D-Link®
Building Networks for People

Release 1.00

# Smart WLAN Manager

# User Manual

May 2007
Version 1.00

Business Class Networking

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# Introduction

The **Smart WLAN Manager** is a convenient tool to manage the configuration of your network from a central computer. With **Smart WLAN Manager** there is no need to configure the D-Link DWL-3140AP Wireless Access Points individually.

## *System Requirement*

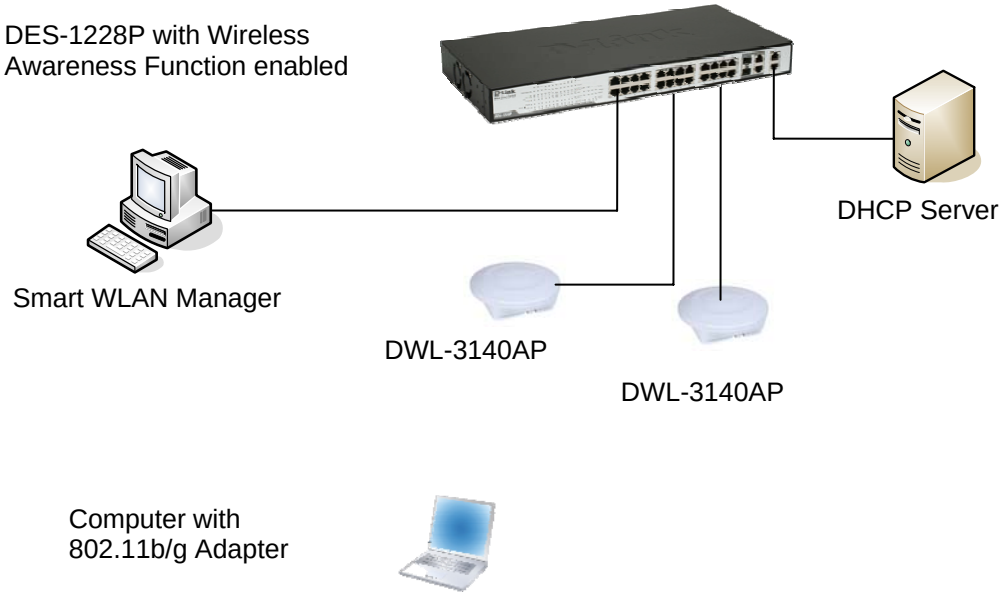
Suggested Specifications for Smart WLAN Manager installation:

- A PC or Notebook with an installed network adapter
- Supported OS: Windows® 2000 or XP
- DHCP server is required

**Note:** The performance of a wired connection is better than a wireless connection for each computer running WLAN Manager. It is recommended to use the wired connection to manage the Access Point.

## *Getting Started*

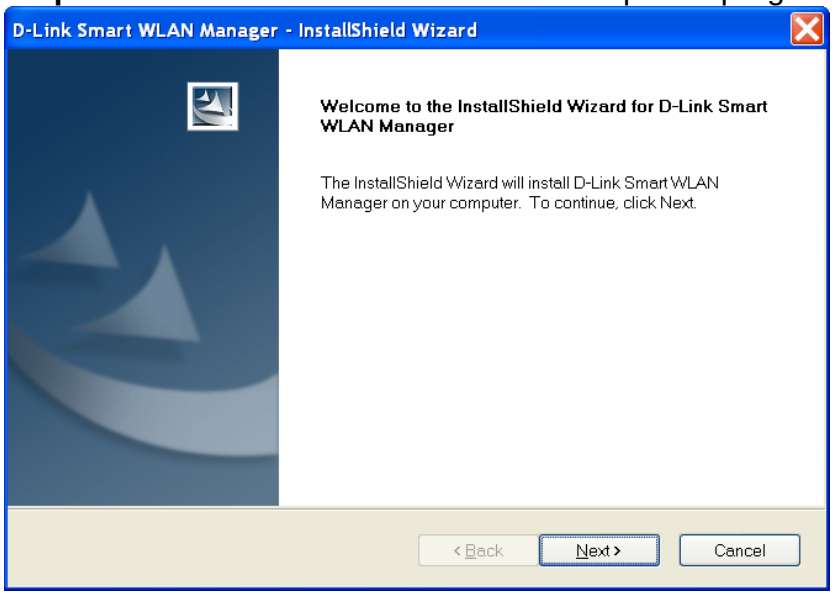
Please prepare your network environment as the following topology (see diagram). Switch (DES-1228P), Access Point (DWL-3140AP), and the DHCP server need to be in the same IP domain; the PC for Smart WLAN Manager installation can connect the switch directly, or via the Internet.



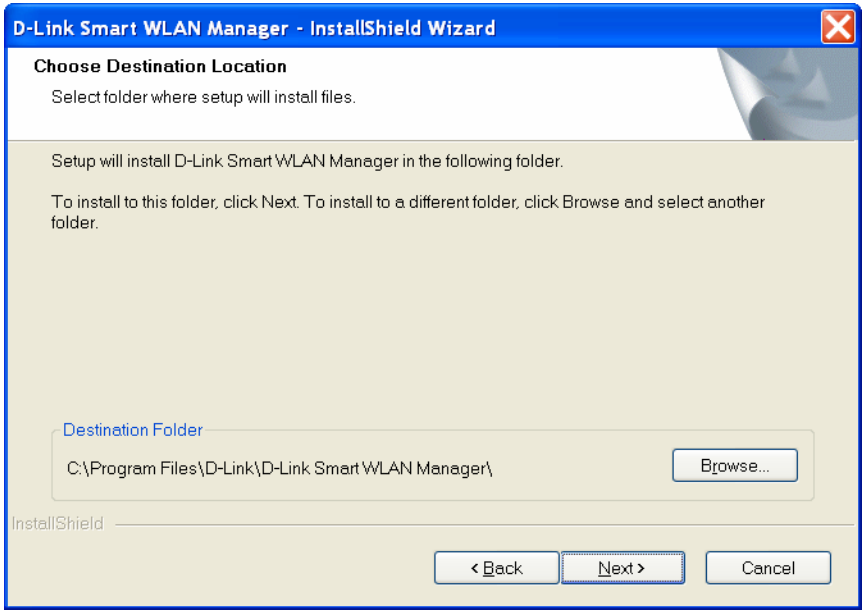
# *Installing the Smart WLAN Manager*

Please do following steps to install the Smart WLAN Manager:

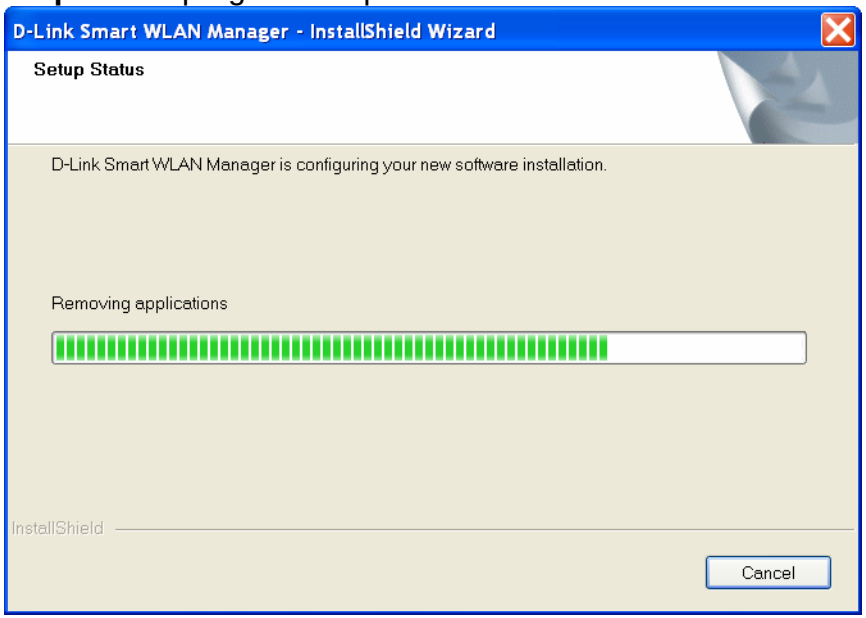
**Step 1.** Insert the CD and execute the “setup.exe” program. The InstallShield Wizard will appear



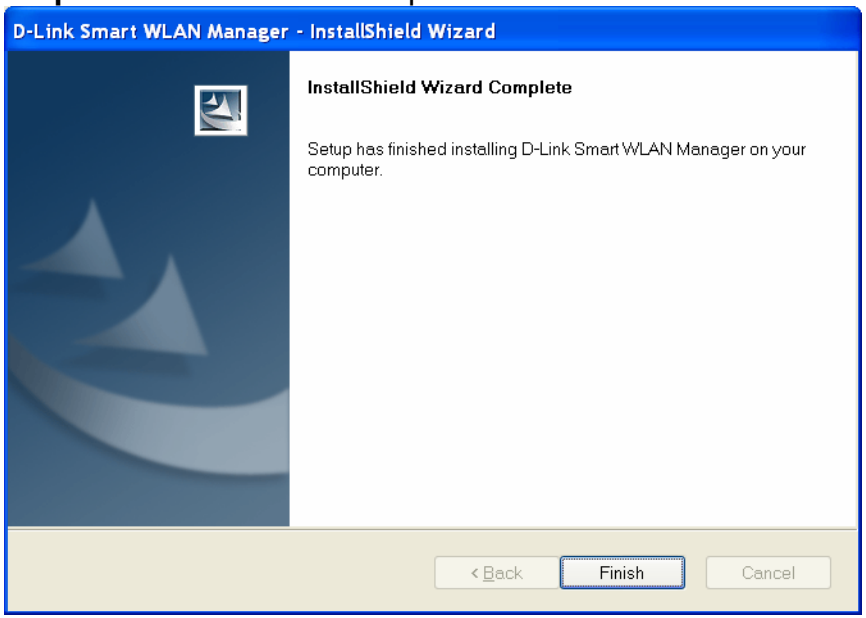
**Step 2.** Choose the destination folder where you want to install the program to and click “Next”.



**Step 3.** The program will perform the installation automatically.



**Step 4.** Click “Finish” to complete the installation.

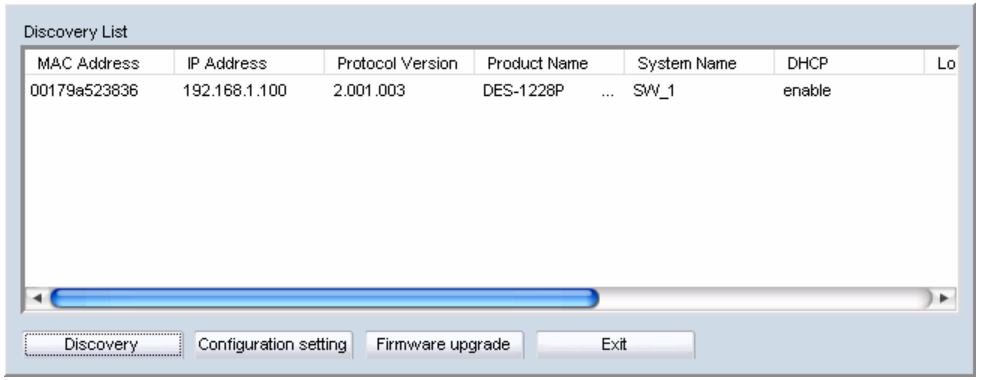


## *Discovering the Switch and AP*

To launch the Smart WLAN Manager:
• Go to the **Start Menu**
• Select **Programs**
• Select D-Link Smart WLAN Manager

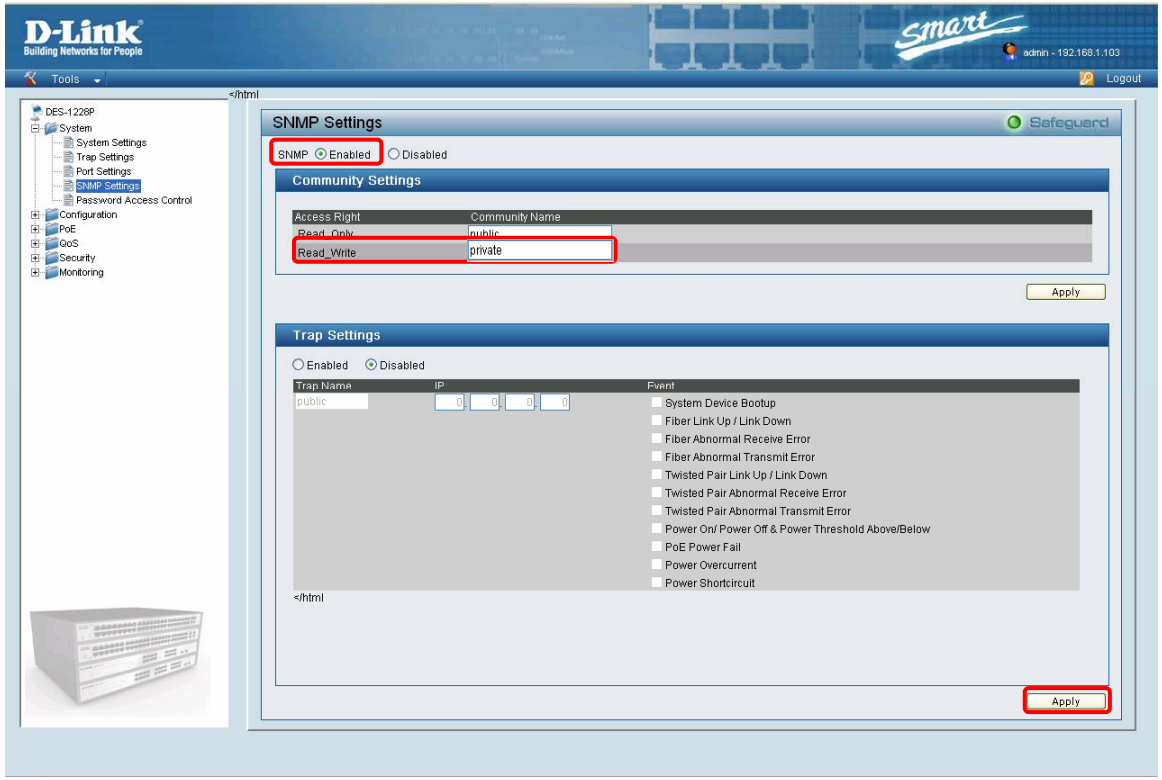
The D-Link Smart WLAN Manager will appear.
Click “OK” (There’s no default password) to continue.


Choose **Tools→Switch Discover Utility** or directly press the icon “  ”, the Discovery List window will appear:

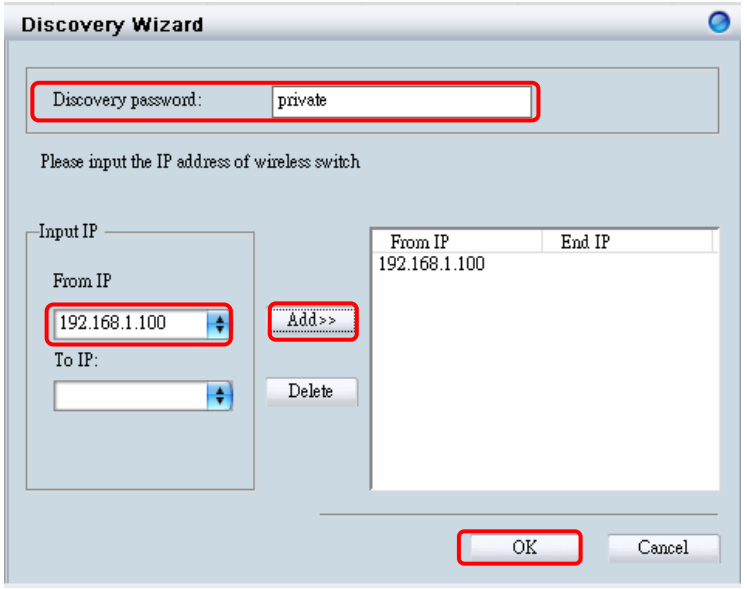


Launch the web browser on your PC, and connect the switch by the IP address found (default password: ***admin***). Make sure the firmware version of DES-1228P is at least 1.20.03.

Make sure the SNMP read_write community is “private” (default value) and enable the function.

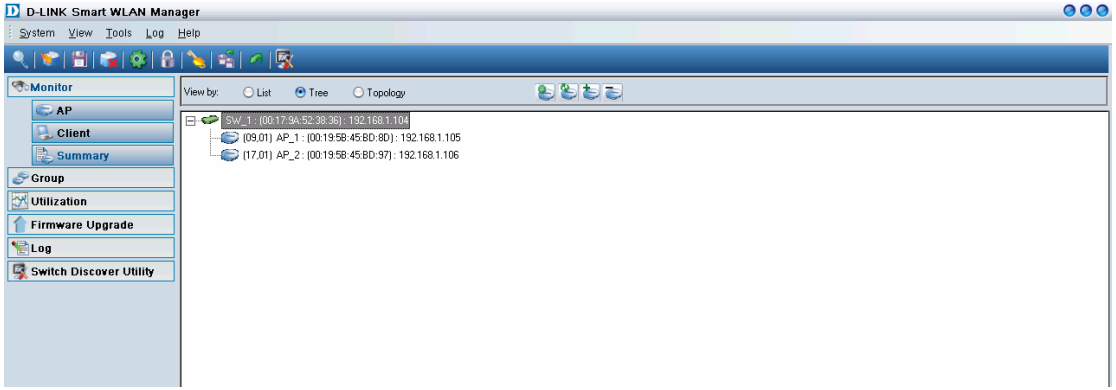


On the Smart WLAN Manager, choose **Tools→Discovery Wizard** or click the icon “”; fill in the Discovery password with the SNMP read_write Community Name “private”, and the IP of the switch. Click “OK”.




In Monitor>Tree, right click the newly found AP and choose “Save to Database ()” to add the AP into the database. The Status of the AP will change from “New” to “Online” after being added to the database.

**Note:** For detailed connection configuration, please also refer to the Configuration Guide.

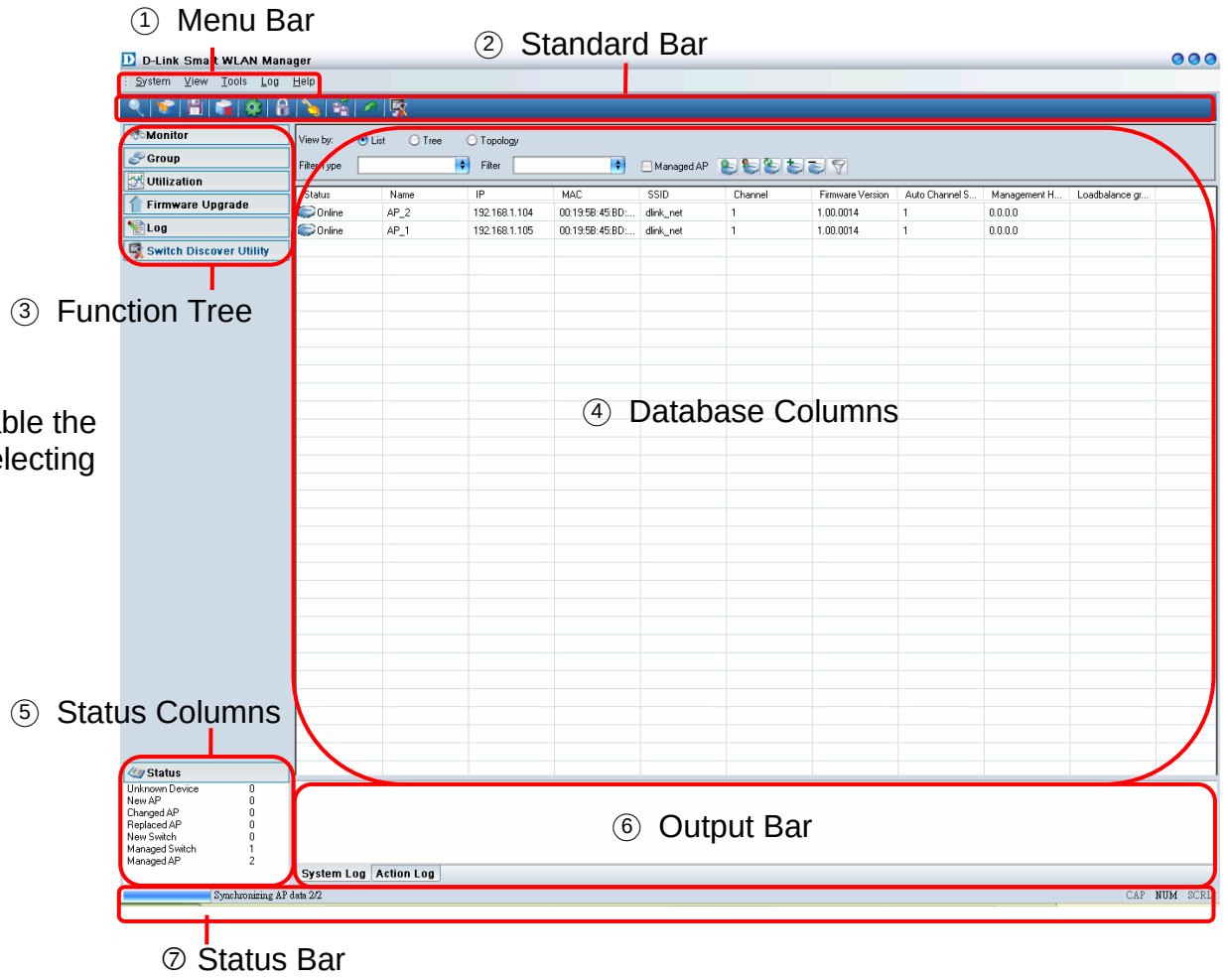


# Using the Smart WLAN Manager

## *Understanding the Screen Layout*

1. Menu Bar
2. Standard Bar
3. Function Tree
4. Database Columns
5. Status Columns
6. Output Bar
7. Status Bar

For maximum window view, the user can disable the *standard bar*, *output bar*, and *status bar* by selecting the options of **View** in the menu bar.

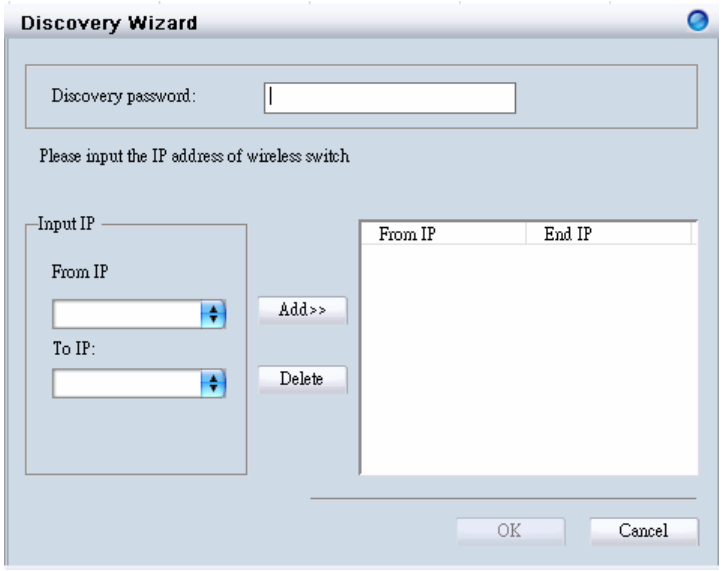


## *Discovering Devices*

Click the **Discovery Wizard** icon or choose **Tools→Discovery Wizard** to discover **available devices** on the network.

**Discovery password -** The discovery password needs to be consistent with the SNMP read_write community name

**Input IP -** Enter the IP address of the switch. User can either input a specific IP address (fill in “From IP”), or a range of IP addresses (fill in both “From IP” and “To IP”)




## *Polling Information*

By default the Smart WLAN Manager will scan the network every 15 seconds. Click the Start Polling icon to scan the network immediately.

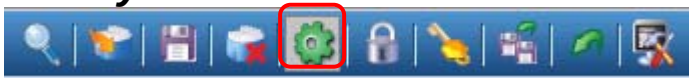
## *Save to Database*

Click the **Save to Database** icon or choose **System→Save all to database** to save all of the discovered devices. You can also use the hotkey **(Ctrl +S)** to achieve the same results.

## *Clear Database*

Click the **Clear Database** icon or choose **System→Clear all from database** to clear all of the records saved.

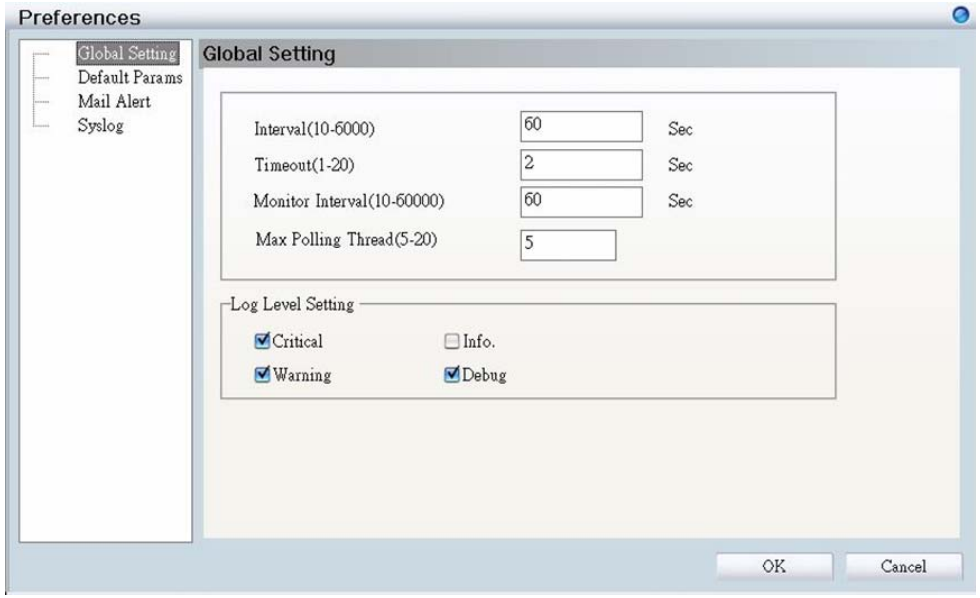
## *Modify the Preference*



Click the **Preference** icon or choose **Tools→Preference** to modify the preference.

### Global Setting

The *Global Setting* allows you to change the monitoring parameters and the log levels.




**Interval -** The time needed to wait for the next polling. The range is from 10 to 6000 seconds, and default value is **60**.

**TimeOut -** The waiting time for the device to respond, in which failure to respond in time will be determined to be in *offline* status. The range is from 1 to 20 seconds, and default value is **2**.

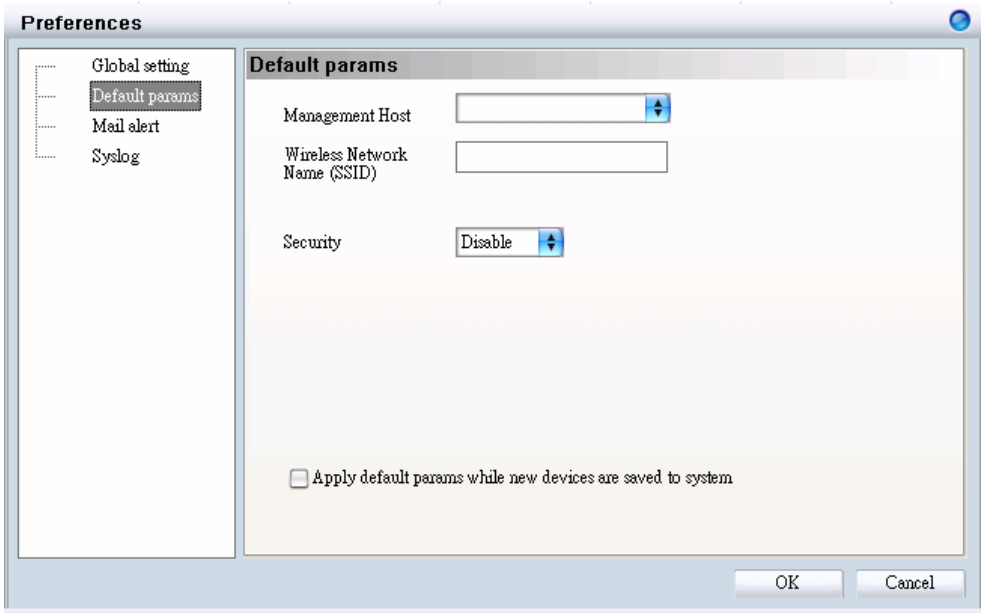
**Monitor interval -** The period to scan for devices. The range is from 10 to 60000 seconds, and default value is **60**.

**Max. Polling thread** – The maximum devices polled at one time. The default value is **5**.

In *Log Level Setting,* users can define what levels of events are to be logged. The default levels are Critical, Warning, and Debug.

## Default Parameters

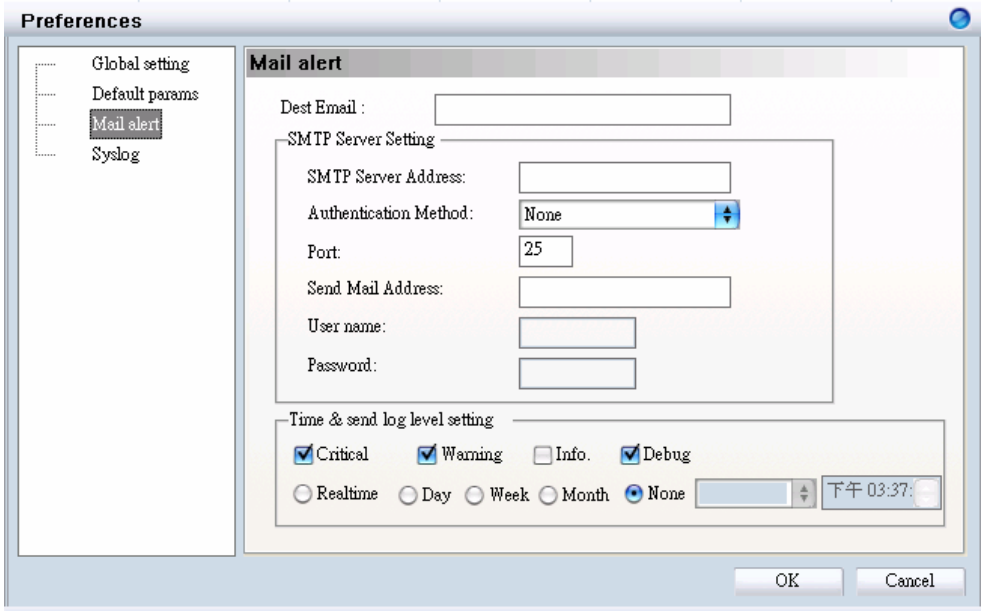
In *Default Params,* users can configure the SSID and security to specific managed AP, or to create a default profile for all new devices by checking the option.




## Mail Alert

In *Mail alert,* users can configure when an event happens, and a log message will be sent from a certain SMTP (mail) server to a specific email address. You can also specify if you want to send the email in real time, or to accumulate the messages and send them out by daily, weekly, or monthly.

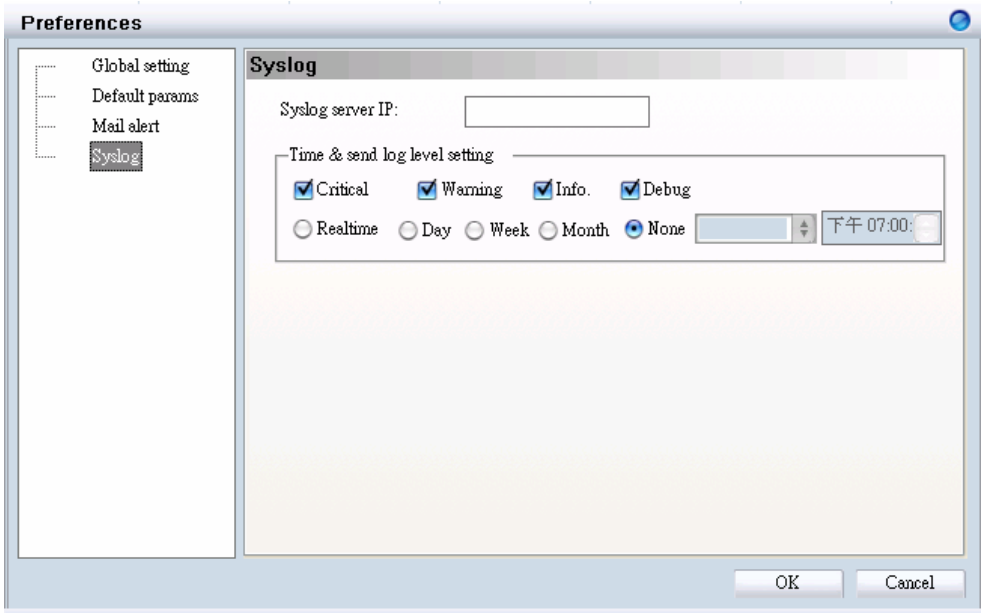
The default message types to be sent are C*ritical*, W*arning*, and D*ebug*.



## Syslog

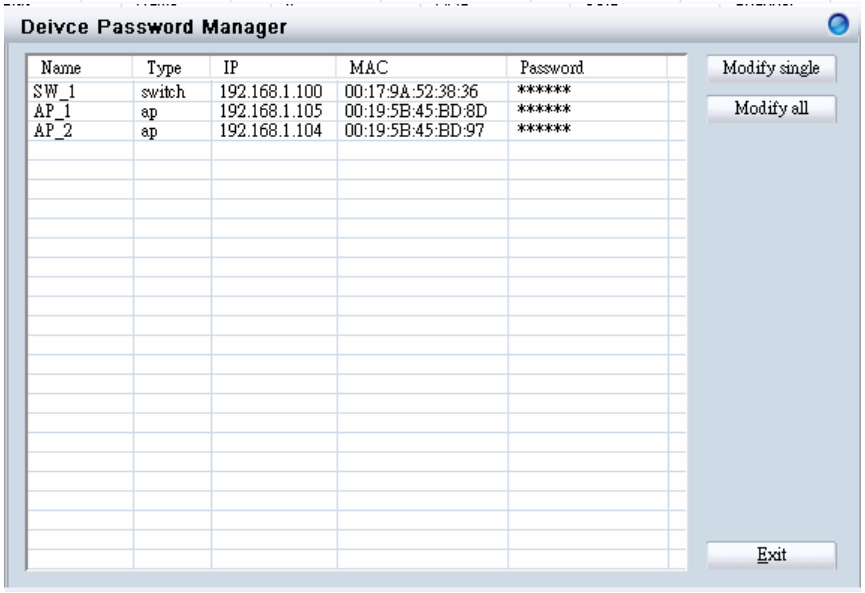
In *Syslog,* users are allowed to set the IP address of the syslog server, the level of events to be sent to the syslog server, and when to send out the message.

The default setting for logs to be recorded are all types (*Critical*, W*arning*, I*nfo*, and D*ebug*).

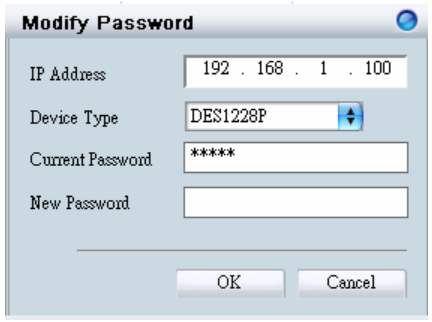


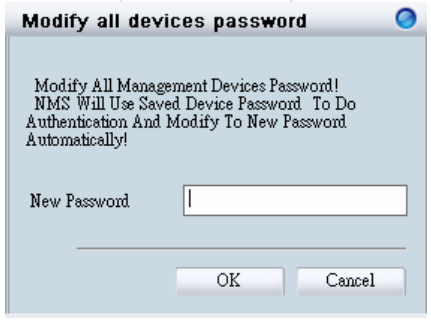
# *Modifying the Device Password*

Click the **Device Password Manager** icon or choose **Tools→Password Manager** to modify the device password.




Users can either change the password individually by selecting the device and clicking “Modify single”, or change all devices at once by clicking “Modify all”.

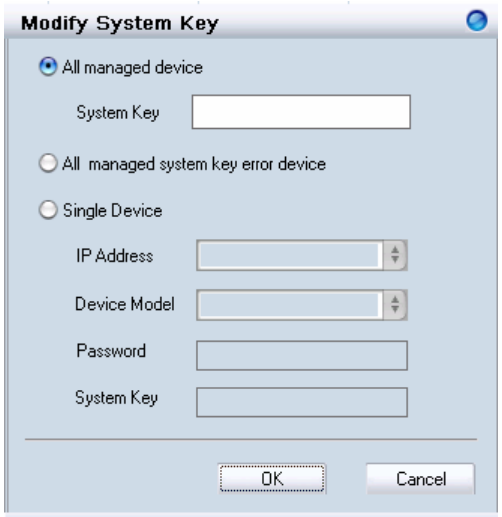


## *Modifying the Device System Key*

Click the **Modify All Device System Key** icon or choose **Tools→System Key Manager** to modify the device system key.

User can assign the system key to examine the validity of the access point. Once the key is configured, it needs to be identical on both access point and wireless switch for normal operation.




## *Backup the Database*

Click the **Backup Database** icon or choose **System→Backup database** to save the current database to the PC.

## *Restore the Database*

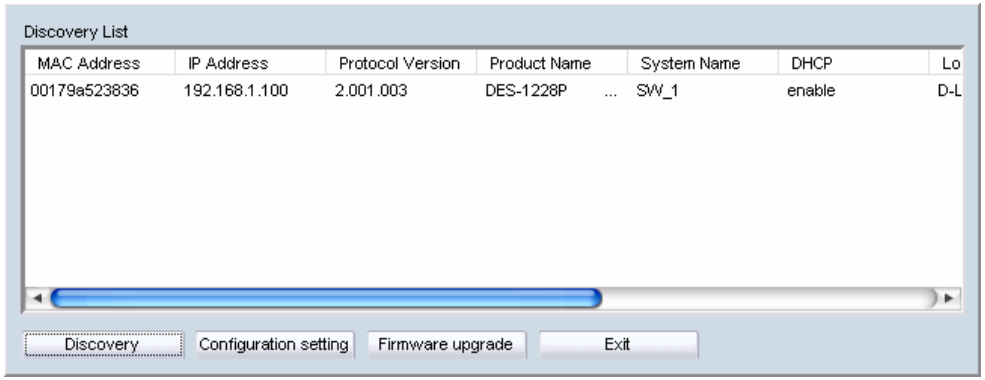
Click the **Restore Database** icon or choose **System→Restore database** to open the saved database from the PC.

## *Searching the Switch*

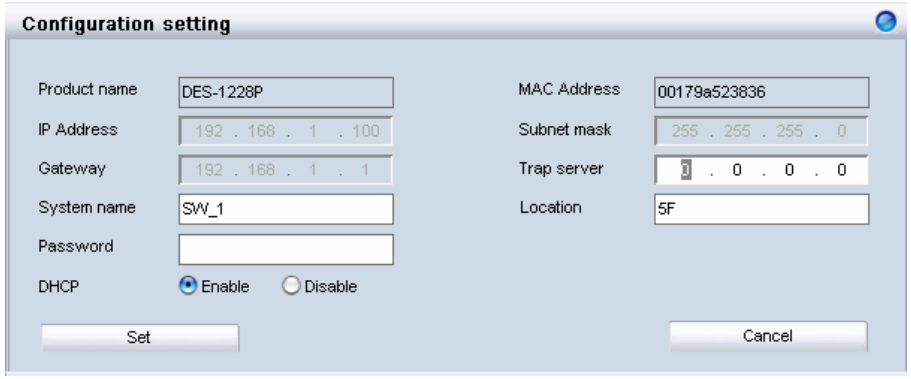
Click the **Switch Discovery Utility** icon or choose **Tools→Switch Discovery Wizard** to search the available switch.

The *Discovery List* window shows the following information of the switch available:

**MAC Address -** The MAC address of the switch.
**IP Address -** The IP address of the switch.
**Product Name -** The model name.
**System Name -** The name identifies the switch in the network.
**DHCP -** The status of the DHCP client of the switch.
**Location -** The location of the switch.
**Trap IP -** The IP address of the **server,** which receives the SNMP Trap message.
**Subnet Mask -** The subnet mask of the switch IP address.
**Gateway -** The IP address of the gateway for the switch.




Selecting the switch and clicking “Configuration setting”, will allow the user to modify some of the attributes. Click “Set” when done.



# Configure the Wireless System

## *Configure the Wireless Switch*

In **Monitor→AP**, choose the view by Tree or topology, and double click the wireless switch you want to change the setting, and the configuration window will pop up.

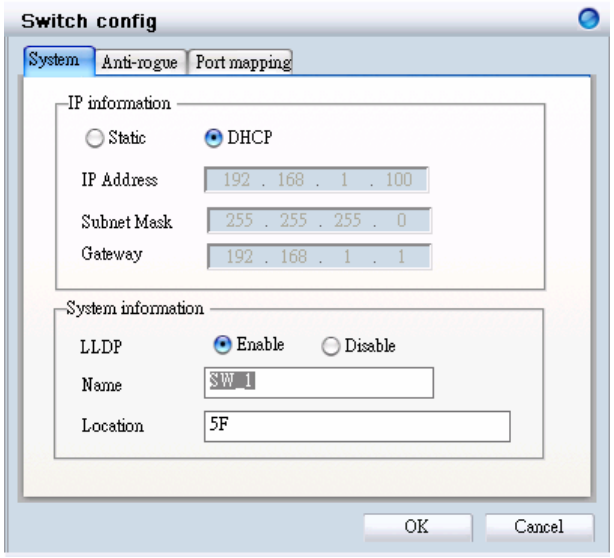
### System Configuration

**IP Address –** Users can choose static or dynamic (DHCP) IP address for the wireless switch. When static IP is selected, please manually input the IP Address, Subnet Mask and Gateway IP.

**LLDP –** Select to **Enable** or **Disable** the LLDP function. When the LLDP function is enabled, the LLDP will begin searching the access points.

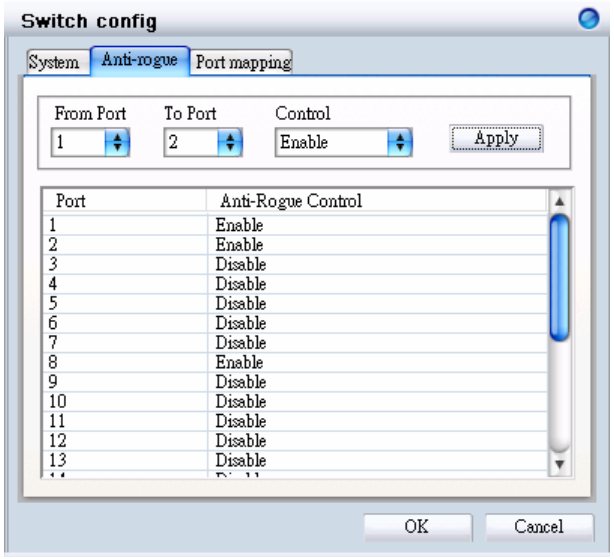
**Name -** Enter the system name for the wireless switch.

**Location -** Enter the location of the wireless switch.



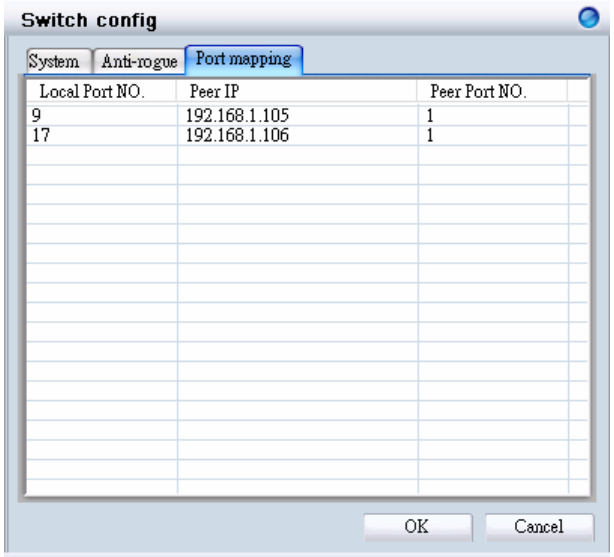
## Anti-Rogue Configuration

Configure the ports you want to enable the anti-rogue function. Once it is enabled on a port, the switch will check the AP with the system key to determine if it will be authenticated or denied.




## Port Mapping Configuration

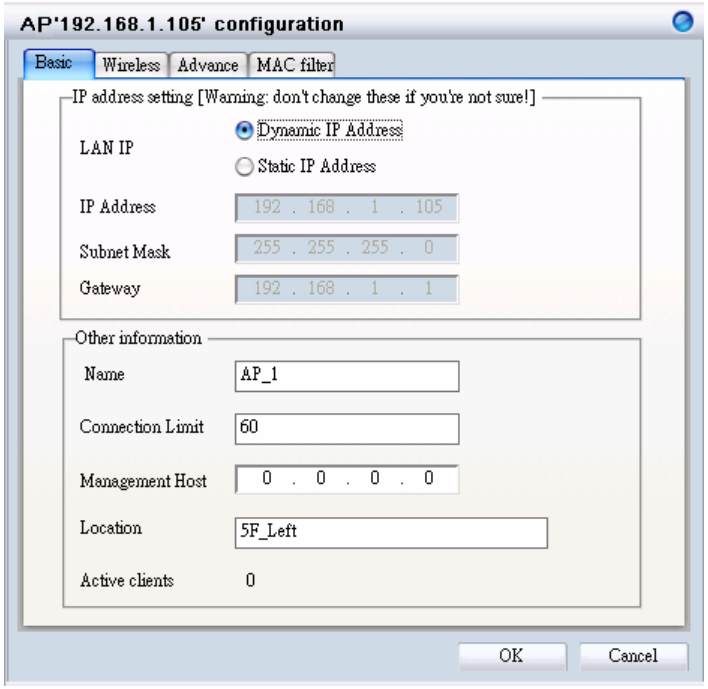
It shows the ports that access points connect to, and their IP addresses.



## *Configure the Access Point individually*

In **Monitor→AP**, double click the AP you want to change the setting, and the configuration windows will pop up.

### Basic Configuration




**IP Address –** Users can choose either static or dynamic (DHCP) IP address for the wireless switch. When the static IP was selected, please manually input the IP Address, Subnet Mask and Gateway IP.

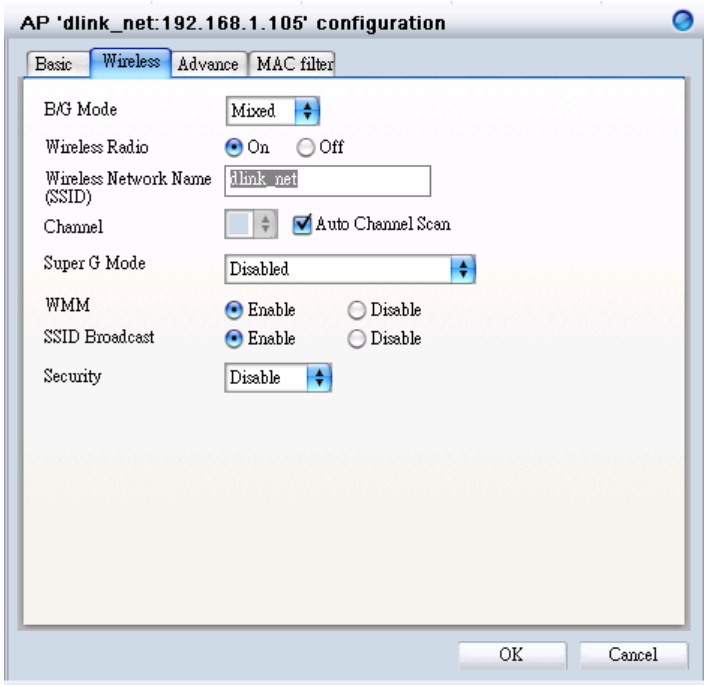
**Name -** User can input the system name for the access point.

**Connection Limit -** Maximum number of clients can be connected. Default value is **60.**

**Management Host -** Configure the IP address of the Smart WLAN Manager. Default is **none**.

**Location -** Users can input the location of the AP.

# Wireless Configuration




**B/G Mode -** Select if you want to include both 802.11b and 11g devices (**Mixed**), or only 802.11b (**B_only**), or 802.11g (**G_only**) device on the network.

**Wireless Radio –** Select to turn the radio wave **On or Off**.
**Wireless Network Name (SSID) -** The Service Set Identifier of the wireless network.

**Channel -** Allows you to manually choose a channel. It's only selectable when *Auto Channel Scan* is disabled.

**Auto Channel Scan -** Select this option to allow the channel to be decided automatically.

**Super G Mode -** Select this option to enable the wireless signal rate of up to 108Mbps. You can choose with or without Turbo mode. (**Note**: You can only choose Super G or B/G mode for AP, these two mode cannot be enabled at the same time.)

**WMM –** Select to **Enable or Disable** the Wi-Fi Multimedia (WMM) function. Enabling this feature will improve the user experience for multimedia application if the wireless device supports WMM as well.

**SSID Broadcast –** Select to **Enable** or **Disable** the broadcast of the SSID.

**Security -** Select the security setting of the network. The available authentication mechanisms include:

- **Disable** (default)
- **WEP**
- **WPA**

### WPA2

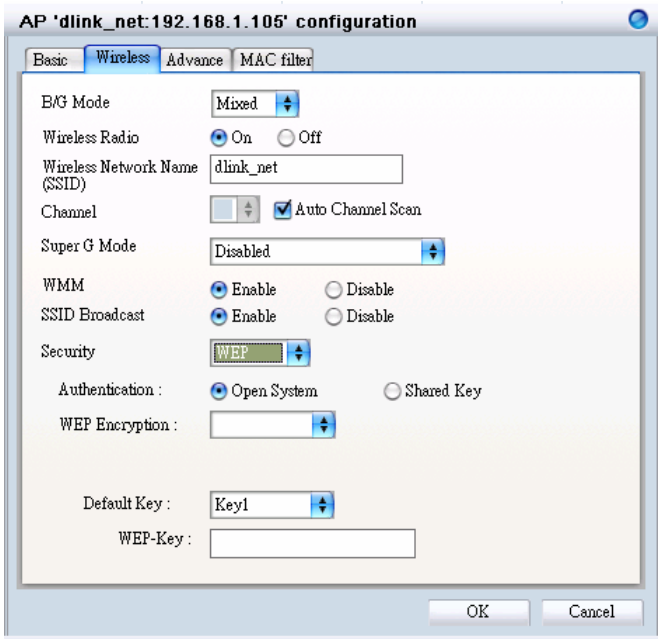
If you select **WEP** as the security type, additional columns will appear with the following options.

**Authentication -** Select **Open System** or **Shared Key** to be used on the network.

**WEP Encryption -** Select the key size (**64-bit, 128-bit**, or **152-bit**).

**Default Key -** Select which defined key is active on the network.

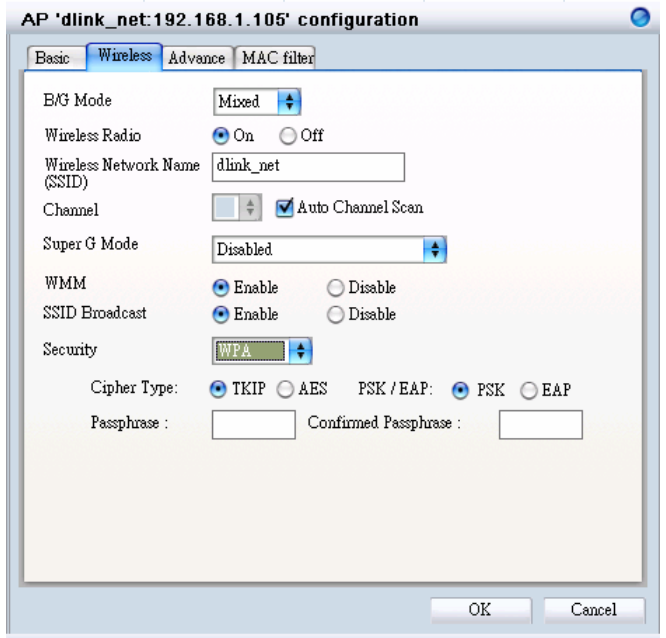
**WEP-Key -** Enter a string as the key.




If you select **WPA-PSK** or **WPA2-PSK** as the security type, additional columns will appear with the following options.

**Cipher Type -** Select **TKIP** or **AES**.

**Passphrase -** Enter a string as the Passphrase.



If you select **WPA-EAP** or **WPA2-EAP** as the security type, additional columns will appear with the following options.

**Cipher Type -** Select **TKIP** or **AES**.

**Radius Server 1 -** Enter the IP address, port used, and the secret of the Radius server 1

**Radius Server 2 -** Enter the IP address, port used, and the secret of the Radius server 2

## Advanced Configuration

**Transmit Data Rates -** Select the maximum wireless signal rate of the AP. Default is **Auto**.

**Transmit Power -** Select the transmit power of the AP. Default is **100%**.

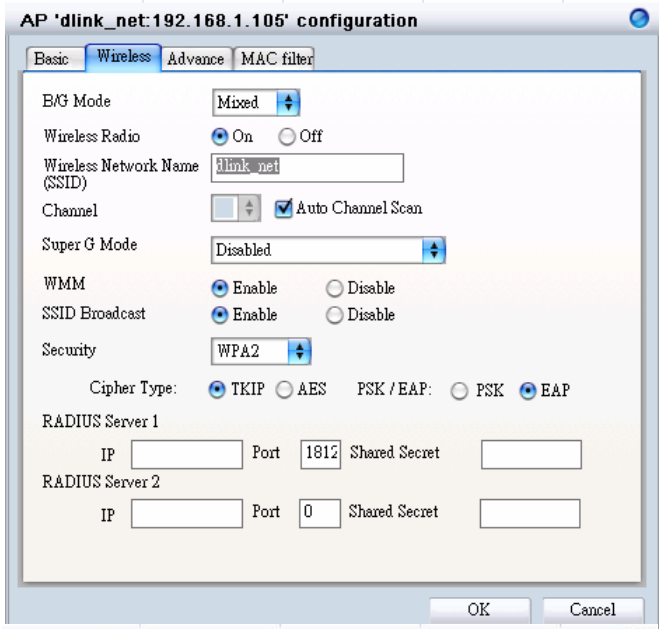
**Beacon Interval -** Beacon is the packet sent by an AP to synchronize a network. Specify the interval to send a beacon. Default is **100** microseconds.

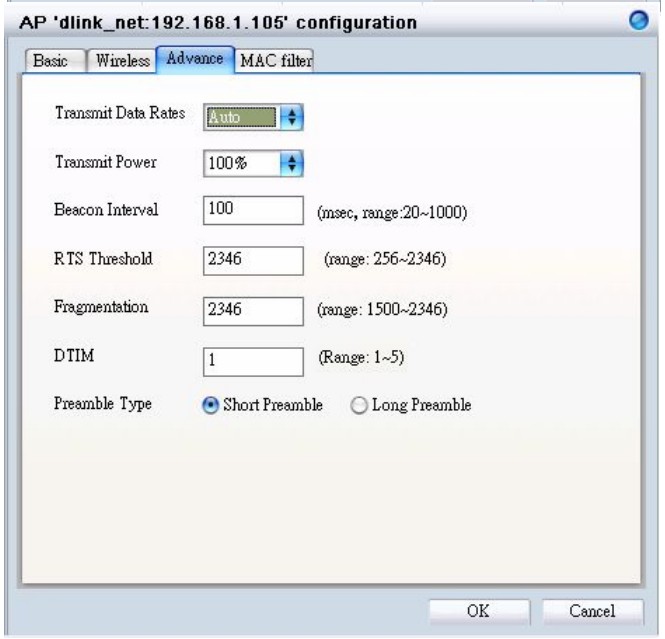
**RTS Threshold -** The RTS threshold should not be changed (recommended), unless you encounter inconsistent data flow. The default value is **2346**.

**Fragmentation -** Specify the fragmentation threshold that packets exceeding it will be fragmented. Default is **2346** bytes.

**DTIM -** DTIM (Delivery Traffic Indication Message) is a countdown informing clients of the next listening window for broadcast and multicast messages. The default value is **1**.

**Preamble Type -** Select **Short** or **Long** preamble.



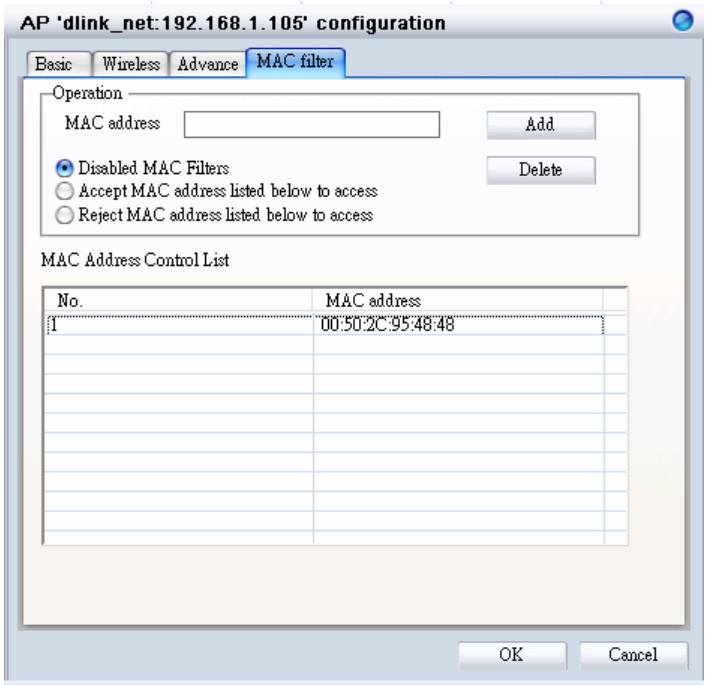
# Mac Filter Configuration

**MAC Address - Add** MAC addresses to the MAC Address Control List. Select an entry on the Address Control List and click **Delete** if you want to remove that Mac address.

**Disable MAC Filters -** Not filtering based on the Mac addresses.

**Accept MAC Filters listed below to access -** When it is selected, only devices with a Mac address in the list are granted access.

**Reject MAC Filters listed below to access -** When it is selected, only devices with a Mac address in the list are not granted access.



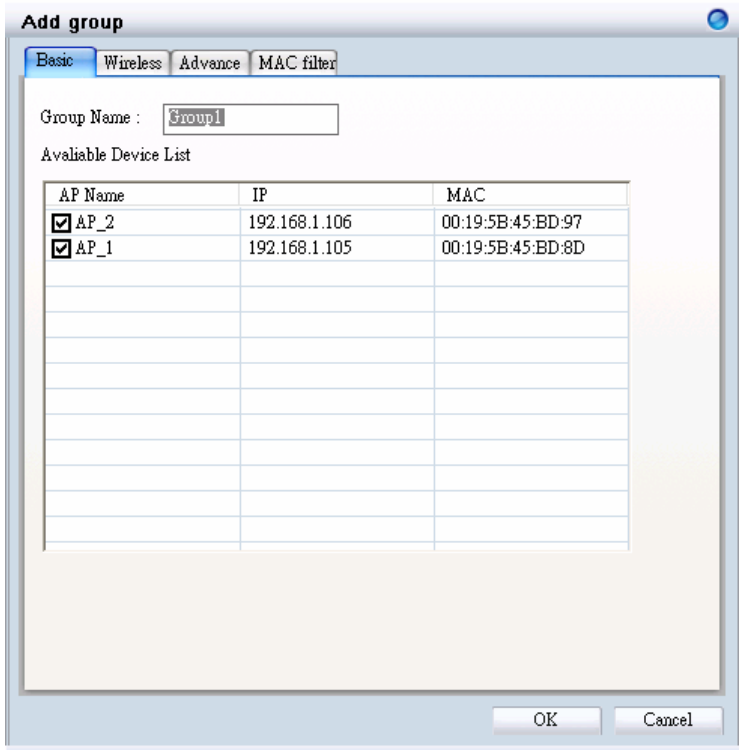
# *Configure the Access Point by Group*

In **Group**, users can configure a group template for multiple access points' use.

## Create a Group Template

Click the "Add Group" icon ( ) and a window will appear:

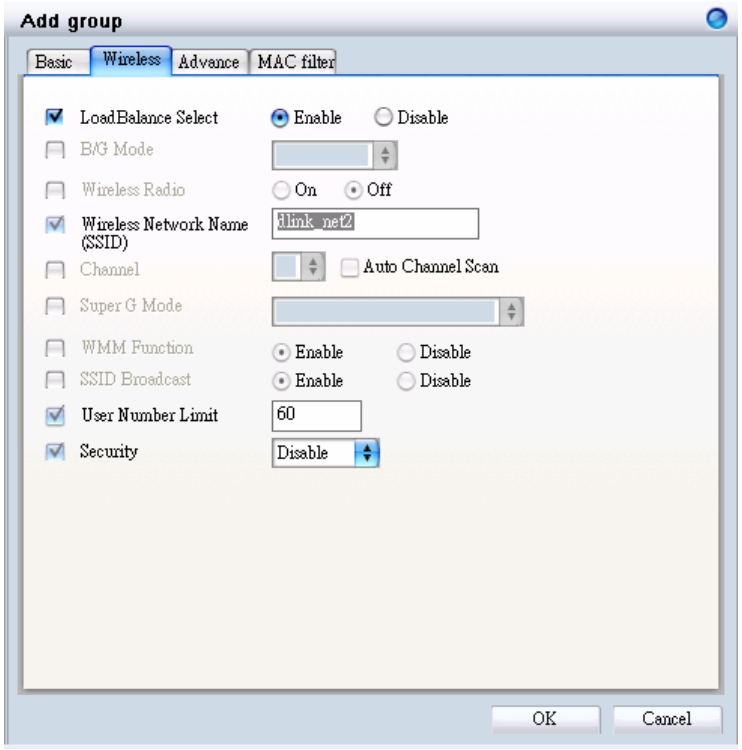
Enter the group name and choose which APs you want to include in this group. You can also add APs after a group is created.



In the Wireless tab, you can choose if want to enable the **Load Balance** function, and other options. When configuring load balance, **SSID**, **User Number Limit**, **Security**, and **MAC Filter** must be specified as well.

When the load balance is enabled, and once the number of clients are connected to an AP has reached the threshold, the new client can only join other APs with connection limits available.

**Note:** For a detailed explanation on Wireless, Advanced, and MAC Filter functions, please refer to section 3.2.2 through 3.2.4.

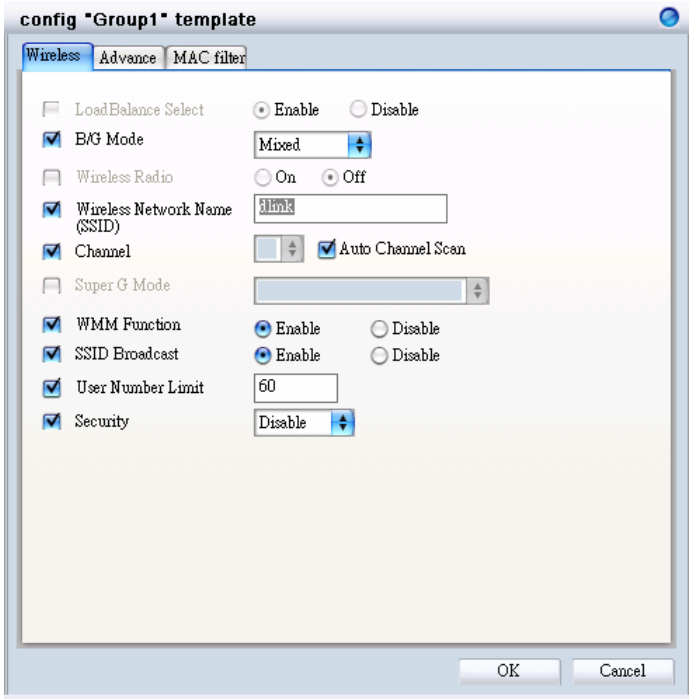



Click “OK” when you are done. The template with access points will appear in the database column.

**Note:** If you choose to apply the configuration template to an AP, the AP will reboot.

## Edit a Group Template

Click the “Configure Group Template” icon ( ) and an edit window will appear:

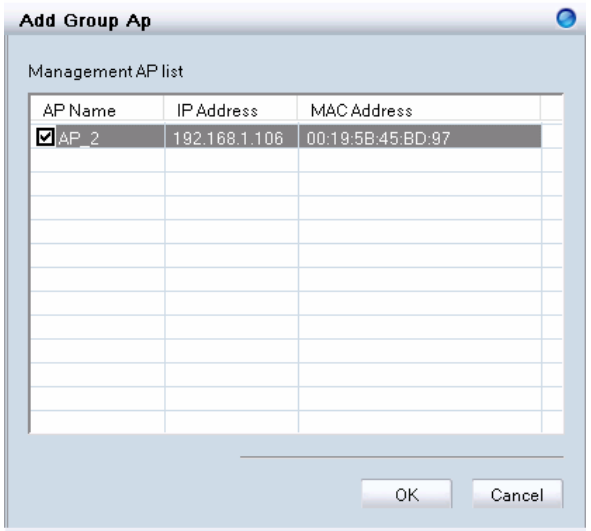



**Note:** For a detailed explanation on Wireless, Advanced, and MAC Filter functions, please refer to section 3.2.2 through 3.2.4.

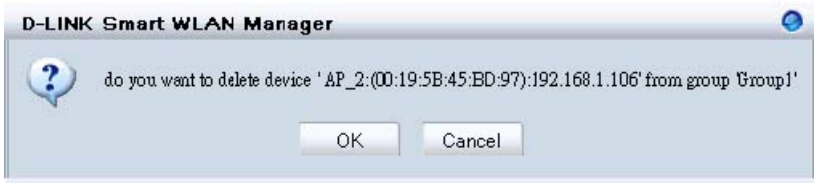
Click “OK” when you are done.

**Note:** Changing a configuration template will cause all APs in the group to reboot.

**Add AP:** If you want to add a new AP to the template, just click the “Add AP to selected group” icon ( ) and a window will appear.



**Delete AP/Template:** If you want to remove an AP from the group, or delete a template, just select the AP or template (the entry will be highlighted in gray), and click the “Delete Group/AP” icon ( ); a warning message will appear.




Or

**Show AP Configuration:** Click the “Show AP Configuration” icon ( ) to display the configuration of selected AP.

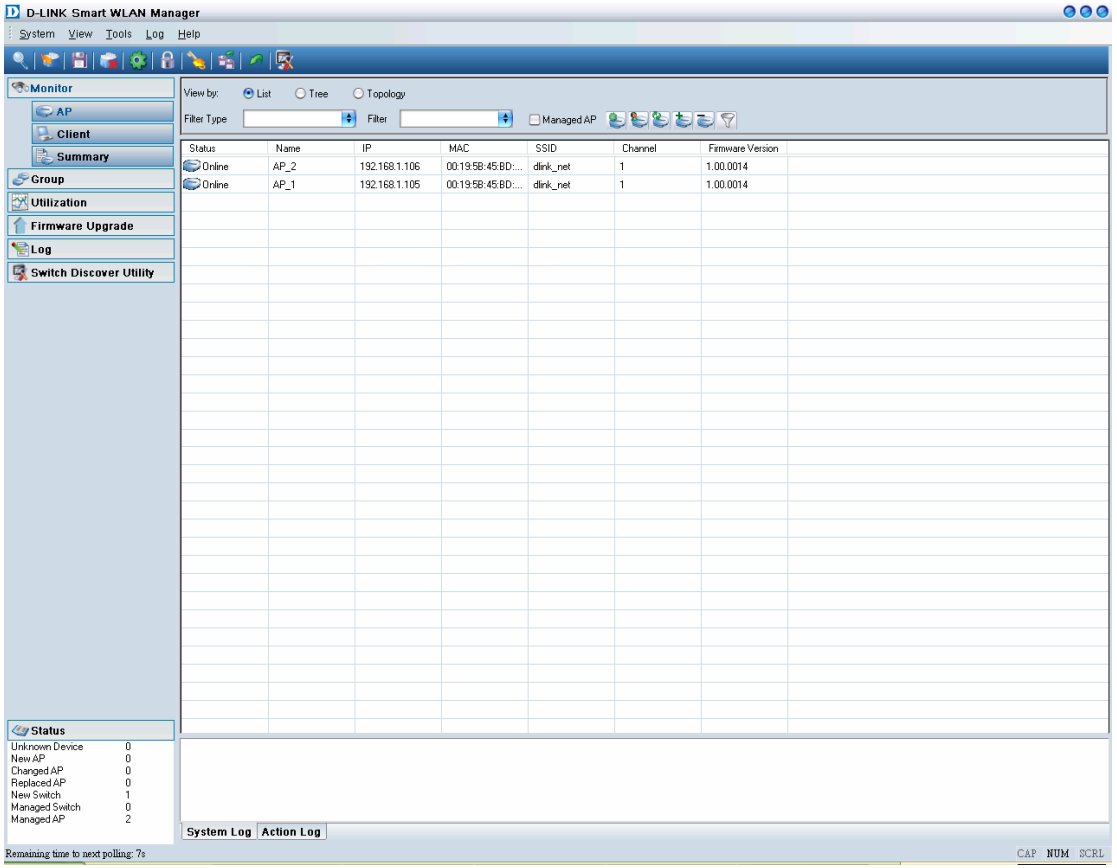
# Management

## *Monitoring*

The Monitor function allows users to view the wireless system status.

### Monitoring AP and Wireless Switch by List

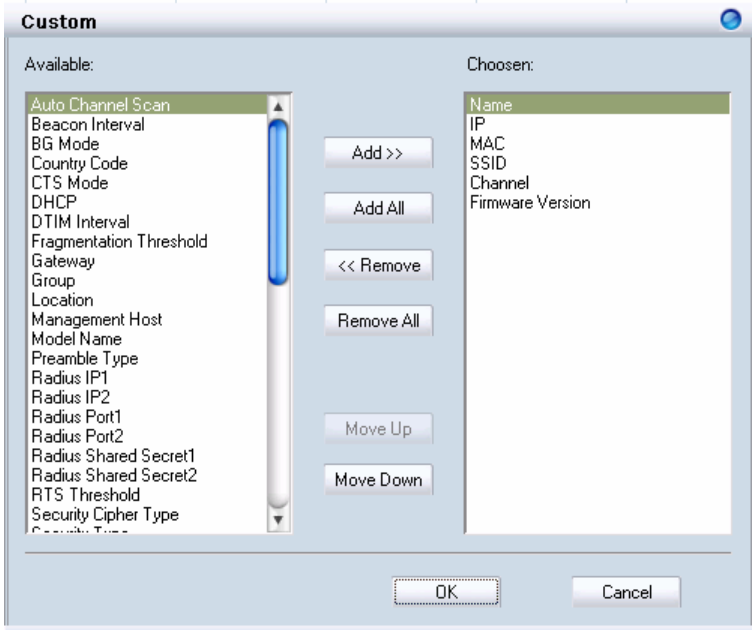
In **Monitor→AP**, users can choose three different views. View by **List** lists the information of wireless access points in the database column. If a failure happens, the icon will change from online ( ) to failed ( ).




The following options are provided:

1. **Filter Type:** Users can enable the filter to narrow down the database display by various attributes.
2. **Filter:** After the *Filter Type* is chosen, users can select the specific content.
3. **Managed AP:** Check this option if you just need to see the managed AP only.
4. **Configuration ( ):** Users can view or modify the selected AP's configuration
5. **AP Connection ( ):** It will redirect users to the selected AP's *Utilization* page.
6. **Reload Previous Configuration ( ):** Allows users to reverse the AP to the previous configuration.

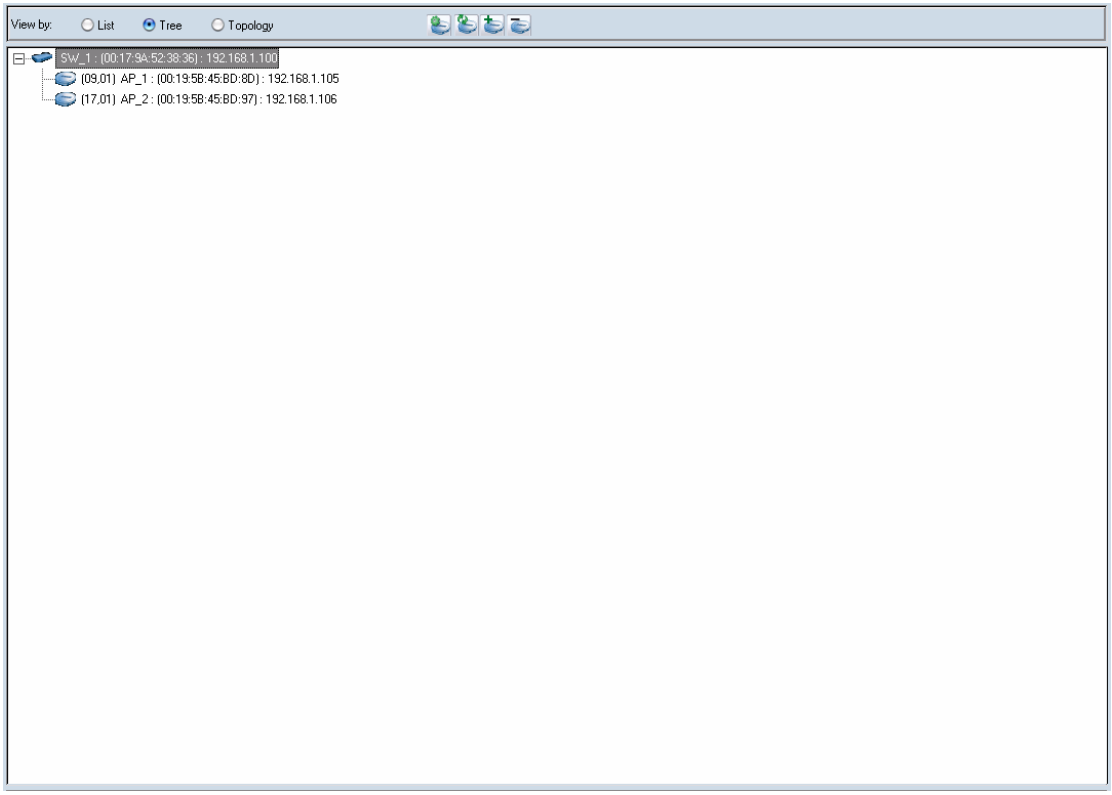
7. **Save to Database ( ):** To add a newly found AP to the database.
8. **Delete from Database ( ):** To delete an AP from the database.
9. **Customize ( ):** Users can change the view by adding/deleting attributes according to their needs.




10. **Replace:** Right click the selected AP and choose “Replace”.

## Monitoring AP and Wireless Switch by Tree

View by **Tree,** lists down the wireless switch and the access points connected to it in the database column. The information displayed includes System Name, Mac address, IP address, and the physical port in which the AP connects to the switch. If a failure happens, the icon will change from online ( or ) to failed ( or ).




The following options are provided:

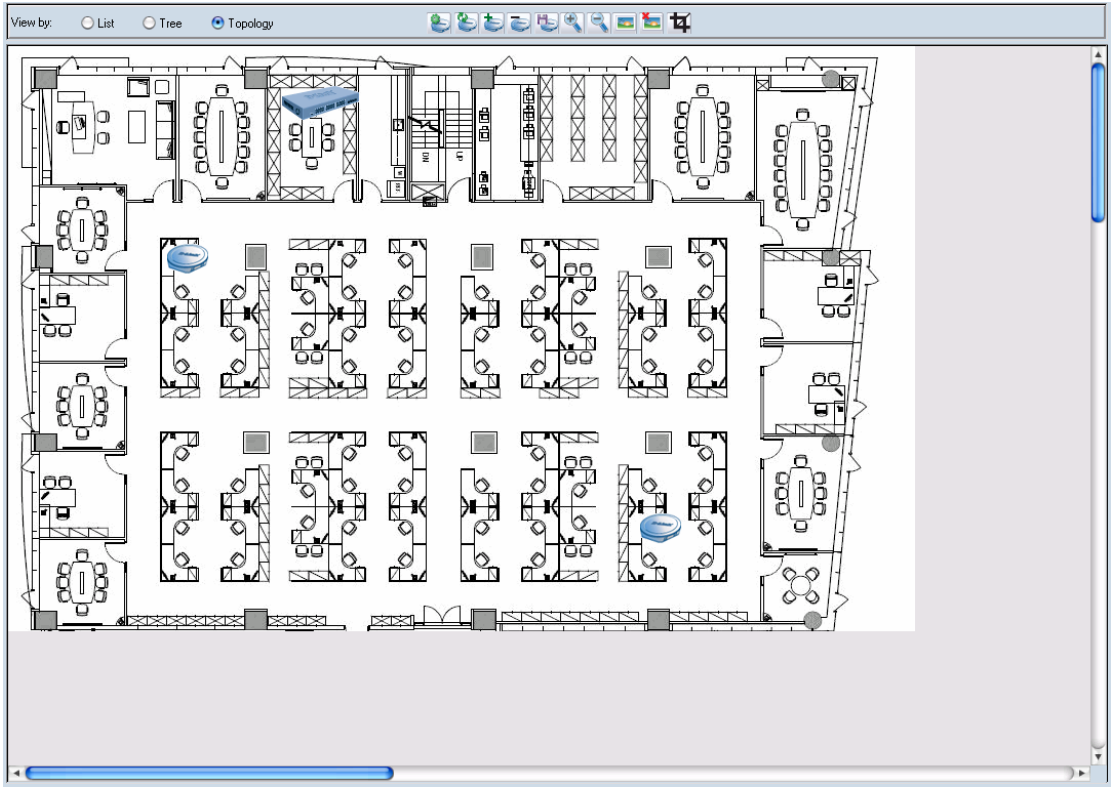
1. **Configuration ( ):** Users can view or modify the selected AP's configuration.
2. **Reload Previous Configuration ( ):** Allows users to reverse AP to the previous configuration.
3. **Save to Database ( ):** To add a newly found AP to database.
4. **Delete from Database ( ):** To delete an AP from database.

## Monitoring AP and Wireless Switch by Topology

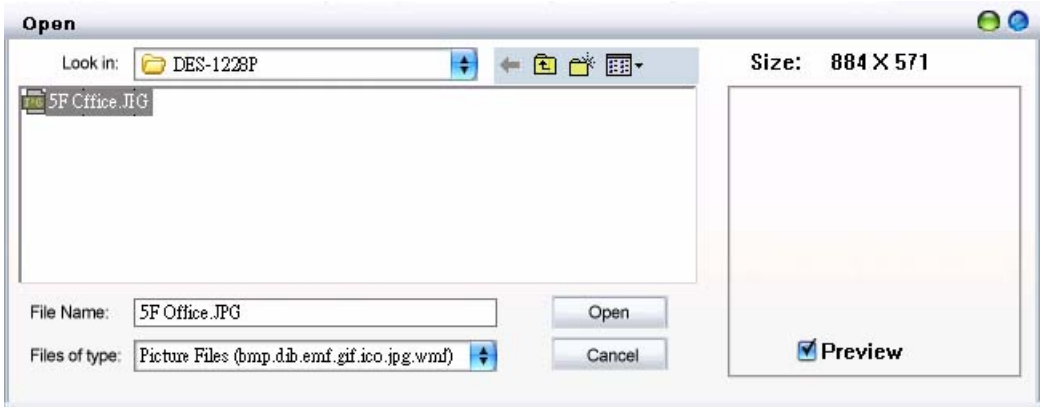
Choose to view by **Topology, Monitor→AP** offers users to visualize the status of the AP and wireless switch on a floor plan. After importing the map, users can drag the icons to their locations. If a failure happens, the icon will change from online (  or  ) to failed (  or  ).

The following options are provided:

1. **Configuration (  ):** Users can view or modify the selected AP's configuration.
2. **Reload Previous Configuration (  ):** Allows users to reverse the AP to the previous configuration.
3. **Save to Database (  ):** To add a newly found AP to the database.
4. **Delete from Database (  ):** To delete an AP from the database.
5. **Save Topology Position (  ):** To reserve the location, the user must set the AP and wireless switch; otherwise it will return to the default when the Smart WLAN manager is restarted.
6. **Zoom In (  ):** Users can get a closer look of the floor plan.
7. **Zoom Out (  ):** Users can choose to see the topology overview.

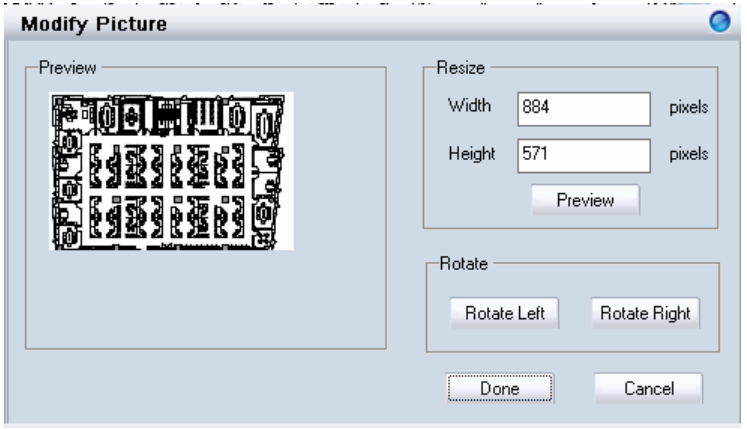


8. **Load Map ( ):** Import the picture file as the floor plan file. The file types supported are BMP, DIB, EMF, GIF, ICO, JPG, and WMF.



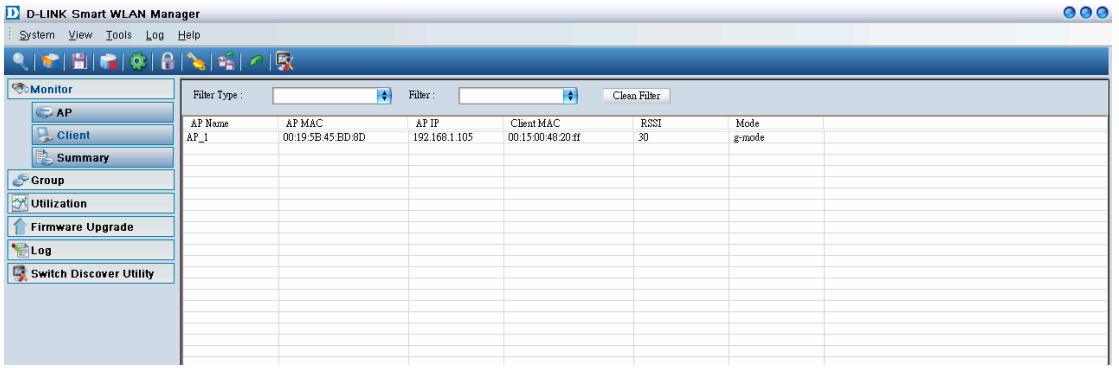

9. **Remove Map ( ):** Remove the current floor plan.

10. **Modify Map ( ):** Users can resize the picture by pixels, and can preview them before taking efforts. Rotating the picture can also be done.



## Monitoring Clients

In **Monitor→Client**, users can see the status of wireless clients connected.

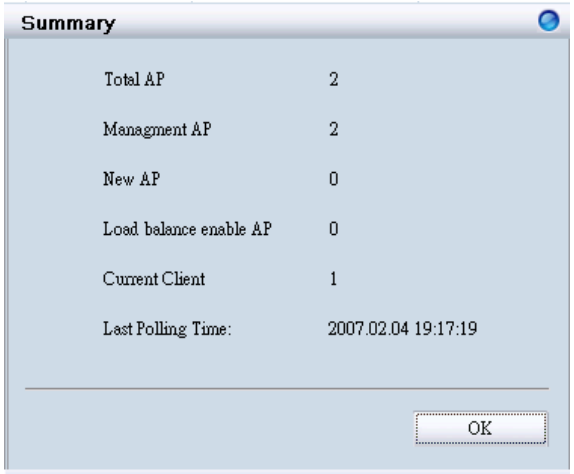



The following options are provided:

1. **Filter Type:** Users can enable the filter to narrow down the database display using various attributes
2. **Filter:** After the *Filter Type* is chosen, users can select the specific content.

## Monitoring Summary

In **Monitor→Summary**, a summary window will appear to provide the following information:



# AP Status and Trouble Shooting

| Status | List view | Tree view | Topology view | Description/Trouble shooting | Remark |
|---|---|---|---|---|---|
| Normal online AP |  |  |  | An AP links and works properly in the network. | |
| Changed AP |  |  |  | A known AP which its configuration has been changed.<br>You can reload the original setting or save the current setting by:<br>1. Reload: double click to Reload the old configuration, or<br>2. Save: press to save the current configuration. | |
| New AP |  |  |  | A new AP was discovered by WLAN Manager. | |
| Offline AP |  |  |  | An existing AP lost the connection<br>1. Check the status of the connected switch and ensure the switch is online.<br>2. Cold start the AP from the switch webpage.<br>3. Cold start the AP detached from the wire reconnected to the switch.<br>4. Factory reset. | Please check “Appendix” to do a “Cold Start” and “Factory Reset”. |
| Replaced AP |  |  |  | An existing AP was replaced by a new AP.<br>You can reverse the AP to the previous configuration, or save the current setting by:<br>Replace: double click to reverse the previous configuration<br>Save: press to save current status | |
| DHCP error | |  |  | An AP cannot get an IP from the DHCP server<br>1. Make sure that the DHCP server for the AP is available.<br>2. If the DHCP server did not connect, please reconnect the DHCP server and wait for about 60 seconds, then press the start polling from WLAN manager<br>3. If the DHCP server was connected, you can try any one of following methods:<br>a. Cold start the AP from the switch webpage and Restart Shutdown the POE from the switch.<br>b. Cold start by the reconnected AP.<br>c. Factory reset.<br>d. Restart the port from the web. | Please check “Appendix” to do “Cold Start” and “Factory Reset”. |
| Anti rogue key error | |  |  | The Anti Rouge AP function of the switch was enabled, but the key of the AP and switch is not matched.<br>The AP key is different with the connected switch, to activate the system | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | key manager Solution, you can try any one of following methods:<br>1. Select the all managed system key Error Device.<br>2. All managed devices change to same system key.<br>3. Disable the anti rouge function from the switch.<br>4. Factory reset the AP and switch. | |
| Not available | |  |  | WLAN Manager can discover the AP successfully but cannot get configuration from the AP correctly.<br>Possible problems:<br>1. Password error; Delete the troubled AP and run the discovery wizard to find the AP again, make sure the password is correct before discovering the AP.<br>2. Different subnet; change the management PC subnet and,<br>a. Try to cold start the AP by web, or<br>b. Try to factory reset. | |
| Unknown device | |  |  | Unknown network devices. | |
| Switch on line | |  |  | The DES-1228P switch links and works properly in the network. | |
| Switch offline | |  |  | The existing DES-1228P lost the connection:<br>1. Check the switch power.<br>2. Check the SNMP community, cable and subnet.<br>3. Factory reset the switch. | |
| New Switch | |  |  | A new DES-1228P switch was discovered by WLAN Manager. | |
| Group apply AP |  | | | The AP setting is same with group setting. | |
| Group not apply |  | | | The AP setting is different with group setting. | |

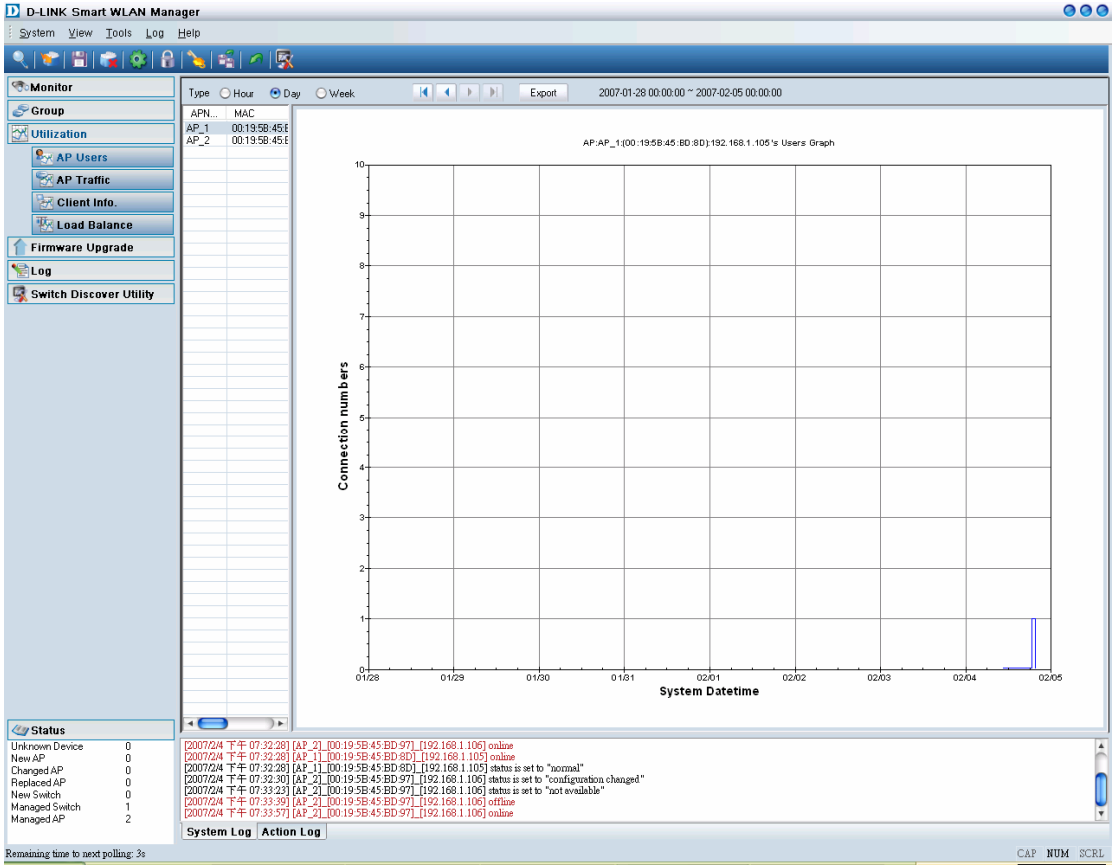
**Note:** If the discover utility can't find any switch or AP, please ensure there is only one NIC (network interface card) in your PC, multiple NIC may make the system work abnormally.

## *Utilization*

In Utilization, users can monitor four different statistics by graphic reports.

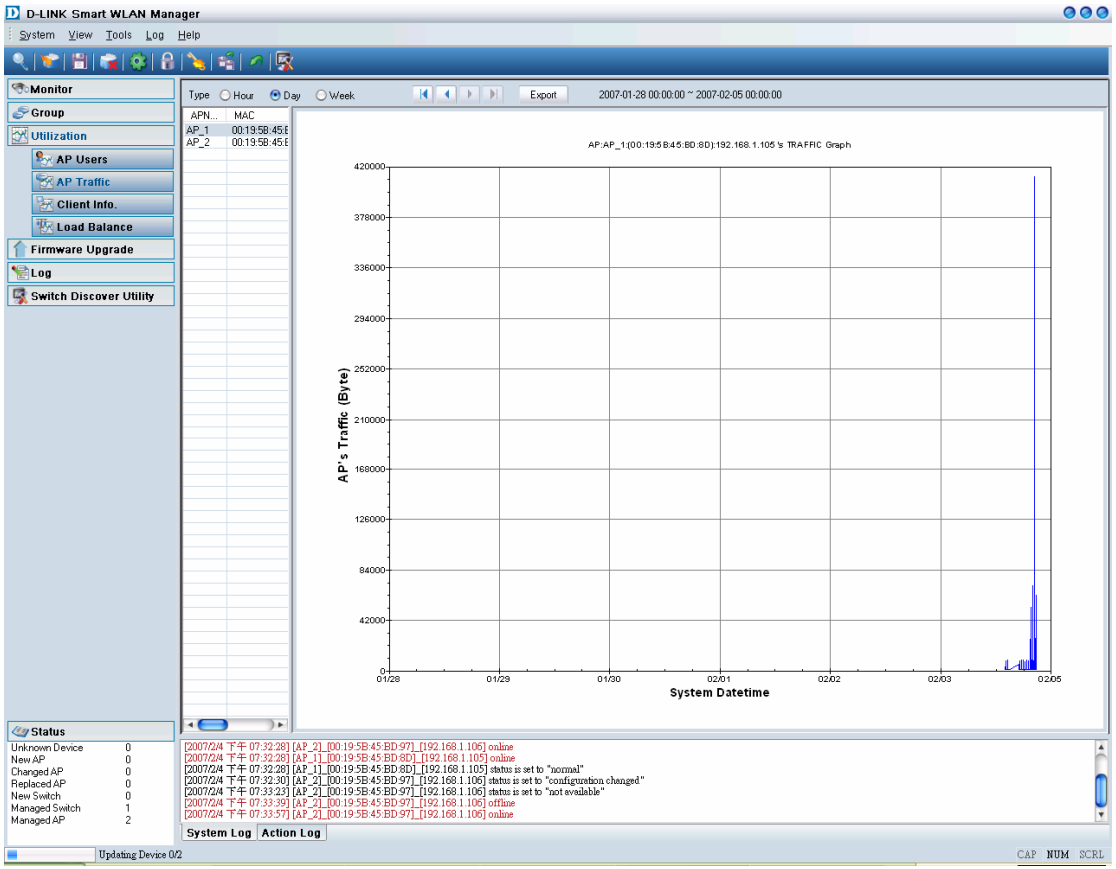
## Utilization→AP Users

This allows users to see the connected client numbers of an access point. You can select the display type by **Hour**, **Day**, or **Week**. The supported file format for exporting includes CSV and PDF.



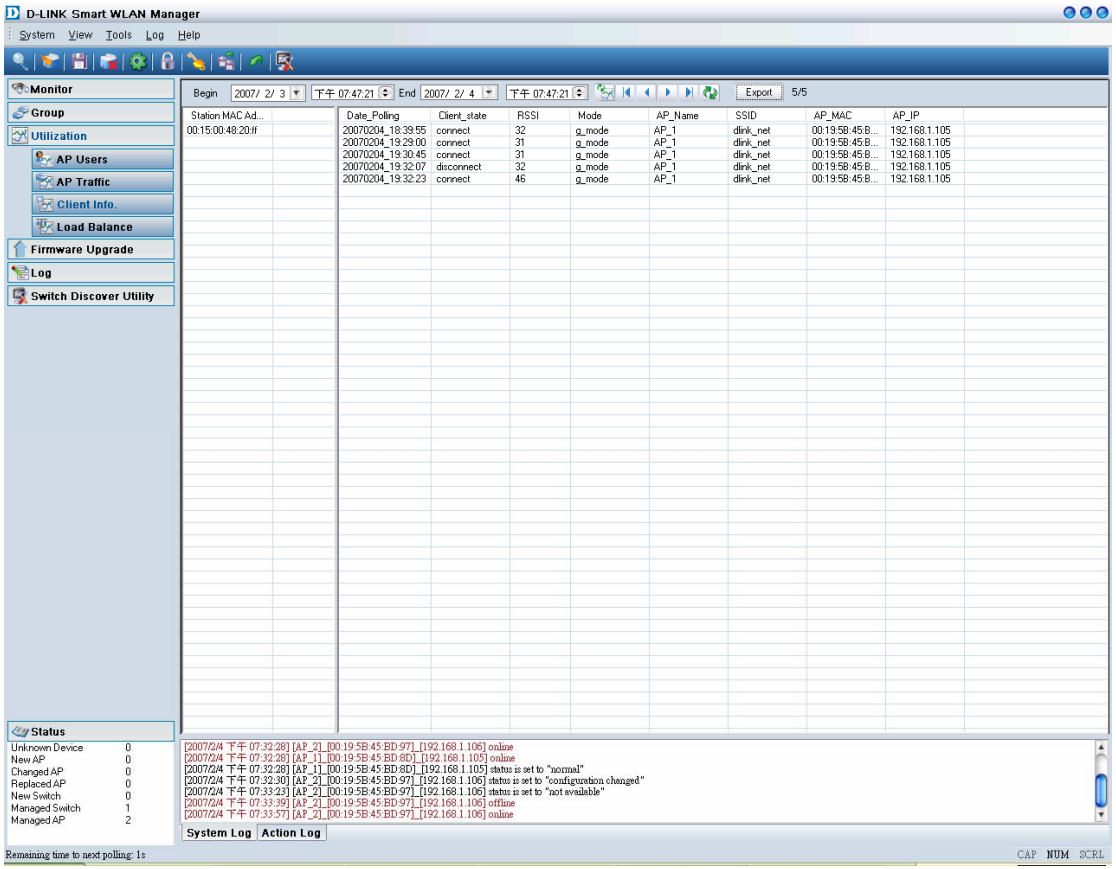
# Utilization→AP Traffic

This allows users to see the traffic volume of an access point in bytes. You can select the display type by **Hour**, **Day**, or **Week**. The supported file format for exporting includes CSV and PDF.



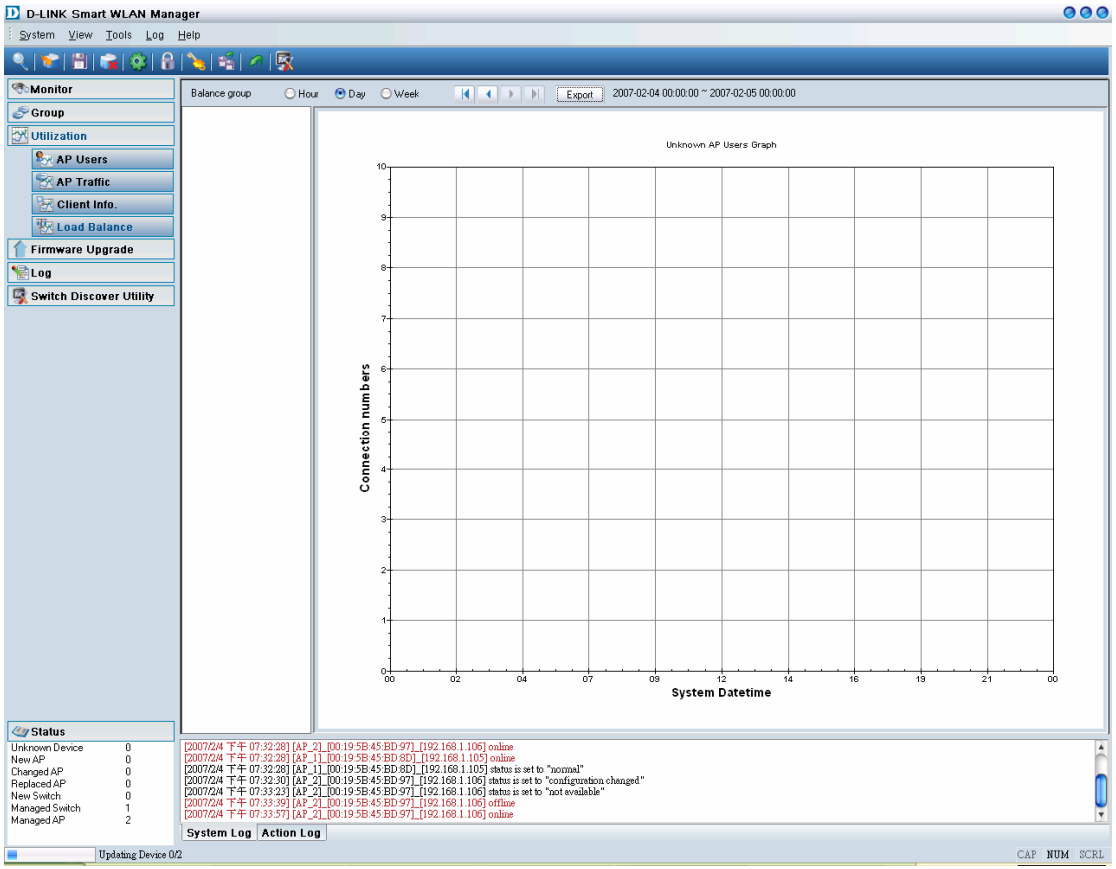
## Utilization→Client Info.

This allows users to see the status history of a wireless client. The supported file format for exporting is CSV.



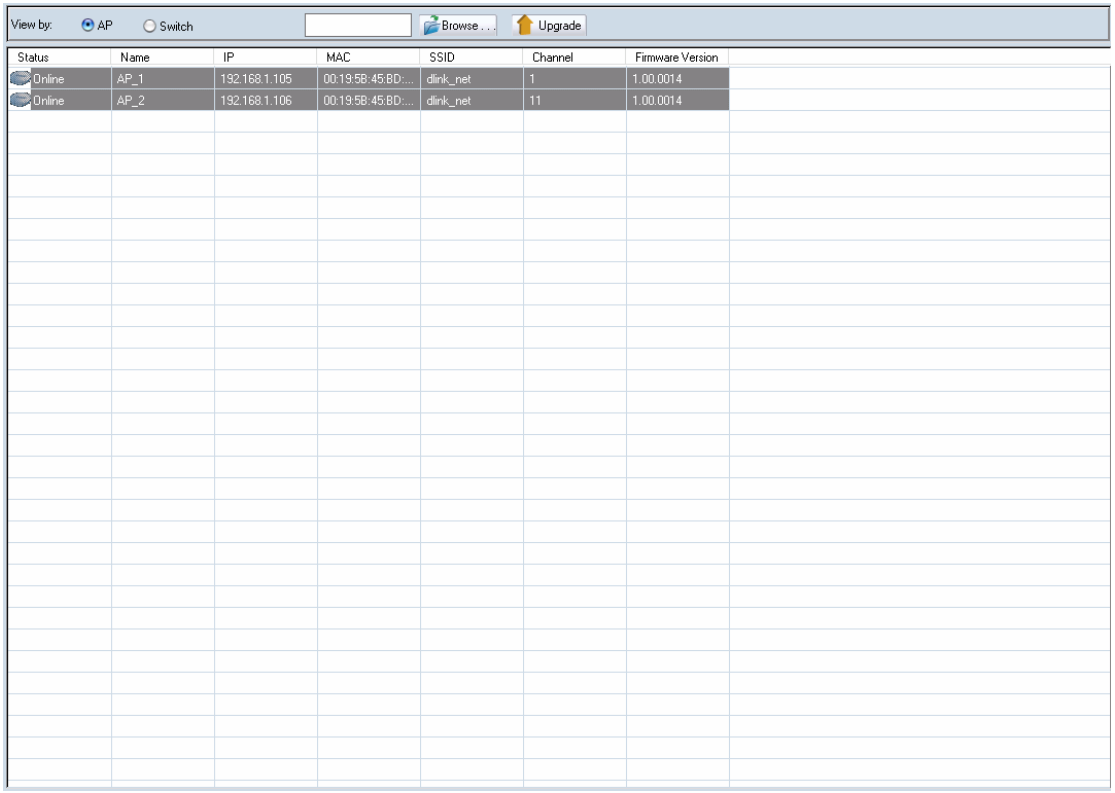
# Utilization→Load Balance

This allows users to see the status of a load balance group. You can select the display type by **Hour**, **Day**, or **Week**. The supported file format for exporting is CSV.



## *Firmware Upgrade*

The Smart WLAN Manager allows users to upgrade multiple devices' firmware all at once. To select a single device, just click on the device you want to select. To select multiple devices, hold down the **Ctrl** key while clicking on each additional device. To select an entire list, hold down the **Shift** key, click on the first device and then click on the last device on the list.



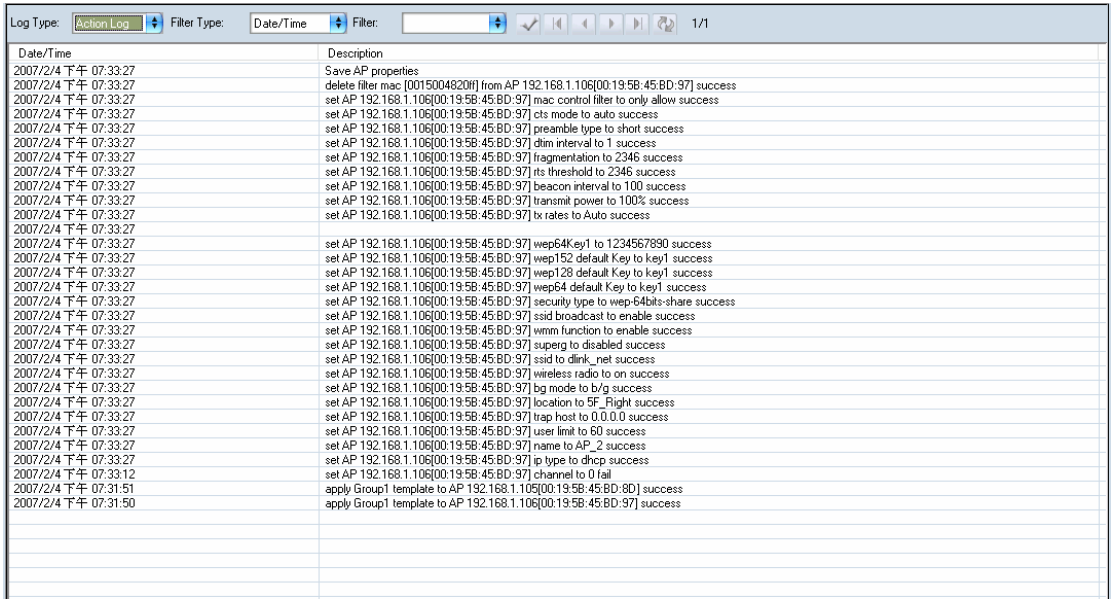

To upgrade the firmware:

1. Change to view by AP or switch.
2. Select the new image file by clicking the "Browse" icon.
3. Select the devices.
4. Select "Upgrade".

After the firmware is downloaded and upgraded, the device will reboot to complete the procedure.

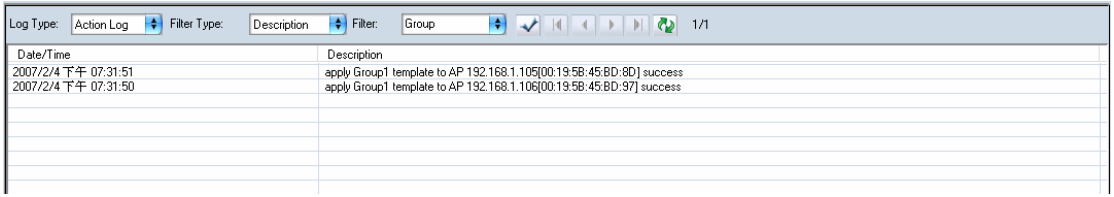
# *Log*

The Smart WLAN Manager offers two kinds of logs: **Action Log** and **System Log**. Users can save logs by using **Log→Save Log As**, and load a saved log by using **Log→Open Log**. **Log→Clear Log** allows users to clear all the records not saved.

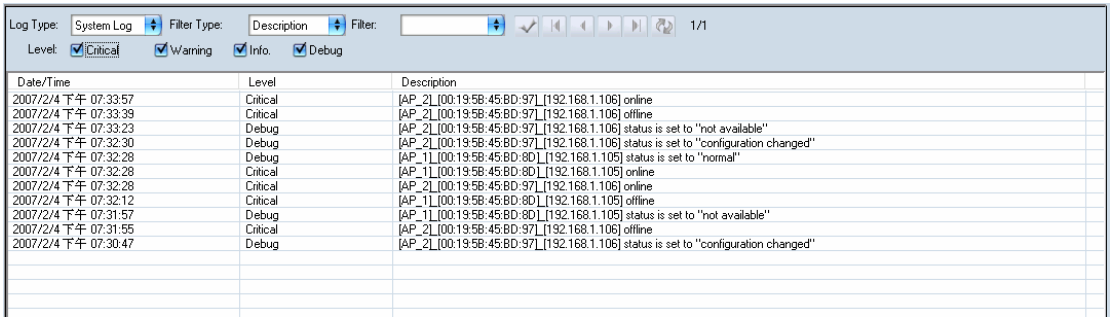



Action Log records all actions users have made. It allows users to filter the log by **Date/Time** or **Description**.

In the following example, users choose the type “Description”, enters “Group”, and click “  ”. The filtered results are shown. To remove a filter, just delete the string entered and click “  ”.




System Log records all system events that have occurred. Users can choose to display by levels they are interested in. Filtering can be used for System Log as well.

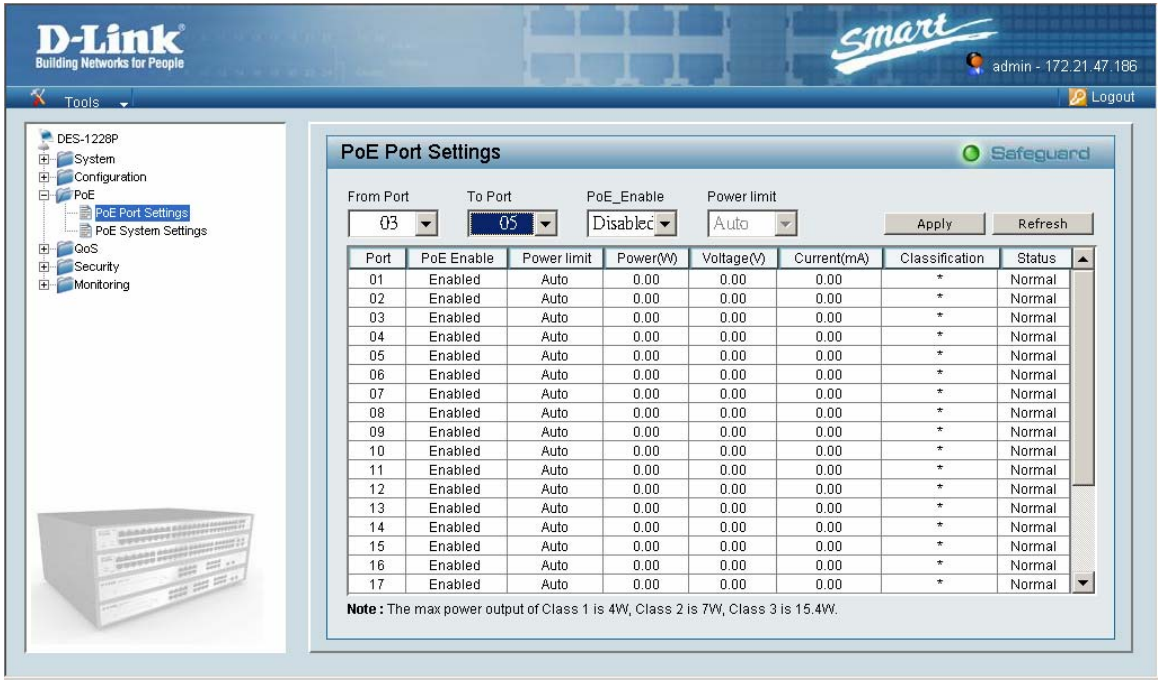


# APPENDIX

## Cold Start the AP:

Please follow the instructions below to *cold start* your AP from the DES-1228P switch Web UI:

1. Connect to the Switch configuration Web page, and select PoE port Settings.
2. Select the AP connected port at the switch, from port and to port, and disable the PoE_Enable
3. Press the “Apply” button and wait for a few seconds
4. Select the “From Port” and “To Port”. Enable the PoE_Enable and wait about 1 minute.
5. Activate the WLAN Smart Manager and press start polling from the toolbar.



## Factory reset

Please follow the 2 steps for factory reset:

1. Reset the DWL-3140 AP to its factory default settings.
2. Restore the other devices on your network to their default settings, by pressing the Reset button on the top of the unit. Please note you will lose the current configuration settings by doing so.