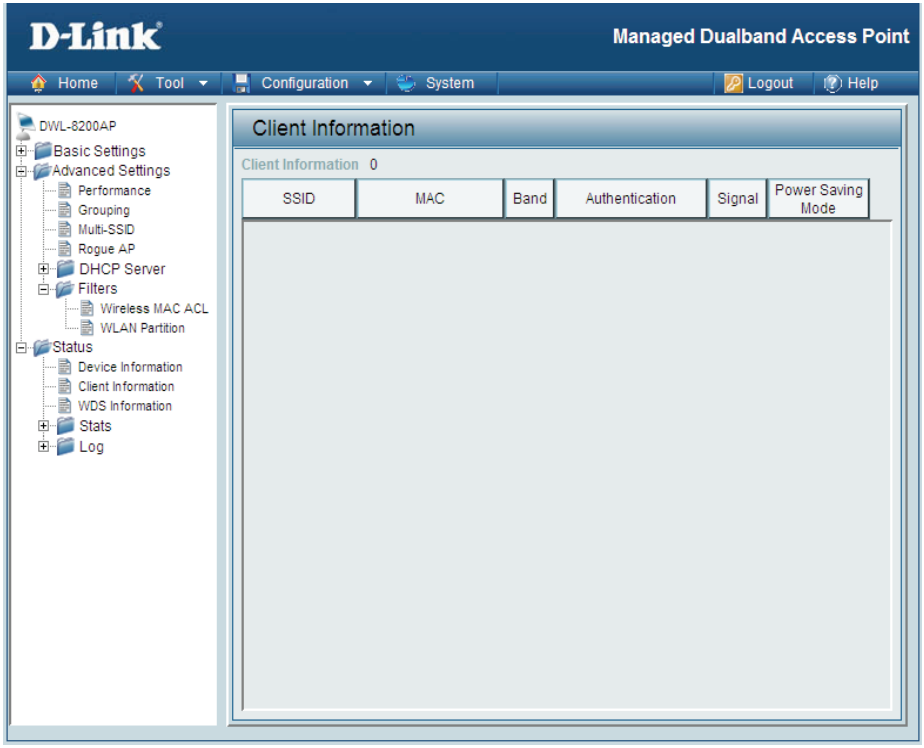
Ethernet to WLAN Access: Enabling this feature allows Ethernet devices to communicate with wireless clients. If this is disabled, all data from the Ethernet to associated wireless devices is blocked. Wireless devices can still send data to the Ethernet devices.

Home > Status > Device Information



Device Information: This window displays the configuration settings of the DWL-8200AP, including the firmware version and device MAC address. It also displays WLAN information for both the 802.11a and 802.11g wireless networks.

Client Information



Client Information: This window displays the wireless client information for clients currently connected to the DWL-8200AP.

The following information is available for each client communicating with the DWL-8200AP.

SSID: Displays the SSID the client is connected to.

MAC: Displays the MAC address of the client.

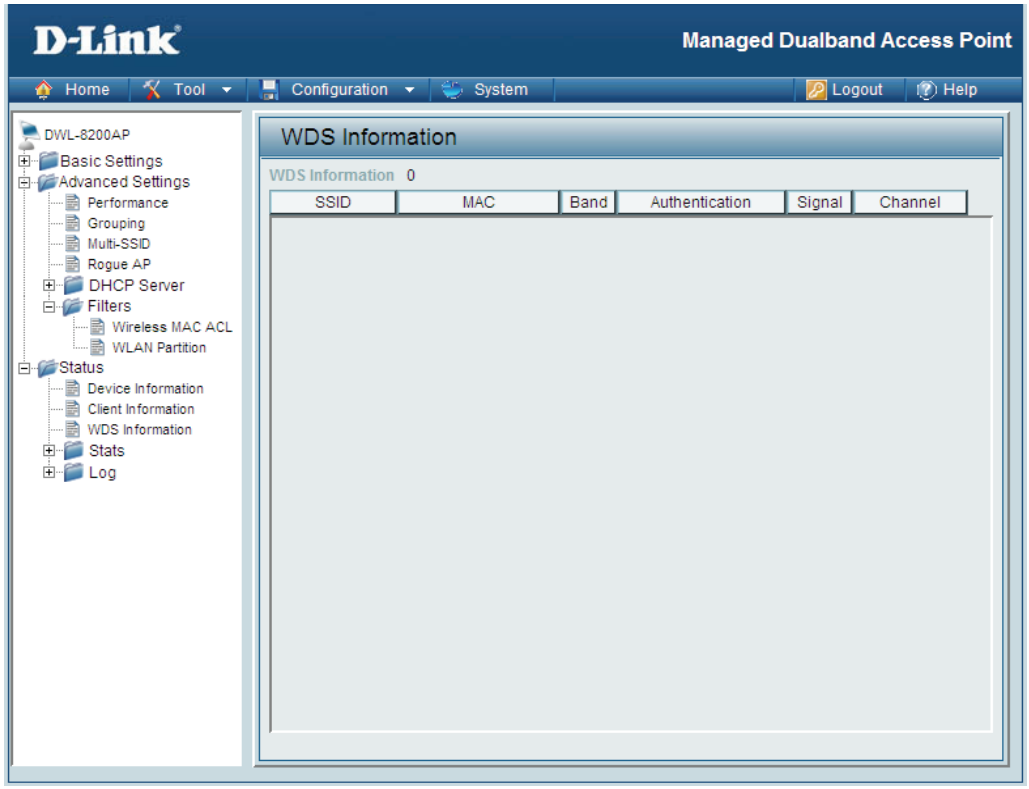
Band: Displays the wireless band the client is connected on.

Authentication: Displays the type of authentication being used.

Signal: Displays the strength of the clients signal.

Power Saving Mode: Displays the status of the power saving feature.

WDS Information



SSID: Displays the SSID the client is connected to.

MAC: Displays the MAC address of the client.

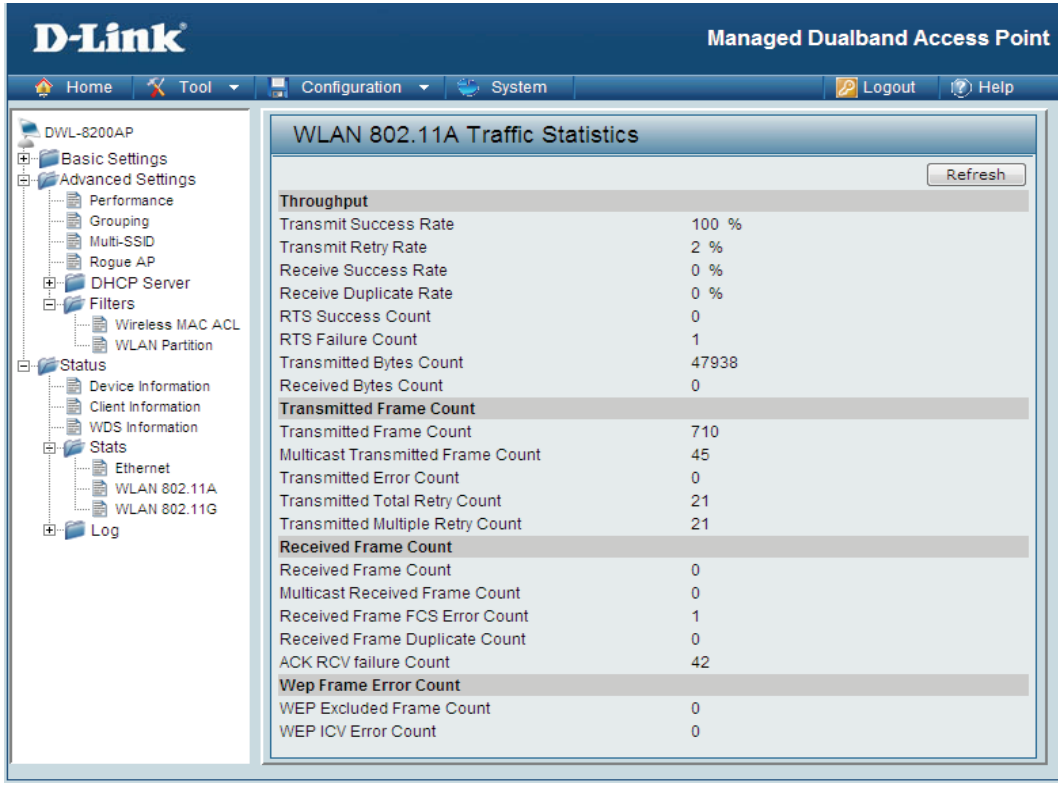
Band: Displays the wireless band the client is connected on.

Authentication: Displays the type of authentication being used.

Signal: Displays the strength of the clients signal.

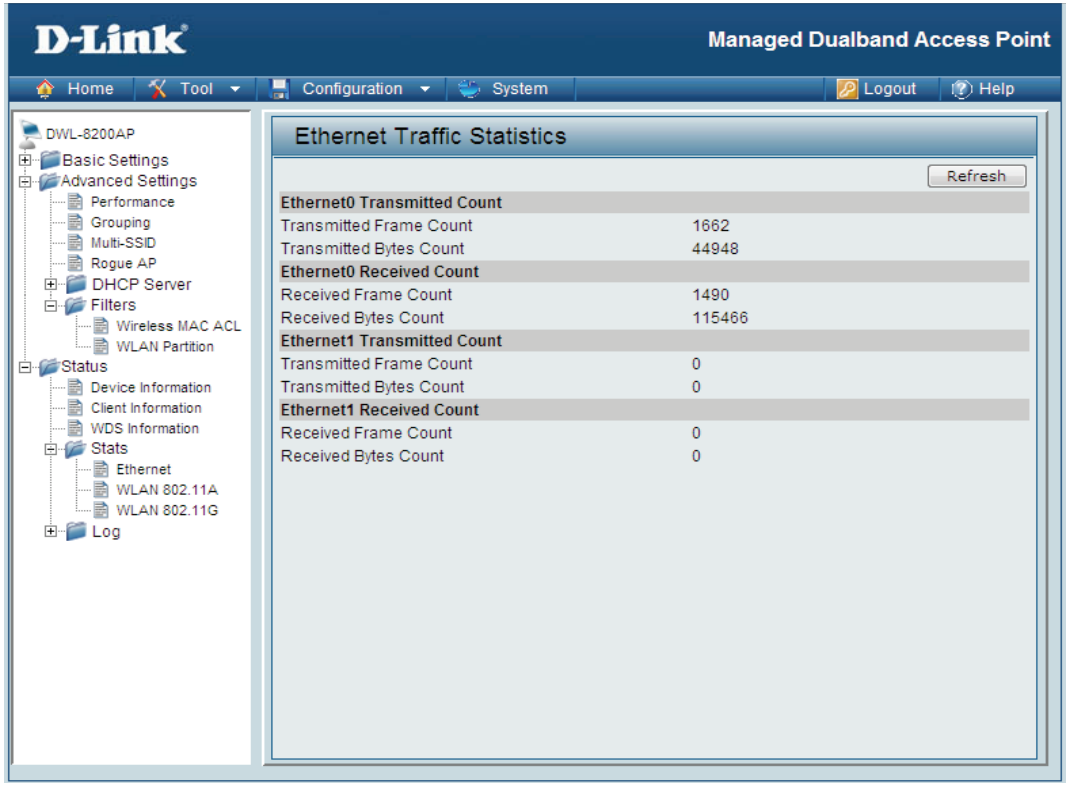
Channel: Displays the wireless channel being used.

Stats > WLAN 802.11a Statistics



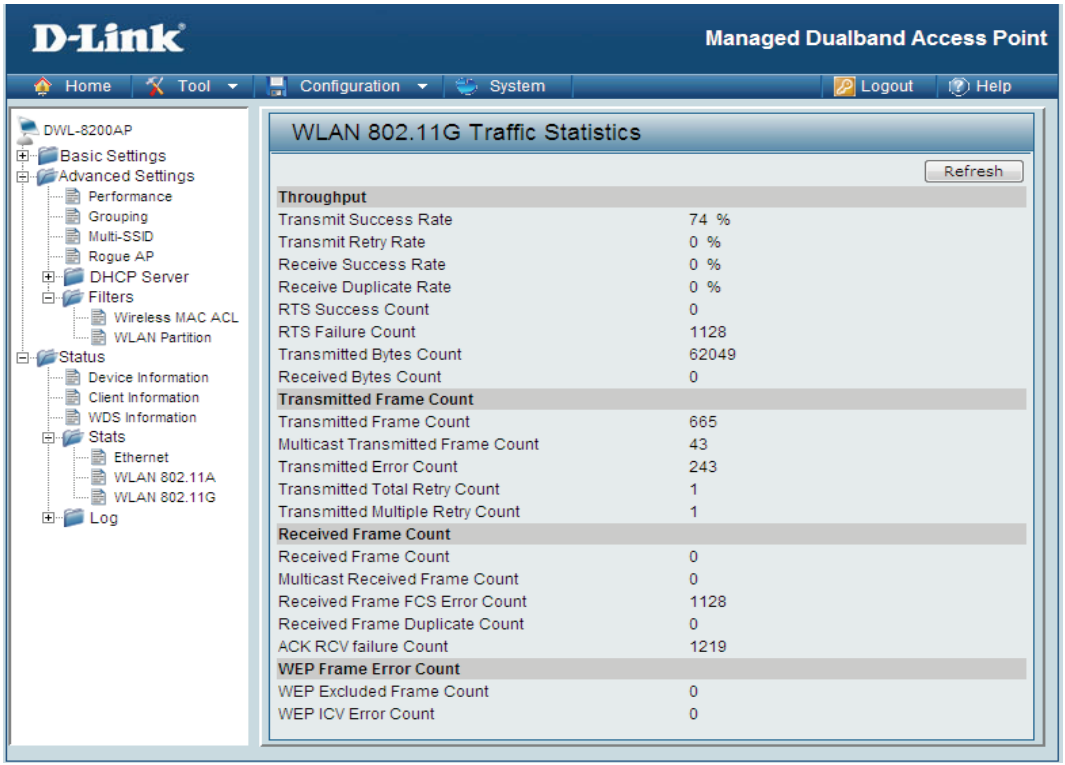
WLAN 802.11a Traffic Statistics: This page displays statistics for data throughput, transmitted and received frames, and WEP frame errors for the 802.11a wireless network.

Ethernet Traffic Statistics



WLAN 802.11a Traffic Statistics: This page displays statistics for data throughput, transmitted and received frames, and WEP frame errors for the 802.11a wireless network.

Stats > WLAN 802.11g Statistics



WLAN 802.11g Traffic Statistics: This page displays statistics for data throughput, transmitted and received frames, and WEP frame errors for the 802.11g wireless network.

SubMask: Enter the subnet mask here.

Gateway: Enter the IP address of the gateway on the network.

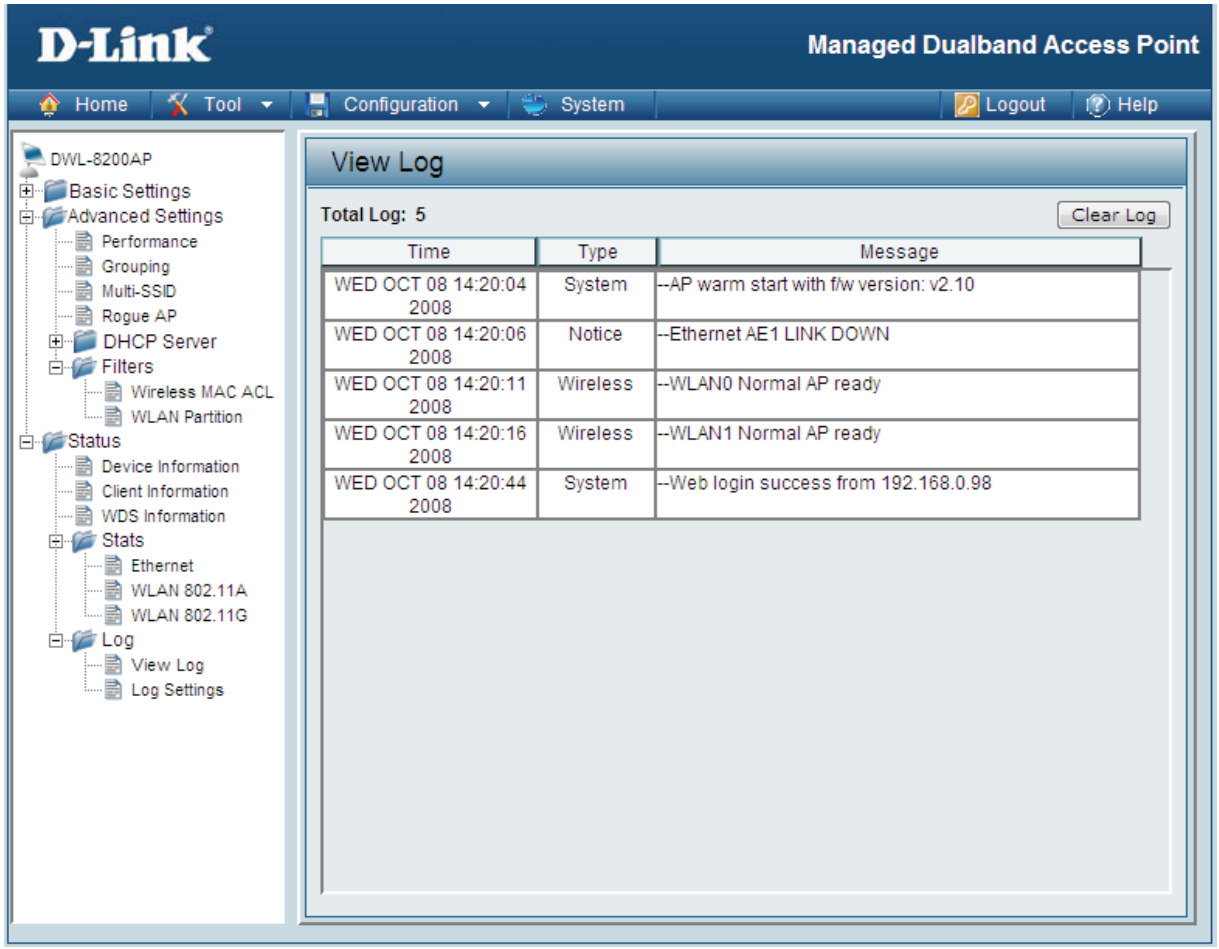
Wins: **Windows Internet Naming Service** is a system that determines the IP address of a network computer with a dynamically assigned IP address, if applicable.

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-8200AP**, if applicable.

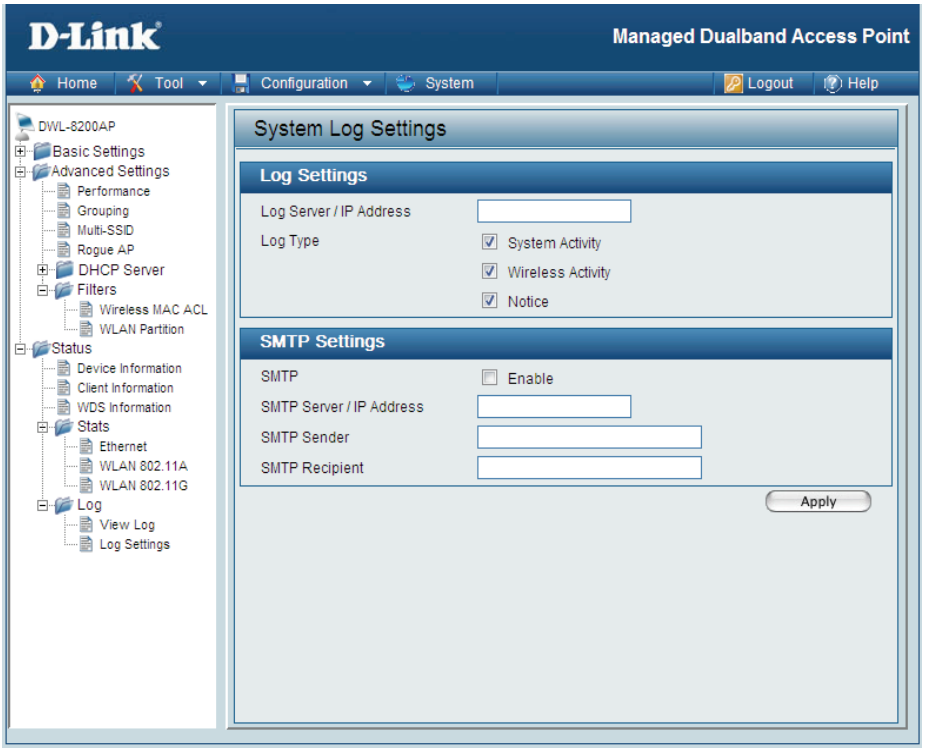
Status: This option turns the Static Pool settings **ON** or **OFF**.

Log > View Log



View Log: The log displays system and network messages including a time stamp and message type.

Log > Log Settings



Log Settings

Log Server / IP Address: Enter the IP address of the server you would like to send the DWL-8200AP log to.

Log Type: Check the box for the type of activity you want to log. There are three types: **System**, **Wireless** and **Notice**.

SMTP Settings

SMTP: Check the box to enable SMTP.

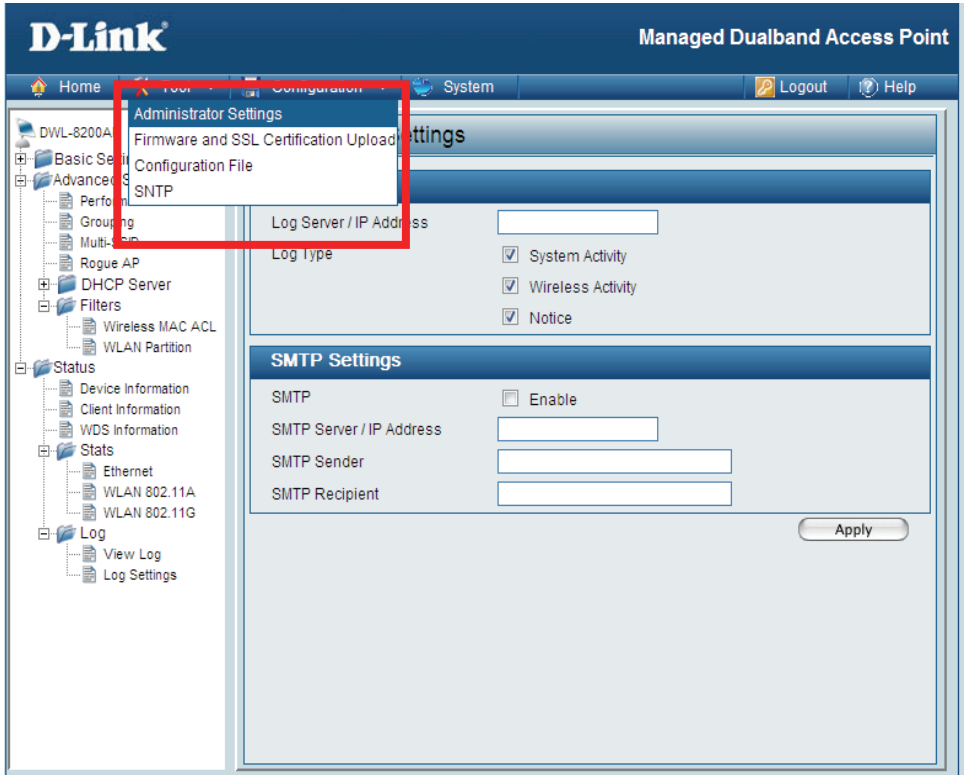
SMTP Server / IP Address: Enter the IP address of the SMTP server.

SMTP Sender: Enter the e-mail address of the SMTP sender.

SMTP Recipient: Enter the e-mail address of the SMTP recipient.

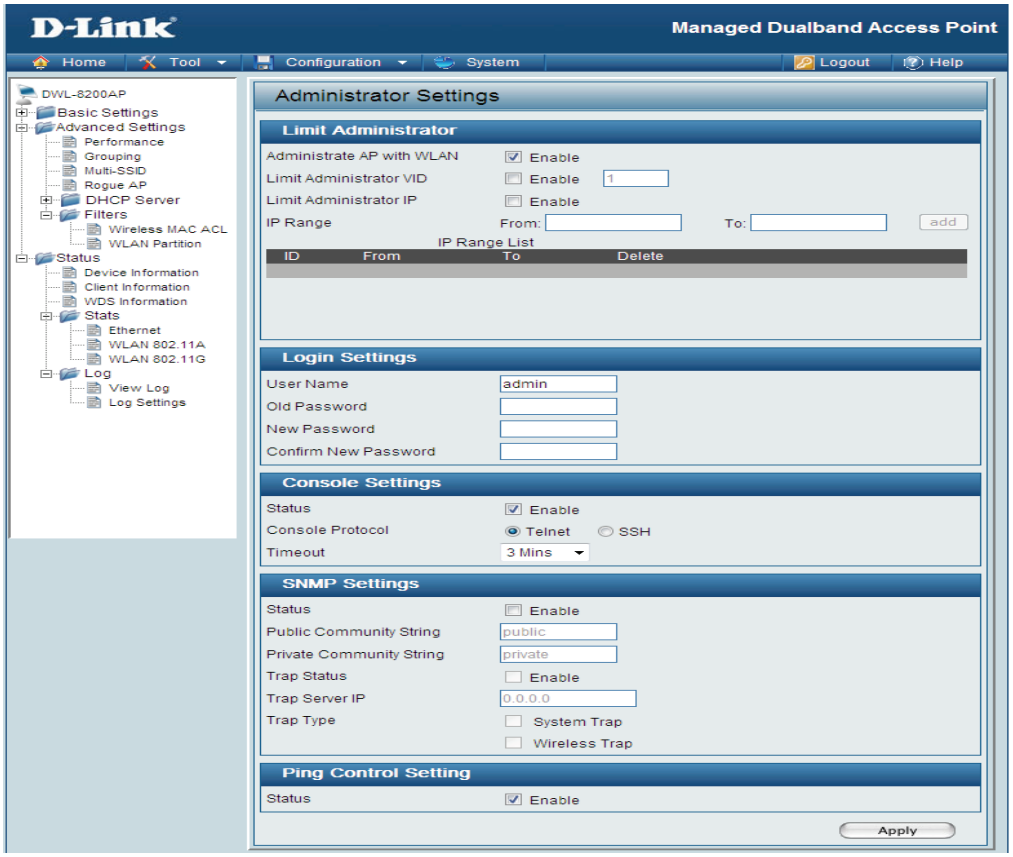
Tool Menu

The DWL-8200AP Tool menu gives access to the Administrator settings, the Firmware and SSL Certification upload menu, the device configuration file settings, and SNTP settings.



The DWL-8200AP Tool menu gives access to the Administrator settings, the Firmware and SSL Certification upload menu, the device configuration file settings, and SNTP settings.

Administrator Settings



Login Settings

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

Old Password: When changing your password, enter the old password here.

New Password: When changing your password, enter the new password here.

Confirm New Password: Confirm your new password here.

Console Settings

Status: Status is Enabled by default. Un-check the box to disable the console.

Console Protocol: Select the type of protocol you would like to use, **Telnet** or **SSH**.

SNMP Settings

Status: Status is Enabled by default. Un-check the box to disable the SNMP functions.

Public Community String: Enter the public SNMP community string.

Private Community String: Enter the private SNMP community string.

Trap Status: Check the box to enable the trap status.

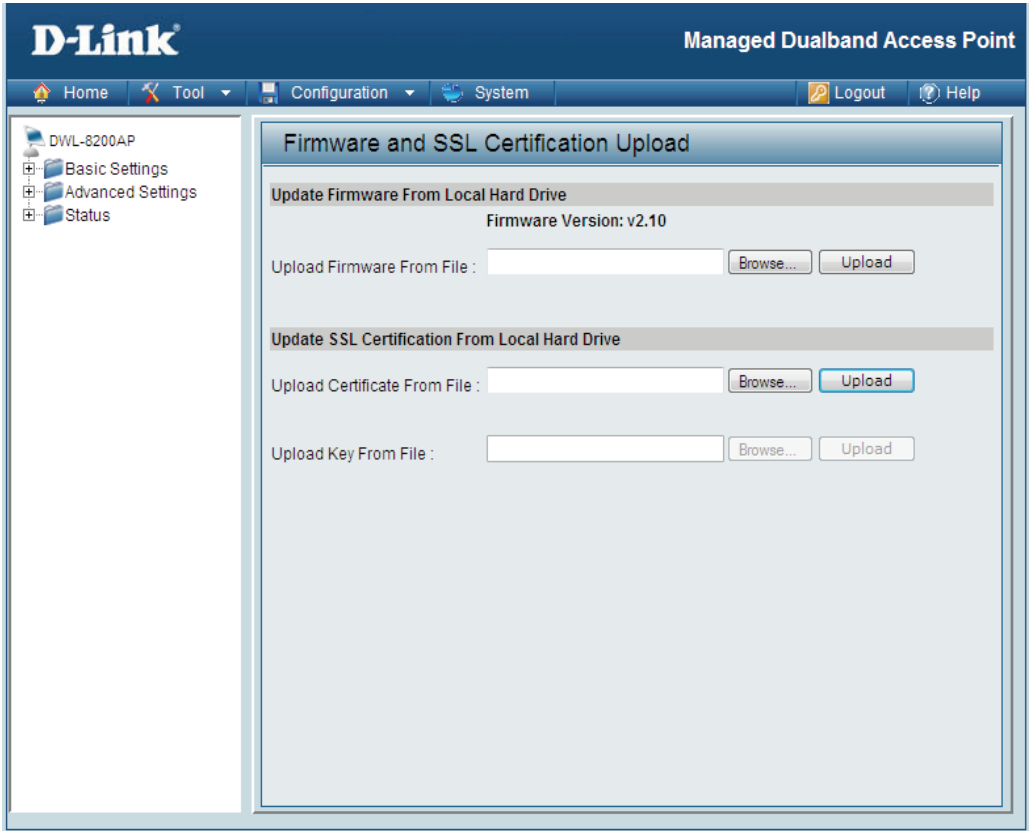
Trap Server IP: Enter the trap server IP address. This is the IP address of the SNMP manager to receive traps sent from the wireless access point.

Trap Type: Select System Trap or Wireless Trap.

Ping Control Settings

Status: Check the box to enable the Ping Control Settings status.

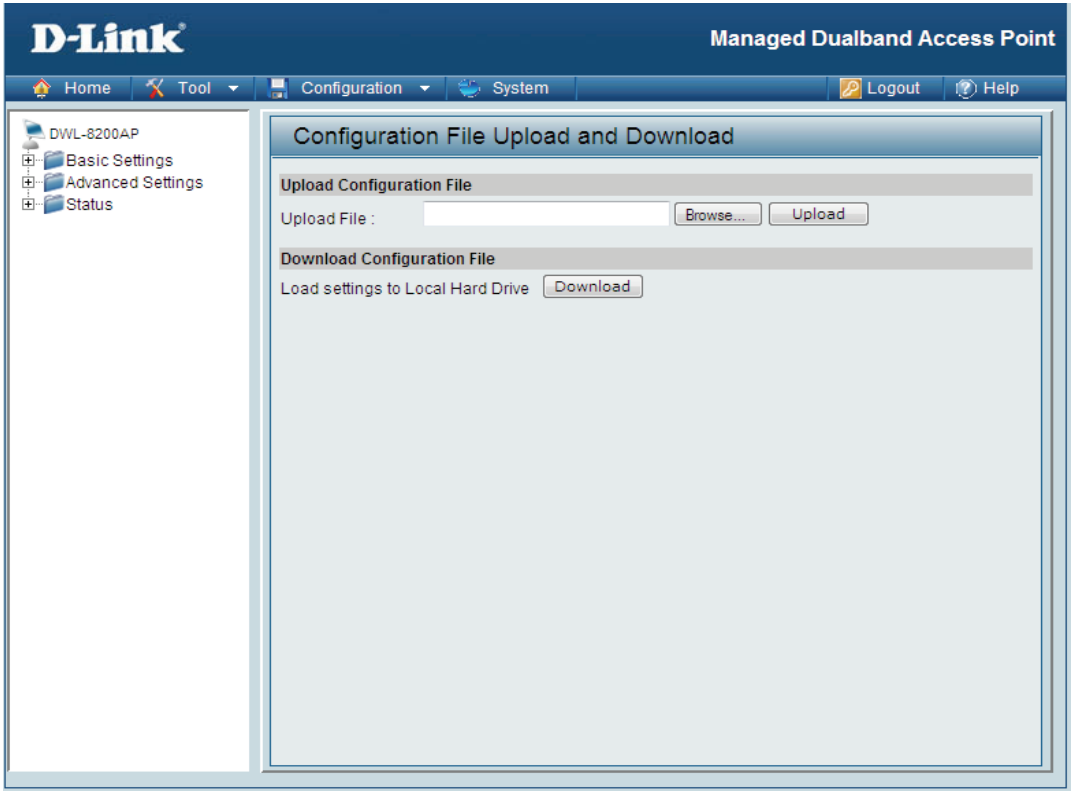
Firmware and SSL Certification Upload



Upload Firmware After downloading the most recent version of firmware for the DWL-8200AP from http://support.dlink.com to your local computer, use the **Browse** button to locate the firmware file on your computer. Click **Upload** to update the firmware version.

Upload SSL Certification: Click **Browse** to locate the SSL Certification file on your local computer. After selecting and opening the file, click **Upload** to upload the file to the DWL-8200AP.

Configuration File Upload and Download

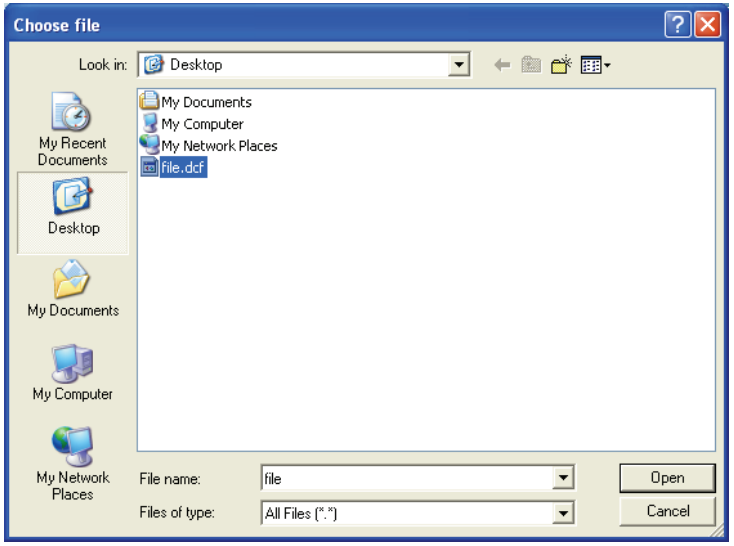


Upload File: Click **Browse** to locate a previously saved configuration file on your local computer. After selecting the file, click **Upload** to apply the configuration settings to the DWL-8200AP.

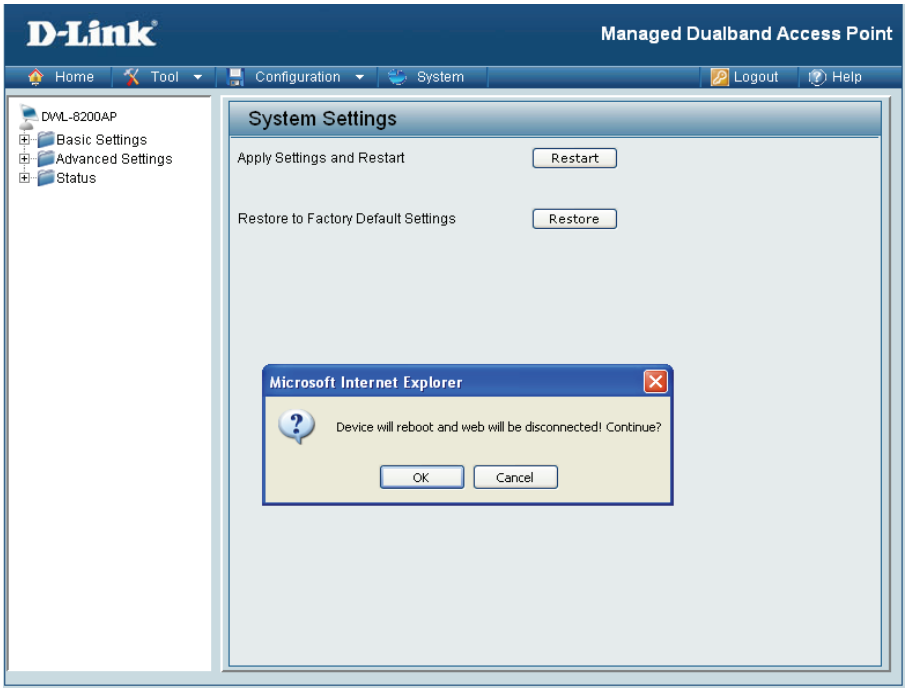
Download Configuration Click **Download** to save the current DWL-8200AP configuration to your local computer.

Configuration File > Upload

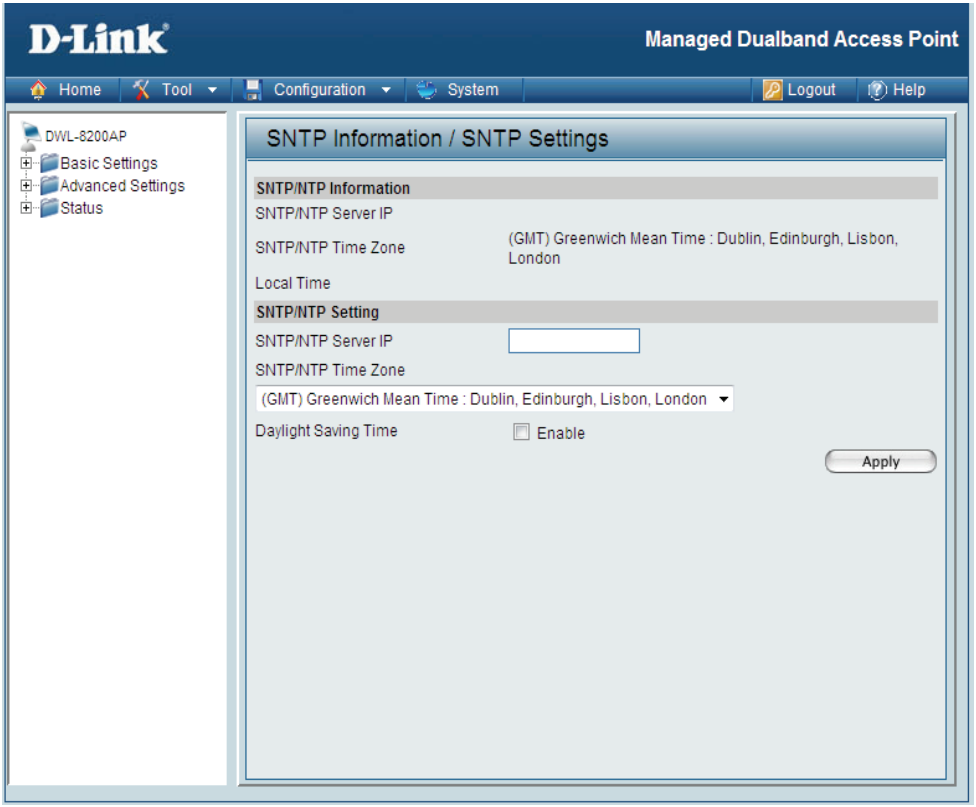
When you click **Browse** on the Upload screen, a dialog box appears. Select the file you wish to download and click **Open**.



Click **Restart** for the settings to take effect. When prompted, click OK, and the device will restart. Please wait for a few seconds.



Tool > SNTP



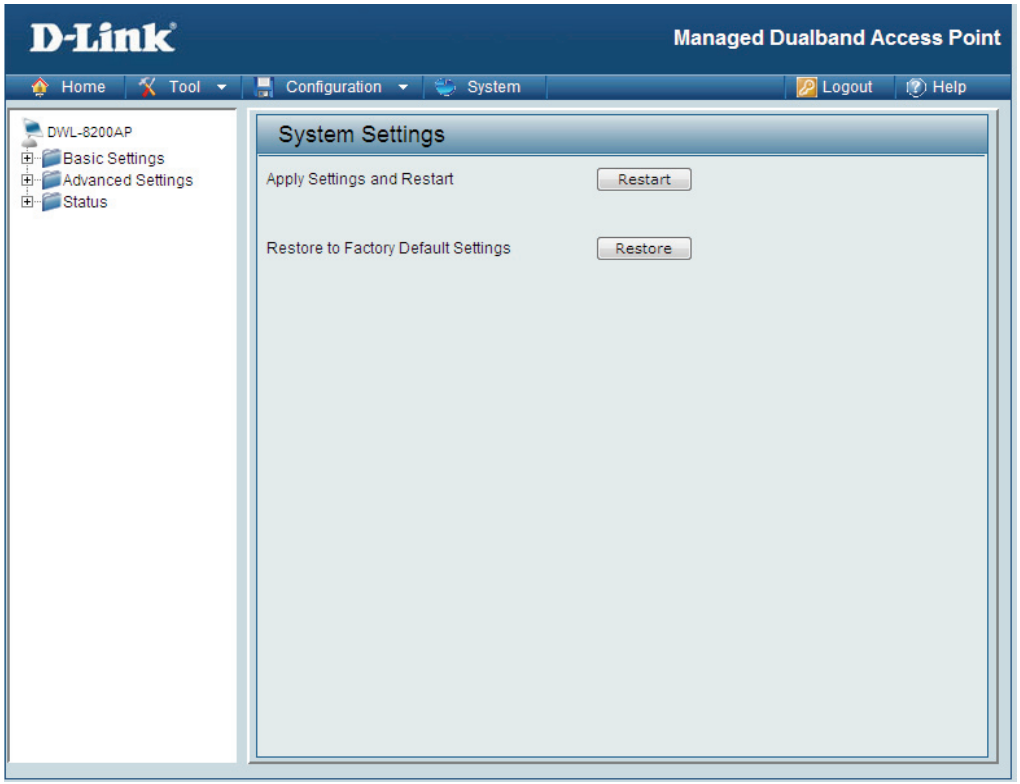
SNTP/NTP Information: Displays the current SNTP/NTP settings.

SNTP/NTP Server IP Enter the SNTP/NTP server IP address.

SNTP/NTP Time Zone: Select your correct Time Zone.

Daylight Saving Time: Check the box to **Enable** Daylight Saving Time.

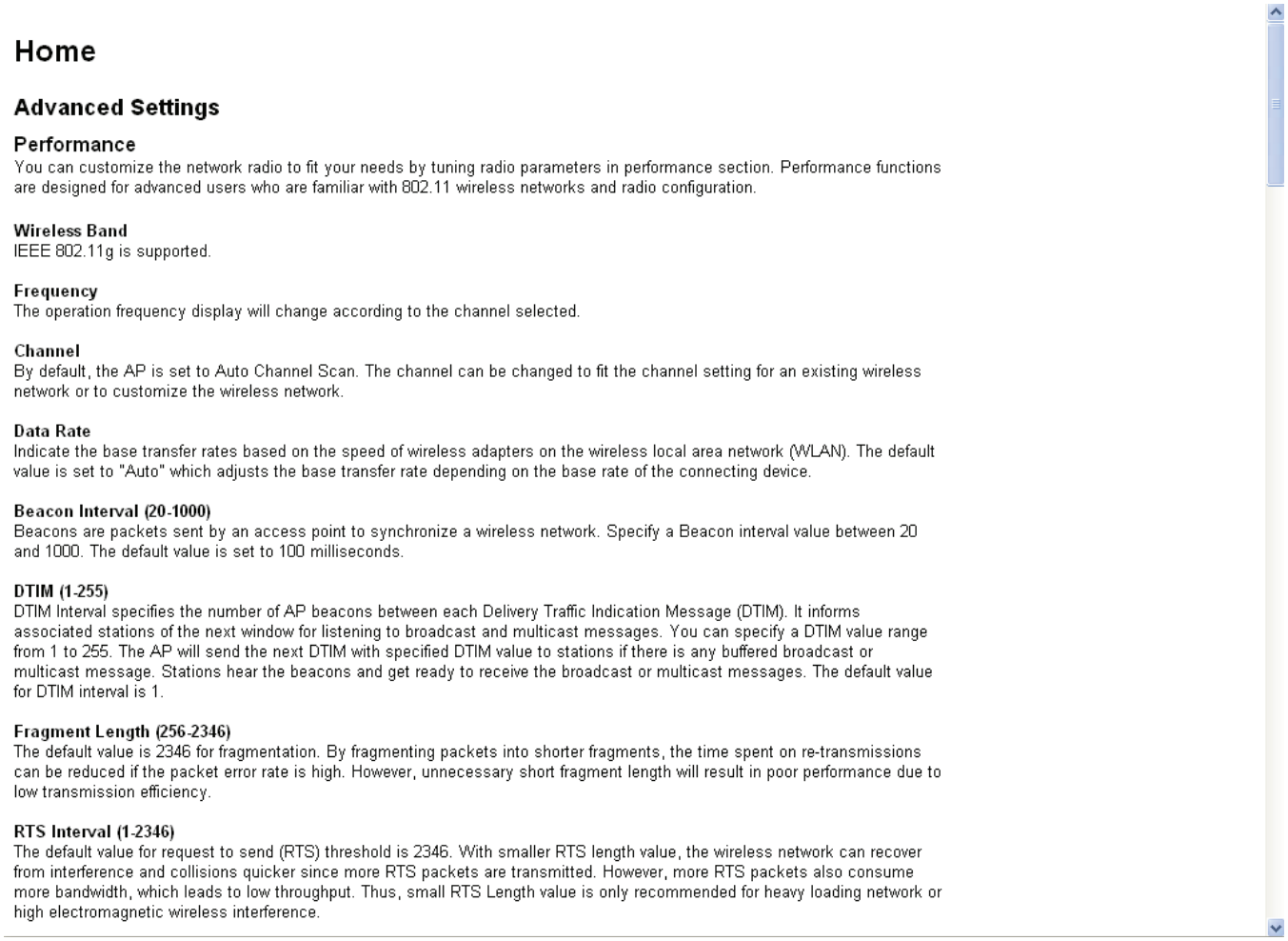
System > System Settings



Click **Restart** to restart the DWL-8200AP.

Click **Restore** to restore the DWL-8200AP back to factory default settings.

Help



Home

Advanced Settings

Performance
You can customize the network radio to fit your needs by tuning radio parameters in performance section. Performance functions are designed for advanced users who are familiar with 802.11 wireless networks and radio configuration.

Wireless Band
IEEE 802.11g is supported.

Frequency
The operation frequency display will change according to the channel selected.

Channel
By default, the AP is set to Auto Channel Scan. The channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network.

Data Rate
Indicate the base transfer rates based on the speed of wireless adapters on the wireless local area network (WLAN). The default value is set to "Auto" which adjusts the base transfer rate depending on the base rate of the connecting device.

Beacon Interval (20-1000)
Beacons are packets sent by an access point to synchronize a wireless network. Specify a Beacon interval value between 20 and 1000. The default value is set to 100 milliseconds.

DTIM (1-255)
DTIM Interval specifies the number of AP beacons between each Delivery Traffic Indication Message (DTIM). It informs associated stations of the next window for listening to broadcast and multicast messages. You can specify a DTIM value range from 1 to 255. The AP will send the next DTIM with specified DTIM value to stations if there is any buffered broadcast or multicast message. Stations hear the beacons and get ready to receive the broadcast or multicast messages. The default value for DTIM interval is 1.

Fragment Length (256-2346)
The default value is 2346 for fragmentation. By fragmenting packets into shorter fragments, the time spent on re-transmissions can be reduced if the packet error rate is high. However, unnecessary short fragment length will result in poor performance due to low transmission efficiency.

RTS Interval (1-2346)
The default value for request to send (RTS) threshold is 2346. With smaller RTS length value, the wireless network can recover from interference and collisions quicker since more RTS packets are transmitted. However, more RTS packets also consume more bandwidth, which leads to low throughput. Thus, small RTS Length value is only recommended for heavy loading network or high electromagnetic wireless interference.

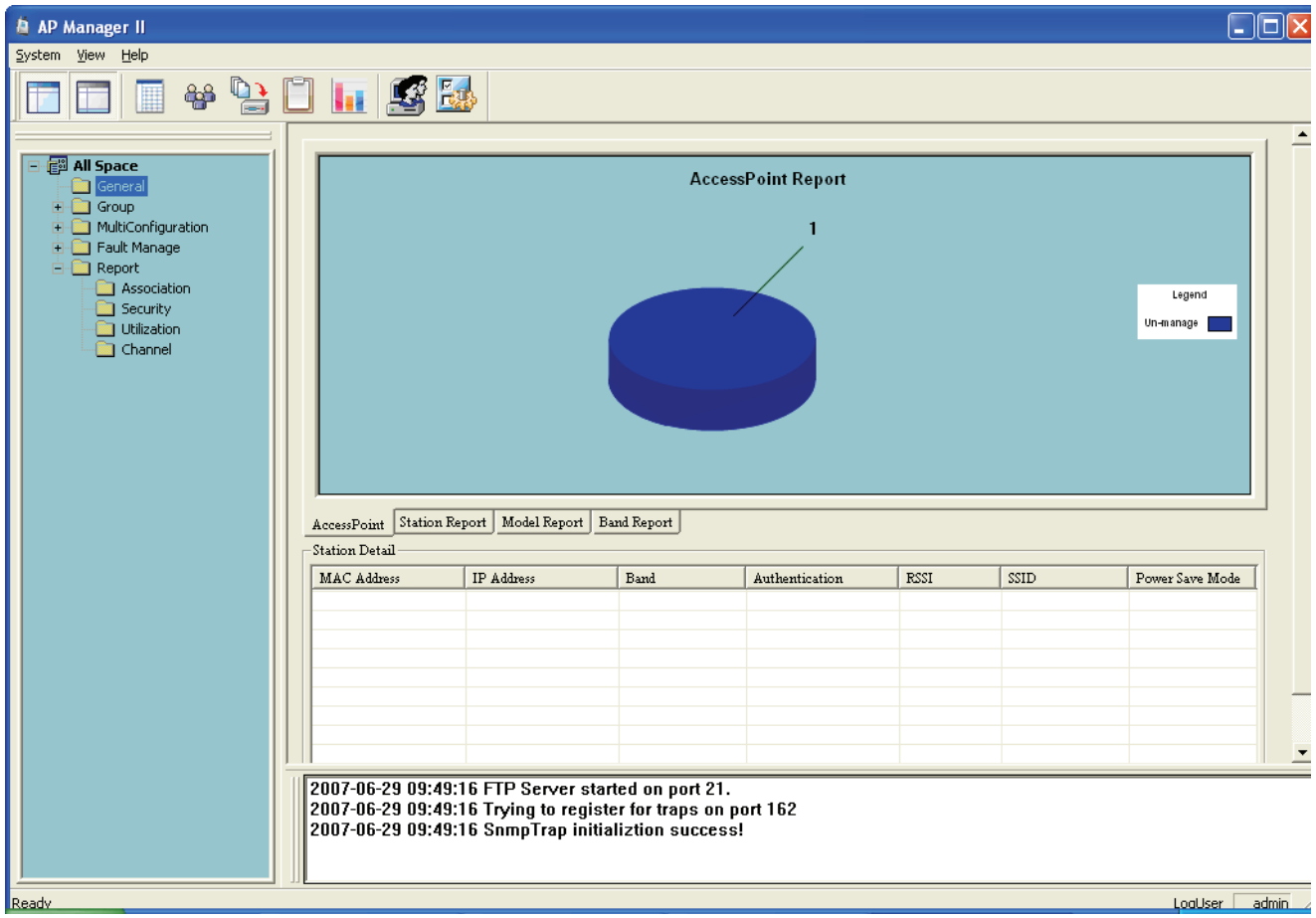
Help: Scroll down the Help page for topics and explanations.

AP Manager II

AP Manager II is a convenient software tool used to manage the configuration of your wireless network from a central computer. With AP Manager II there is no need to configure devices individually.

AP Manager II allows you to configure AP settings, update the firmware, and organize and sort your APs into manageable groups.

Please see the **AP Manager II User Manual** included on the CD for system requirements, installation considerations, and information on the software functionality.



Networking Basics

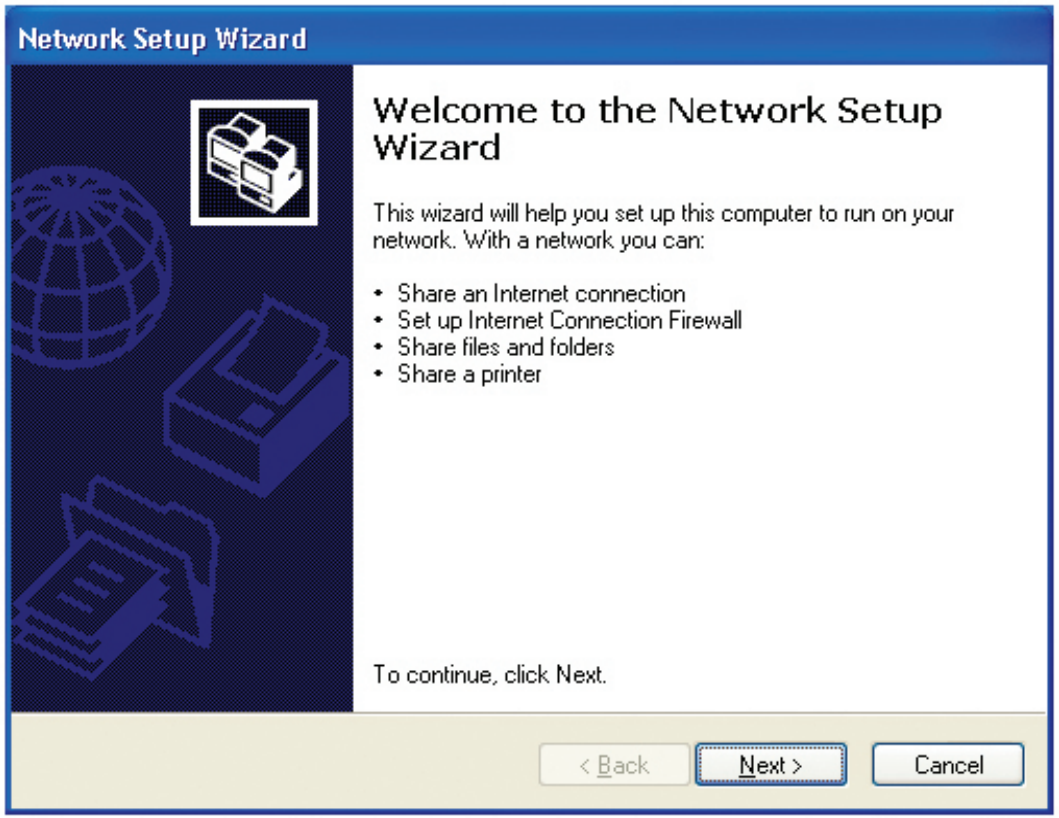
Using the Network Setup Wizard in Windows® XP

In this section you will learn how to establish a network at home or work, using **Windows® XP.**

Note: Please refer to websites such as http://www.homenethelp.com
and http://www.microsoft.com/windows2000 for information about networking computers using Windows® 2000.

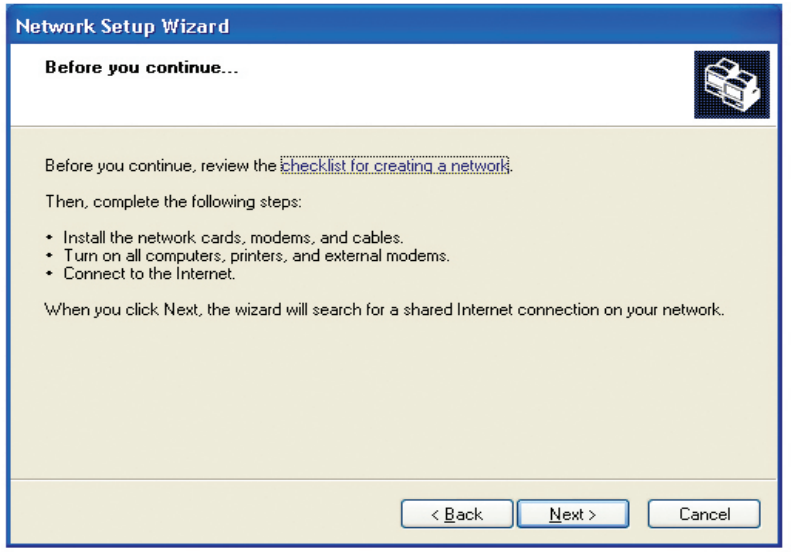
Go to **Start > Control Panel>Network Connections**
Select **Set up a home or small office network**

When this screen appears, click **Next.**



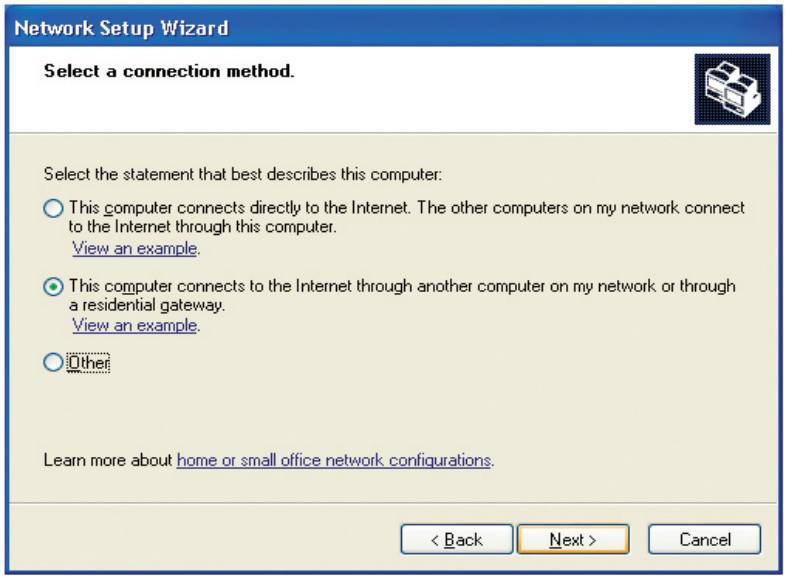
Please follow all the instructions in this window:

Click **Next**.

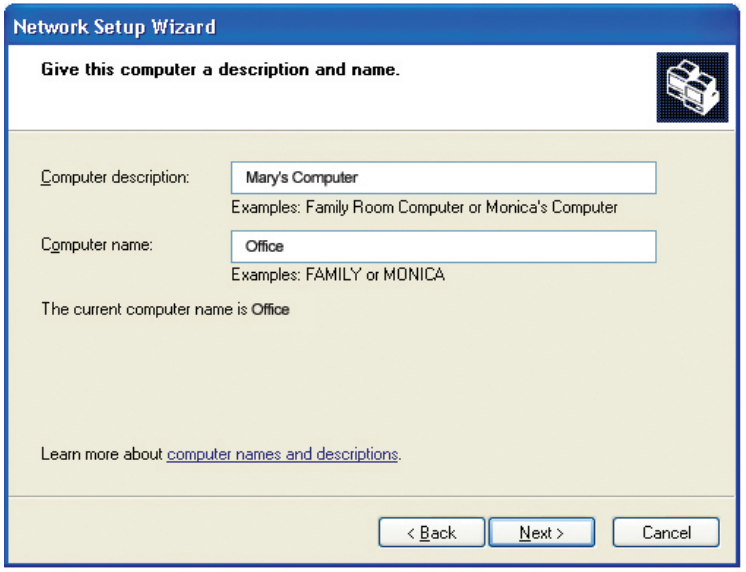


In the following window, select the best description of your computer. If your computer connects to the internet through a gateway/router, select the second option as shown.

Click **Next**.

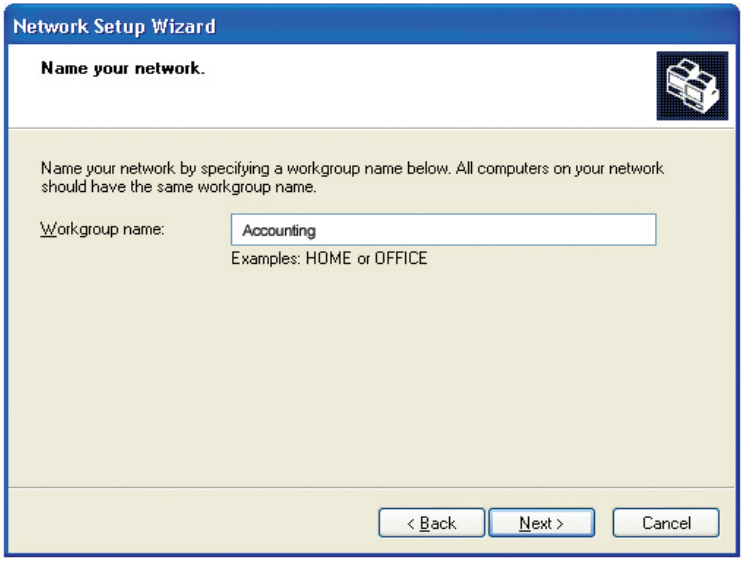


Enter a **Computer description** and a **Computer name** (optional).
Click **Next**.



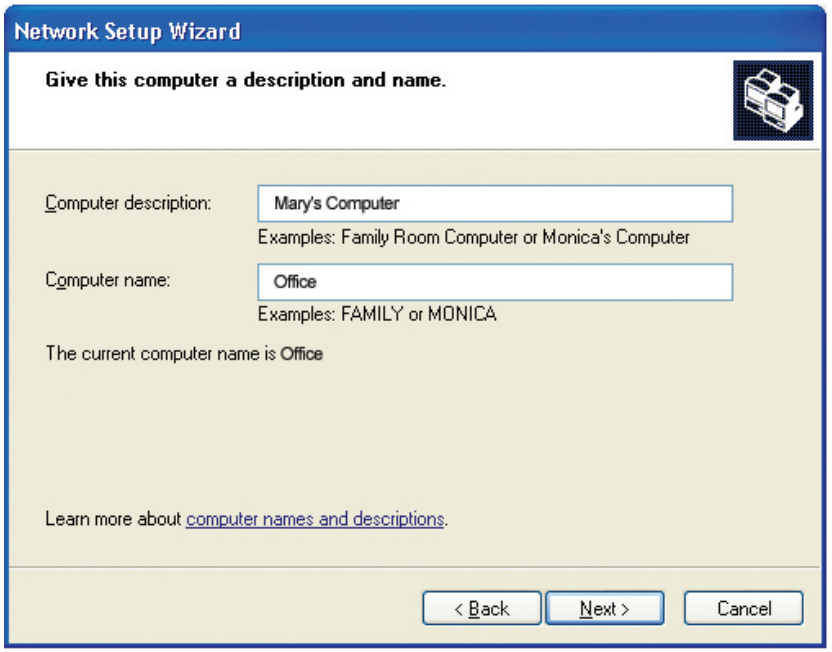
Enter a **Workgroup** name. All computers on your network should have the same **Workgroup name.**

Click **Next**.



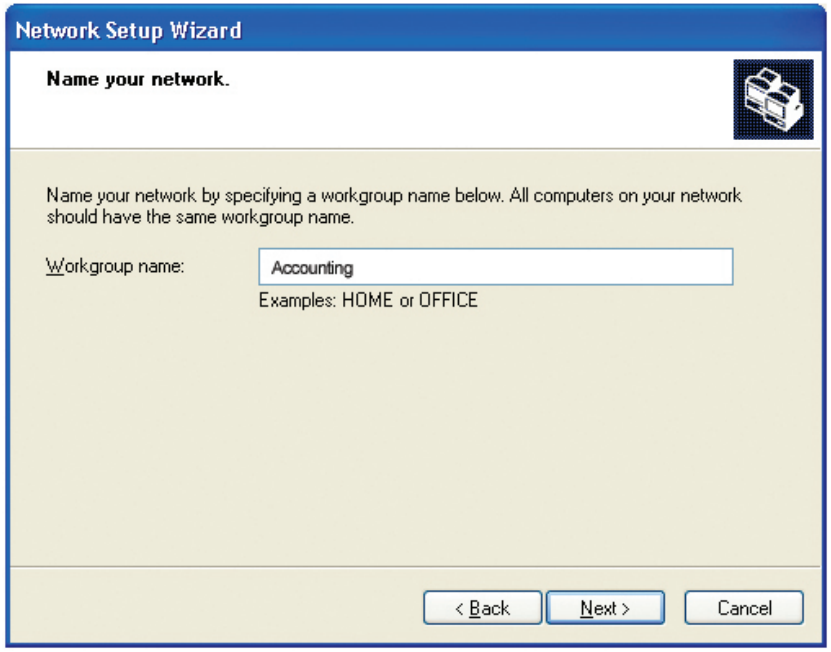
Enter a **Computer description** and a **Computer name** (optional).

Click **Next**.

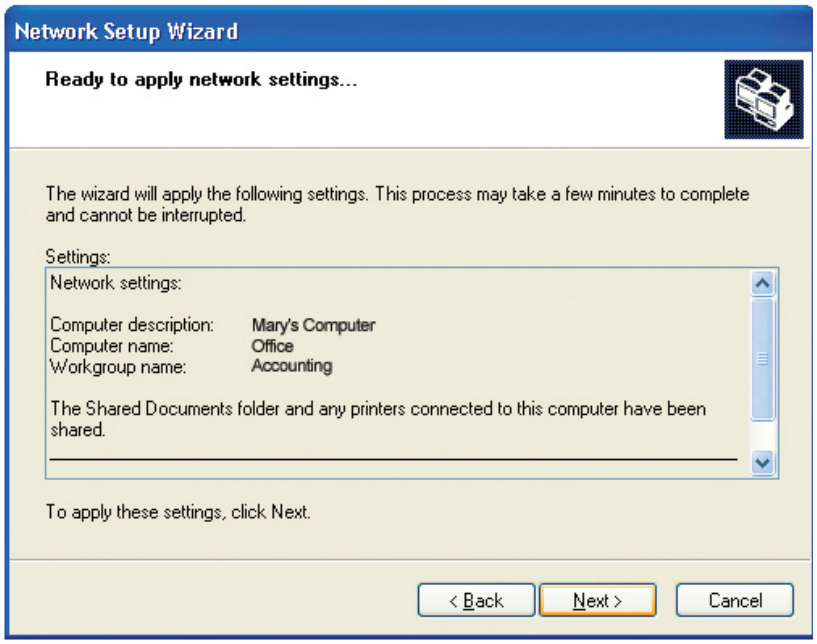


Enter a **Workgroup** name. All computers on your network should have the same **Workgroup name.**

Click **Next**.

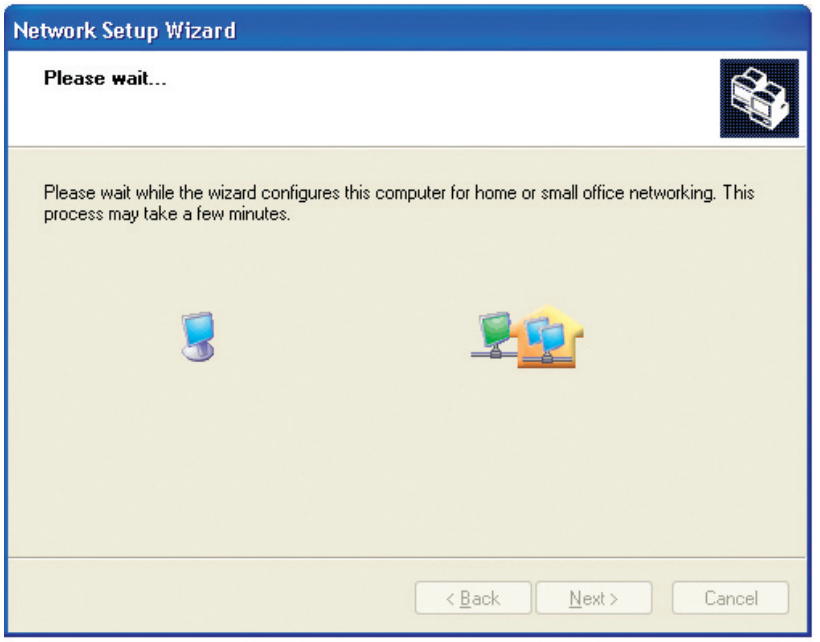


Please wait while the **Network Setup Wizard** applies the changes.



When the changes are complete, click **Next**.

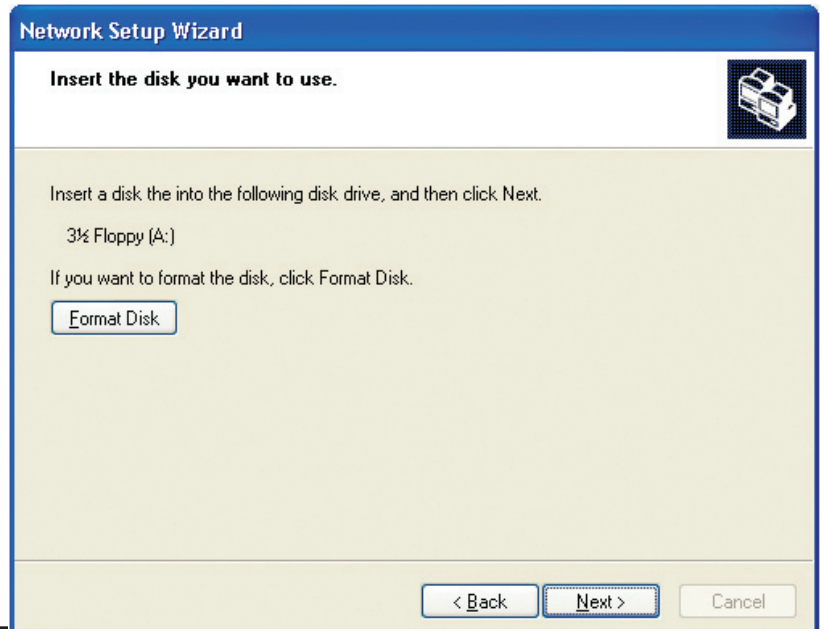
Please wait while the **Network Setup Wizard** configures the computer. This may take a few minutes.

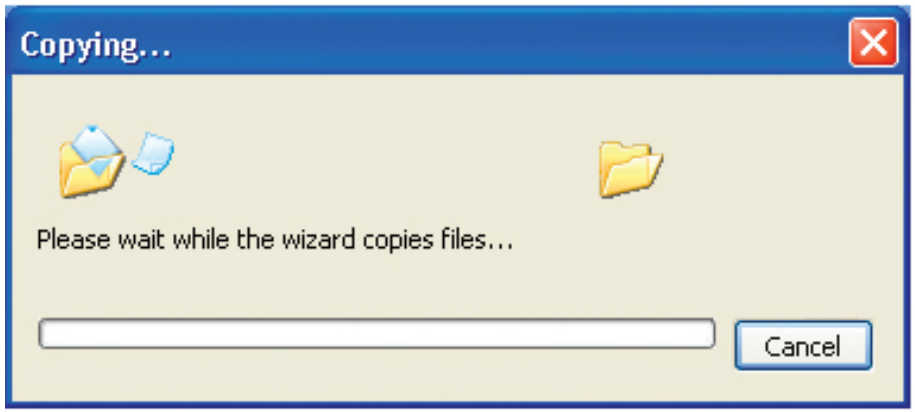


In the window below, select the option that fits your needs. In this example, **Create a Network Setup Disk** has been selected. You will run this disk on each of the computers on your network. Click **Next**.

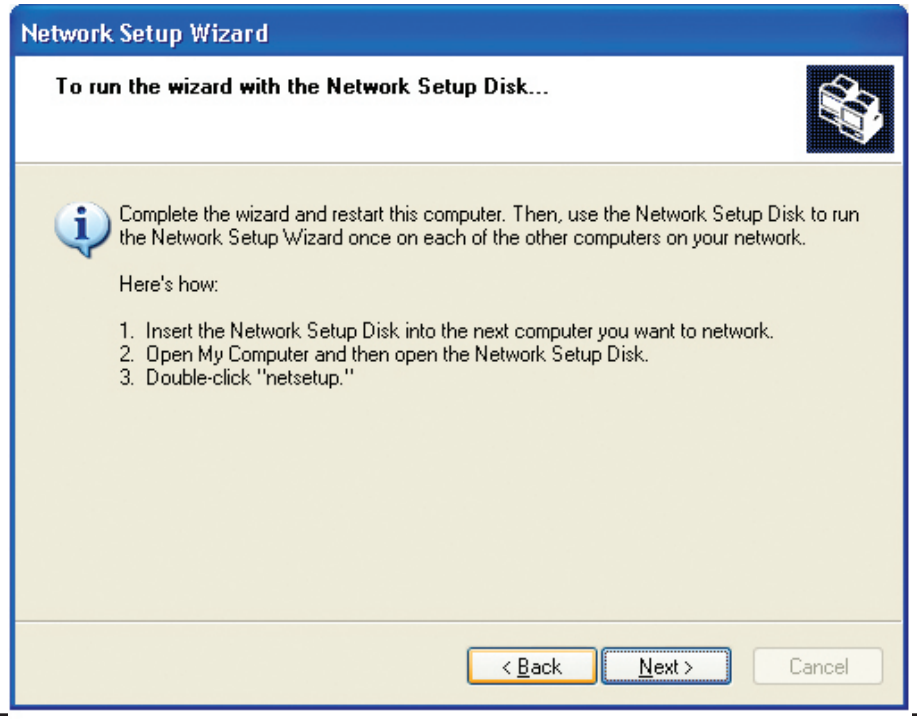
Insert a disk into the Floppy Disk Drive, in this case drive **A**.

Click **Next**.



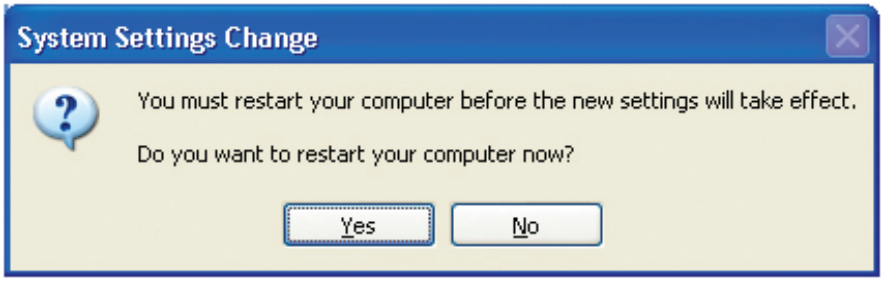


Please read the information under **Here's how** in the screen below. After you complete the **Network Setup Wizard** you will use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. To continue click **Next**.



Please read the information on this screen, then click **Finish** to complete the **Network Setup Wizard**.

The new settings will take effect when you restart the computer. Click **Yes** to restart the computer.



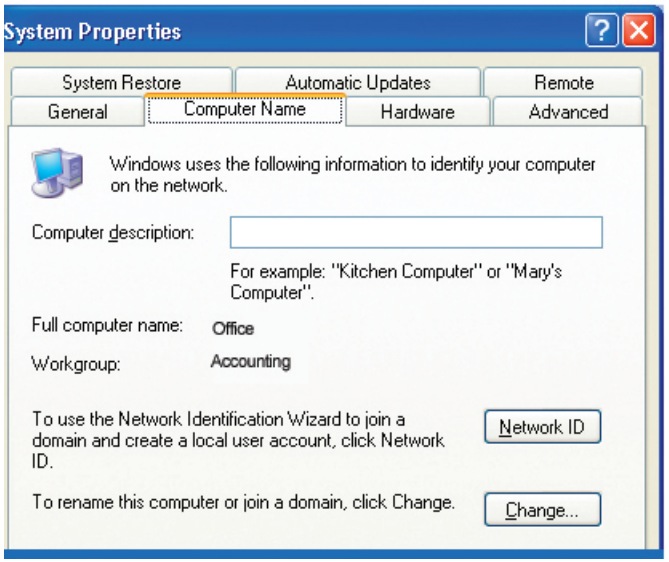
You have completed configuring this computer. Next, you will need to run the **Network Setup Disk** on all the other computers on your network. After running the **Network Setup Disk** on all your computers, your new wireless network will be ready to use.

Naming Your Computer

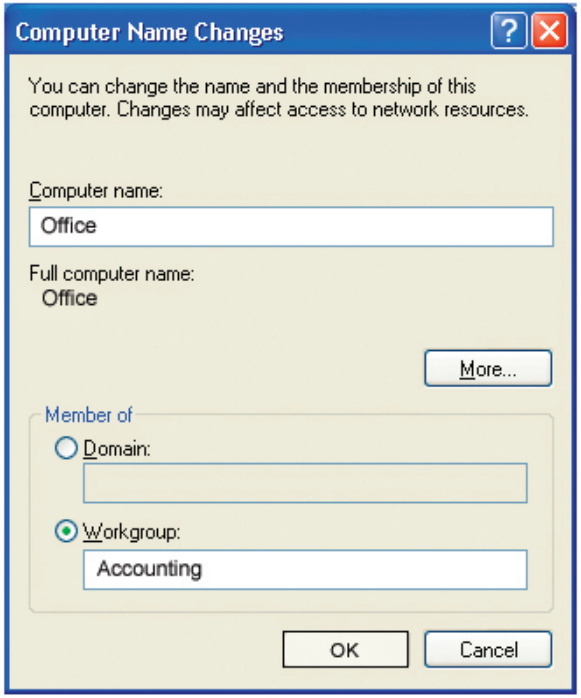
To name your computer in **Windows® XP**, please follow these

- Click **Start** (in the lower left corner of the screen).
- **Right-click** on **My Computer**.
- Select **Properties** and click.

- Select the **Computer Name Tab** in the System Properties window.
- You may enter a **Computer Description** if you wish; this field is optional.
- To rename the computer and join a domain, Click **Change**.



- In this window, enter the **Computer name**.
- Select **Workgroup** and enter the name of the **Workgroup**.
- All computers on your network must have the same **Workgroup** name.
- Click **OK**.



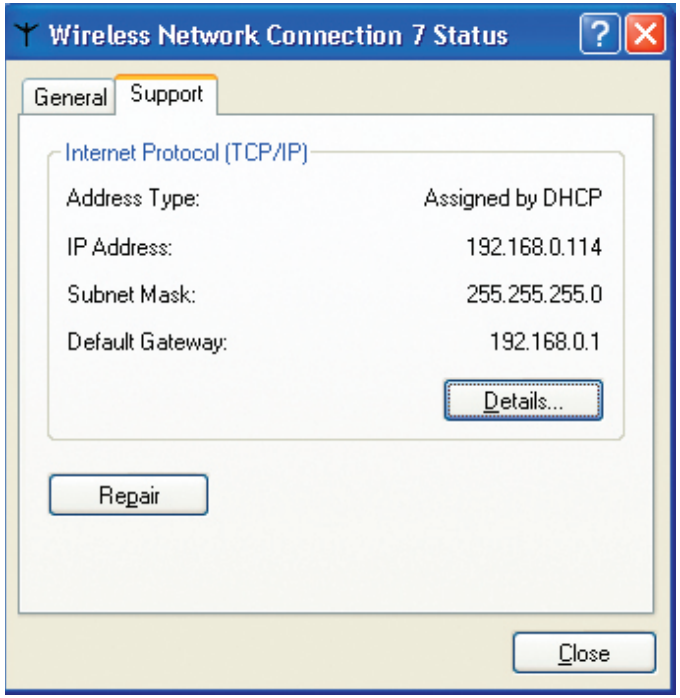
Checking the IP Address in Windows® XP

The wireless adapter-equipped computers in your network must be in the same IP Address range (see Getting Started in this manual for a definition of IP Address Range.) To check on the IP Address of the adapter, please do the following:

- Right-click on the ***Local Area Connection icon*** in the task bar.
- Click on **Status**.

This window will appear:

- Click the **Support tab**.
- Click **Close**.

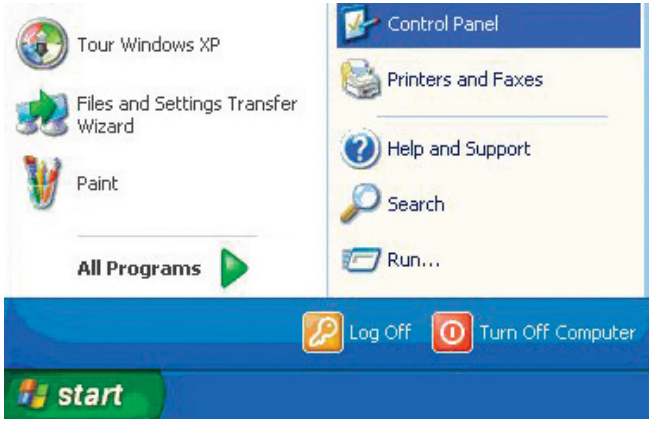


Assigning a Static IP Address in Windows® XP/2000

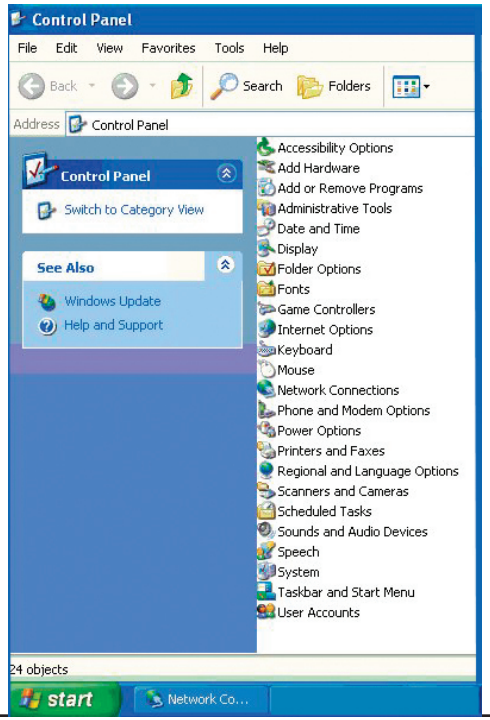
Note: DHCP-enabled routers will automatically assign IP addresses to the computers on the network, using DHCP (Dynamic Host Configuration Protocol) technology. If you are using a DHCP-capable router you will not need to assign static IP addresses.

If you are not using a DHCP capable router, or you need to assign a static IP address, please follow these instructions:

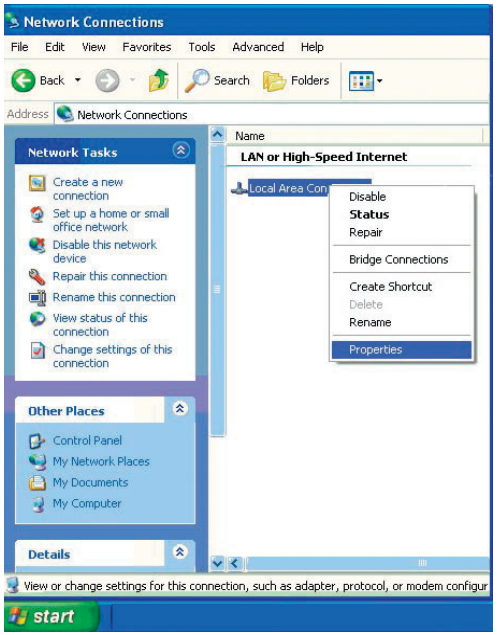
- Go to **Start**.
- Double-click on **Control Panel**.



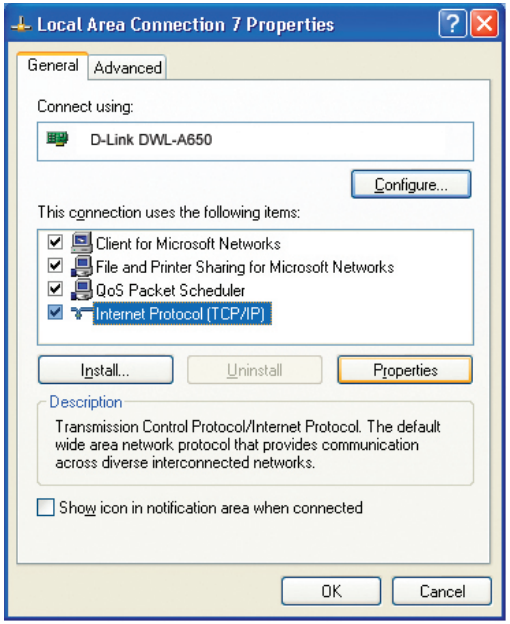
- Double-click on **Network Connections**.



- Right-click on **Local Area Connections**.
- Double-click on **Properties**.



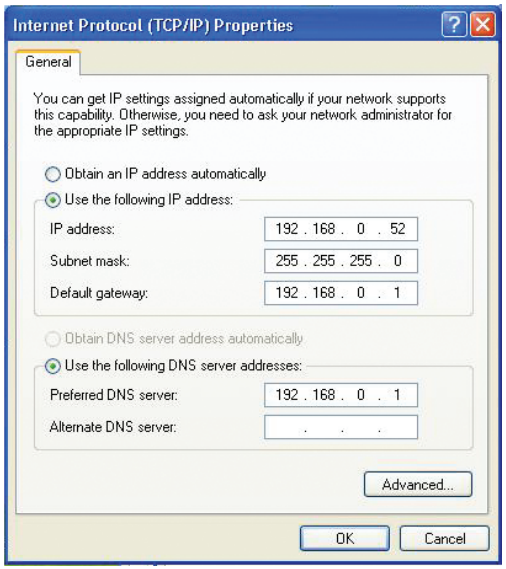
- Click on **Internet Protocol (TCP/IP)**.
- Click **Properties**.
- Input your **IP address and subnet mask**. (The IP addresses on your network must be within the same range. For example, if one computer has an IP address of 192.168.0.2, the other computers should have IP addresses that are sequential, like 192.168.0.3 and 192.168.0.4. The subnet mask must be the same for all the computers on the network.)



- Input your **DNS server addresses**. **(Note: If you are entering a DNS server, you must enter the IP address of the default gateway.)**

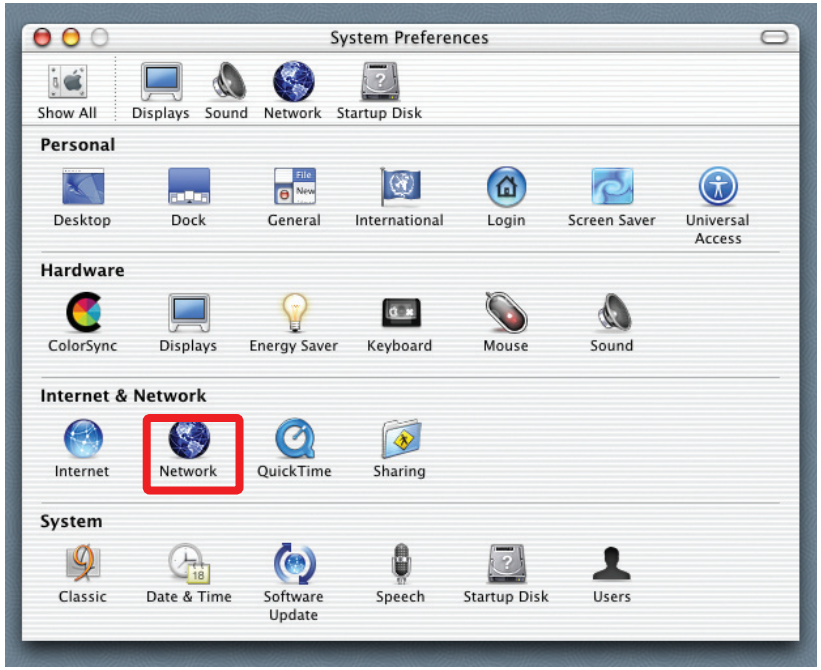
The DNS server information will be supplied by your ISP (Internet Service Provider.)

- Click **OK**.

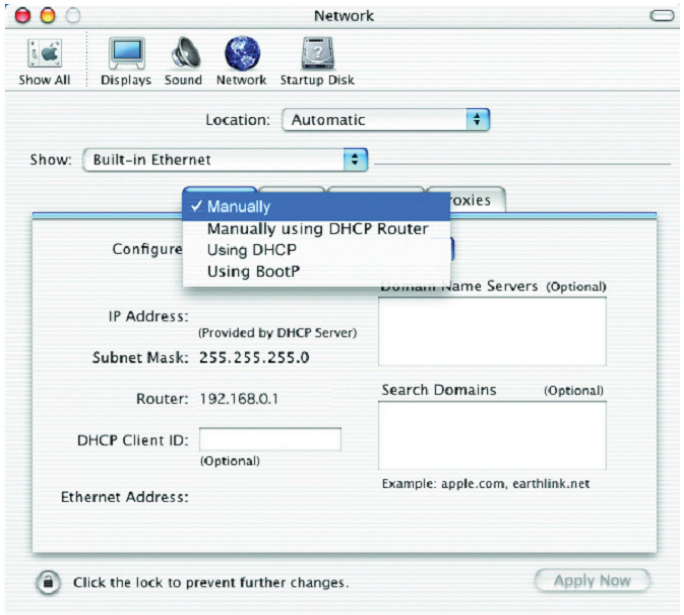


Assigning a Static IP Address in Macintosh® OSX

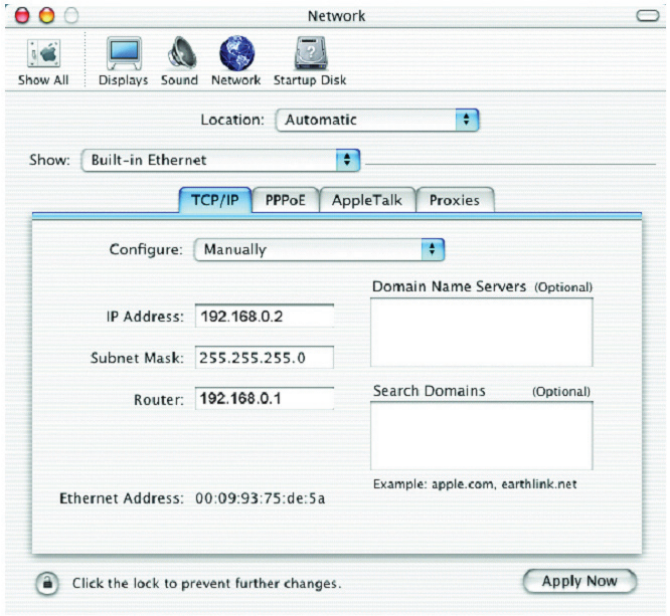
- Go to the **Apple Menu** and select **System Preferences**.
- Click on **Network**.



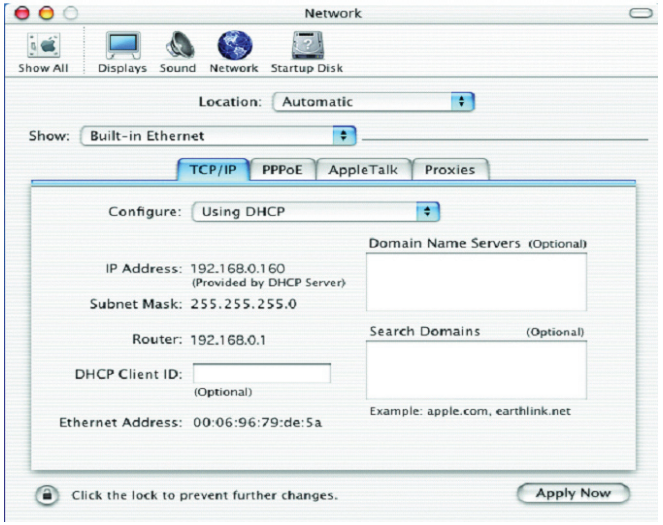
- Select **Built-in Ethernet** in the **Show** pull-down menu.
- Select **Manually** in the **Configure** pull-down menu.



- Input the **Static IP Address**, the **Subnet Mask** and the **Router IP Address** in the appropriate fields.
- Click **Apply Now**.

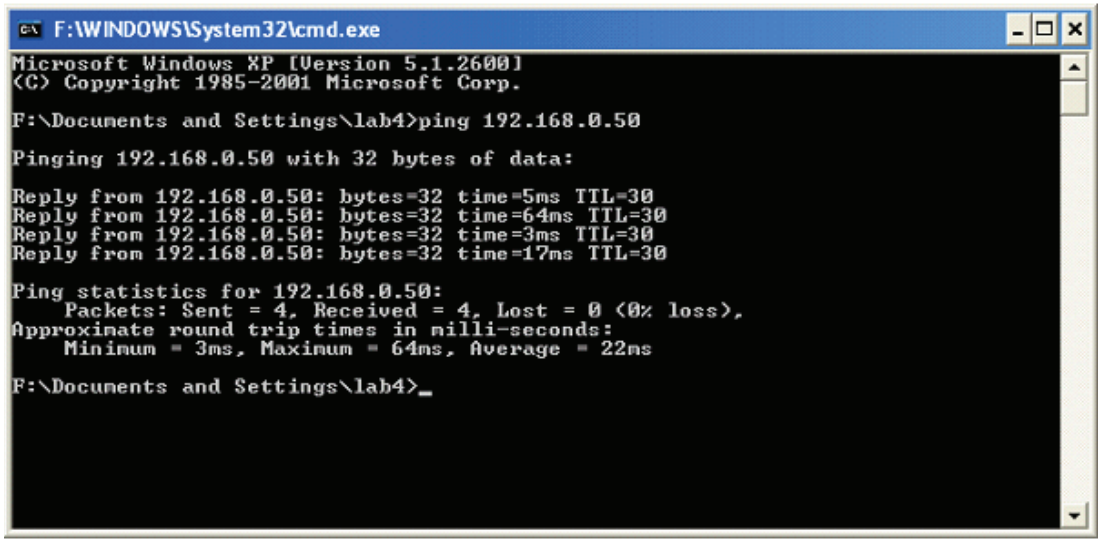


- Click **Apply Now**.
- The **IP Address, Subnet mask**, and the **Router's IP Address** will appear in a few seconds.



Checking the Wireless Connection by Pinging in Windows®

Go to **Start** > **Run** > type **cmd**. A window similar to this one will appear. Type **ping xxx.xxx.xxx.xxx**, where **xxx** is the **IP address** of the wireless router or access point. A good wireless connection will show four replies from the wireless router or access point, as shown.



Troubleshooting

This Chapter provides solutions to problems that can occur during the installation and operation of the **DWL-8200AP** Wireless Access Point. We cover various aspects of the network setup, including the network adapters. Please read the following if you are having problems.

Note: It is recommended that you use an Ethernet connection to ***configure the DWL-8200AP .***

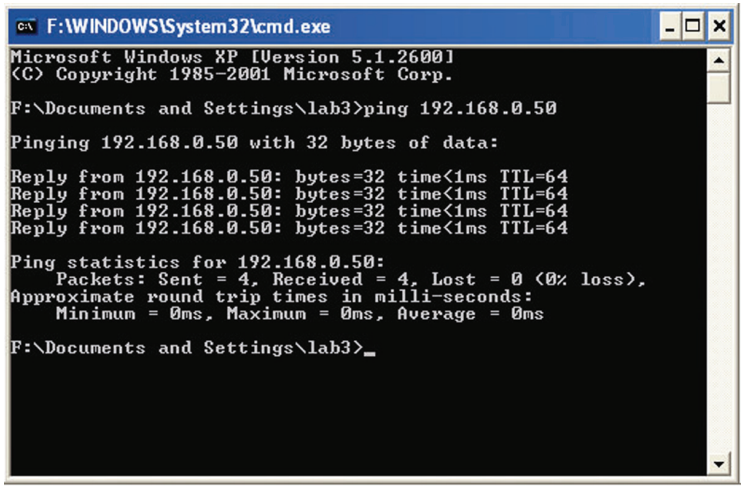
1. The computer used to configure the DWL-8200AP cannot access the Configuration menu.

- Check that the **Ethernet LED** on the **DWL-8200AP** is **ON**. If the **LED** is not **ON**, check that the cable for the Ethernet connection is securely inserted.
- Check that the Ethernet Adapter is working properly. Please see item 3 (***Check that the drivers for the network adapters are installed properly***) in this **Troubleshooting** section to check that the drivers are loaded properly.
- Check that the **IP address** is in the same range and subnet as the **DWL-8200AP**. Please see ***Checking the IP Address in Windows XP*** in the **Networking Basics** section of this manual.

Note: The IP address of the **DWL-8200AP** is 192.168.0.50. All the computers on the network must have a unique IP address in the same range, e.g., 192.168.0.x. Any computers that have identical IP addresses will not be visible on the network. They must all have the same subnet mask, e.g., 255.255.255.0.

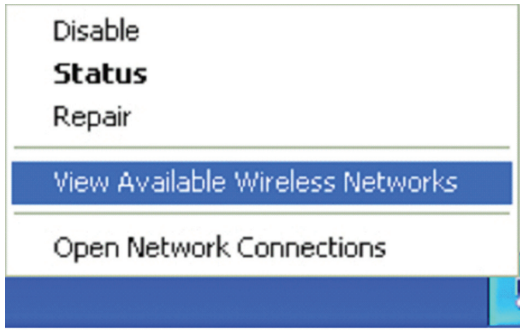
- Do a **Ping test** to make sure that the **DWL-8200AP** is responding. Go to **Start**>**Run**>Type **Command**>Type **ping 192.168.0.50.** A successful ping will show four replies.

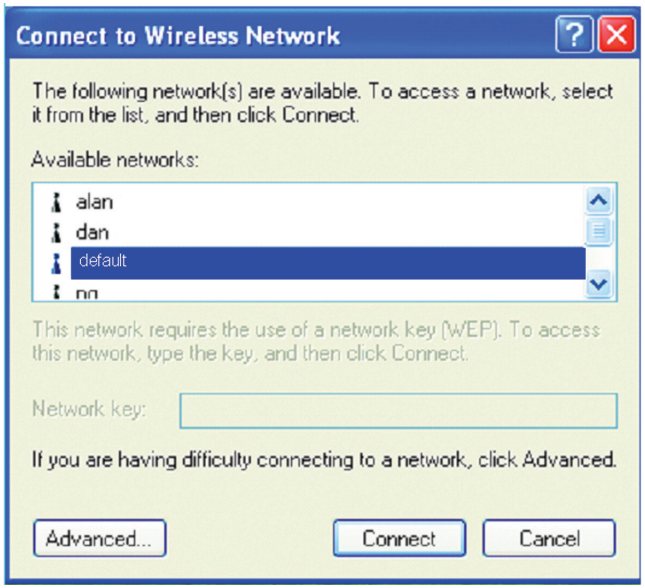
Note: If you have changed the default IP address, make sure to ping the correct IP address assigned to the **DWL-8200AP**.



2. The wireless client cannot access the Internet in the Infrastructure mode.

Make sure the wireless client is associated and joined with the correct access point. To check this connection: **Right-click** on the **Local Area Connection icon** in the taskbar and select **View Available Wireless Networks**. The **Connect to Wireless Network** screen will appear. Please make sure you have selected the correct available network, as shown in the illustrations below.





- Check that the **IP address** assigned to the wireless adapter is within the same **IP address range** as the access point and gateway. *Since the **DWL-8200AP** has an IP address of 192.168.0.50, wireless adapters must have an IP address in the same range, e.g., 192.168.0.x. Each device must have a unique IP address; no two devices may have the same IP address. The subnet mask must be the same for all the computers on the network.)* To check the **IP address** assigned to the wireless adapter: **double-click** on the **Local Area Connection icon** in the taskbar > select the **Support tab** and the **IP address** will be displayed. *Please refer to **Checking the IP Address** in the **Networking Basics** section of this manual.)*

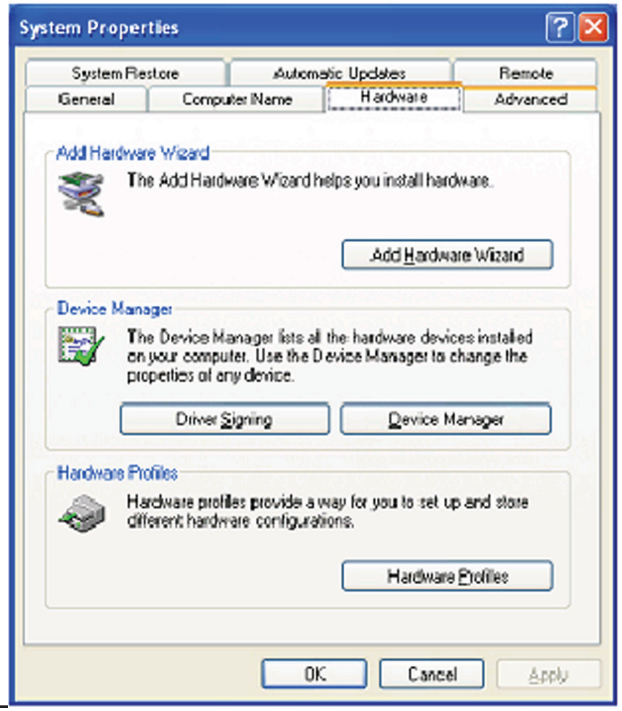
- If it is necessary to assign a **Static IP Address** to the wireless adapter, please refer to the appropriate section in **Networking Basics**. If you are entering a **DNS Server address** you must also enter the **Default Gateway Address.** *(Remember that if you have a DHCP-capable router, you will not need to assign a static IP address. See **Networking Basics: Assigning a Static IP Address**.)*

3. Check that the drivers for the network adapters are installed properly.

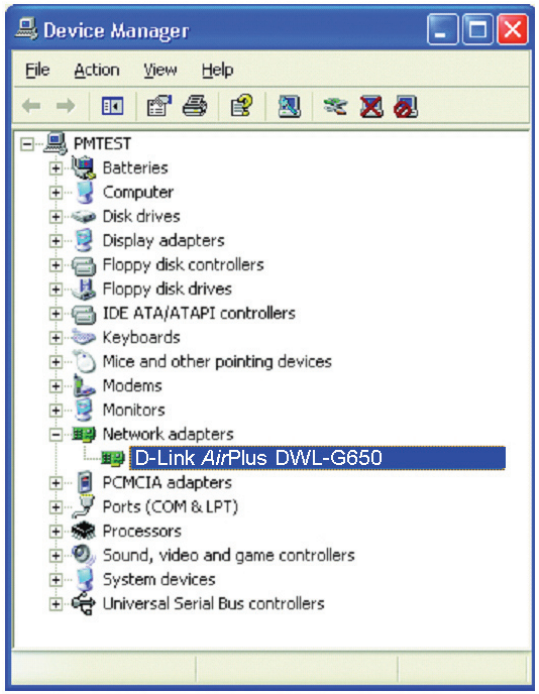
You may be using different network adapters than those illustrated here, but this procedure will remain the same, regardless of the type of network adapters you are using.

- Go to **Start > My Computer > Properties**.

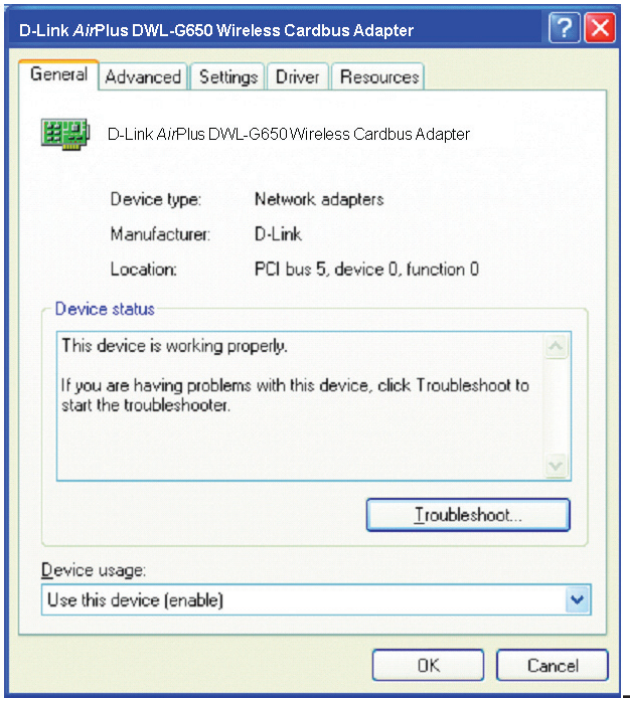
- **Select** the **Hardware Tab**.
- Click **Device Manager**.



- Double-click on **Network Adapters**.
- Right-click on **D-Link *Air*Plus DWL-G650 Wireless Cardbus Adapter**. (In this example we use the DWL-G650; you may be using other network adapters, but the procedure will remain the same.)
- Select **Properties** to check that the drivers are installed properly.



- Look under **Device Status** to check that the device is working properly.
- Click **OK**.



4. What variables may cause my wireless products to lose reception?

D-Link products let you access your network from virtually anywhere you want. However, the positioning of the products within your environment will affect the wireless range. Please refer to **Installation Considerations** in the **Wireless Basics** section of this manual for further information about the most advantageous placement of your D-Link wireless products.

5. Why does my wireless connection keep dropping?

- Antenna Orientation- Try different antenna orientations for the **DWL-8200AP**. Try to keep the antenna at least 6 inches away from the wall or other objects.
- If you are using 2.4GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, and lights, your wireless connection will degrade dramatically or drop altogether. Try changing the channel on your router, access point and wireless adapter to a different channel to avoid interference.
- Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, monitors, electric motors, etc.

6. Why can't I get a wireless connection?

If you have enabled encryption on the **DWL-8200AP**, you must also enable encryption on all wireless clients in order to establish a wireless connection.

- Make sure that the SSID on the router and the wireless client are exactly the same. If they are not, wireless connection will not be established.
- Move the **DWL-8200AP** and the wireless client into the same room and then test the wireless connection.
- Disable all security settings.
- Turn off your **DWL-8200AP** and the client. Turn the **DWL-8200AP** back on again, and then turn on the client.
- Make sure that all devices are set to **Infrastructure** mode.
- Check that the LED indicators are indicating normal activity. If not, check that the AC power and Ethernet cables are firmly connected.
- Check that the IP address, subnet mask, gateway and DNS settings are correctly entered for the network.
- If you are using 2.4GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, and lights, your wireless connection will degrade dramatically or drop altogether. Try changing the channel on your **DWL-8200AP**, and on all the devices

in your network to avoid interference.

- Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, monitors, electric motors, etc.

7. I forgot my encryption key.

- Reset the **DWL-8200AP** to its factory default settings and restore the other devices on your network to their default settings. You may do this by pressing the Reset button on the back of the unit. You will lose the current configuration settings.

Technical Specifications

Standards
- IEEE 802.11a
- IEEE 802.11b
- IEEE 802.11g
- IEEE 802.3
- IEEE 802.3af
- IEEE 802.3u
- IEEE 802.3x

Device Management
- Web-Based – Internet Explorer v7 or later; Firefox 3.0 or later; or other Java enabled browsers.
- Telnet
- AP Manager II
- SNMP v.3

Data Rate
For 802.11a/g:
- 108, 54, 48, 36, 24, 18, 12, 9 and 6Mbps

For 802.11b:
- 11, 5.5, 2, and 1Mbps

Security
- WPA – Enterprise
- WPA – Personal
- WPA2 – Enterprise
- WPA2 – Personal
- 64-bit, 128-bit, and 152-bit WEP
- MAC Address Access Control List

Wireless Frequency Range
- 2.4GHz to 2.4835GHz
- 5.15GHz to 5.24GHz, 5.745GHz to 5.825GHz

Wireless Operating Range*
802.11g (Full Power with 5dBi gain diversity dipole antenna)
Indoors:
- 98ft (30m) @ 54Mbps
- 105ft (32m) @ 48Mbps
- 121ft (37m) @ 36Mbps
- 148ft (45m) @ 24Mbps
- 203ft (62m) @ 18Mbps
- 223ft (68m) @ 12Mbps
- 253ft (77m) @ 9Mbps
- 302ft (92m) @ 6Mbps

Outdoors:
- 328ft (100m) @ 54Mbps
- 968ft (295m) @ 11Mbps
- 1378ft (420m) @ 6Mbps

Operating Voltage
- 48VDC +/- 10% for PoE

Radio and Modulation Type
For 802.11b:
DSSS :
- DBPSK @ 1Mbps
- DQPSK @ 2Mbps
- CCK @ 5.5 and 11Mbps

For 802.11a/g:
OFDM:
- BPSK @ 6 and 9Mbps
- QPSK @ 12 and 18Mbps
- 16QAM @ 24 and 36Mbps
- 64QAM @ 48, 54 and 108Mbps

DSSS:
- DBPSK @ 1Mbps
- DQPSK @ 2Mbps
- CCK @ 5.5 and 11Mbps

Max Transmit Output Power

For 802.11a:
- 63mW (18dBm)

For 802.11b:
- 100mW (20dBm)

For 802.11g:
- 100mW (20dBm)

Receiver Sensitivity

For 802.11a:

• 6Mbps: -87dBm
• 9Mbps: -86dBm
• 11Mbps: -88dBm
• 12Mbps: -85dBm
• 18Mbps: -83dBm
• 24Mbps: -80dBm
• 36Mbps: -76dBm
• 48Mbps: -71dBm
• 54Mbps: -71dBm

For 802.11b:
• 1Mbps: -92dBm
• 2Mbps: -89dBm
• 5.5Mbps: -88dBm
• 11Mbps: -83dBm

For 802.11g:
• 1Mbps: -95dBm
• 2Mbps: -91dBm
• 5.5Mbps: -89dBm
• 6Mbps: -87dBm
• 9Mbps: -85dBm
• 11Mbps: -88dBm
• 12Mbps: -80dBm
• 18Mbps: -80dBm
• 24Mbps: -77dBm
• 36Mbps: -73dBm
• 48Mbps: -72dBm
• 54Mbps: -72dBm

LEDs
• Power
• Status
• LAN 1
• LAN 2
• 802.11b/g
• 802.11a

Temperature
• Operating: 32 ºF to 104ºF (0ºC to 40ºC)
• Storing: -4ºF to 149ºF (-20ºC to 65ºC)

Humidity
• Operating: 10%~90% (non-condensing)
• Storing: 5%~95% (non-condensing)

Certifications
• FCC
• Wi-Fi

Dimensions
• L = 10.93 inches (277.7mm)
• W = 6.10 inches (155mm)
• H =1.77 inches (45mm)

• H = 1.77 inches (45mm)

Warranty
1 year

* Maximum wireless signal rate derived from IEEE Standard 802.11a and 802.11g 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 may adversely affect wireless signal range.