USER MANUAL

DAP-1360

VERSION 2.0

D-Link®

WIRELESS

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Package Contents

- D-Link DAP-1360 Wireless N Range Extender
- Power Supply
- CAT5 Ethernet Cable
- CD-ROM with User Manual
- Quick Install Guide

Note: *Using a power supply with a different voltage than the one included with the DAP-1360 will cause damage and void the warranty for this product.*

System Requirements

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

Introduction

D-Link, an industry leader in networking, introduces the new D-Link DAP-1360 Wireless N Range Extender. With the ability to transfer files with a maximum wireless signal rate of up to 300Mbps*, the DAP-1360 gives you high-speed wireless network access for your home or office.

The DAP-1360 is Wi-Fi IEEE 802.11n compliant, meaning that it can connect and interoperate with other 802.11n compatible wireless client devices. The DAP-1360 is also backwards compatible with 802.11b/g. It can be flexibly configured to operate in 7 different modes **Access Point**, **Wireless Client**, **Bridge**, **Bridge with AP**, **Repeater**, **WISP Client Router** or **WISP Repeater**. With its Setup Wizard, the DAP-1360 ensures that you will be up and running on a wireless network in just a matter of minutes.

The DAP-1360 features Wi-Fi Protected Access (WPA-PSK/WPA2-PSK) to provide an enhanced level of security for wireless data communications. The DAP-1360 also includes additional security features to keep your wireless connection safe from unauthorized access.

The DAP-1360 supports WPS on the AP, repeater and wireless client operation modes,with each capable of being conveniently set up by using the PIN method or Push Button.

• Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.

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

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

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

ULTIMATE PERFORMANCE
The D-Link Wireless N Range Extender (DAP-1360) is a 802.11n compliant device that delivers real world performance of up to 650% faster than an 802.11g wireless connection (also faster than a 100Mbps wired Ethernet connection). Create a secure wireless network to share photos, files, music, video, printers, and network storage throughout your home. Connect the DAP-1360 to router and share your high-speed Internet access with everyone on the network. In addition, this Range Extender includes a Quality of Service (QoS) engine that keeps digital phone calls (VoIP) and online gaming smooth and responsive, providing a better Internet experience.

EXTENDED WHOLE HOME COVERAGE
This high performance Wireless Bridge provides superior Whole Home Coverage while reducing dead spots. The DAP-1360 is designed for use in bigger homes and for users who demand higher performance networking.

TOTAL NETWORK SECURITY
The DAP-1360 supports all of the latest wireless security features to prevent unauthorized access, be it from over the wireless network or from the Internet. Support for WPA and WPA2 standards ensure that you'll be able to use the best possible encryption method, regardless of your client devices.

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

Features

- **Faster Wireless Networking -** The DAP-1360 provides up to 300Mbps* wireless connection with other 802.11n wireless clients. This capability allows users to participate in real-time activities online, such as video streaming, online gaming, and real-time audio. The performance of this 802.11n wireless access point gives you the freedom of wireless networking at speeds 650% faster than 802.11g.

- **Compatible with 802.11b and 802.11g Devices -** The DAP-1360 is still fully compatible with the 802.11b/g standards, so it can connect with existing 802.11b/g PCI, USB, and Cardbus adapters.

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

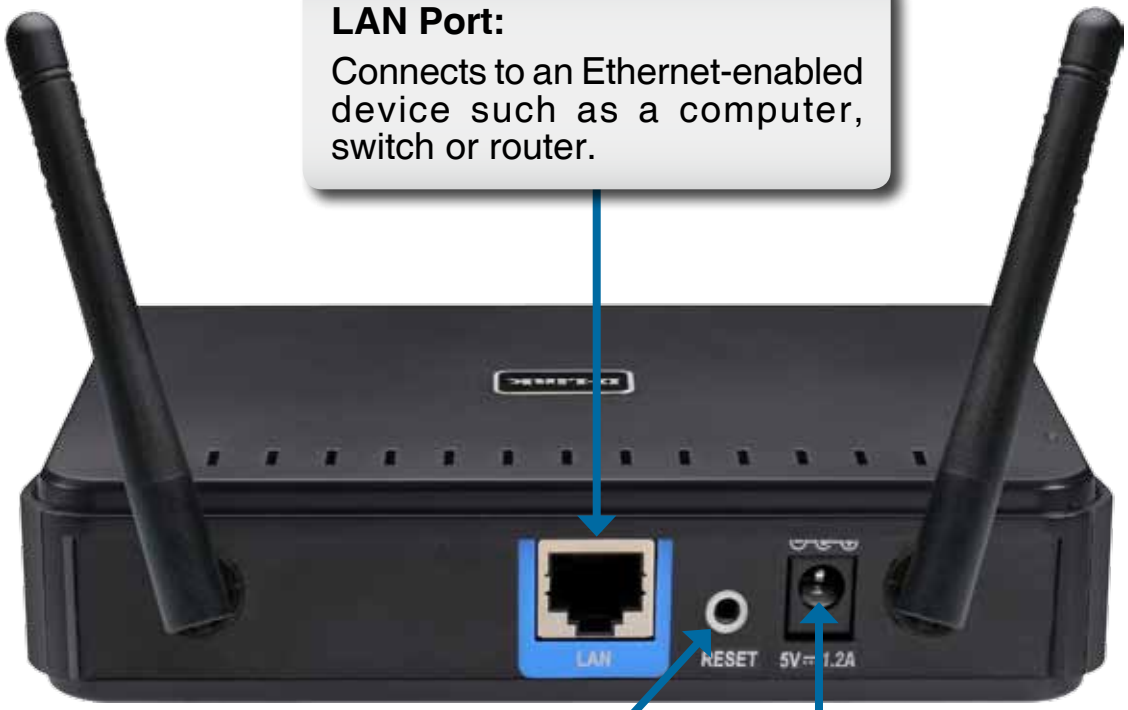
- **WPS PBC-** (Wi-Fi Protected Setup Push Button Configuration) Push Button Configuration is a button that can be pressed to add the device to an existing network or to create a new network. A virtual button can be used on the utility while a physical button is placed on the side of the device.

  This easy setup method allows you to form a secured wireless link between the DAP-1360 and another WPS enabled device. A PC is no longer needed to log into the Web-based interface.

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

- **User-friendly Setup Wizard -** Through its easy-to-use Web-based user interface, the DAP-1360 lets you control what information is accessible to those on the wireless network, whether from the Internet or from your company’s server. Configure your access point to your specific settings within minutes.

Hardware Overview
Connections



LAN Port:
Connects to an Ethernet-enabled device such as a computer, switch or router.

RESET:
Restores the access point's configuration to its original factory default settings.

Power Socket:
Connects to the power adapter.

Hardware Overview

LEDs

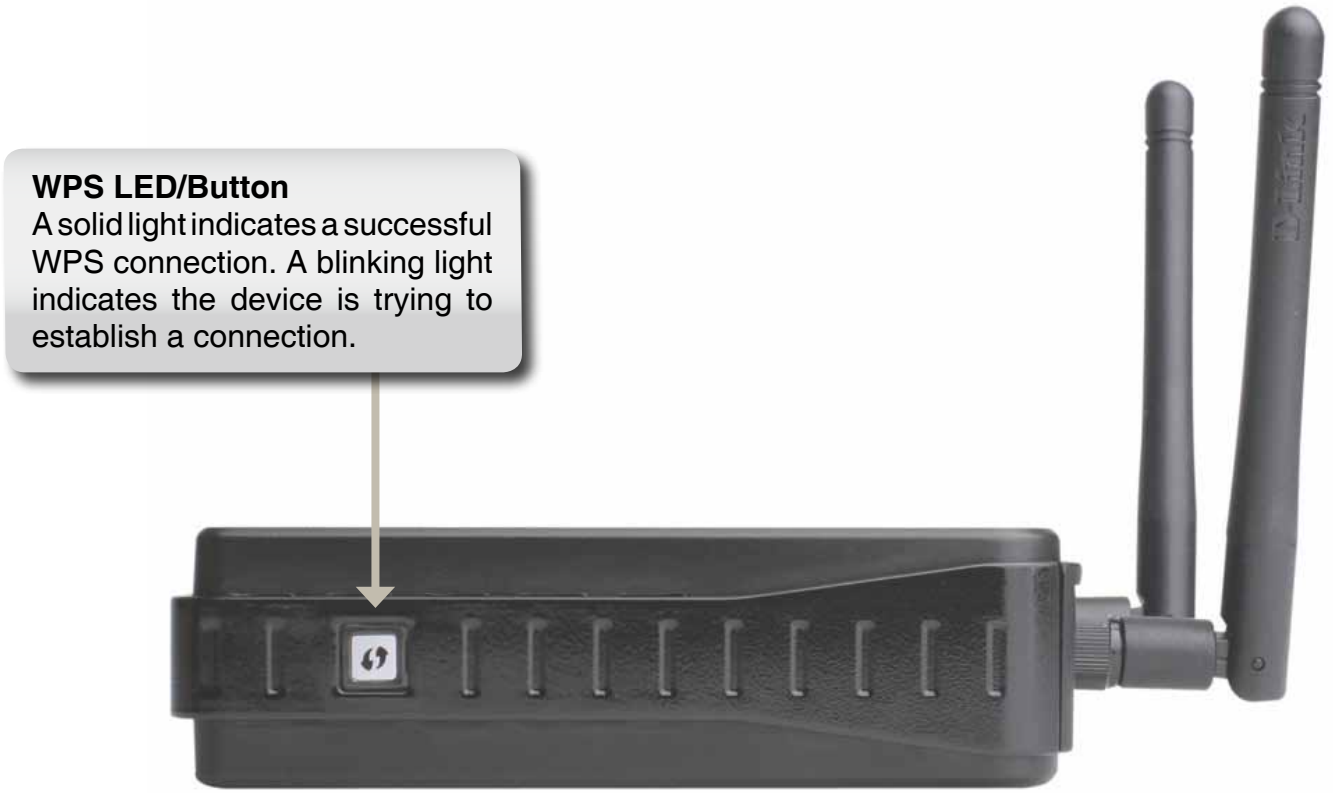
Power LED
A solid green light indicates the device has been successfully connected to a power source.

Security LED
A solid light indicates that wireless security is enabled.

Wireless LED
A blinking green condition indicates wireless activity is taking place or wireless connections are OK.

LAN LED
A blinking green light indicates data is being transferred through the LAN port. A solid green light indicates the LAN port connection is OK.

Hardware Overview
WPS LED/Button



Installation

Please configure the DAP-1360 with a computer connected directly to the AP. The next few pages will explain the different operational modes you can use.

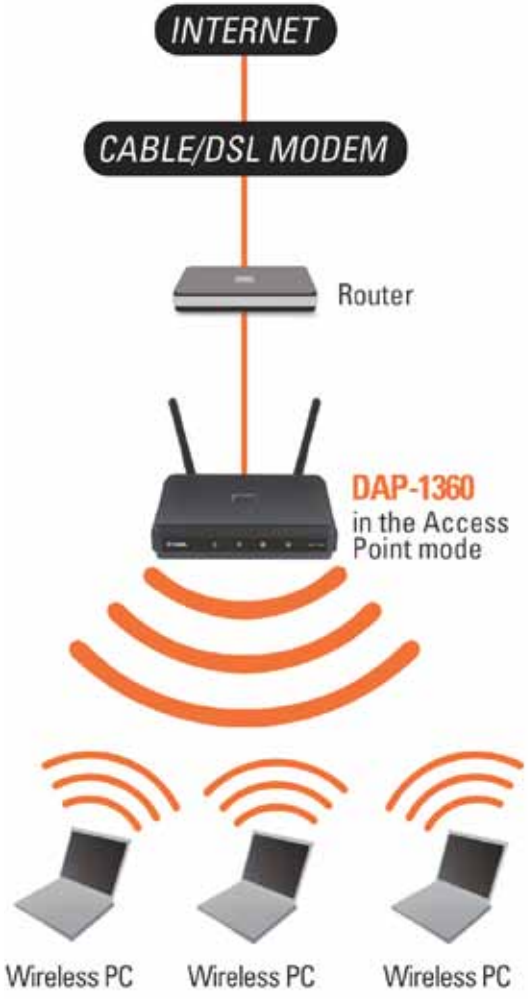
Operation Modes

Depending on how you want to use your DAP-1360 will determine which mode you use. This section will help you figure out which setting works with your setup.

- Access Point mode - page 12
- Wireless Client mode - page 13
- Repeater mode - page 14
- Bridge mode - page 15
- Bridge with AP mode - page 16
- WISP Client Router mode - page 17
- WISP Repeater mode - page 18

Access Point Mode

In the Access Point mode, the DAP-1360 acts as a central connection point for any computer (client) that has a 802.11n or backward-compatible 802.11b/g wireless network interface and is within range of the AP. Clients must use the same SSID (wireless network name) and channel as the AP in order to connect. If wireless security is enabled on the AP, the client will need to enter a password to connect to the AP. In Access Point mode, multiple clients can connect to the AP at the same time.



Wireless Client Mode

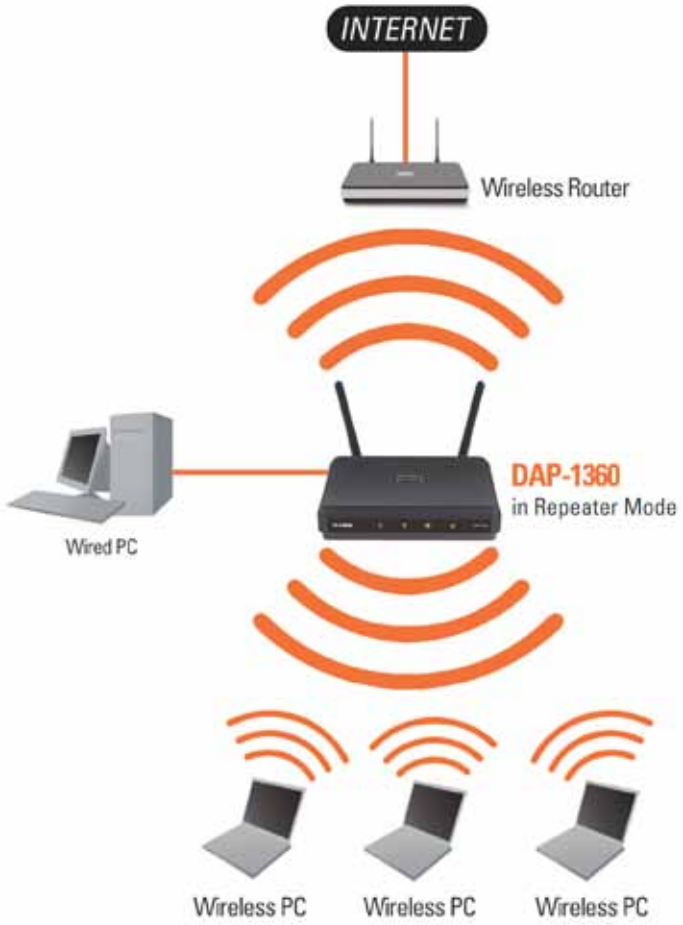
In the Wireless Client mode, the DAP-1360 acts as a wireless network adapter for your Ethernet-enabled device (such as a game console or a TV set-top box). Connect your Ethernet-enabled device to the AP using an Ethernet cable. The AP Client mode can support multiple wired clients.

If you are going to connect several Ethernet-enabled devices to your DAP-1360, connect the LAN port of the DAP-1360 to an Ethernet switch, then connect your devices to this switch.

Example: Connect a gaming console using an ethernet cable to the DAP-1360. The unit is set to Wireless Client mode which will wirelessly connect to a wireless router on your network.

Repeater Mode

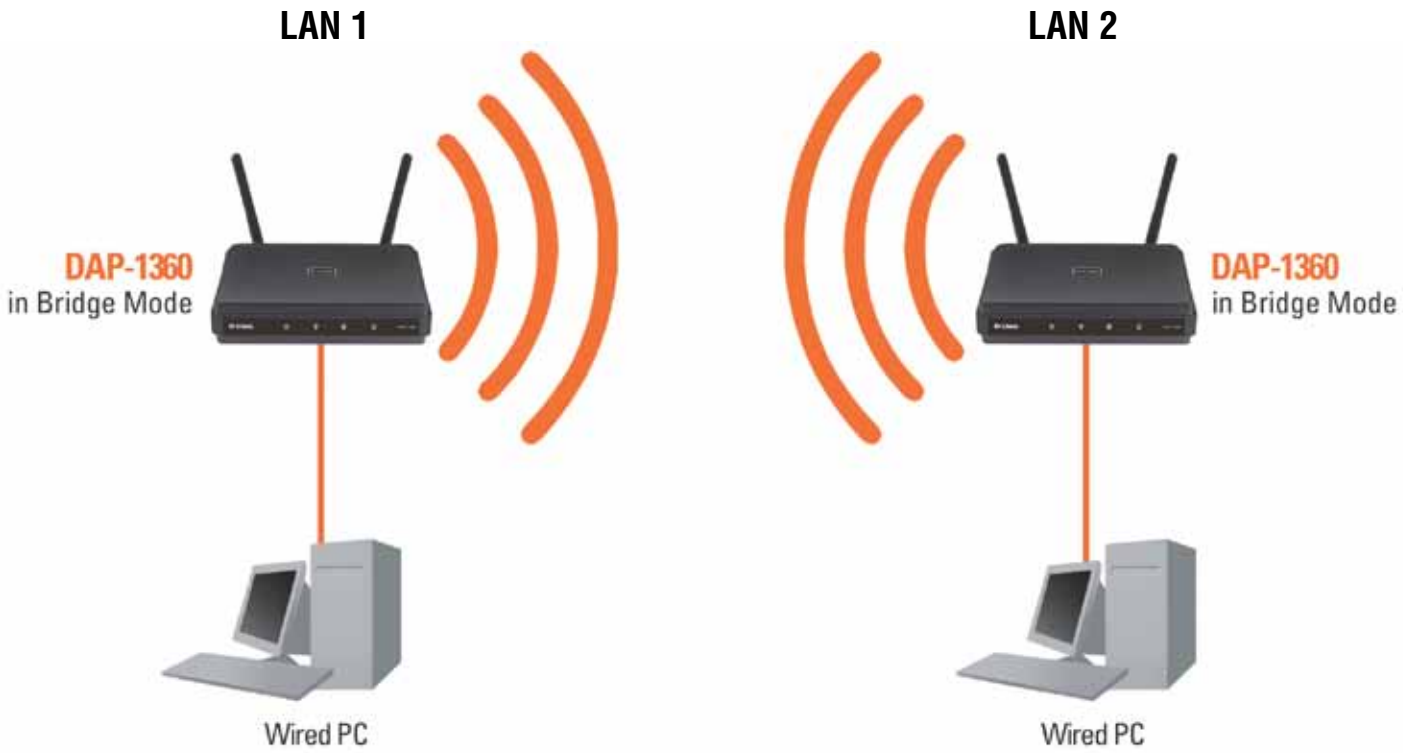
In Repeater mode, the DAP-1360 increases the range of your wireless network by extending the wireless coverage of another AP or wireless router. The APs and wireless router (if used) must be within range of each other. Make sure that all clients, APs, and the wireless router all use the same SSID (wireless network name), channel, and security settings.



Bridge Mode

In the Bridge mode, the DAP-1360 wirelessly connects seperate local area networks (LANs) that can't easily be connected together with a cable. For example, if there are two wired LANs separated by a small courtyard, it would be expensive to bury cables to connect between the two sides together. A better solution is to use two DAP-1360 units to wirelessly connect the two LANs. In the Bridge mode, both DAP-1360 units do not act as APs.

Note: The Bridge mode is not specified in the Wi-Fi or IEEE standards. This mode will only work using two DAP-1360 units. Communication with other APs (even other D-Link APs) is not guaranteed.

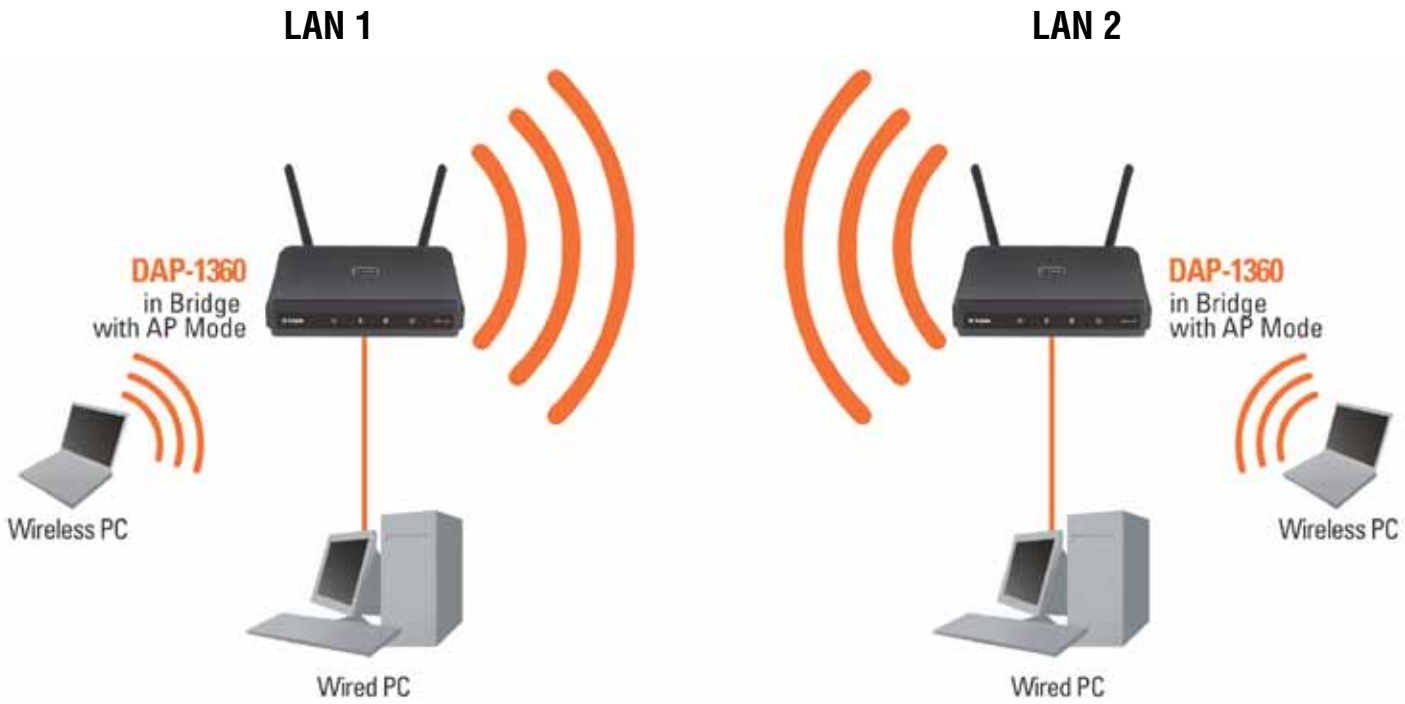


Connecting Two Separate LANs Together Through Two DAP-1360 Units (Wireless PCs Cannot Access the DAP-1360 Units)

Bridge with AP Mode

The Bridge with AP mode is the same as the Bridge mode, but in this case, the DAP-1360 also acts as an AP. Clients with wireless interfaces can wirelessly connect to the DAP-1360 and then connect to the other LAN that the DAP-1360 bridges to.

Note: *The Bridge with AP mode is not specified in the Wi-Fi or IEEE standards. This mode will only work using two DAP-1360 units. Communication with other APs (even other D-Link APs) is not guaranteed.*

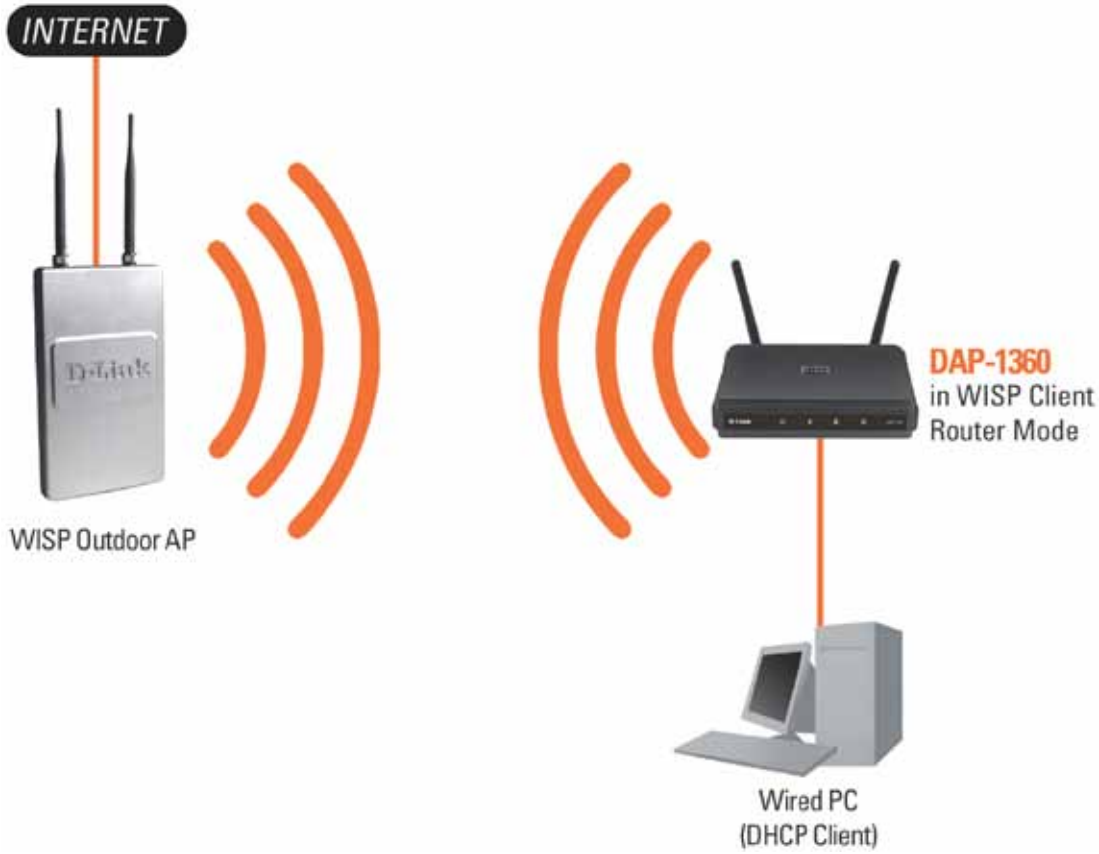


Connecting Two Separate LANs Together Through Two DAP-1360 Units
(Wireless PCs Can Access the DAP-1360 Units)

WISP Client Router Mode

In the WISP Client Router mode, the DAP-1360 wirelessly connects to a WISP (Wireless Internet Service Provider) AP. In this mode, the DAP-1360 also acts as a router for wired clients on your LAN and provides NAT (Network Address Translation) and a DHCP server to generate IP addresses for wired clients only. NAT and the DHCP server allow many computers to share the same wireless Internet connection.

If you are a WISP subscriber and want to access your WISP account using wired computers, connect your computers to the DAP-1360 to get NAT, and then connect them to the WISP AP.

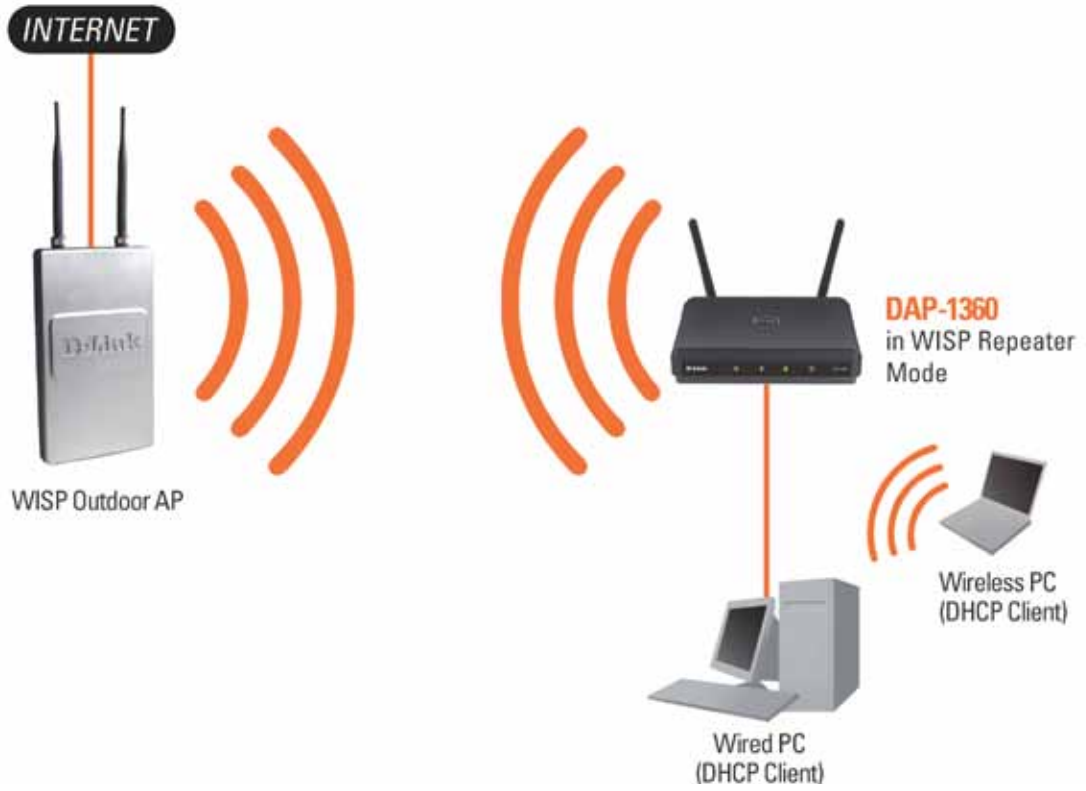


Connecting Wired PCs to the Internet Using the DAP-1360

WISP Repeater Mode

In the WISP Repeater mode, the DAP-1360 wirelessly connects to a WISP (Wireless Internet Service Provider) AP. In this mode, the DAP-1360 also acts as a router for both wireless and wired clients on your LAN. The WISP Repeater mode provides NAT (Network Address Translation) and a DHCP server to generate IP addresses for both wireless and wired clients. NAT and the DHCP server allow many computers to share the same wireless Internet connection.

If you are a WISP subscriber and want to use your WISP account in your house, but the signals from the outdoor WISP AP are not strong enough to reach all of the areas in the house, use the DAP-1360 to can extend the signals from the outdoor WISP AP and provide access to wireless clients in your house. Using this mode, wireless as well as wired clients can connect to the outdoor WISP AP through the DAP-1360.



Connecting Wired and Wireless PCs to the Internet Using the DAP-1360

Wireless Installation Considerations

The D-Link wireless access point lets you access your network using a wireless connection from virtually anywhere within the operating range of your wireless network. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

1. Keep the number of walls and ceilings between the D-Link access point and other network devices to a minimum. Each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.

2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.

3. Building Materials make a difference. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless access points, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.

4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

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

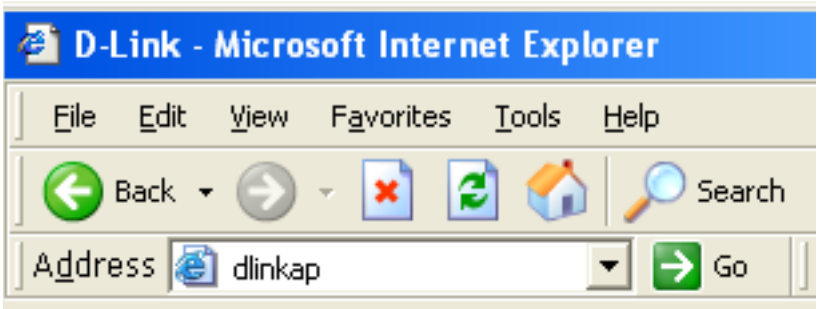
Configuration

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

Web-based Configuration Utility

If you wish to change the default settings or optimize the performance of the DAP-1360, you may use the web-based configuration utility.

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



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

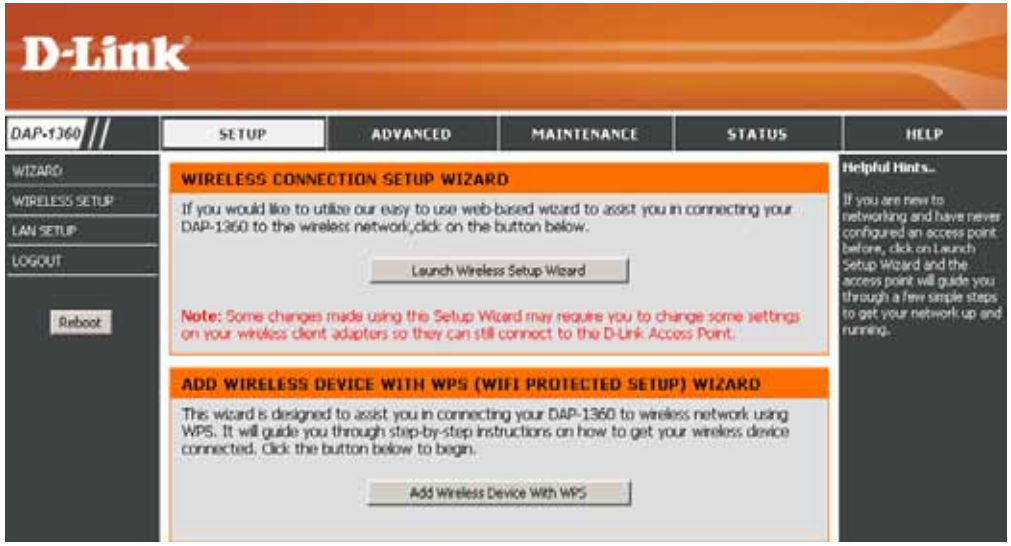
If you get a Page Cannot be Displayed error, please refer to the **Troubleshooting** section for assistance.

Wireless Setup Wizard

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

To set up your wireless network, click **Add Wireless Device With WPS** and skip to page 38.

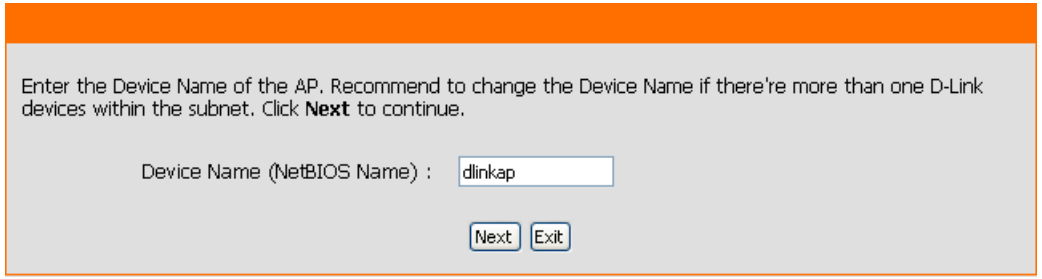
If you want to enter your settings without running the wizard, click **Wireless Setup** on the left side and skip to page 40.



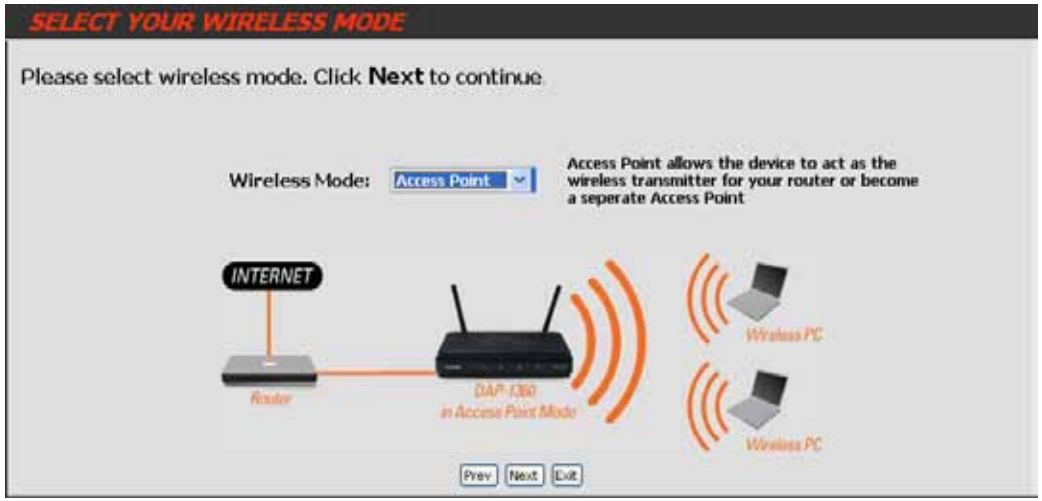
Access Point Mode

This Wizard is designed to assist you in configuring your DAP-1360 as an access point.

Enter the Device Name of the AP and click **Next** to continue. It is recommended to change the Device Name if there is more than one D-Link device within the same wireless network.



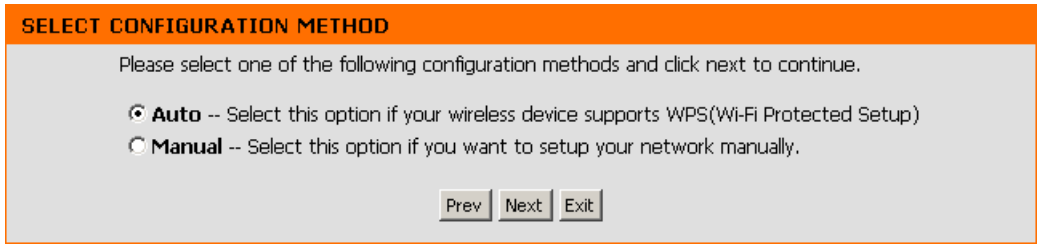
Select **Access Point** from the drop-down menu.



If you want to change the admin account password, enter a new password and click **Next**. It is strongly recommended to change your password.

Select **Auto** as the configuration method only if your wireless device supports Wi-Fi Protected Setup (WPS). For **Manual** setup, skip to the next page.

Click **Next** to continue.



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

In order for your network settings to take effect AP will reboot automatically.

When the device has finished rebooting the main screen will display.

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

Click **Next** to continue.

Enter a name for your wireless network (SSID).

Select **Automatically assign a network key** to have the access point generate a key for you to enter on your wireless clients. If you want to enter your own key, select **Manually assign a network key**.

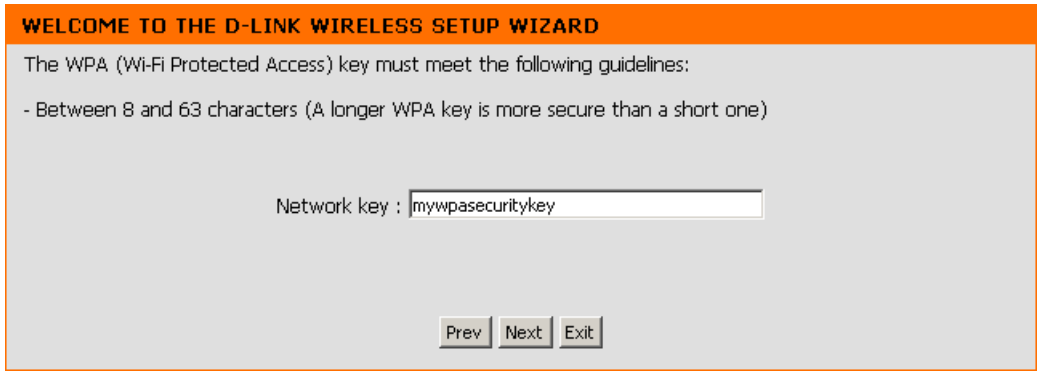
To use WPA security, check the **use WPA encryption instead of WEP box**. If left unchecked, WEP encryption will be used.

Click **Next** to continue.

If you selected **Manually assign a network key** as the configuration method, enter your network key. This key must be entered on your wireless clients.

For **WEP** encryption, enter a Network Key exactly 5 or 13 characters long or exactly 10 or 26 characters using 0-9 and A-F.

Click **Next** to continue.



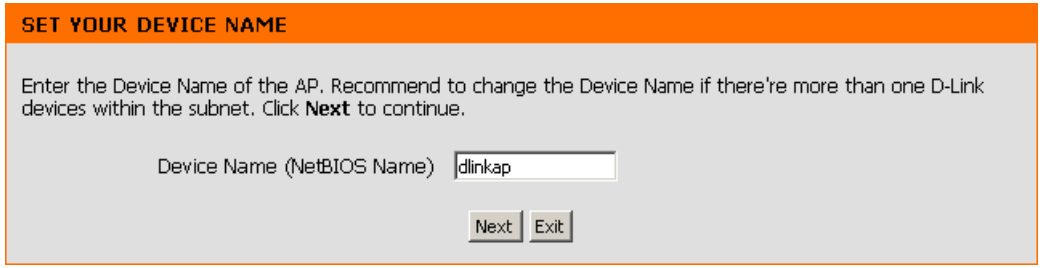
The following screen will show you your network key to enter on your wireless clients.

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

Repeater Mode

This Wizard is designed to assist you in configuring your DAP-1360 as a repeater.

Enter the Device Name of the AP and click **Next** to continue. It is recommended to change the Device Name if there is more than one D-Link device within the same wireless network.

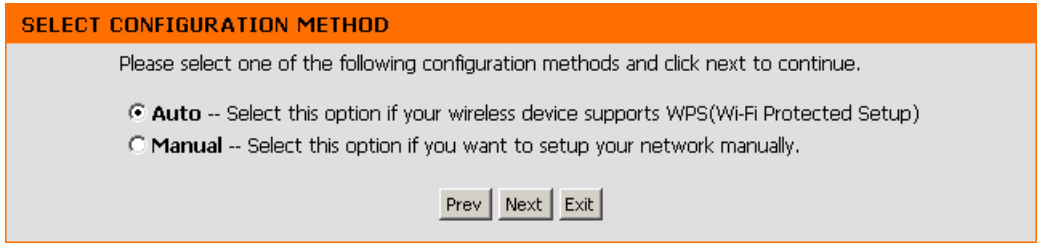


Select **Repeater** from the drop-down menu.

If you want to change the admin account password, enter a new password and click **Next**. It is strongly recommended to change your password.

Select **Auto** as the configuration method only if your wireless device supports Wi-Fi Protected Setup (WPS). For **Manual** setup, skip to the next page.

Click **Next** to continue.



For PBC (Push Button Configuration), skip to the next page.

Select **PIN** to connect your wireless device with WPS. You may click **Generate New PIN** to use a different PIN number. Click **Connect** to start the WPS scan.

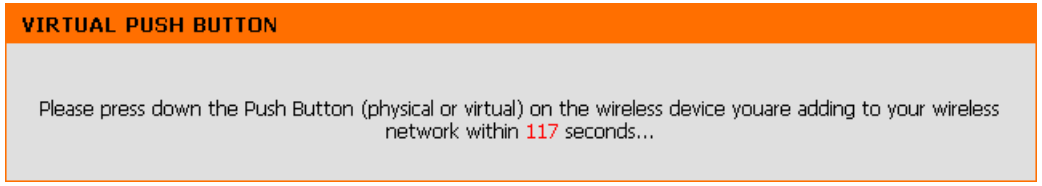
Within 2 minutes, enter the PIN number into the other device you want to connect to.

Select **PBC** to use the Push Button Configuration to connect to your network.

Click **Connect** to continue.

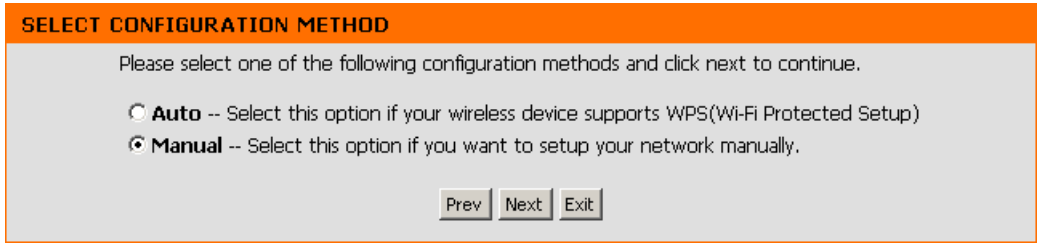
Note: *You may also press the WPS button located on the side of the DAP-1360 instead of running this wizard.*

On the device you want to connect to, start the PBC process on the device. You will have 2 minutes to start the PBC process on both devices.

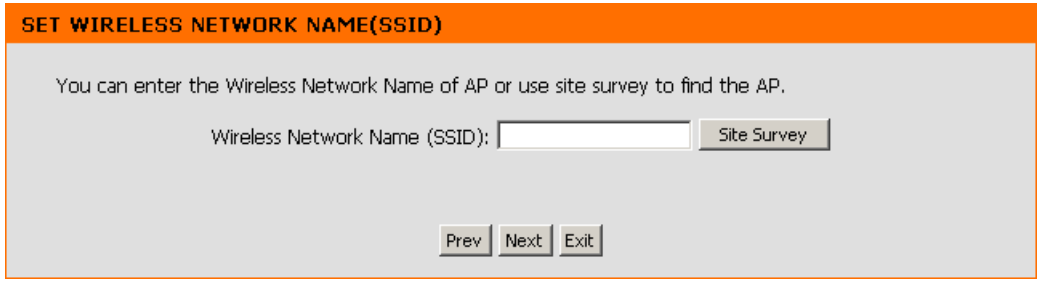


Select **Manual** configuration to setup your network manually.

Click **Next** to continue.

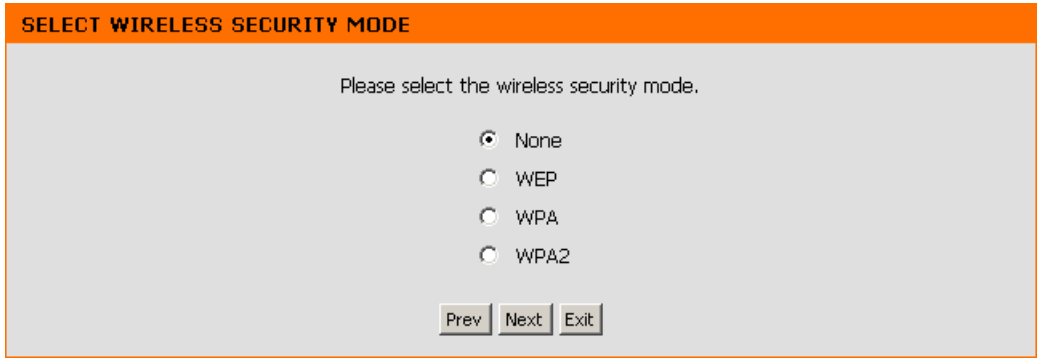


Enter the network name (SSID) of the network you want to connect to. If you do not know the exact name or would like to search for the wireless network, click **Site Survey**.



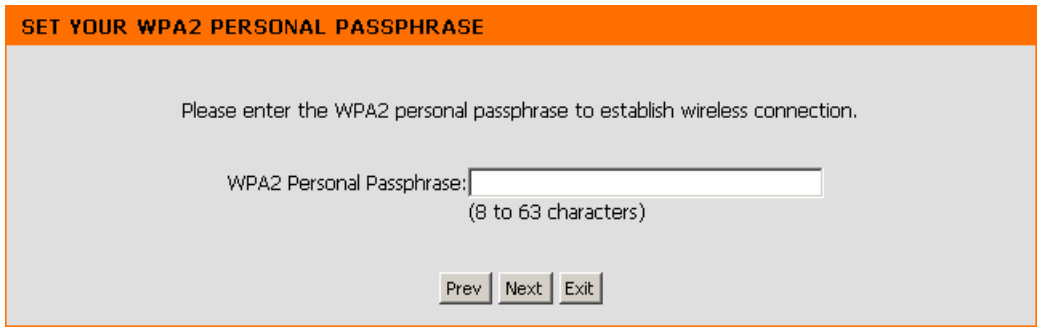
Find your access point from the list, click the radio button in the right column, and click **Connect**.

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

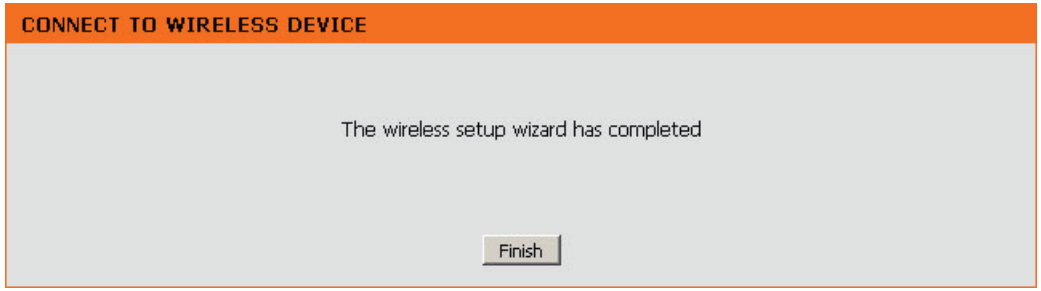


If you select **WEP**, choose the key type (ASCII or HEX), the key size (64 or 128-bit), and enter the wireless security password. Click **Next** to complete the Setup Wizard.

If you select **WPA** or **WPA2**, enter the wireless security password. Click **Next** to complete the Setup Wizard.



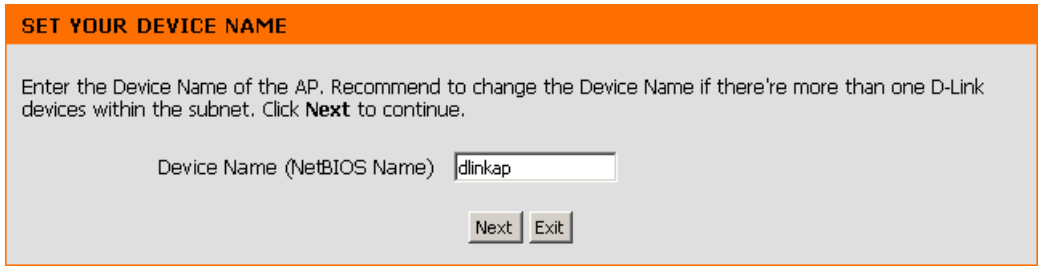
The Wireless Setup Wizard is complete. Click **Finish** to reboot the device.



Wireless Client Mode

This Wizard is designed to assist you in configuring your DAP-1360 as a wireless client.

Enter the Device Name of the AP and click **Next** to continue. It is recommended to change the Device Name if there is more than one D-Link device within the same wireless network.

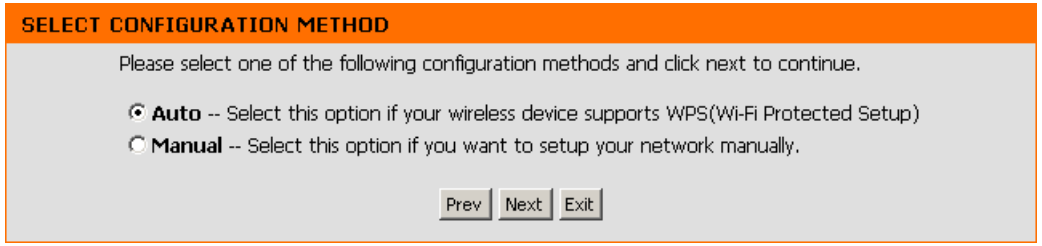


Select **Wireless Client** from the drop-down menu.

If you want to change the admin account password, enter a new password and click **Next**. It is strongly recommended to change your password.

Select **Auto** as the configuration method only if your wireless device supports Wi-Fi Protected Setup (WPS). For **Manual** setup, skip to the next page.

Click **Next** to continue.



For PBC (Push Button Configuration), skip to the next page.

Select **PIN** to connect your wireless device with WPS. You may click **Generate New PIN** to use a different PIN number. Click Connect to start the WPS scan.

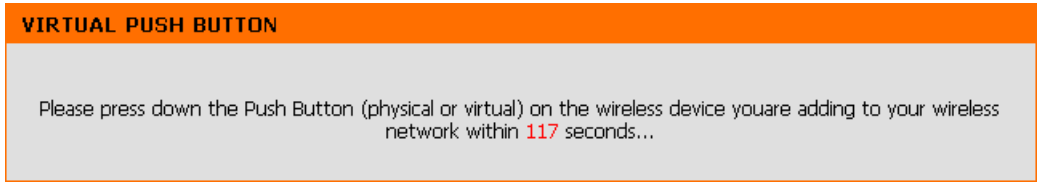
Within 2 minutes, enter the PIN number into the other device you want to connect to.

Select **PBC** to use the Push Button Configuration to connect to your network.

Click **Connect** to continue.

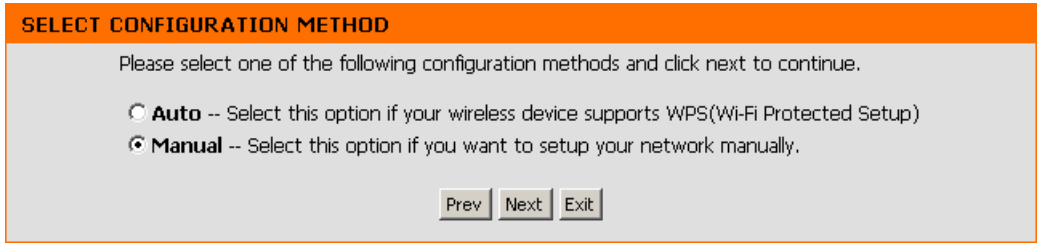
Note: *You may also press the WPS button located on the side of the DAP-1360 instead of running this wizard.*

On the device you want to connect to, start the PBC process on the device. You will have 2 minutes to start the PBC process on both devices.

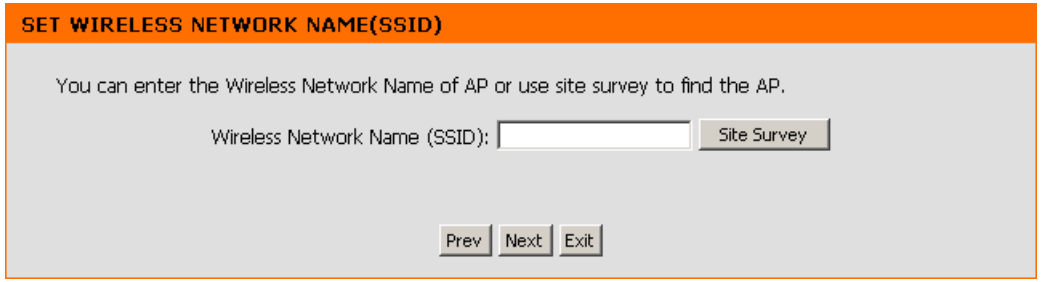


Select **Manual** configuration to setup your network manually.

Click **Next** to continue.

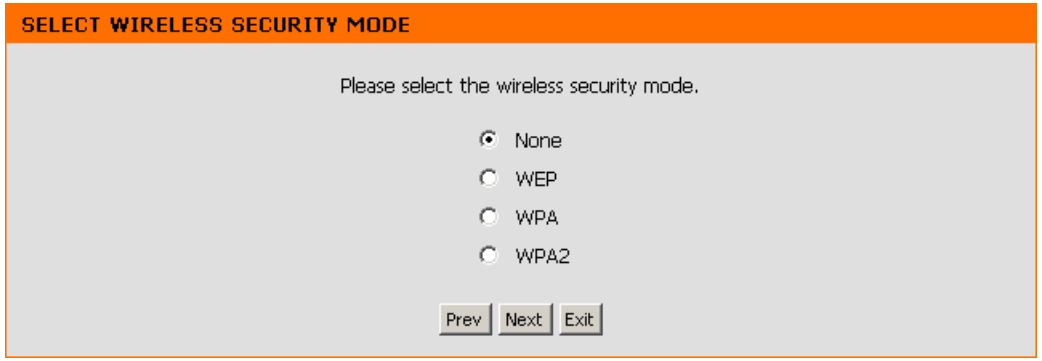


Enter the network name (SSID) of the network you want to connect to. If you do not know the exact name or would like to search for the wireless network, click **Site Survey**.



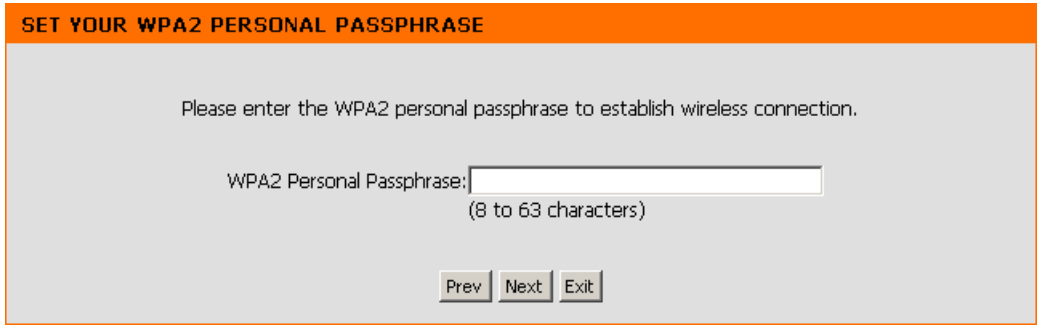
Find your access point from the list, click the radio button in the right column, and click **Connect**.

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

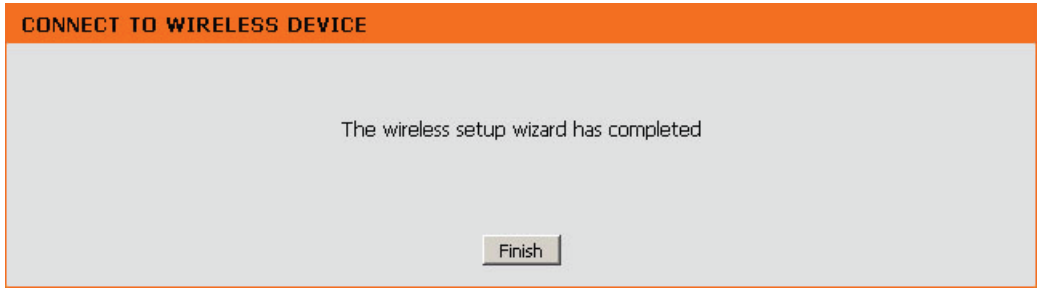


If you select **WEP**, choose the key type (ASCII or HEX), the key size (64 or 128-bit), and enter the wireless security password. Click **Next** to complete the Setup Wizard.

If you select **WPA** or **WPA2**, enter the wireless security password. Click **Next** to complete the Setup Wizard.



The Wireless Setup Wizard is complete. Click **Finish** to reboot the device.



Add Wireless Device With WPS

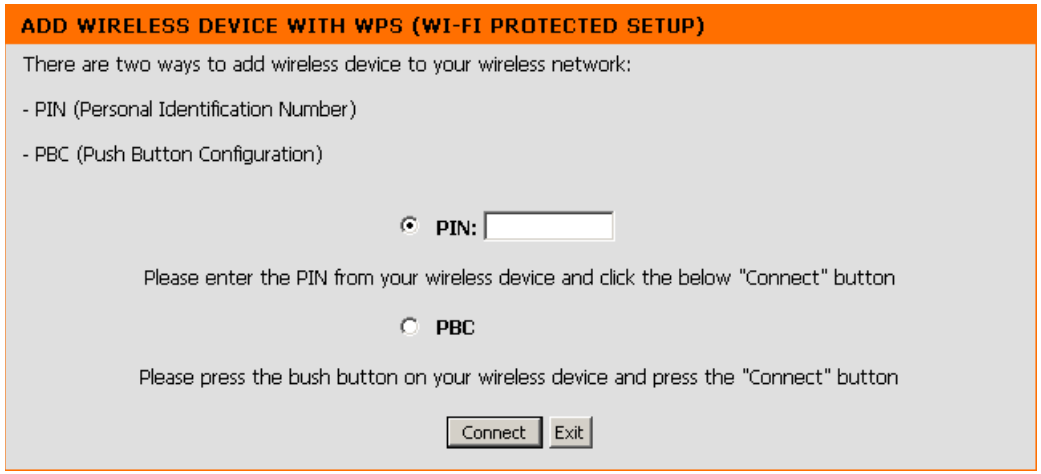
This Wizard is designed to assist you in your wireless network setup. It will guide you through step-by-step instructions on how to set up your wireless network and how to make it secure.

Select **PIN** to use your **PIN** number from your wireless device to connect to your network.

For **PBC** configuration, skip to the next page.

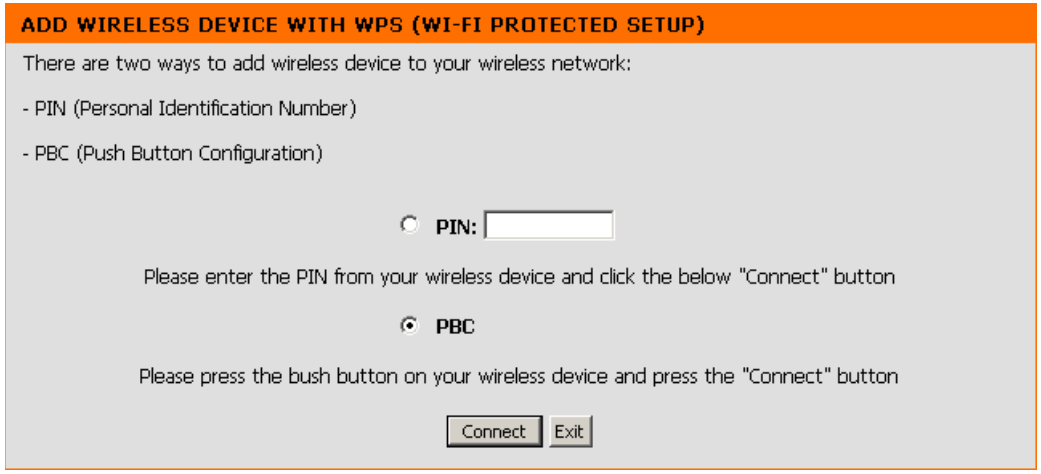
Click **Connect** to continue.

Start **WPS** on the wireless device you are adding to you wireless network to complete the setup.

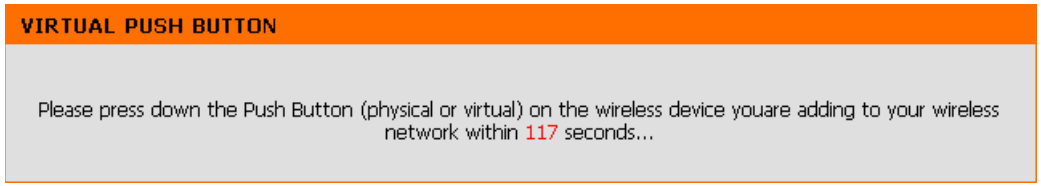


Select **PBC** to use the Push Button Configuration in order to connect to your network.

Click **Connect** to continue.



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



Manual Configuration
Wireless Settings

You may manually configure your DAP-1360 instead of running the setup wizard.

- Access Point mode - page 41
- Repeater mode - page 43
- Wireless Client mode - page 44
- Bridge mode - page 45
- Bridge with AP mode - page 46
- WISP Client Router mode - page 47
- WISP Repeater mode - page 47

Access Point Mode

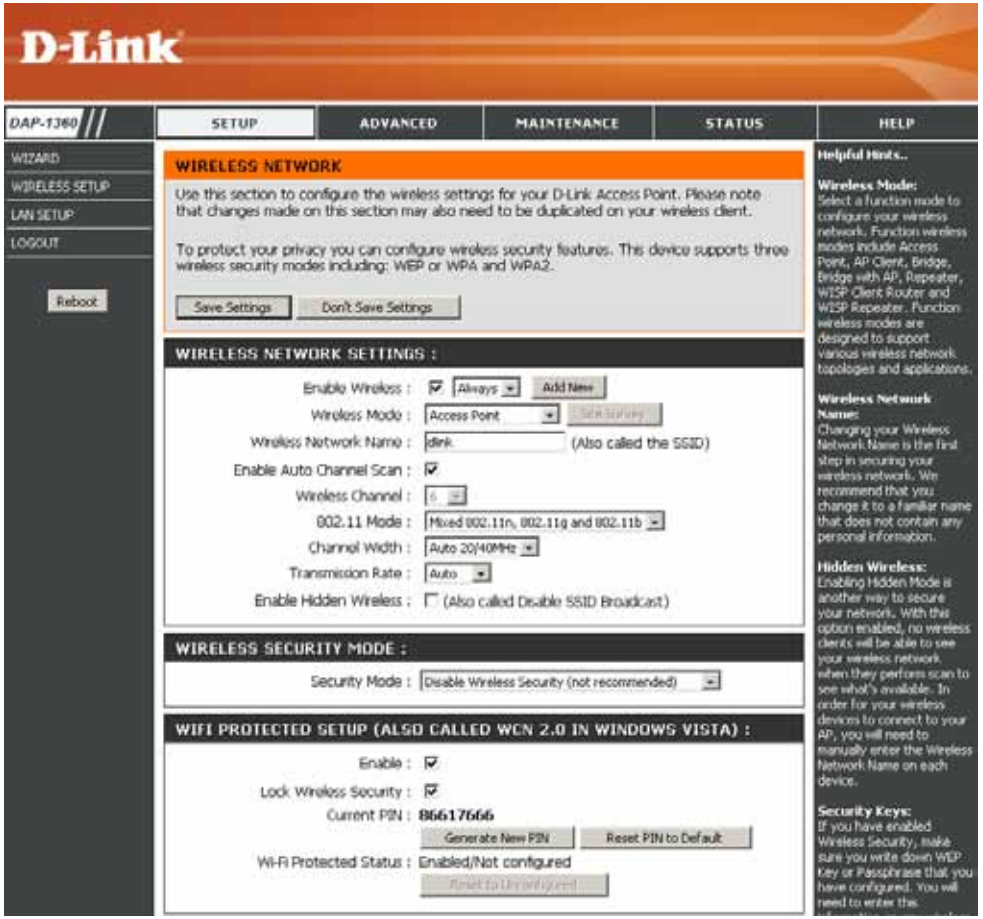
Enable Wireless: Check the box to enable the wireless function. If you do not want to use wireless, uncheck the box to disable all the wireless functions. You may also set up a specific time range (schedule). Select a schedule from the drop-down menu or click **Add New** to create a new schedule.

Wireless Mode: Select **Access Point** from the drop-down menu.

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

Enable Auto Channel Scan: The **Auto Channel Scan** setting can be selected to allow the DAP-1360 to choose the channel with the least amount of interference.

Wireless Channel: Indicates the channel setting for the DAP-1360. The Channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network. If you enable Auto Channel Scan, this option will be grayed out.



802.11 Mode: Select one of the following:

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

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

Transmission Rate: Select the transmit rate. It is strongly suggested to select **Best (automatic)** for best performance.

Enable Hidden Wireless: Check the box if you do not want the SSID of your wireless network to be broadcasted by the DAP-1360. If checked, the SSID of the DAP-1360 will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your DAP-1360 in order to connect to it.

Security Mode: Refer to page 73 for more information regarding the wireless security.

Enable: Enable the Wi-Fi Protected Setup feature.

Lock Wireless Security Settings: Locking the wireless security settings prevents the settings from being changed by any new external user using its PIN. Devices can still be added to the wireless network using Wi-Fi Protected Setup. It is still possible to change wireless network settings with Manual Wireless Network Setup, Wireless Network Setup Wizard, or an existing external WLAN Manager user.

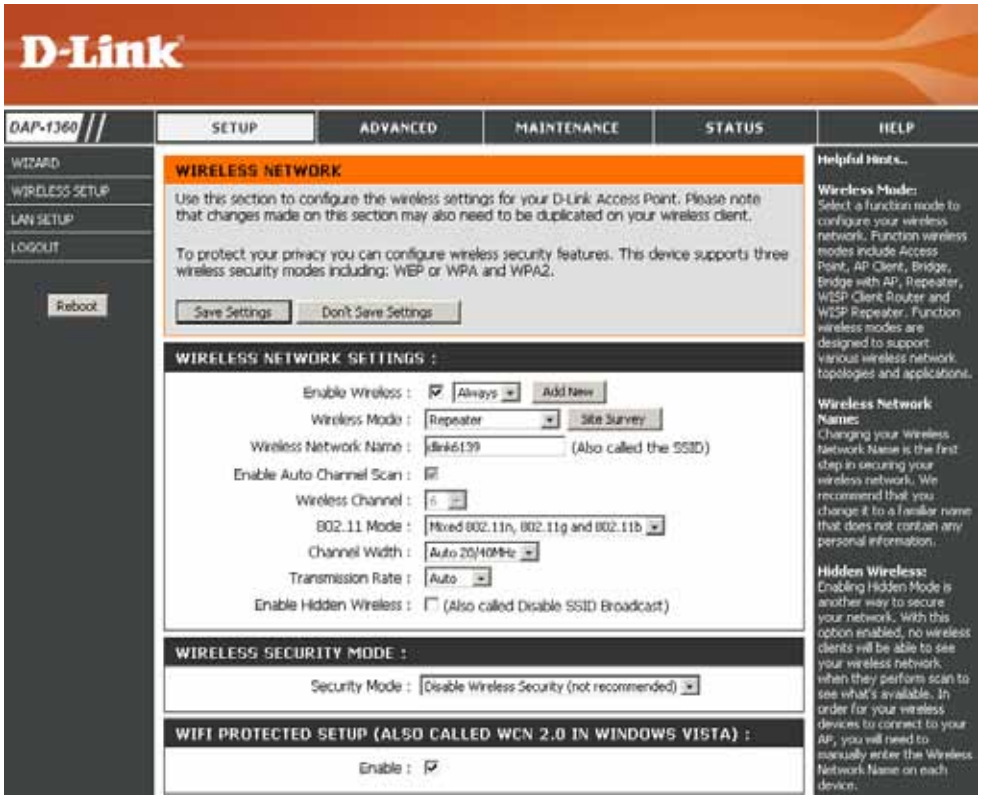
Current PIN: Shows the current value of the access point's PIN.

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

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

Reset to Unconfigured: Resets Wi-Fi Protected Status to Not Configured. The Vista WPS icon will only be displayed when the Wi-Fi Protected Status is Not Configured.

Repeater Mode



Enable Wireless: Check the box to enable the wireless function. If you do not want to use wireless, uncheck the box to disable all the wireless functions. You may also set up a specific time range (schedule). Select a schedule from the drop-down menu or click **Add New** to create a new schedule.

Wireless Mode: Select **Repeater** from the drop-down menu.

Site Survey: Click **Site Survey** to display a list of wireless networks in your area. You may select the wireless access point to connect to.

Wireless Network Name: Enter the SSID of the access point you want to repeat the signal of. If you do not know for sure, click **Site Survey** and select it from the list, if available.

Wireless Channel: The channel will automatically change to the channel of the AP you are connected to.

802.11 Mode: Select the appropriate 802.11 mode based on the wireless clients in your network. The drop-down menu options are **802.11g Only**, **Mixed 802.11b/g**, **802.11b Only**, **802.11n Only**, or **Mixed 802.11b/g/n**.

Channel Width: Select the appropriate channel width between **20MHz** or **Auto 20/40MHz** from the drop-down menu.

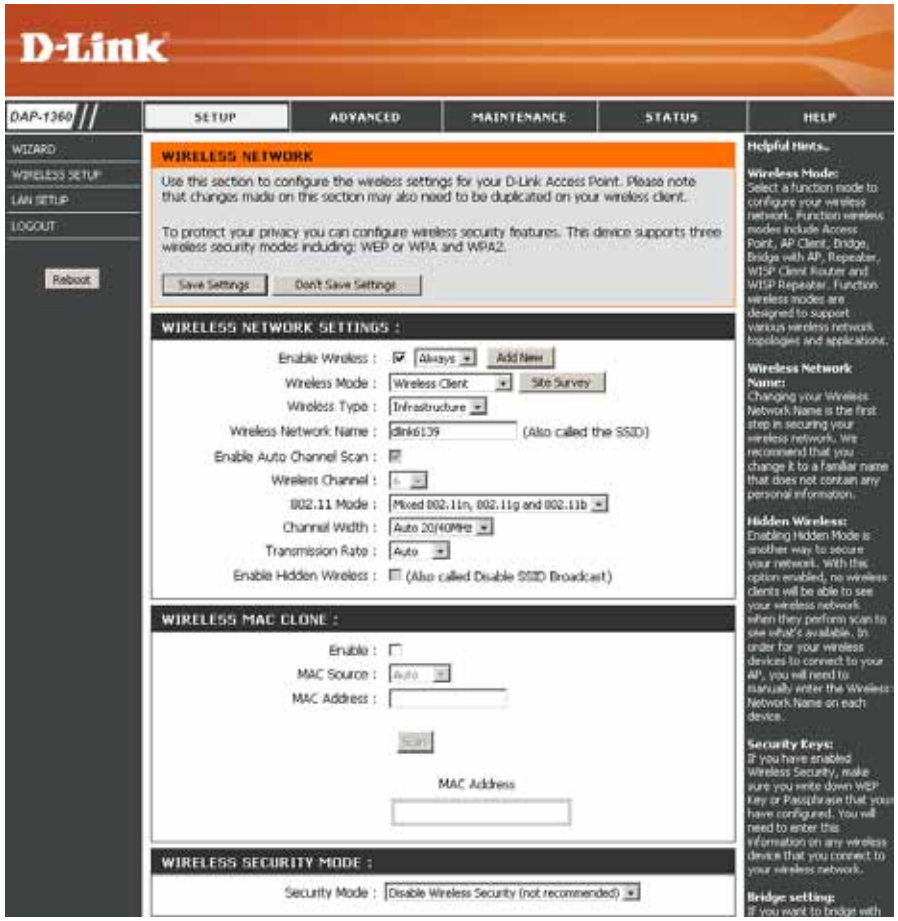
Transmission Rate: Select the transmission rate. It is strongly suggested to use the Auto setting for optimal performance.

Enable Hidden Wireless: Check the box if you do not want the SSID to be broadcast by the DAP-1360. This prevents the SSID from being seen by site survey utilities, so any wireless clients will have to be pre-configured with the SSID of the DAP-1360 in order to connect to it.

Wireless Security Mode: Select a wireless security setting. Options are **None**, **WEP**, **WPA**, or **WPA2**. See the Wireless Security section in this manual for a detailed explanation of the wireless security options.

WPS: Select enable if you want to configure the DAP-1360 with Wi-Fi Protection setup.

Wireless Client Mode



Enable Wireless: Check the box to enable the wireless function. If you do not want to use wireless, uncheck the box to disable all the wireless functions. You may also set up a specific time range (schedule). Select a schedule from the drop-down menu or click **Add New** to create a new schedule.

Wireless Mode: Select **Wireless Client Mode** from the drop-down menu.

Site Survey: Click **Site Survey** to display a list of wireless networks in your area. You may select the wireless access point to connect to.

Wireless Type: Select **Infrastructure** if connecting to an access point or wireless router, or select **Ad-Hoc** if connecting to another wireless client.

Wireless Network Name: Enter the SSID of the access point you want to repeat the signal of. If you do not know for sure, click **Site Survey** and select it from the list, if available.

Wireless Channel: The channel will automatically change to the channel of the AP you are connected to.

802.11 Mode: Select the appropriate 802.11 mode based on the wireless clients in your network. The drop-down menu options are **802.11g Only**, **Mixed 802.11b/g**, **802.11b Only**, **802.11n Only**, or **Mixed 802.11b/g/n**.

Channel Width: Select the appropriate channel width between **20MHz** or **Auto 20/40MHz** from the drop-down menu.

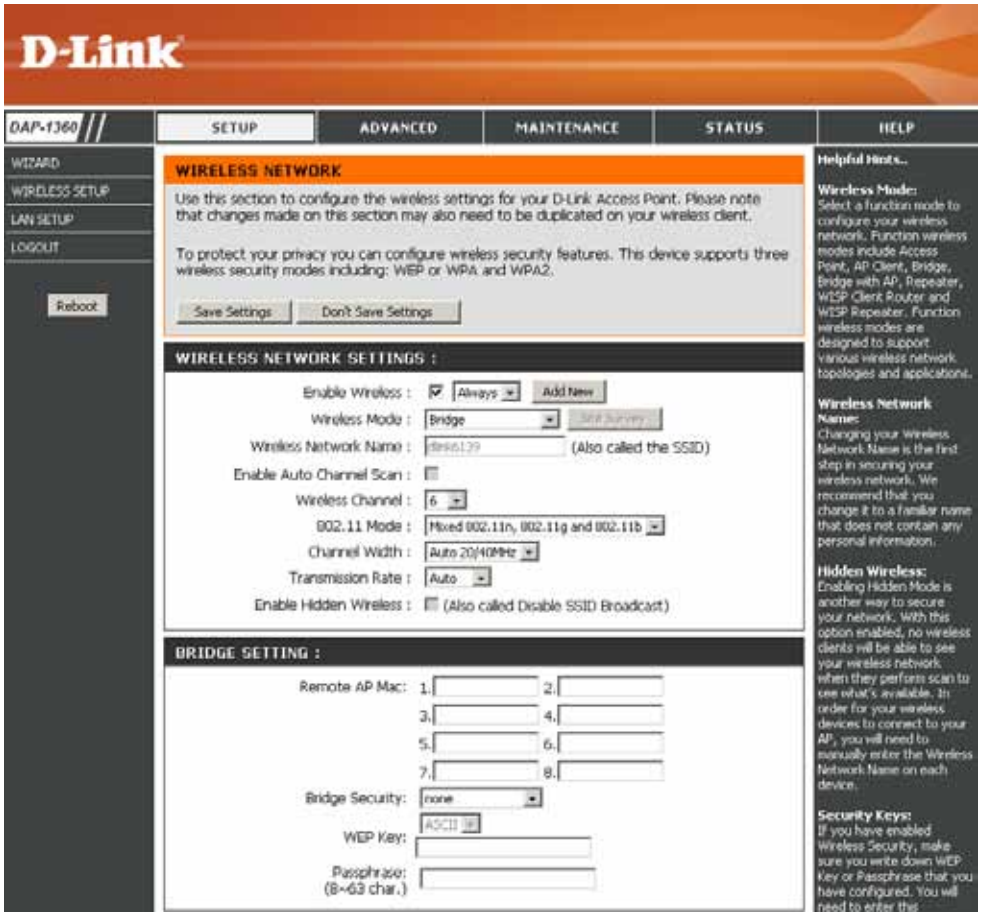
Transmission Rate: Select the transmission rate. It is strongly suggested to use the Auto setting for optimal performance.

Wireless MAC Clone: You can clone the wireless MAC address to connect the device.

Wireless Security Mode: Select a wireless security setting. Options are **None**, **WEP**, **WPA**, or **WPA2**. See the Wireless Security section in this manual for a detailed explanation of the wireless security options.

WPS: Select enable if you want to configure the DAP-1360 with Wi-Fi Protection setup.

Bridge Mode



Enable Wireless: Select this to turn the Wi-Fi module on and off. Use the drop-down box to select if you want to use a schedule. Click **Add New** to add or change a schedule.

Wireless Network Name: The Wireless Network Name is a unique name that identifies a network. All devices on a network must share the same wireless network name in order to communicate on the network. If you decide to change the wireless network name from the default setting, enter your new wireless network name in this field.

Wireless Channel: All devices on the network must share the same channel.

802.11 Mode: Select the appropriate 802.11 mode based on the wireless clients in your network. The drop-down menu options are **802.11g Only**, **Mixed 802.11b/g**, **802.11b Only**, **802.11n Only**, or **Mixed 802.11b/g/n**.

Channel Width: Select the appropriate channel width between **20MHz** or **Auto 20/40MHz** from the drop-down menu.

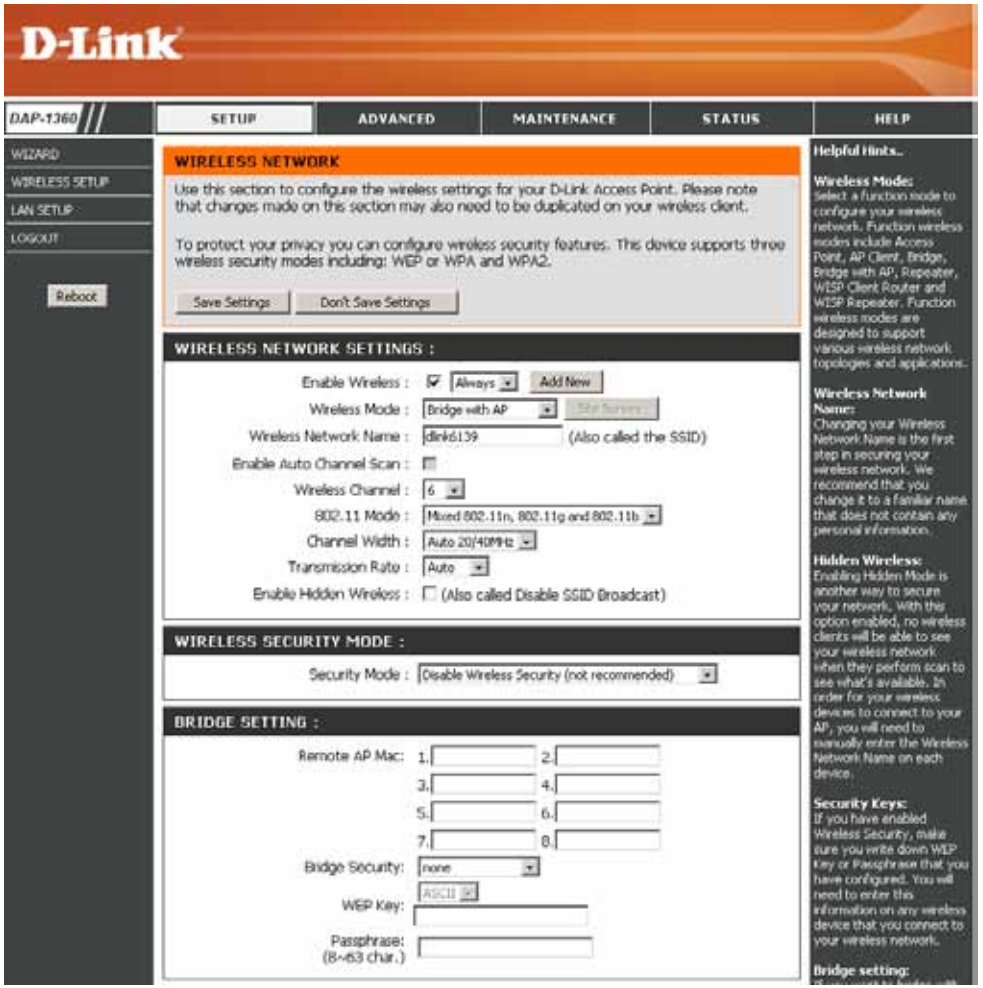
Transmission Rate: Select the transmission rate. It is strongly suggested to use the Auto setting for optimal performance.

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

Bridge Security: Select None to disable encryption to across the network. Select WEP 64-bit or WEP 128-bit to limit communication to only those devices that share the same WEP settings. Select **WPA-PSK** or **WPA2-PSK** to secure your network using a password and dynamic key changes (No RADIUS server required).

Note: *The Bridge mode is not completely specified in the Wi-Fi or IEEE standards. This mode can work with other DAP-1360 units. Communication with other APs (even other D-Link APs) is not guaranteed.*

Bridge with AP Mode



Enable Wireless: Select this to turn the Wi-Fi module on and off. Use the drop-down box to select if you want to use a schedule. Click **Add New** to add or change a schedule.

Wireless Network Name: The Wireless Network Name is a unique name that identifies a network. All devices on a network must share the same wireless network name in order to communicate on the network. If you decide to change the wireless network name from the default setting, enter your new wireless network name in this field.

Wireless Channel: All devices on the network must share the same channel.

802.11 Mode: Select the appropriate 802.11 mode based on the wireless clients in your network. The drop-down menu options are **802.11g Only**, **Mixed 802.11b/g**, **802.11b Only**, **802.11n Only**, or **Mixed 802.11b/g/n**.

Channel Width: Select the appropriate channel width between **20MHz** or **Auto 20/40MHz** from the drop-down menu.

Transmission Rate: Select the transmission rate. It is strongly suggested to use the **Auto** setting for optimal performance.

Enable Hidden Wireless: Check the box if you do not want the SSID to be broadcast by the DAP-1360. This prevents the SSID from being seen by site survey utilities, so any wireless clients will have to be pre-configured with the SSID of the DAP-1360 in order to connect to it.

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

Bridge Security: Select None to disable encryption to across the network. Select WEP 64-bits or WEP 128-bits to limit communication to only those devices that share the same WEP settings. Select **WPA-PSK** or **WPA2-PSK** to secure your network using a password and dynamic key changes (No RADIUS server required).

Note: *The Bridge mode is not completely specified in the Wi-Fi or IEEE standards. This mode can work with other DAP-1360 units. Communication with other APs (even other D-Link APs) is not guaranteed.*

WISP Client Router/WISP Repeater Modes

Enable Wireless: Select this to turn the Wi-Fi module on and off. Use the drop-down box to select if you want to use a schedule. Click **Add New** to add or change a schedule.

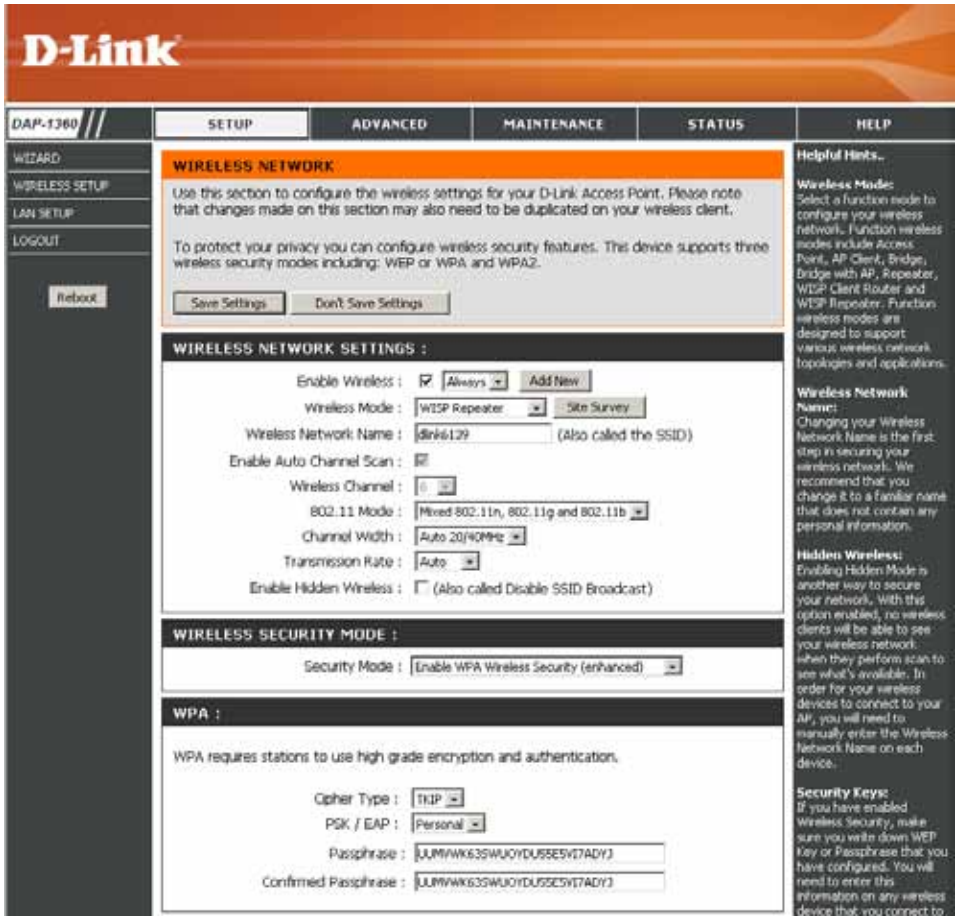
Site Survey: Click this button to choose the root AP from an available connection list. If the root AP has wireless encryption, you have to use the same wireless security mode to connect the root AP.

Wireless Network Name: You can input the wireless network name of the root AP or click the **Site Survey** button to find the root AP.

Wireless Channel: The channel used will be displayed. The channel will follow the root AP.

802.11 Mode: Select the appropriate 802.11 mode based on the wireless clients in your network. The drop-down menu options are **802.11g Only**, **Mixed 802.11b/g**, **802.11b Only**, **802.11n Only**, or **Mixed 802.11b/g/n**.

Channel Width: Select the appropriate channel width between **20MHz** or **Auto 20/40MHz** from the drop-down menu.



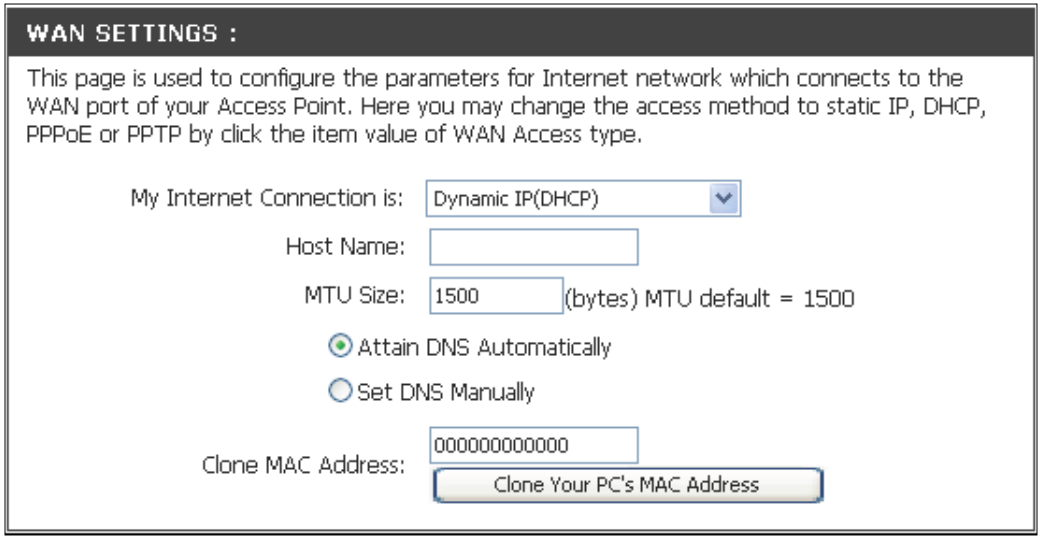
Transmission Rate: Select the transmission rate. It is strongly suggested to use the Auto setting for optimal performance.

Enable Hidden Wireless: This option is unavailable in WISP Client Router and available in the WISP Repeater mode.

Wireless Security Mode: Select a wireless security setting. Options are None, WEP, WPA, or WPA2. Refer to the **Wireless Security** section of this manual for a detailed explanation of the wireless security options.

WAN Settings
Dynamic IP (DHCP)

WAN settings are only used in the WISP Client Router wireless mode and the WISP Repeater wireless mode. Choose Dynamic IP(DHCP) to obtain IP Address information automatically from your ISP. Select this option if your ISP does not give you any IP number to use. This option is commonly used for Cable modem services.



Host Name: The Host Name is optional but may be required by some ISPs.

MTU Size: You may need to change the MTU (Maximum Transmission Unit) for optimal performance with your specific ISP. The default MTU size is 1500.

Attain DNS Automatically: Select this option if you want the DAP-1360 to get the DNS (Domain Name System) server IP address automatically.

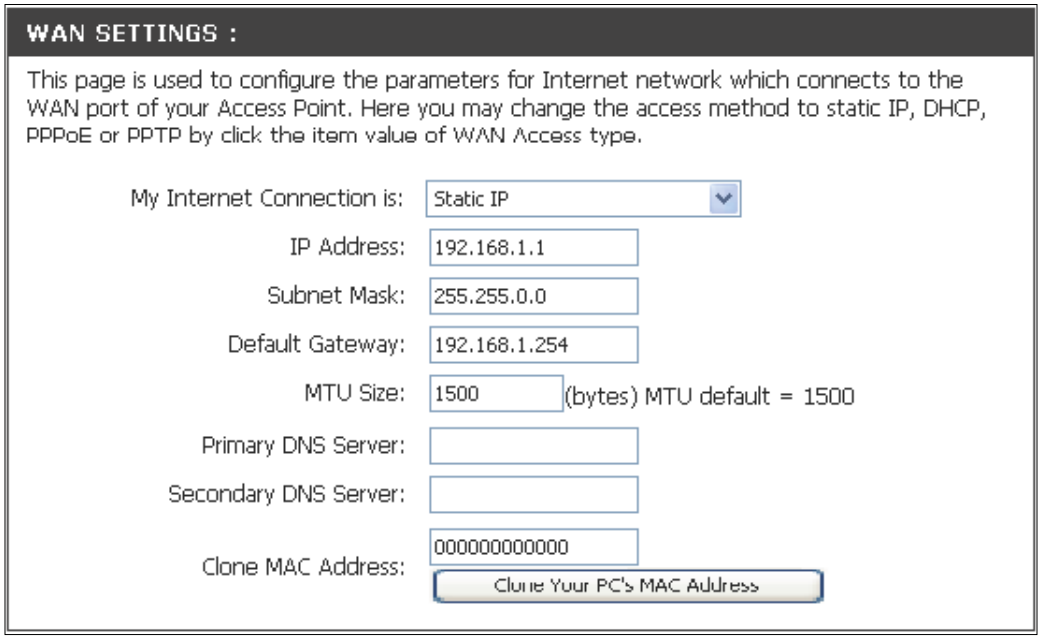
Set DNS manually: Select this option if you want to manually enter the DNS Server IP address(es). The fields to enter the Primary and Secondary DNS server IP addresses will appear after you have selected this option.

DNS Server: Enter the Primary and Secondary DNS server IP address assigned by your ISP.

Clone MAC Address: The default MAC address is set to the Ethernet MAC address your DAP-1360. You can click the Clone Your PC's MAC Address button to replace the AP's MAC address with the MAC address of the PC that you used to register with your ISP. It is not recommended that you change the default MAC address unless required by your ISP.

Static IP

Select Static IP if all WAN IP information is provided to you by your ISP. You will need to enter in the IP address, subnet mask, gateway address, and DNS address(es) provided to you by your ISP.



IP Address: 192.168.1.1 is the default WAN IP Address of the DAP-1360.

Subnet Mask: 255.255.255.0 is the default subnet mask. All devices on the network must have the same subnet mask to communicate on the network.

Default Gateway: Enter the IP Address of the gateway in your network.

MTU Size: You may need to change the MTU (Maximum Transmission Unit) for optimal performance with your specific ISP. The default MTU size is 1500.

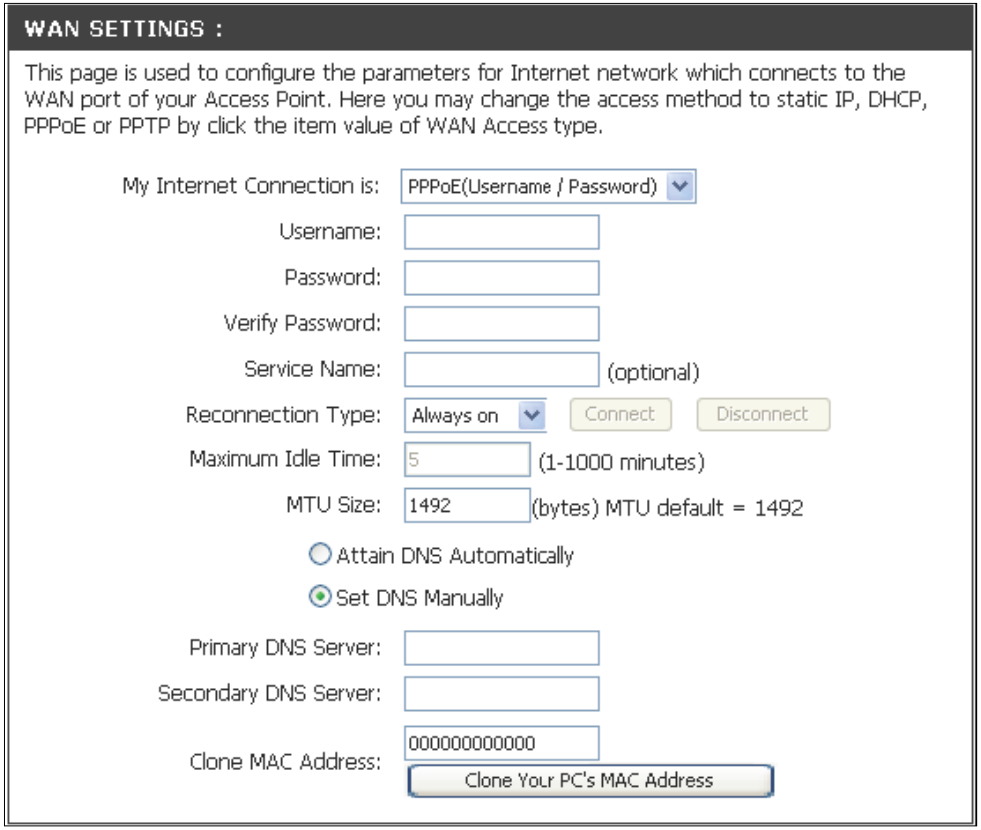
Primary DNS Server: Enter the Primary DNS (Domain Name System) server IP address assigned by your ISP.

Secondary DNS Server: Enter the Secondary DNS (optional) server IP address assigned by your ISP.

Clone MAC Address: The default MAC address is set to the MAC address on the AP (Access Point). You can click the Clone Your PC's MAC Address button to replace the AP's MAC address with the MAC address of your Ethernet card. It is not recommended that you change the default MAC address unless required by your ISP.

PPPoE

Select PPPoE (Point-to-Point Protocol over Ethernet) if your ISP uses a PPPoE connection. Your ISP will provide you with a username and password. This option is typically used for DSL services. Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through the DAP-1360.



Username: Enter your PPPoE user name.

Password: Enter your PPPoE password and then retype the password in the next box.

Service Name: Enter the ISP Service Name (optional).

Reconnection Type: Select **Always on**, **On demand**, or **Manual**.

Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity.

MTU Size: You may need to change the MTU (Maximum Transmission Unit) for optimal performance with your specific ISP. The default MTU size is 1492.

Attain DNS Automatically: Select this option if you want the DAP-1360 to get the DNS (Domain Name System) server IP address automatically.

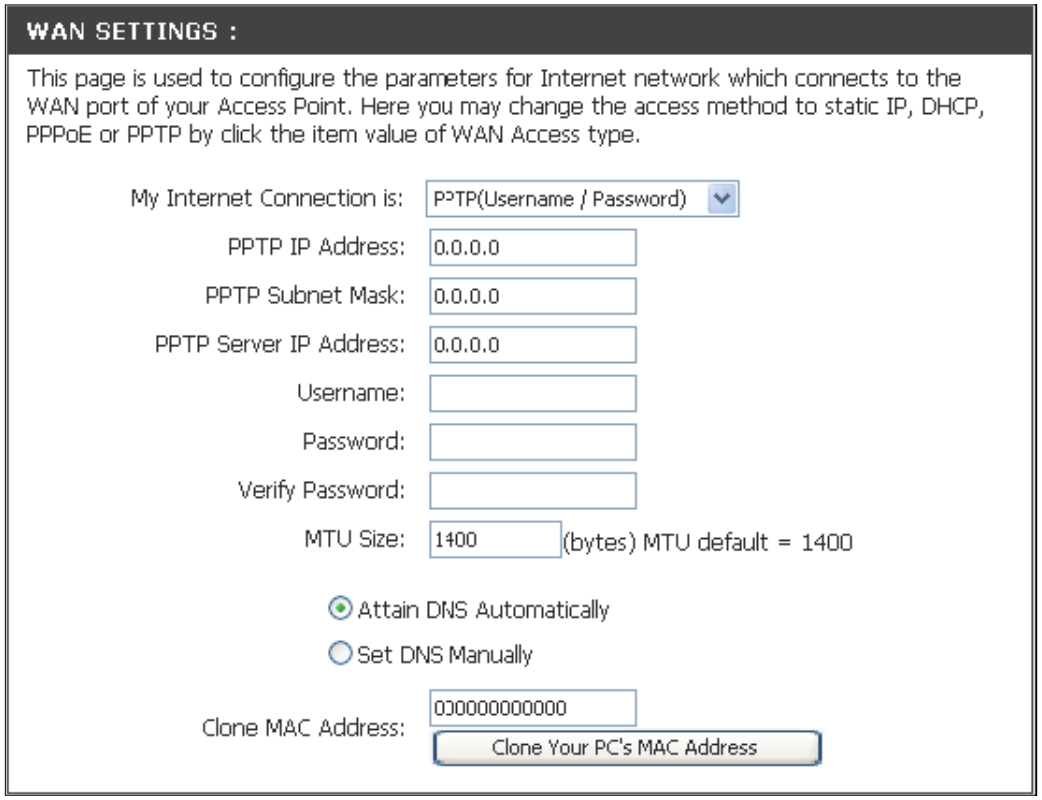
Set DNS Manually: Select this option if you want to manually enter the DNS Server IP address(es). Fields to enter the Primary and Secondary DNS server IP addresses will appear after you select this option.

DNS Servers: Enter the Primary and Secondary DNS server IP address assigned by your ISP.

Clone MAC Address: The default MAC address is set to the MAC address on the AP (Access Point). You can click the **Clone Your PC's MAC Address** button to replace the AP's MAC address with the MAC address of your Ethernet card. It is not recommended that you change the default MAC address unless required by your ISP.

PPTP

Choose PPTP (Point-to-Point Tunneling Protocol) if your ISP uses a PPTP connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.



PPTP IP Address: Enter the IP address (Static PPTP only).

PPTP Subnet Mask: Enter the subnet mask.

PPTP Server IP Address: Enter the Server IP Address provided by your ISP.

Username: Enter your PPTP username.

Password: Enter your PPTP password and then retype the password in the next box.

MTU Size: You may need to change the MTU (Maximum Transmission Unit) for optimal performance with your specific ISP. The default MTU size is 1400.

Attain DNS Automarically: Select this option if you want the DAP-1360 get DNS server IP address automatically.

Set DNS Automatically: Select this option if you want to manually enter the DNS Server IP address(es). Fields to enter the Primary and Secondary DNS server IP addresses will appear after you select this option.

DNS Servers: Enter the Primary and Secondary DNS (Domain Name System) server IP address assigned by your ISP.

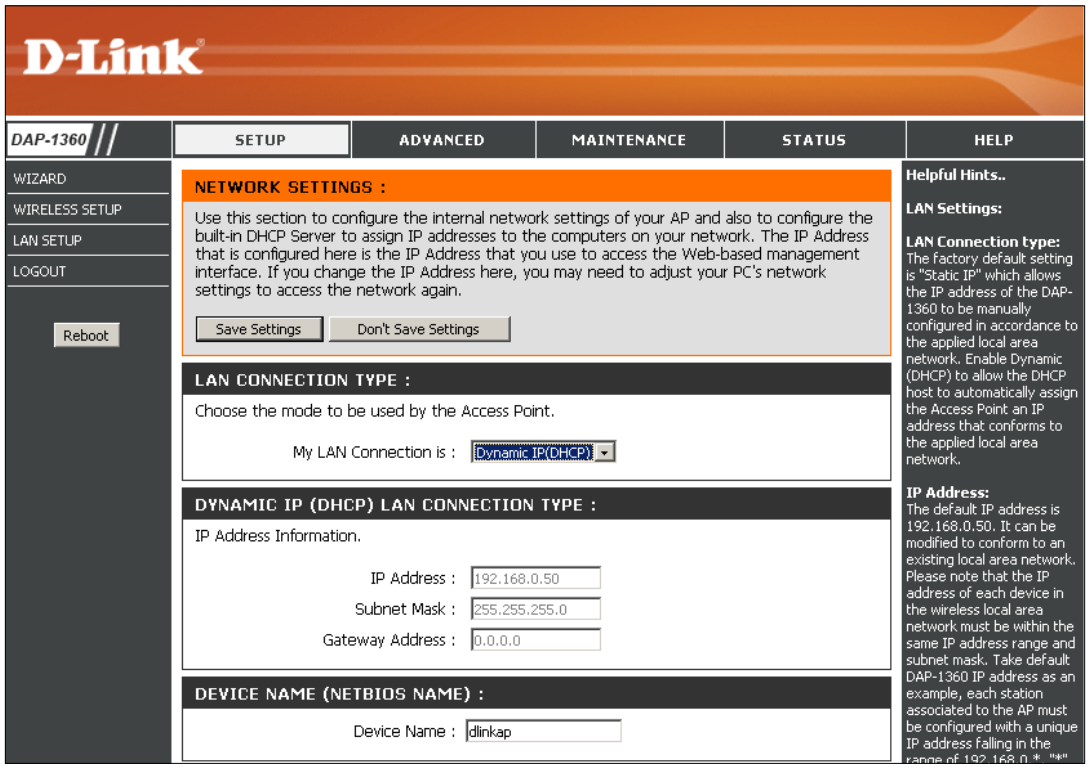
Clone MAC Address: The default MAC address is set to the MAC address on the AP (Access Point). You can click the **Clone Your PC's MAC Address** button to replace the AP's MAC address with the MAC address of your Ethernet card. It is not recommended that you change the default MAC address unless required by your ISP.

LAN Settings

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

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

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



Static IP

Select Static IP Address if all the Internet port's IP information is provided to you by your ISP. You will need to enter in the IP address, subnet mask, gateway address, and DNS address(es) provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four octets separated by a dot (x.x.x.x). The Access point will not accept the IP address if it is not in this format.

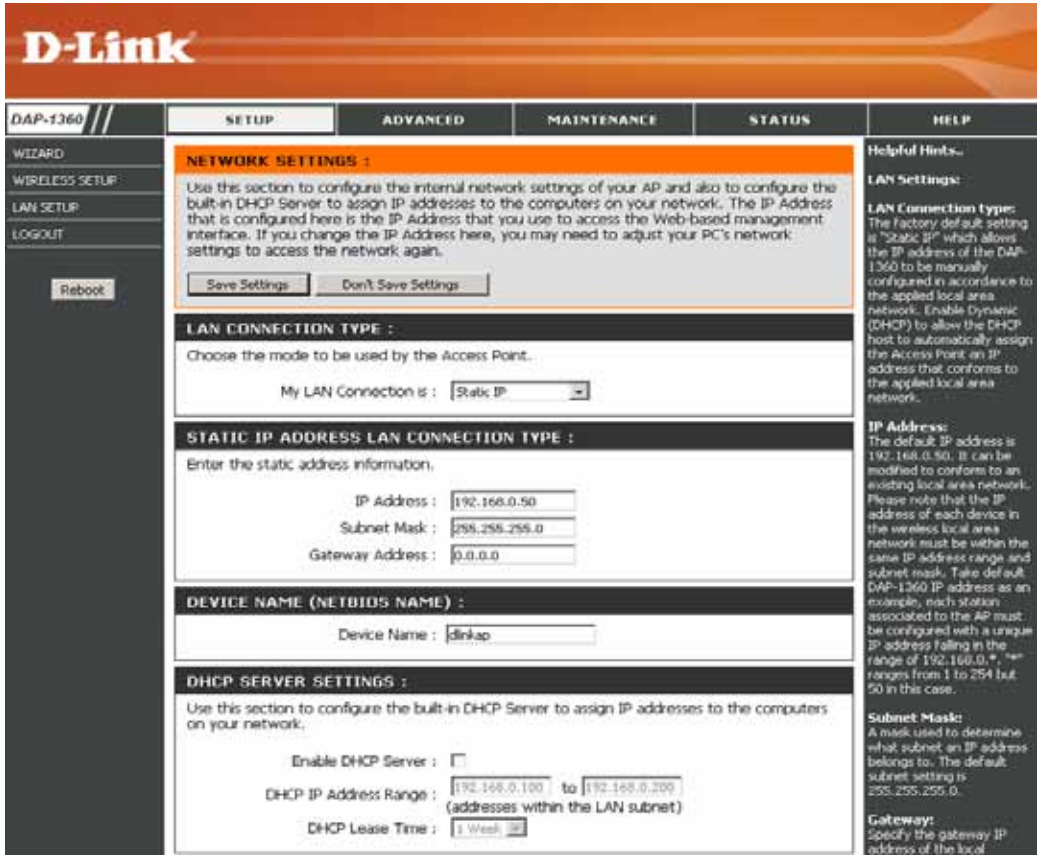
LAN Connection Type: Select Static IP from the drop-down menu.

Access Point IP Address: Enter the IP address of the access point. The default IP address is 192.168.0.50. If you change the IP address, once you click **Apply**, you will need to enter the new IP address in your browser to get back into the configuration utility.

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

Default Gateway: Enter the Gateway assigned by your ISP.

Device Name: Enter the Device Name of the AP. It is recommended to change the Device Name if there is more than one D-Link device within the subnet. You can enter the device name of the AP into your web browser to access the instead of IP address for configuration. If you are using the device name to connect, ensure that your PC and your DAP-1360 are on the same network.



Enable DHCP Server: Select this to enable the DHCP server if static IP address is selected.

DHCP IP Address Range Lease Time: Enter the starting and ending IP addresses for the DHCP server's IP assignment. Enter the length of time for the IP address lease.

Advanced
Advanced Wireless

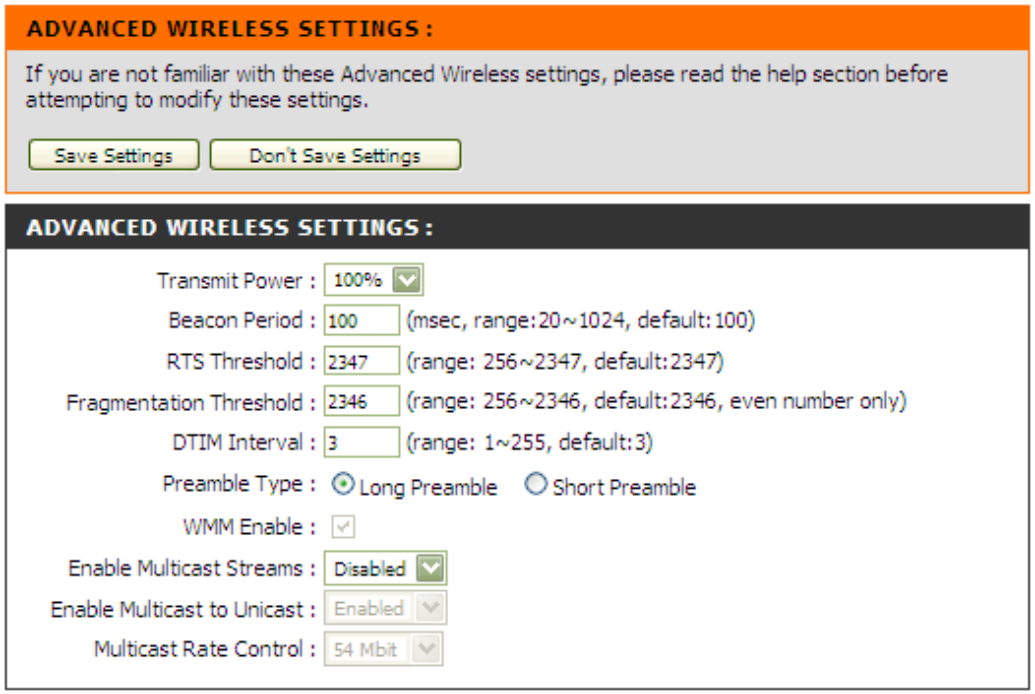
Transmit Power: Sets the transmit power of the antennas.

Beacon Period: Beacons are packets sent by an access point to synchronize a wireless network. Specify a value. 100 is the default setting and is recommended.

RTS Threshold: This value should remain at its default setting of 2346. If inconsistent data flow is a problem, only a minor modification should be made.

Fragmentation Threshold: 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.

DTIM Interval: (Delivery Traffic Indication Message) 1 is the default setting. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.



Preamble Type: Select Short or Long Preamble. The default setting in Long Preamble. The Preamble defines the length of the CRC block (Cyclic Redundancy Check) is a common technique for detecting data transmission errors) for communication between the access point and roaming wireless network adapters. High network traffic areas should use the short preamble type.

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

Enable Multicast Streams: Select Enable to allow multicast traffic to pass through the AP.

Enable Multicast to Unicast: Select Enable to convert multicast streams to unicast streams.

Multicast Rate Control: Configure the multicast data rate, the drop down manual options are 54Mbps, 48Mbps, 36Mbps, 24Mbps, 12Mbps, 9Mbps, 6Mbps, 11Mbps, 5.5Mbps, 2Mbps, 1Mbps and Auto.

Access Control

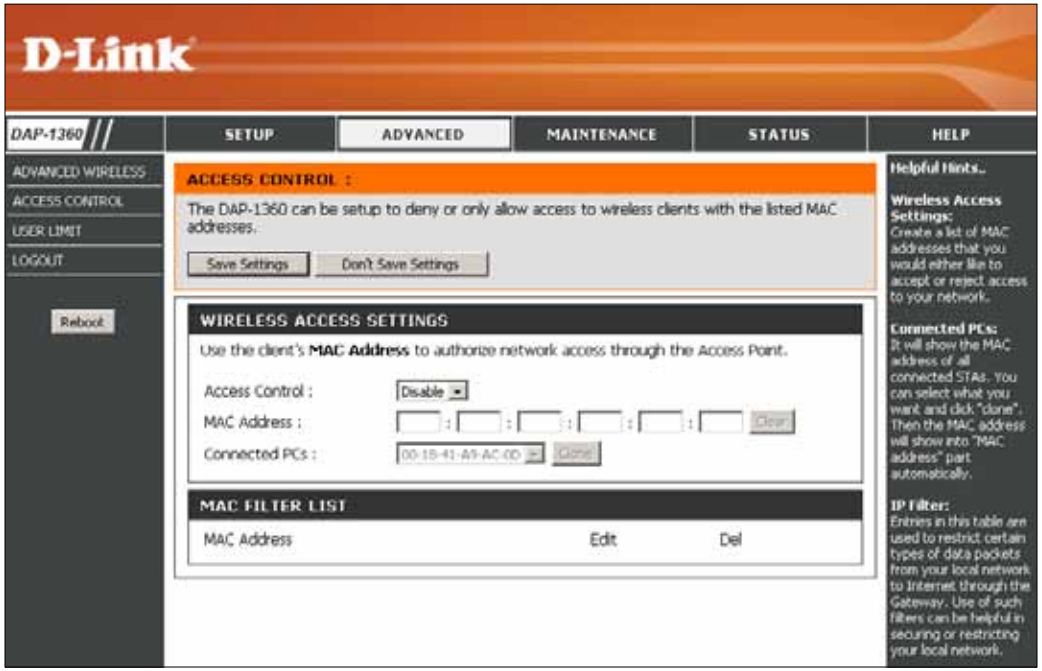
Access Control allows you to allow or deny wireless clients access to your wireless network.

Access Control: Use the drop-down menu to select either **Disable**, **Accept**, or **Reject**.

MAC Address: Enter the MAC address of the wireless client to accept or reject.

Connected PCs: You may select the client already connected to the access point from the drop-down menu. Select the MAC address and click the **Clone** button. Click **Save Settings**.

MAC Filter List: Lists the clients currently in your access control list.



User Limit

Enter the maximum number of wireless clients that can connect at one time to your access point.

Enable User Limit: Check the **Enable User Limit** box to enable this feature.

User Limit: Enter the maximum number of clients, between 1 and 32.

Save Settings: Click **Save Settings** to save and activate the new changes.

Port Forwarding (WISP modes only)

This function is available if your DAP-1360 is in the WISP Client Router or WISP Repeater mode. This feature allows you to open a single port or a range of ports. Click **Save Settings** and the port forwarding rule will be put into the Port Forwarding List.

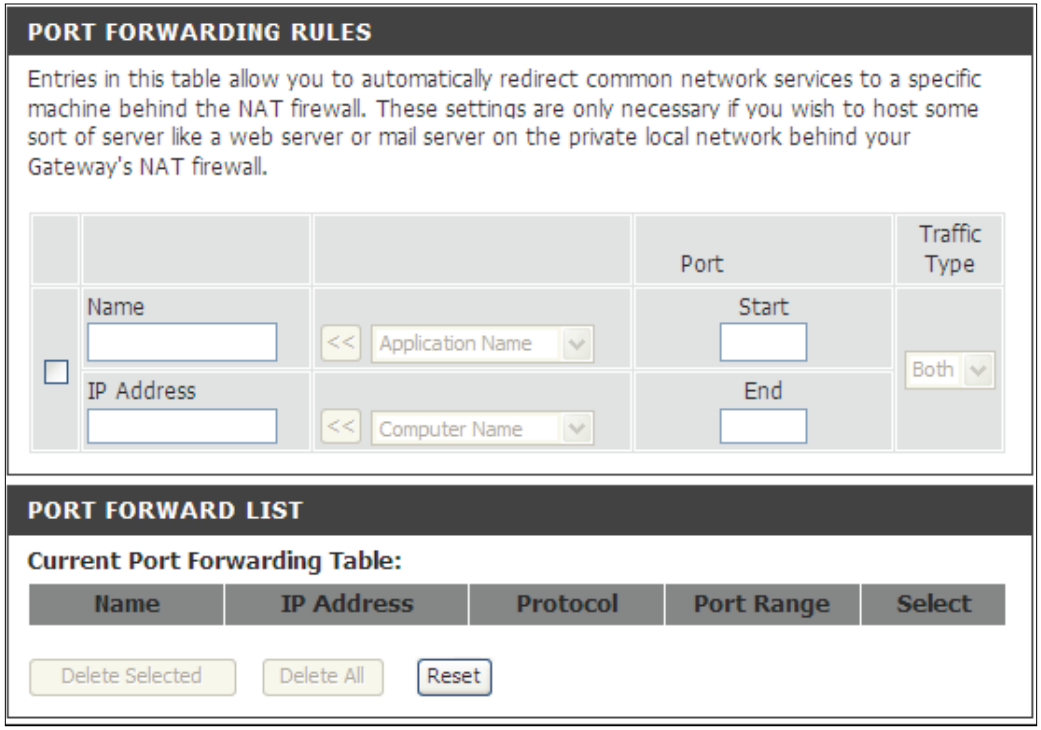
Port Forwarding Rules: Check the box to configure a port forwarding rule.

Name: Enter a name for the rule. You can select an application name from the Application Name drop-down menu. Click the **<<** button to fill in the Name field with the application name that you selected.

IP Address: Enter the IP address of the computer on your local network that you want to allow the incoming service to.

Start/End Ports: Enter the port or ports that you want to open. If you want to open one port, enter the same port in both boxes.

Traffic Type: Select **TCP**, **UDP**, or **Both**.



Port Filter (WISP modes only)

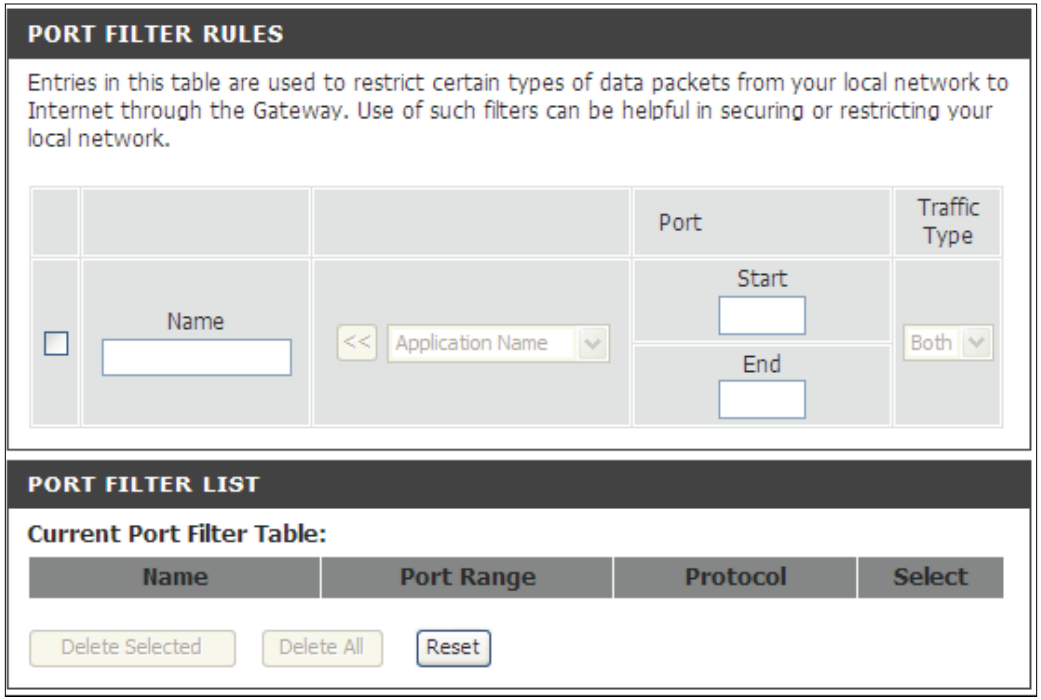
This function is available if your DAP-1360 is in the WISP Client Router or WISP Repeater mode. This feature is used to secure or restrict your local network. It will deny the ports that you enter from the local network to the Internet. Click **Save Settings** and the port filter rule will be put into the Port Filter List.

Port Filter Rules: Check the box to configure a port filter rule.

Name: Enter a name for the rule. You can select an application name from the Application Name drop-down menu. Click the **<<** button to fill in the Name field with the application name that you selected.

Start/End Ports: Enter the port or ports that you want to open. If you want to open one port, enter the same port in both boxes.

Traffic Type: Select **TCP**, **UDP**, or **Both**.

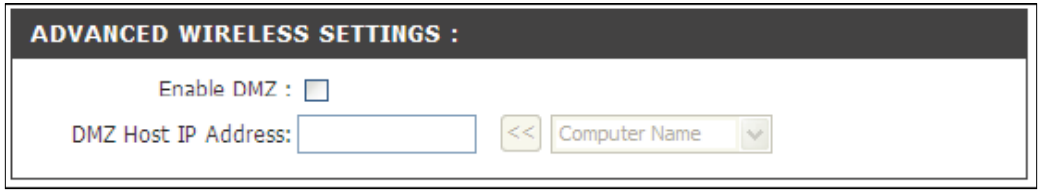


DMZ (WISP modes only)

This function is available only if the DAP-1360 is in the WISP Client Router or WISP Repeater mode. This feature allows you to set up a DMZ (Demilitarized Zone) host. If you have a client PC that cannot run Internet applications properly from behind the DAP-1360, then you can set the client up for unrestricted Internet access. The DMZ allows a computer to be exposed to the Internet. This feature is useful for gaming purposes. Enter the IP address of the computer that will be the DMZ host. Adding a client to the DMZ may expose your local network to a variety of security risks, so only use this option as a last resort.

Enable DMZ: Check this box to enable DMZ.

DMZ Host IP Address: Enter the IP address of the computer you would like to open all ports to. You can select a computer from the Computer Name drop-down menu and click **<<** to enter the computer name into the DMZ Host IP Address field.

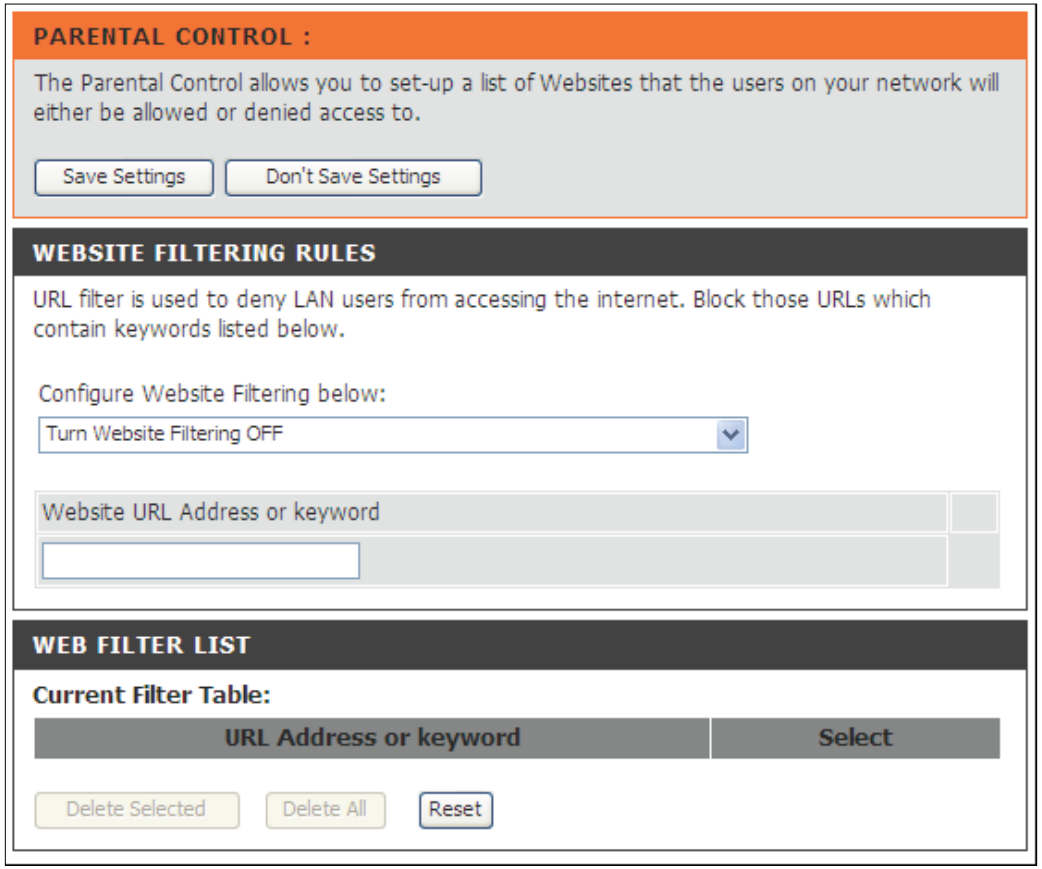


Parental Control (WISP modes only)

This function is available only if the DAP-1360 is in the WISP Client Router or WISP Repeater mode. This feature allows you to create a list of websites that you want to deny users access.

Configure Website Filtering Below: Select **Turn Website Filtering OFF** or **Turn Website Filtering ON and DENY computers access to ONLY these sites**.

Website URL Address: Enter a keyword or URL that you want to block and click **Save Settings**. Any URL that contains the keyword will be blocked.



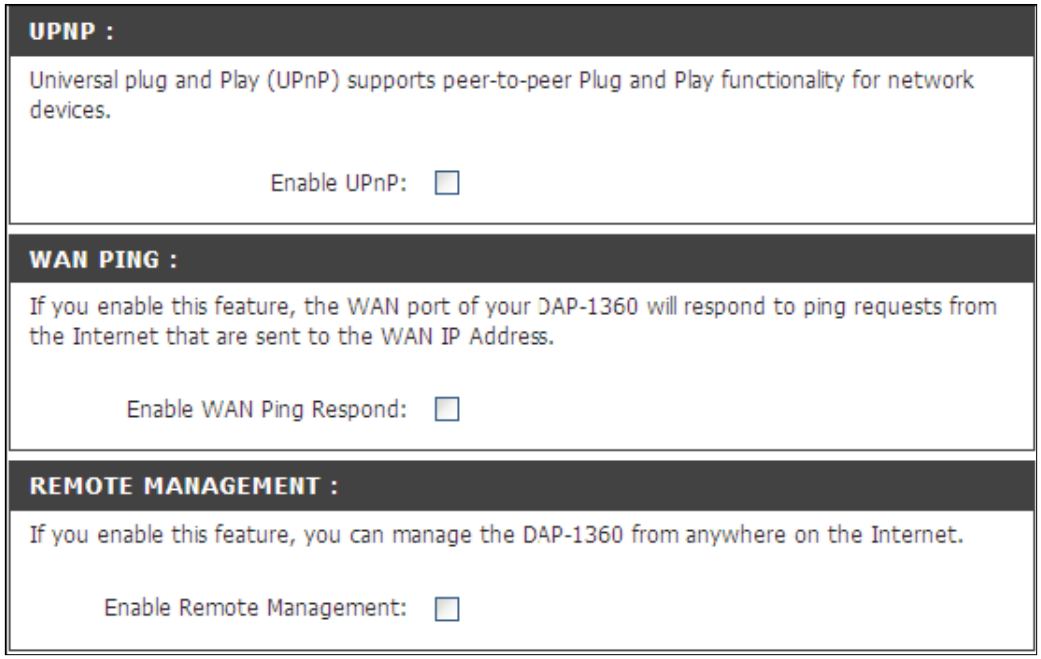
Advanced Network (WISP modes only)

This function is available if the DAP-1360 is in WISP Client Router or WISP Repeater mode. This feature allows you to change the LAN settings. Please be aware that any changes to the factory default settings may affect the behavior of your network.

Enable UPnP: Check this box to use the Universal Plug and Play (UPnP™) feature. UPnP provides compatibility with networking equipment, software and peripherals.

Enable WAN Ping Respond: Check this box to allow the WAN port of the DAP-1360 to be pinged. Unchecking the box will not allow the DAP-1360 to respond to pings. Blocking ping response may provide some extra security from intruders.

Remote Management: Remote management allows the DAP-1360 to be configured from the Internet by a web browser. A username and password are still required to access the Web-Management interface. In general, only a member of your network can browse the built-in web pages to perform Administrator tasks. This feature enables you to perform Administrator tasks from the remote (Internet) host.

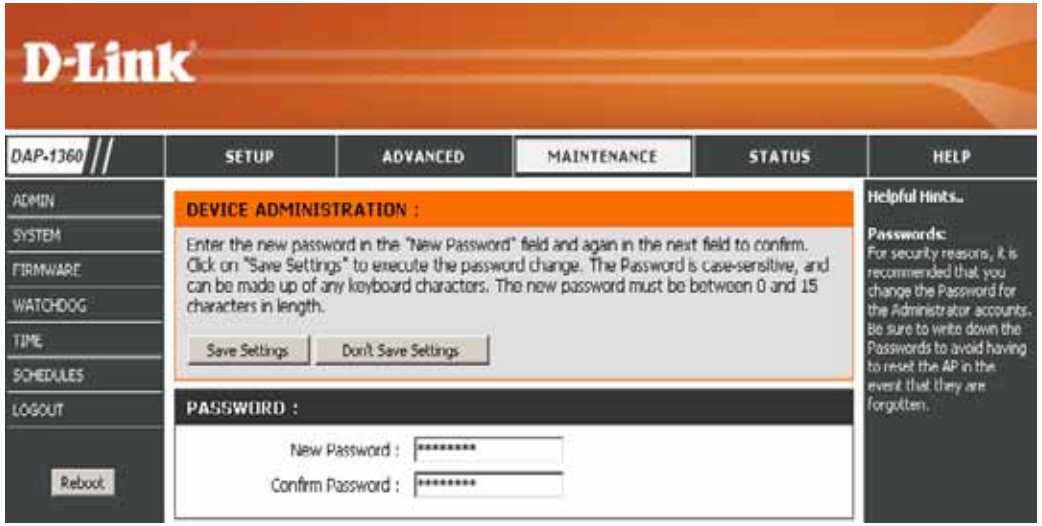


Maintenance
Admin

This page will allow you to change the Administrator password. The administrator password has read/write access.

Password: Enter a new password for the Administrator Login Name. The administrator can make changes to the settings.

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

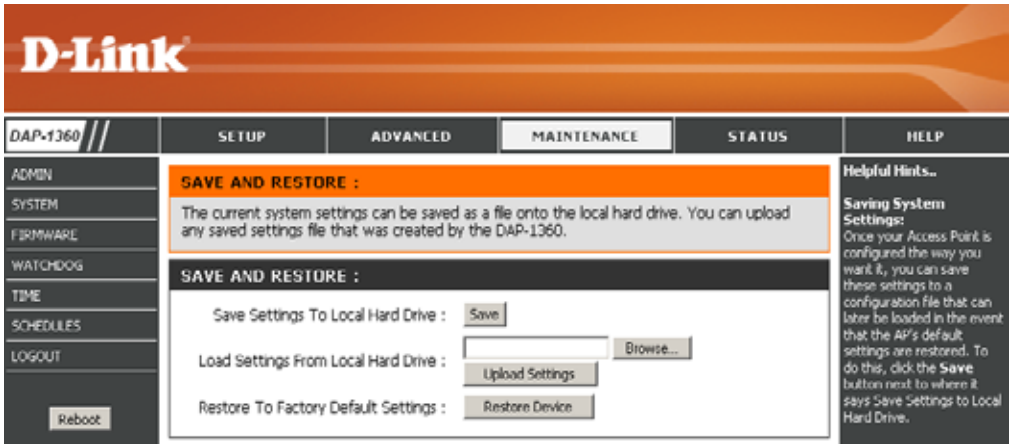


System

Save to Local Hard Drive: Use this option to save the current access point configuration settings to a file on the hard disk of the computer you are using. Click the **Save** button. You will then see a file dialog where you can select a location and file name for the settings.

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

Restore to Factory Default: This option will restore all configuration settings back to the settings that were in effect at the time the access point was shipped from the factory. Any settings that have not been saved will be lost, including any rules that you have created. If you want to save the current access point configuration settings, use the **Save** button above.

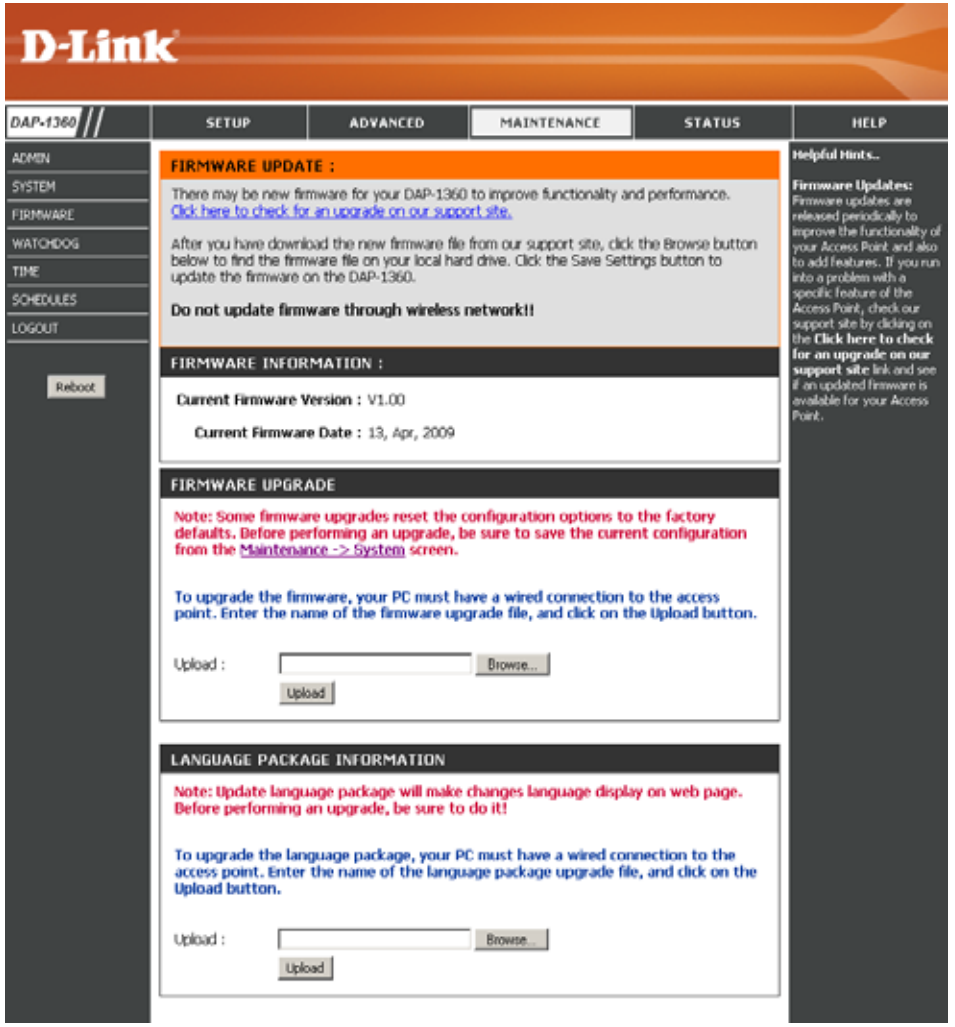


Firmware

You can upgrade the firmware of the access point here. Make sure the firmware you want to use is on the local hard drive of the computer. Click on **Browse** to locate the firmware file to be used for the update. Please check the D-Link support website for firmware updates at http://support.dlink.com. You can download firmware upgrades to your hard drive from this site.

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

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



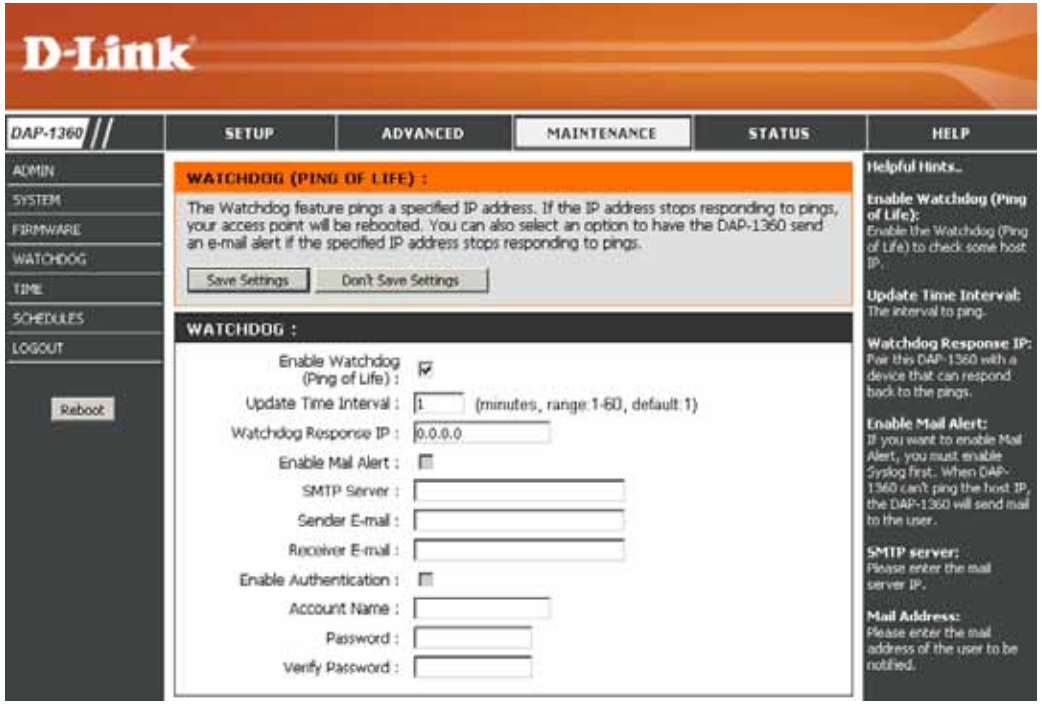
Language Pack

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

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

Watchdog

The Watchdog feature pings a specified IP address. If the IP address stops responding to pings, your AP will be rebooted. You can also select an option to have the DAP-1360 send an e-mail alert if the specified IP address stops responding to pings.



Enable Watchdog (Ping of Life): Check this box to enable the Watchdog (Ping of Life) to check some host IP.

Update Time Interval: Enter the time interval of how often you would like the Watchdog to ping the response IP address.

Watchdog Response IP: Enter the IP address that the Watchdog will ping.

Enable Mail Alert: Check this box to enable e-mail notification for the Watchdog.

SMTP Server: Enter the SMTP server IP address.

Sender E-Mail: Enter the e-mail address from which the notification will be sent.

Receiver E-Mail: Enter the e-mail address which the notification will be sent to.

Enable Authentication: Check the box to enable authentication that is used with the SMTP server.

Account Name: Enter your account name that is used with the SMTP server.

Password: Enter your password that is used with the SMTP server and re-enter it in the next box.

Time

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

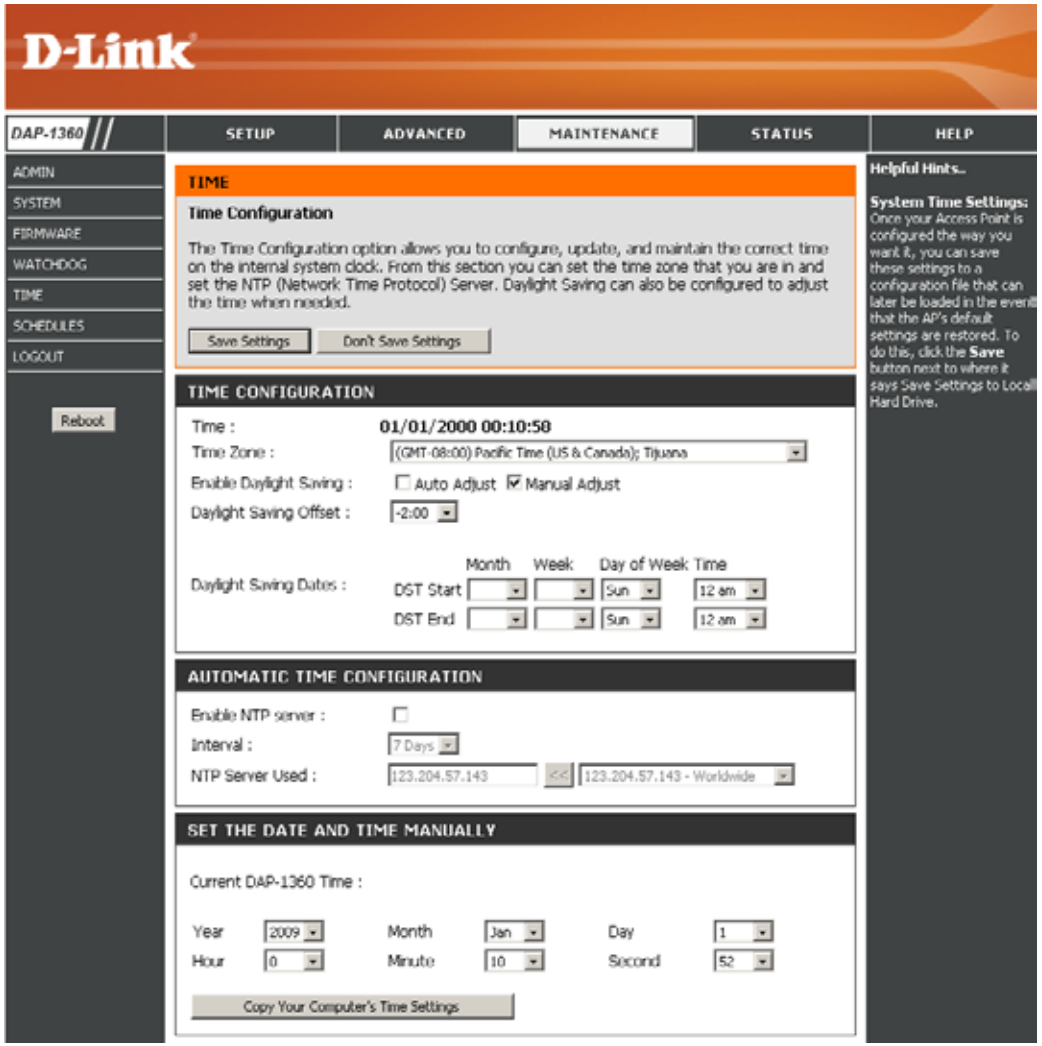
Time Zone: Select the Time Zone from the drop-down menu.

Daylight Saving: To select Daylight Saving time manually, click the **Enable Daylight Saving** check box. Next use the drop-down menu to select a Daylight Saving Offset and then enter a start date and an end date for daylight saving time.

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

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

Date and Time: To manually input the time, enter the values in these fields for the Year, Month, Day, Hour, Minute, and Second and then click **Save Settings**. You can also click the **Copy Your Computer's Time Settings** button at the bottom of the screen.



Schedules

Schedules can be created for use with enforcing rules. For example, if you want to restrict web access to Mon-Fri from 3pm to 8pm, you could create a schedule selecting Mon, Tue, Wed, Thu, and Fri and enter a Start Time of 3pm and End Time of 8pm.

Name: Enter a name for your new schedule.

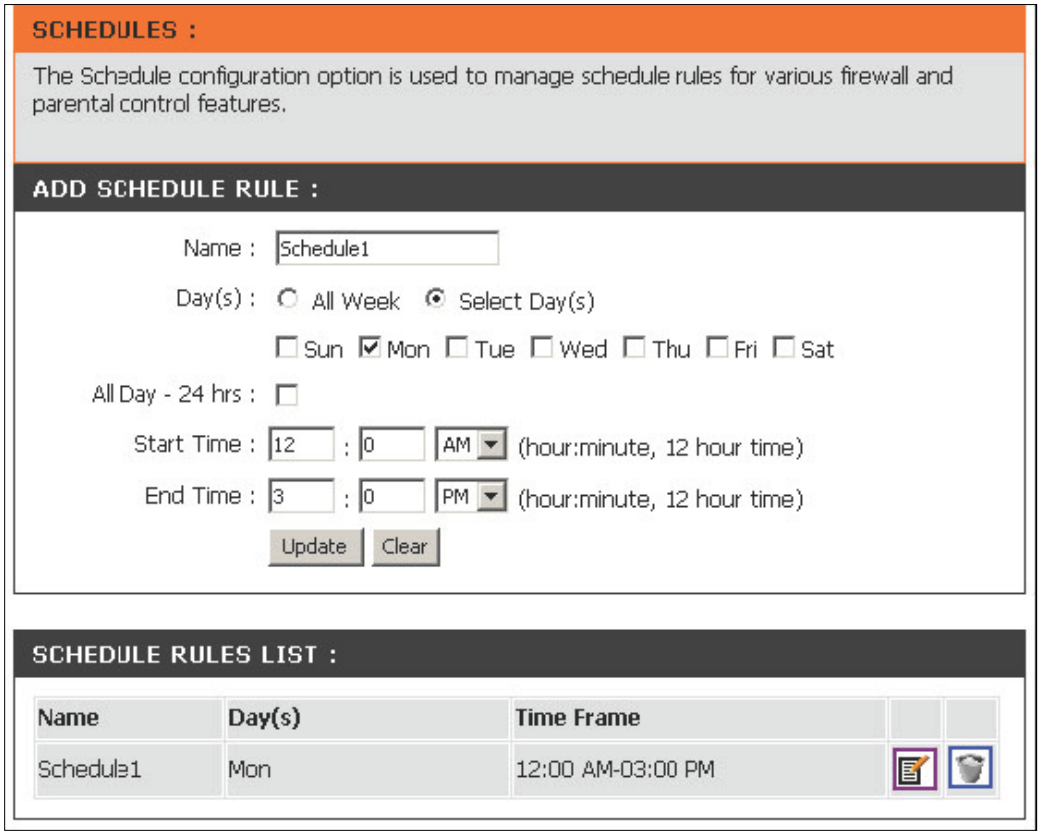
Days: Select a day, a range of days, or All Week to include every day.

Time: Check **All Days** or enter a start and end time for your schedule.

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

Add: Click **Add** to save your schedule. You must click **Save Settings** at the top for your schedules to go into effect.

Schedule Rules List: The list of schedules will be listed here. Click the **Edit** icon to make changes or click the **Delete** icon to remove the schedule.



Status

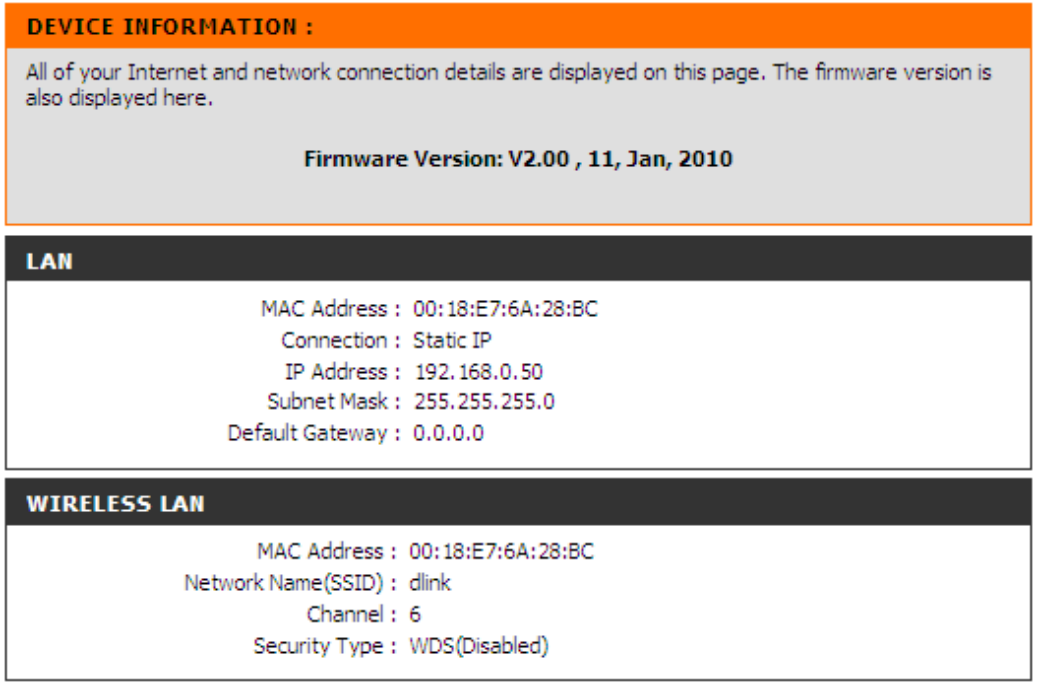
Device Info

This page displays the current information for the DAP-1360. It will display the LAN and wireless LAN information.

General: Displays the access point's time and firmware version.

LAN: Displays the MAC address and the private (local) IP settings for the access point.

Wireless LAN: Displays the wireless MAC address and your wireless settings such as SSID and Channel.



Logs

The DAP-1360 keeps a running log of events and activities occurring on the AP. If the AP is rebooted, the logs are automatically cleared. You can save the log files under Log Setting.

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

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

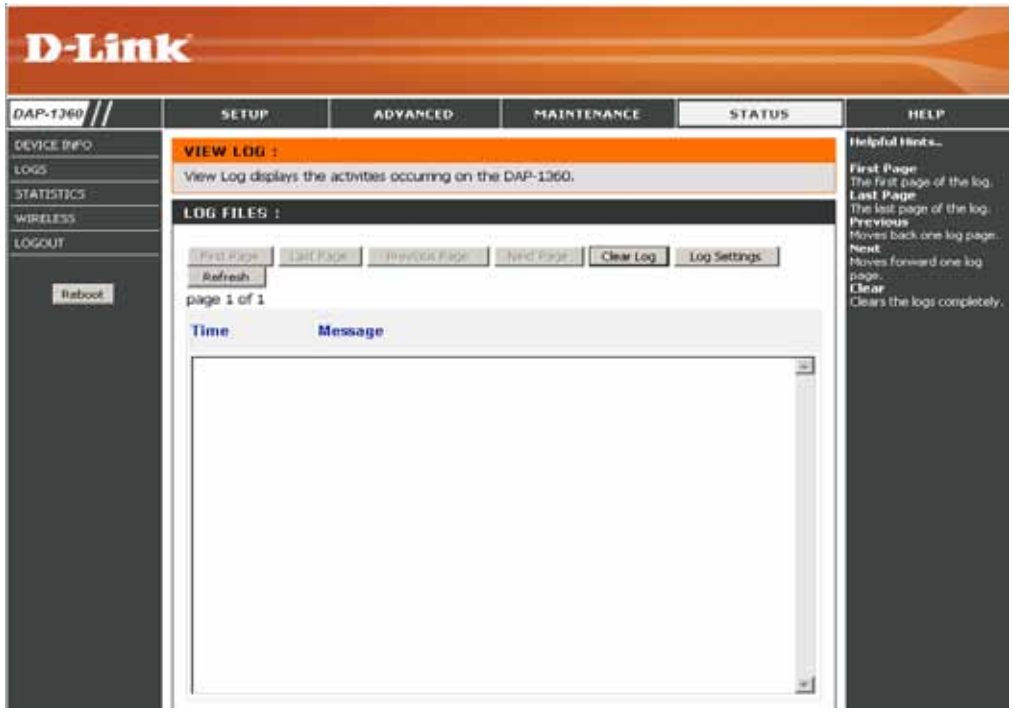
Previous Page: This button directs you to the previous page of the log.

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

Clear Log: This button clears all current log content.

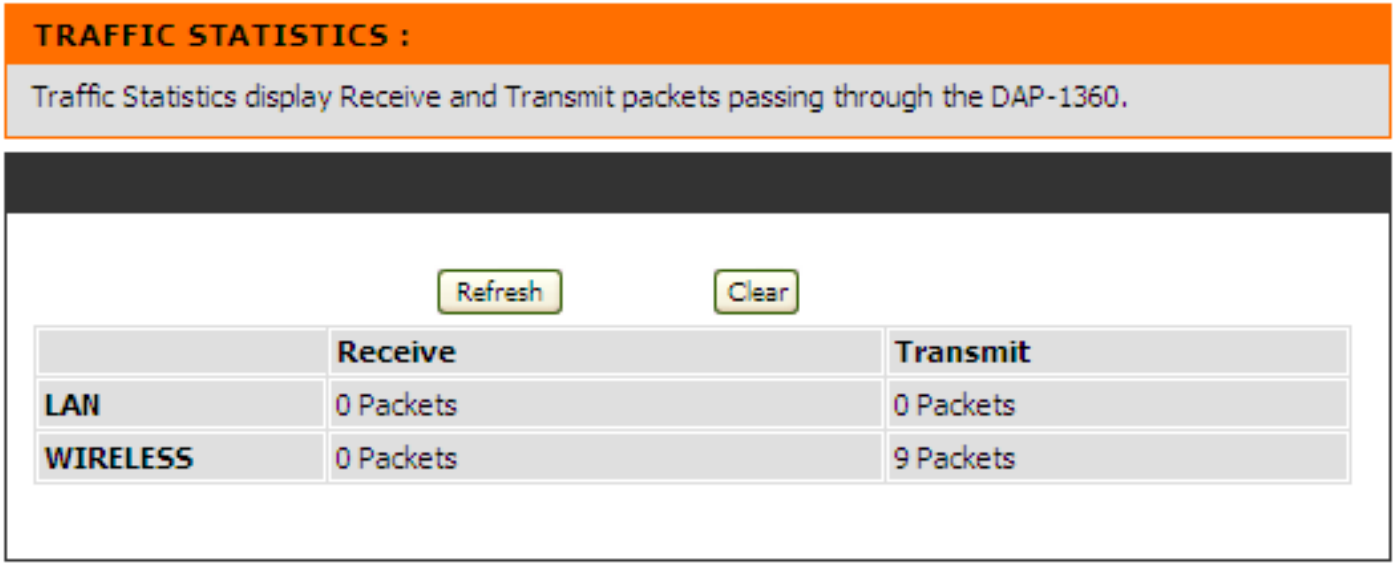
Log Settings: This button opens a new menu where you can configure the log settings.

Refresh: This button refreshes the log.



Statistics

The DAP-1360 keeps statistics of the traffic that passes through it. You can view the amount of packets that pass through the LAN and wireless portions of the network. The traffic counter will reset if the access point is rebooted.



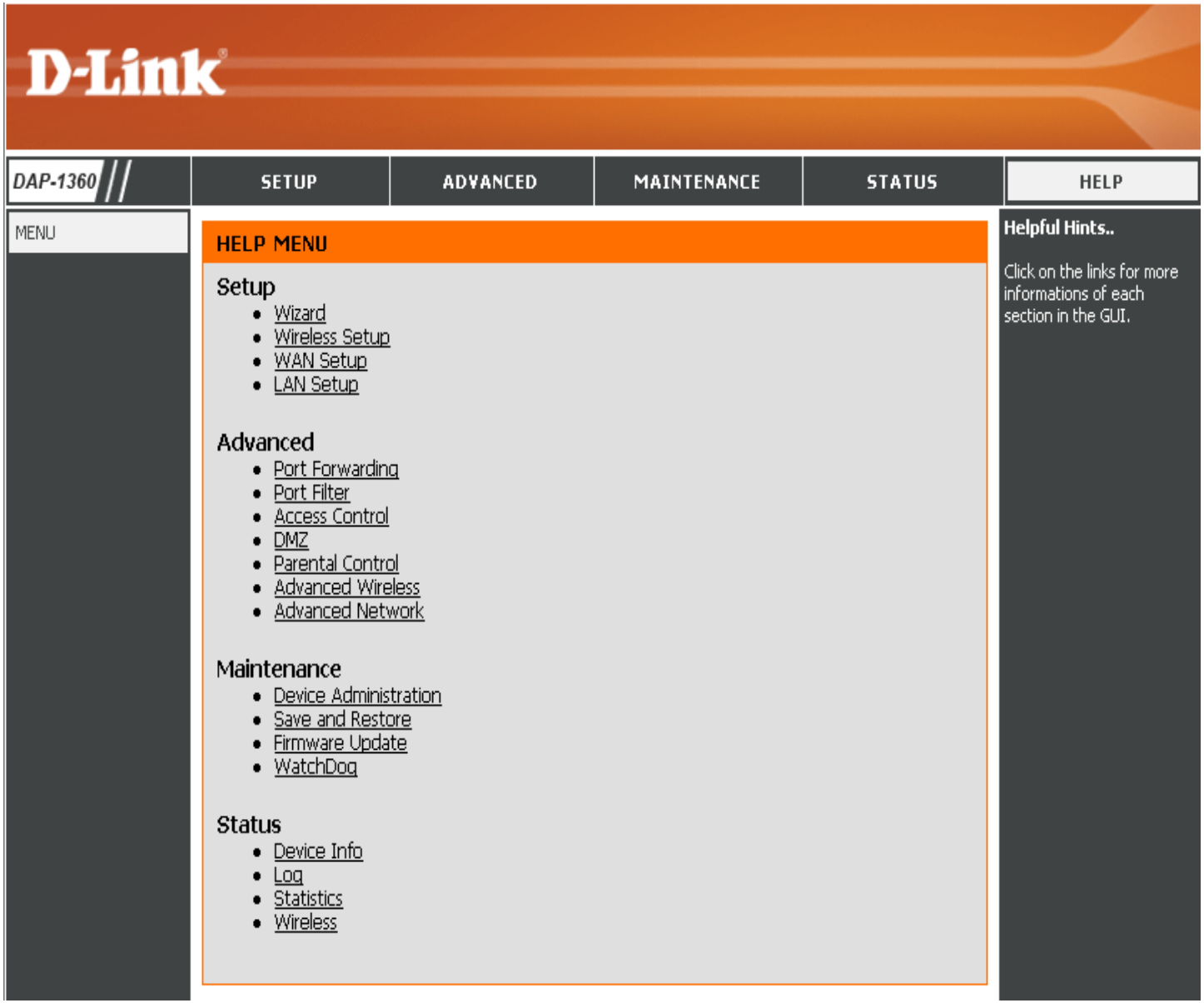
Wireless

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

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

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

Help


D-Link
DAP-1360
SETUP
ADVANCED
MAINTENANCE
STATUS
HELP
MENU
HELP MENU
Setup
Wizard
Wireless Setup
WAN Setup
LAN Setup
Advanced
Port Forwarding
Port Filter
Access Control
DMZ
Parental Control
Advanced Wireless
Advanced Network
Maintenance
Device Administration
Save and Restore
Firmware Update
WatchDog
Status
Device Info
Log
Statistics
Wireless
Helpful Hints..
Click on the links for more informations of each section in the GUI.

Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DAP-1360 offers the following types of security:

- WPA2 (Wi-Fi Protected Access 2)
- WPA (Wi-Fi Protected Access)
- WEP (Wired Equivalent Privacy)
- WPA2-PSK (Pre-Shared Key)
- WPA-PSK (Pre-Shared Key)

What is WEP?

WEP stands for Wired Equivalent Privacy. It is based on the IEEE 802.11 standard and uses the RC4 encryption algorithm. WEP provides security by encrypting data over your wireless network so that it is protected as it is transmitted from one wireless device to another.

To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange – alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily.

What is WPA?

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

The 2 major improvements over WEP:

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

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

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

WPA/WPA2 incorporates user authentication through the Extensible Authentication Protocol (EAP). EAP is built on a more secure public key encryption system to ensure that only authorized network users can access the network.

Configure WEP

It is recommended to enable encryption on your wireless access point before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the access point (192.168.0.50). Click on **Setup** and then click **Wireless Settings** on the left side.

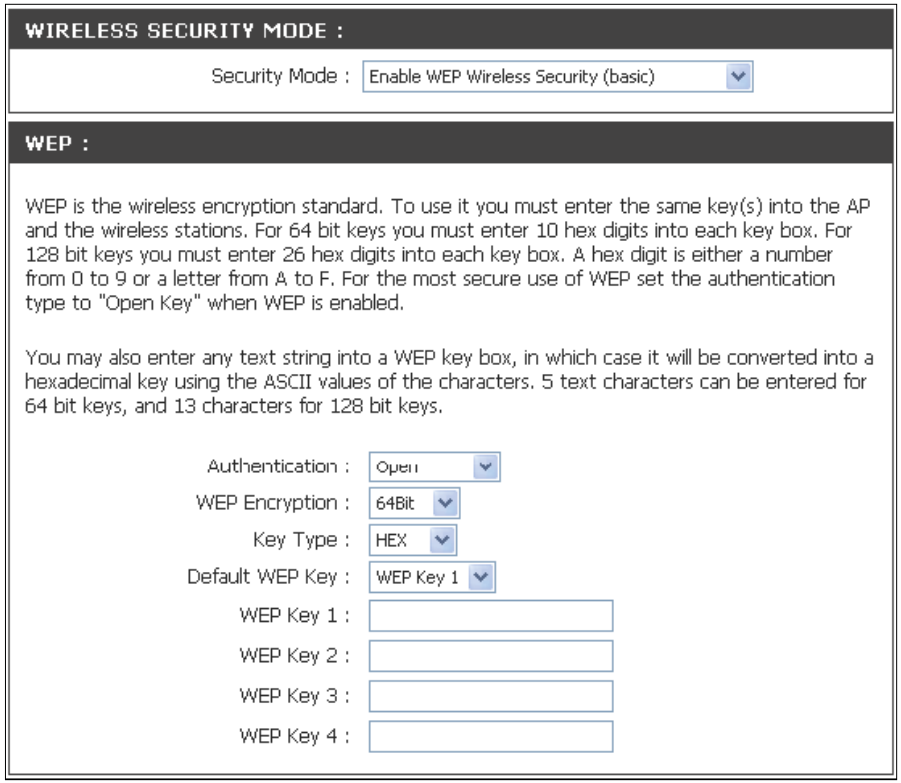
2. Next to Security Mode in the Wireless Security Mode section, select **Enable WEP Wireless Security (Basic)**.

3. Next to *Authentication*, select **Open** or **Shared Key**.

4. Next to *WEP Encryption*, select **64-bit** or **128-bit** encryption.

5. Next to *Key Type*, select either **Hex** or **ASCII**.
   Hex (recommended) - Letters A-F and numbers 0-9 are valid.
   ASCII - All numbers and letters are valid.

6. Next to Key 1, enter a WEP key that you create. Make sure you enter this key exactly on all your wireless devices. You may enter up to 4 different keys.



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

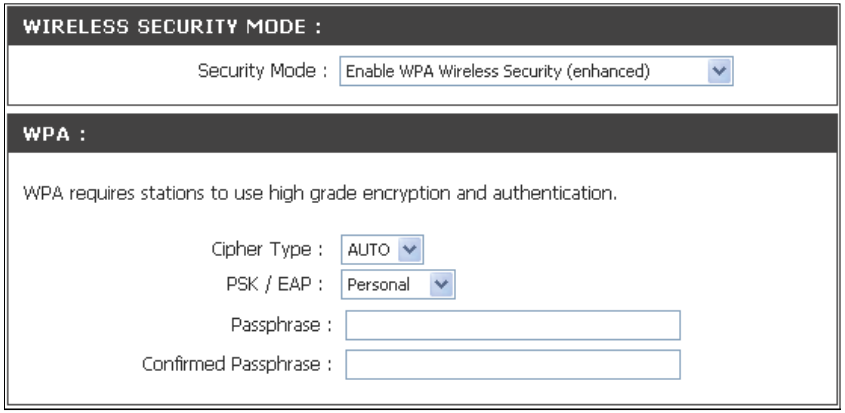
Configure WPA/WPA2 Personal

It is recommended to enable encryption on your wireless access point before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the access point (192.168.0.50). Click on Setup and then click Wireless Settings on the left side.

2. Next to *Security Mode*, select **Enable WPA Wireless Security**, **Enable WPA2 Wireless Security**, or **Enable WPA2-Auto Wireless Security**.

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



4. Next to *PSK / EAP*, select **Personal**.

5. Next to *Passphrase*, enter a key. The key is entered as a passphrase in ASCII format at both ends of the wireless connection. The passphrase must be between 8-63 characters.

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

Configure WPA/WPA2 Enterprise

It is recommended to enable encryption on your wireless access point before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

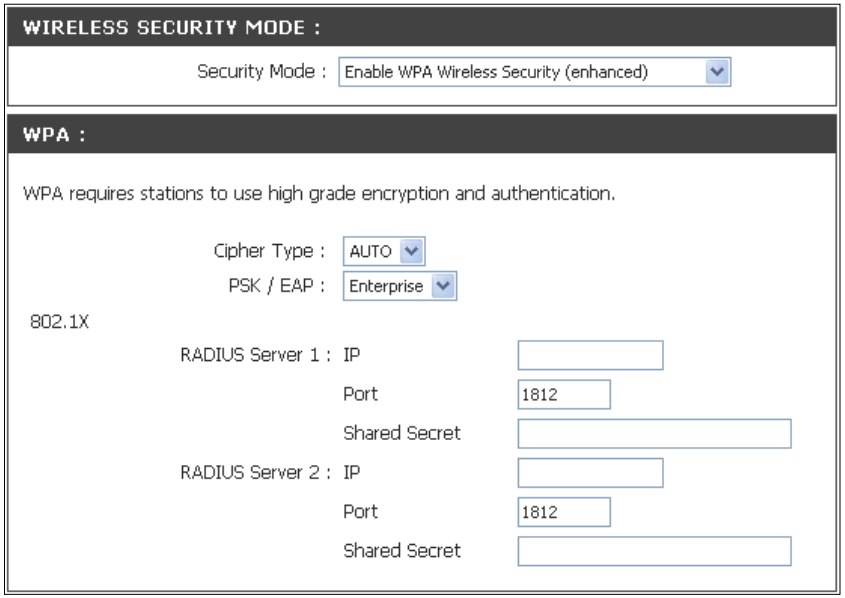
1. Log into the web-based configuration by opening a web browser and entering the IP address of the access point (192.168.0.50). Click on **Setup** and then click **Wireless Settings** on the left side.

2. Next to *Security Mode*, select **Enable WPA Wireless Security**, **Enable WPA2 Wireless Security**, or **Enable WPA2-Auto Wireless Security**.

3. Next to *Cipher Mode*, select **TKIP**, **AES**, or **Auto**.

4. Next to *Personal / Enterprise*, select **Enterprise**.

5. Next to *RADIUS Server*, enter the IP Address of your RADIUS server.



6. Next to *Port*, enter the port you are using with your RADIUS server. 1812 is the default port.

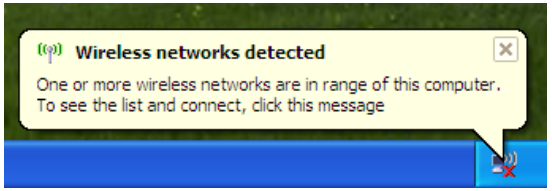
7. Next to *Shared Secret*, enter the security key.

8. Click **Save Settings** to save your settings.

Connect to a Wireless Network
Using Windows® XP

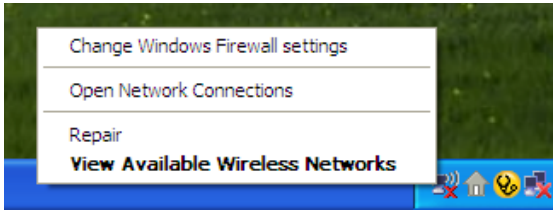
Windows® XP users may use the built-in wireless utility (Zero Configuration Utility). The following instructions are for Service Pack 2 users. If you are using another company's utility or Windows® 2000, please refer to the user manual of your wireless adapter for help with connecting to a wireless network. Most utilities will have a "site survey" option similar to the Windows® XP utility as seen below.

If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.



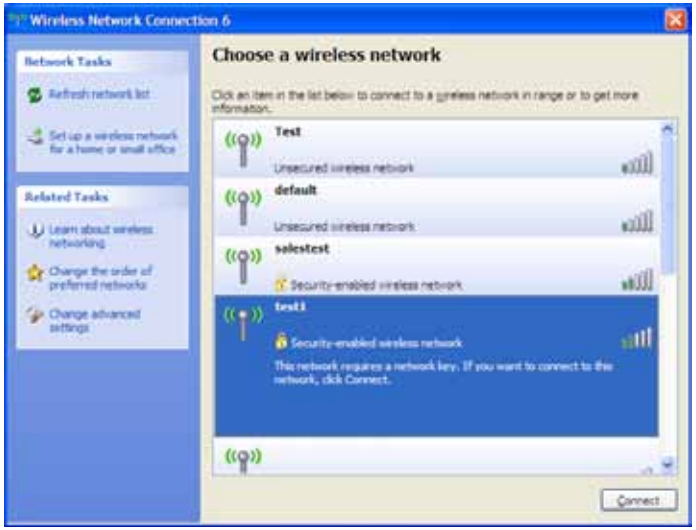
or

Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **View Available Wireless Networks**.



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

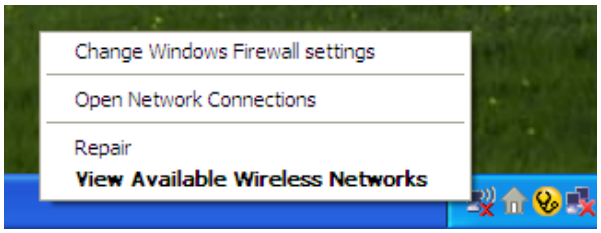
If you get a good signal, but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



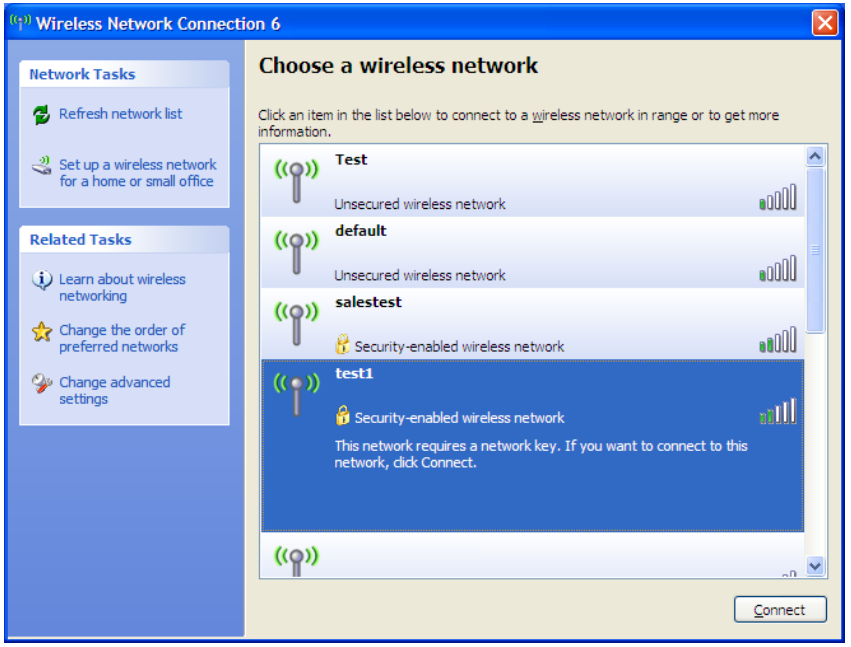
Configure WEP

It is recommended to enable WEP on your wireless bridge or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

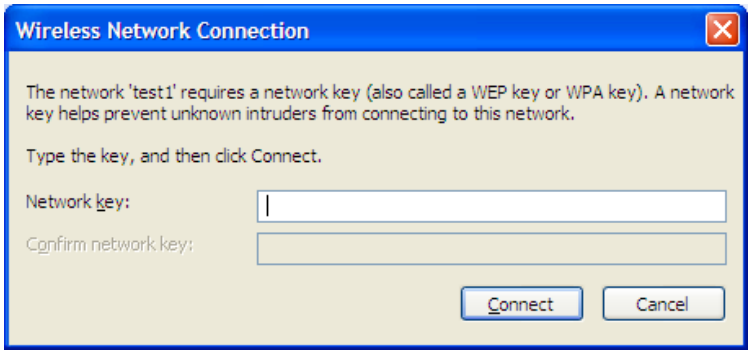
1. Open the Windows® XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks.**



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



3. The **Wireless Network Connection** box will appear. Enter the same WEP key that is on your access point and click **Connect.**

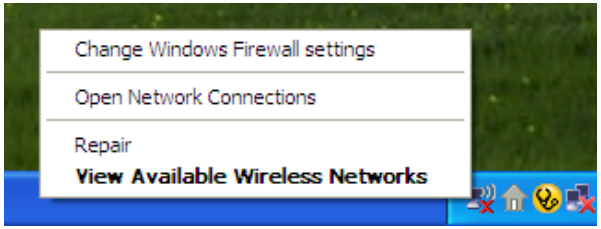


It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WEP settings are correct. The WEP key must be exactly the same as on the wireless access point.

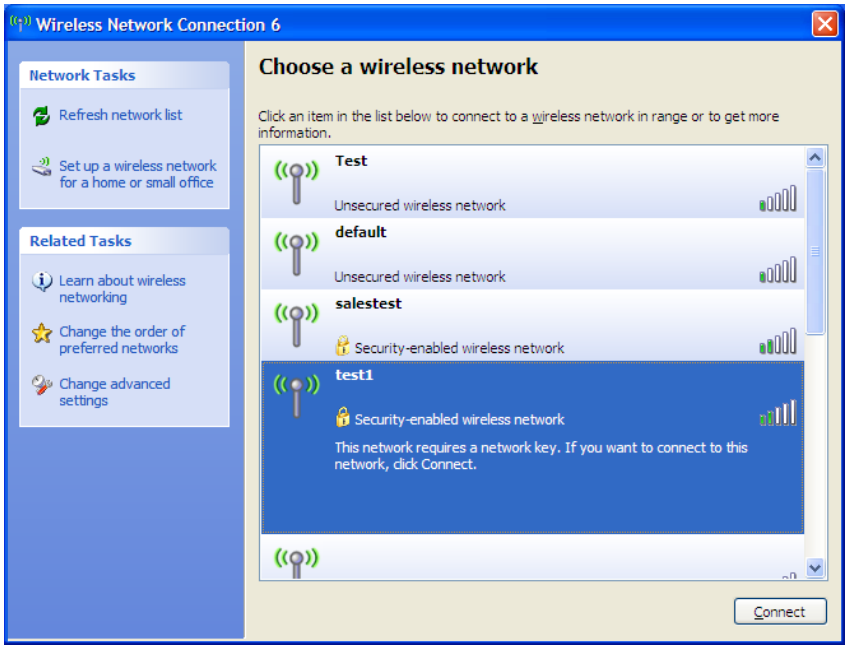
Configure WPA-PSK

It is recommended to enable WEP on your wireless bridge or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

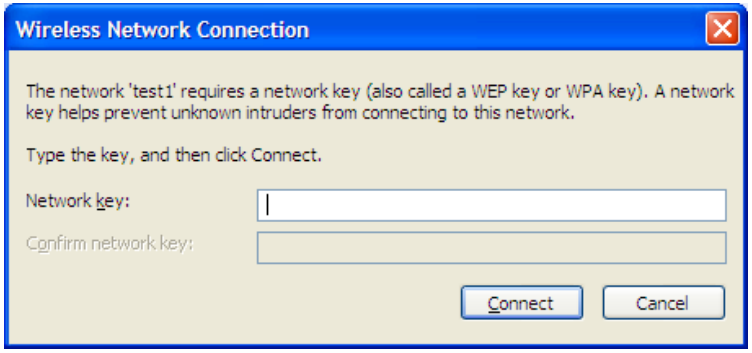
1. Open the Windows® XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks.**



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



3. The **Wireless Network Connection** box will appear. Enter the WPA-PSK passphrase and click **Connect.**



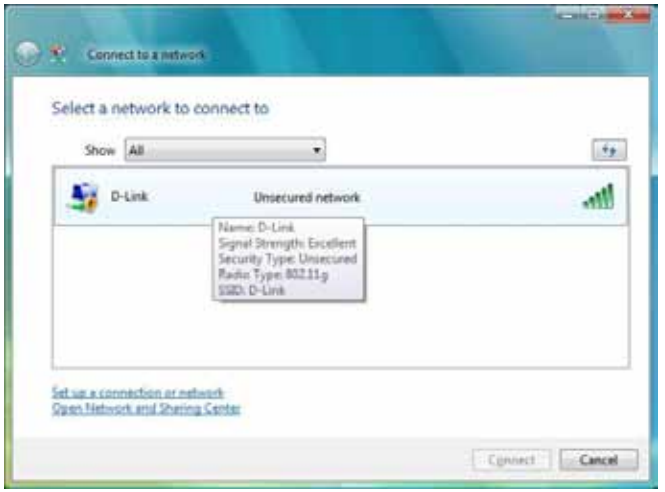
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WPA-PSK settings are correct. The WPA-PSK passphrase must be exactly the same as on the wireless access point.

Connect to a Wireless Network
Using Windows Vista®

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

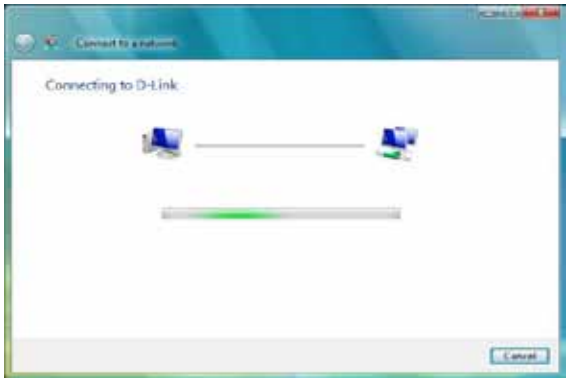
From the Start menu, go to Control Panel, and then click on **Network and Sharing Center**.

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



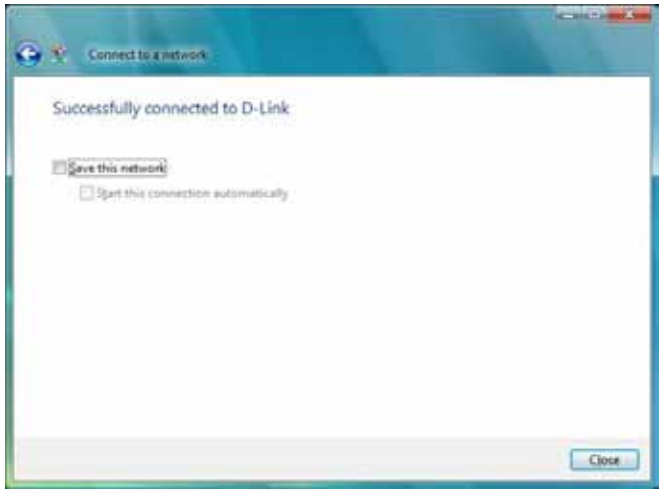
Click **Connect Anyway** to continue.

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



The final window indicates the establishment of a successful connection.

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



Configure WEP

It is recommended to enable WEP on your wireless bridge or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

Click on a network (displayed using the SSID) using WEP under Select a network to connect to and then click the **Connect** button.

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

Configure WPA-PSK

It is recommended to enable WEP on your wireless bridge or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

Click on a network (displayed using the SSID) using WPA-PSK under Select a network to connect to and then click the **Connect** button.

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

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DAP-1360. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

1. Why can't I access the web-based configuration utility?

When entering the IP address of the D-Link access point (192.168.0.50 for example), you are not connecting to a website on the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
    - Internet Explorer 7.0 or higher
    - Firefox 3.0 or higher
- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.
- Disable any internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

- Configure your Internet settings:

    - Go to **Start > Settings > Control Panel**. Double-click the **Internet Options** Icon. From the Security tab, click the button to restore the settings to their defaults.

    - Click the Connection tab and set the dial-up option to Never Dial a Connection. Click the LAN Settings button. Make sure nothing is checked. Click OK.

    - Go to the Advanced tab and click the button to restore these settings to their defaults. Click OK three times.

    - Close your web browser (if open) and open it.

- Access the web management. Open your web browser and enter the IP address of your D-Link access point in the address bar. This should open the login page for your the web management.

- If you still cannot access the configuration, unplug the power to the access point for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

2. What can I do if I forgot my password?

If you forgot your password, you must reset your access point. Unfortunately this process will change all your settings back to the factory defaults.

To reset the access point, locate the reset button (hole) on the rear panel of the unit. With the access point powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the access point will go through its reboot process. Wait about 30 seconds to access the access point. The default IP address is 192.168.0.50. When logging in, the username is admin and leave the password box empty.

3. Why can't I connect to certain sites or send and receive emails when connecting through my access point?

If you are having a problem sending or receiving email, or connecting to secure sites such as eBay, banking sites, and Hotmail, we suggest lowering the MTU in increments of ten (Ex. 1492, 1482, 1472, etc).

Note: AOL DSL+ users must use MTU of 1400.

To find the proper MTU Size, you'll have to do a special ping of the destination you're trying to go to. A destination could be another computer, or a URL.

- **Click on Start and then click Run.**
- **Windows® 95, 98, and Me users type in command (Windows® NT, 2000, and XP users type in cmd) and press Enter (or click OK).**
- Once the window opens, you'll need to do a special ping. Use the following syntax:

  ping [url] [-f] [-l] [MTU value]

Example: **ping yahoo.com -f -l 1472**

```
C:\>ping yahoo.com -f -l 1482

Pinging yahoo.com [66.94.234.13] with 1482 bytes of data:

Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.

Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

C:\>ping yahoo.com -f -l 1472

Pinging yahoo.com [66.94.234.13] with 1472 bytes of data:

Reply from 66.94.234.13: bytes=1472 time=93ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=109ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=125ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=203ms TTL=52

Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 93ms, Maximum =  203ms, Average =  132ms

C:\>
```

You should start at 1472 and work your way down by 10 each time. Once you get a reply, go up by 2 until you get a fragmented packet. Take that value and add 28 to the value to account for the various TCP/IP headers. For example, lets say that 1452 was the proper value, the actual MTU size would be 1480, which is the optimum for the network we're working with (1452+28=1480).

Once you find your MTU, you can now configure your access point with the proper MTU size.

To change the MTU rate on your access point follow the steps below:

- Open your browser, enter the IP address of your access point (192.168.0.50) and click **OK.**
- Enter your username (admin) and password (blank by default). Click **OK** to enter the web configuration page for the device.
- Click on **Setup** and then click **Manual Configure.**
- To change the MTU enter the number in the MTU field and click **Save Settings** to save your settings.
- Test your email. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. Strictly adhering to the IEEE standard, the D-Link wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Access point is a device used to provide this link.

What is Wireless?

Wireless or Wi-Fi technology is another way of connecting your computer to the network without using wires. Wi-Fi uses radio frequency to connect wirelessly, so you have the freedom to connect computers anywhere in your home or office.

D-Link is the worldwide leader and award winning designer, developer, and manufacturer of networking products. D-Link delivers the performance you need at a price you can afford. D-Link has all the products you need to build your network.

How does wireless work?

Wireless works similar to how cordless phone work, through radio signals to transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer. There are two different types of wireless networks Wireless Local Area Network (WLAN), and Wireless Personal Area Network (WPAN).

Wireless Local Area Network (WLAN)

In a wireless local area network, a device called an Access Point (AP) connects computers to the network. The access point has a small antenna attached to it, which allows it to transmit data back and forth over radio signals. With an indoor access point as seen in the picture, the signal can travel up to 300 feet. With an outdoor access point the signal can reach out up to 30 miles to serve places like manufacturing plants, industrial locations, college and high school campuses, airports, golf courses, and many other outdoor venues.

Wireless Personal Area Network (WPAN)

Bluetooth is the industry standard wireless technology used for WPAN. Bluetooth devices in WPAN operate in a range up to 30 feet away.

Compared to WLAN the speed and wireless operation range are both less than WLAN, but in return it doesn't use nearly as much power which makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

Who uses wireless?

Wireless technology has become so popular in recent years that almost everyone is using it, whether it's for home, office, business, D-Link has a wireless solution for it.

Home

- Gives everyone at home broadband access
- Surf the web, check email, instant message, etc.
- Gets rid of the cables around the house
- Simple and easy to use

Small Office and Home Office

- Stay on top of everything at home as you would at office
- Remotely access your office network from home
- Share Internet connection and printer with multiple computers
- No need to dedicate office space

Where is wireless used?

Wireless technology is expanding everywhere not just at home or office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a D-Link Cardbus Adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like: Airports, Hotels, Coffee Shops, Libraries, Restaurants, and Convention Centers.

Wireless network is easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

Tips

Here are a few things to keep in mind, when you install a wireless network.

Centralize your access point or Access Point

Make sure you place the bridge/access point in a centralized location within your network for the best performance. Try to place the bridge/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range.

Eliminate Interference

Place home appliances such as cordless telephones, microwaves, wireless speakers, and televisions as far away as possible from the bridge/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

Security

Don't let your next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA or WEP security feature on the access point. Refer to product manual for detail information on how to set it up.

Wireless Modes

There are basically two modes of networking:

- **Infrastructure –** All wireless clients will connect to an access point or wireless bridge.
- **Ad-Hoc –** Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more wireless network Cardbus adapters.

An Infrastructure network contains an Access Point or wireless bridge. All the wireless devices, or clients, will connect to the wireless bridge or access point.

An Ad-Hoc network contains only clients, such as laptops with wireless cardbus adapters. All the adapters must be in Ad-Hoc mode to communicate.

Networking Basics

Check your IP address

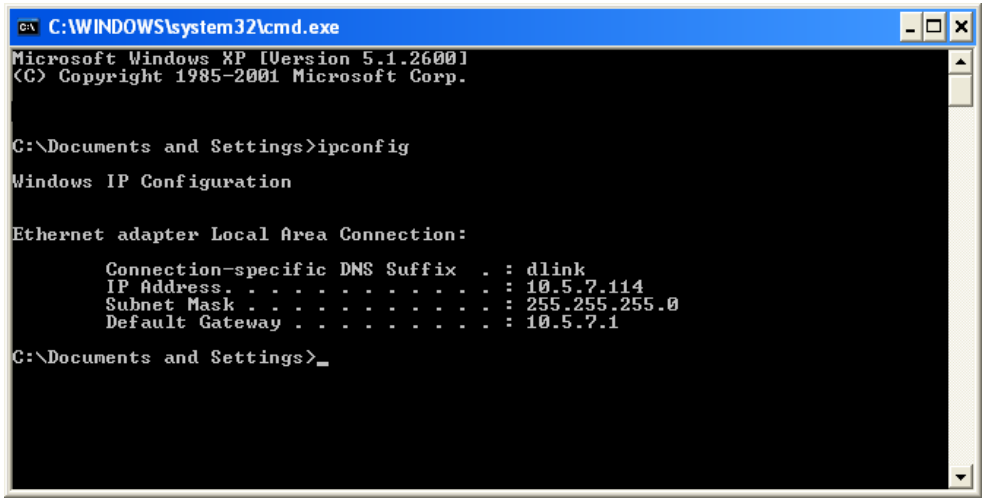
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start** > **Run**. In the run box type ***cmd*** and click **OK**.

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

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

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



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

Statically Assign an IP address

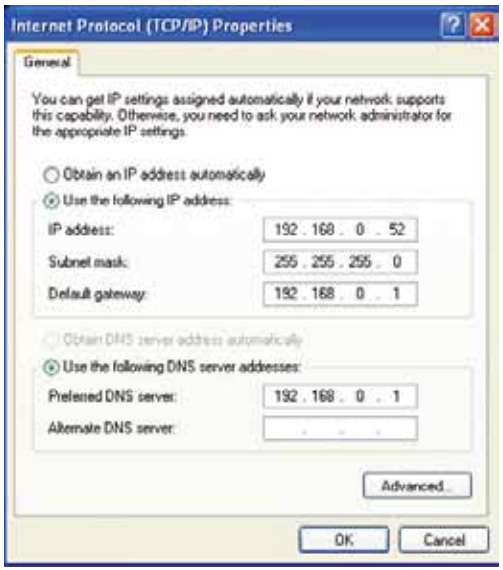
If you are not using a DHCP capable gateway/access point, or you need to assign a static IP address, please follow the steps below:

Step 1
Windows® XP - Click on **Start > Control Panel > Network Connections.**
Windows® 2000 - From the desktop, right-click **My Network Places > Properties.**

Step 2
Right-click on the Local Area Connection which represents your D-Link network adapter and select **Properties.**

Step 3
Highlight **Internet Protocol (TCP/IP)** and click **Properties.**

Step 4
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your access point.



Example: If the access point´s LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set Default Gateway the same as the LAN IP address of your access point (192.168.0.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

Step 5
Click **OK** twice to save your settings.

Technical Specifications

Standards

- IEEE 802.11n
- IEEE 802.11g
- IEEE 802.11b
- IEEE 802.3
- IEEE 802.3u

Security

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

Wireless Signal Rates[1]

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

Modulation

- DQPSK
- DBPSK
- CCK
- OFDM

Frequency Range[2]

- 2.4GHz to 2.483GHz

LEDs

- Power
- WLAN
- Security
- LAN

Operating Temperature

- 32°F to 131°F (0°C to 55°C)

Humidity

- 90% maximum (non-condensing)

Safety & Emissions

- FCC
- CE
- IC
- C-Tick
- NCC

Dimensions

- 147.5 (L) x 113 (W) x 31.5 (H) mm

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

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

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February 11, 2010