

# Configuration Guide

## *Smart AP Control (SAPC)*



# Catalogue

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# Overview

## > Main Features:

- ◆ AP auto discovery (subnet-based discovery)
- ◆ AP auto IP assignment
- ◆ AP group management (bulk provision, upgrade, reboot, LED control)
- ◆ AP provisioning
- ◆ AP SSID, radio configuration
- ◆ AP LED control
- ◆ AP bulk firmware upgrade
- ◆ Remote AP power reboot
- ◆ Floor map view
- ◆ Floor map import, custom map export\*
- ◆ Real-time AP signal coverage display
- ◆ Real-time AP and wireless client status monitoring
- ◆ Real-time graphical statistics view
- ◆ Real-time wireless channel distribution
- ◆ Rogue AP detection\*
- ◆ Wireless MAC black list\*
- ◆ Ban clients per AP\*
- ◆ Dashboard view
- ◆ Remarks: \* means new features will be added through system updates.

## > System Requirement:

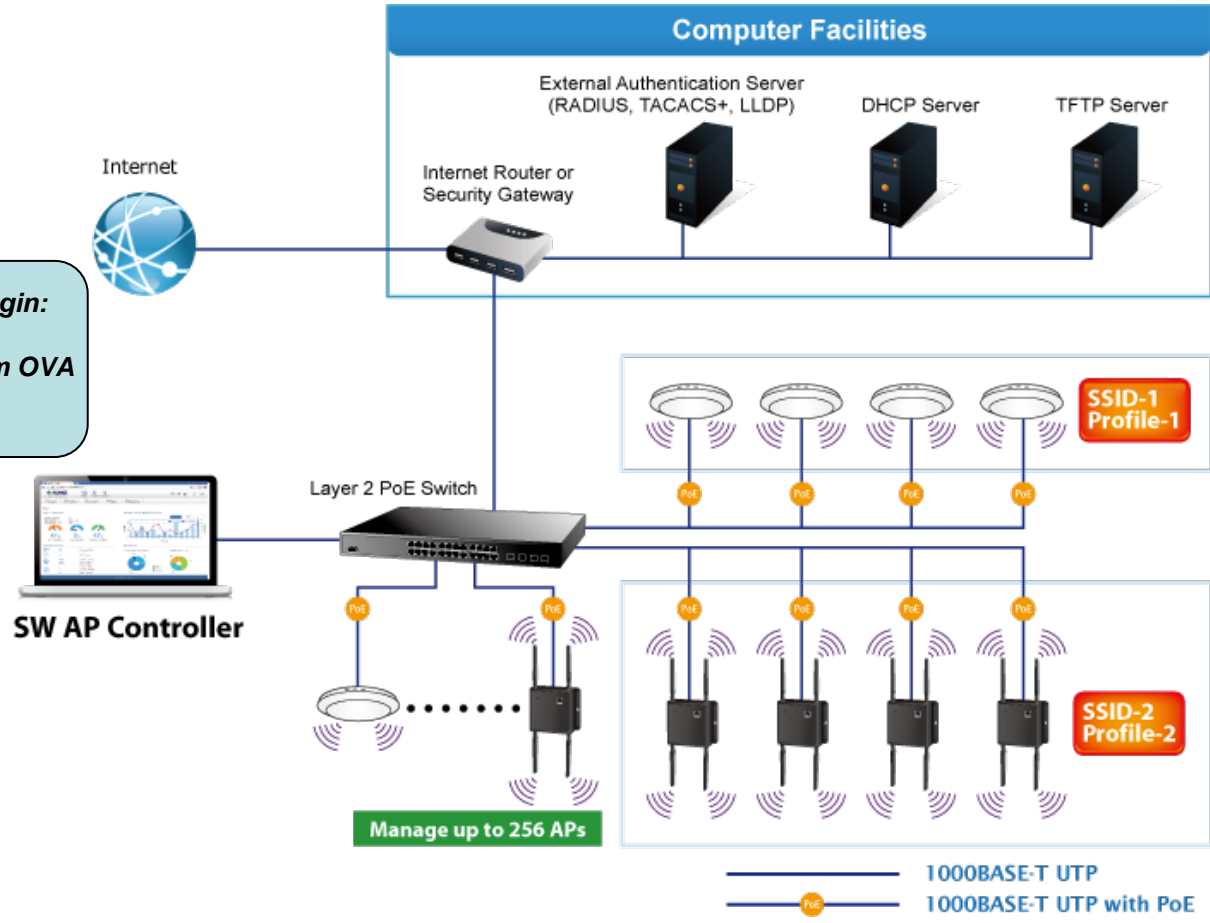
- ◆ CPU: Intel Core i3 3.4 GHz dual-core or above
- ◆ RAM: 4 GB minimum
- ◆ HDD: 200 GB (actual requirement is dependent on log size)
- ◆ OS: Microsoft Windows 7/8/8.1/10  
Note: supported OS is dependent on virtualization product
- ◆ Virtualization : Oracle VirtualBox 5.0 or later
- ◆ Browser: Chrome 31.0 or better

## > Compatible Managed APs:

- ◆ WDAP-W7200AC
- ◆ WDAP-C7200AC
- ◆ WNAP-C3220A
- ◆ WNAP-W2201A
- ◆ WNAP-W2200UE
- ◆ WDAP-C7200E
- ◆ WNAP-C3220E
- ◆ WBS-202N
- ◆ WDAP-702AC
- ◆ WBS-502AC
- ◆ WAP-252N
- ◆ WBS-502N
- ◆ WDAP-802AC
- ◆ WAP-552N
- ◆ WBS-200N
- ◆ WAP-200N
- ◆ WAP-500N
- ◆ WBS-500N

# Application

3 steps to follow for the first-time login:  
 1. Install Virtual Box for your OS  
 2. Import Smart AP Control System OVA  
 3. Login system through browser  
 ( Chrome only )



Manage up to 256 APs

# Main UI Introduction



# Home Page - Dashboard UI Structure

**A** - Header bar containing the PLANET logo, system status (1 AP(s), 0 Client(s), 0 Group(s)), and navigation icons.

**B** - Navigation icons for Home, System Information, Managed APs, Settings, Tools, Refresh, and Logout.

**C** - System Information section showing:
 

- System Version: v1.1b180627
- Management IP: 192.168.1.100
- Management Port: 8888
- CPU Utilization: 10%
- Disk Utilization: 6.9%
- Memory Utilization: 26%

**D** - Managed APs on Wireless Channels chart showing Tx Power and AP Numbers across channels 1-13 for 2.4GHz and 5GHz.

**E** - Network Summary table:

	1	Managed APs
	0	AP Groups
	0	2.4GHz Clients
	0	5GHz Clients
	4	SSID Profiles
	0	2.4GHz Profiles
	0	5GHz Profiles

**F** - AP Summary section showing an AP Status Chart (1 Online) and Current Clients of Top APs (There is no client).

# Main Dashboard - Description

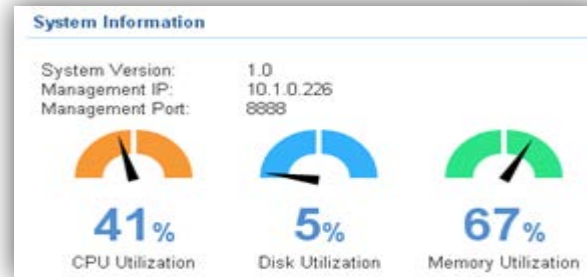
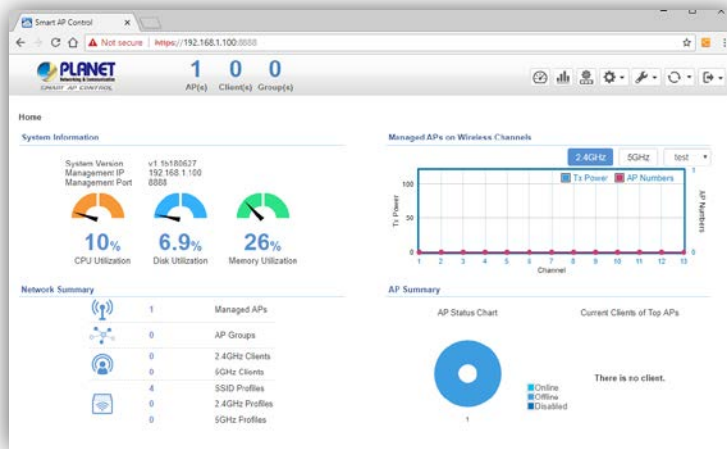
Item	Description	Remark
A	<b>AP Status Summary</b>	<ol style="list-style-type: none"> <li>Shows a rough system status: Current APs online (total online), AP Groups (total groups), Clients (total active clients)</li> <li>Click the PLANET Logo to connect to PLANET web site.</li> </ol>
B	<b>System Menu</b>	<p>From Left to right:</p> <ol style="list-style-type: none"> <li>Dashboard (Home): provides the whole system view and wireless network status</li> <li>Graphical Statistics: provides the AP and active clients status in charts</li> <li>AP control: 1. Preference, 2. Search, 3. Profiles, 4. Control, 5. Map It, 6. Statistics</li> <li>System Configuration: includes user configuration, static IP, DHCP client setting.</li> <li>Maintenance: system upgrade, backup, or restore</li> <li>Refresh: auto refresh or manually refresh the page content</li> <li>Exit: click on option to log out, reboot, shut down the system or reset to factory default.</li> </ol>
C	<b>System Information</b>	<ol style="list-style-type: none"> <li>System Version</li> <li>Management IP</li> <li>Management Port,</li> <li>CPU Utilization</li> <li>Disk Utilization</li> <li>Memory Utilization,</li> </ol>
D	<b>Managed APs on Wireless Channels</b>	Shows the total wireless channels in real time
E	<b>Network Summary</b>	Shows the total APs, AP Groups, clients, and profiles in real time
F	<b>AP Summary</b>	Shows the pie charts including AP Status, and Current Clients of Top Aps in real time

# Dashboard Introduction












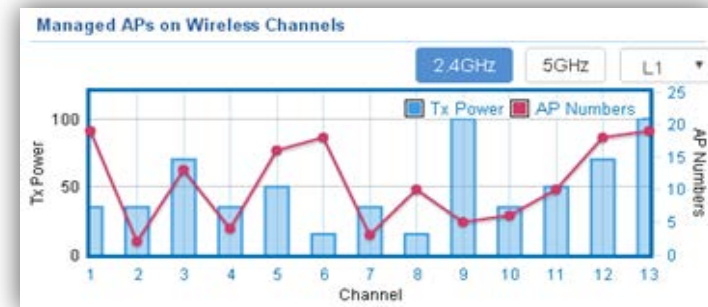
# Dashboard (Home)



➤ **System Information:** In this area, you can view the basic system information including System Version, Management IP, Management Port, CPU Utilization, Disk Utilization, and Memory Utilization.

Network Summary		
	242	Managed APs
	19	AP Groups
	16107	2.4GHz Clients
	15841	5GHz Clients
	5	SSID Profiles
	11	2.4GHz Profiles
	31	5GHz Profiles

➤ **Network Summary:** In this area, you can view the network status including total managed APs, AP groups, 2.4GHz/5GHz clients, and SSID/2.4GHz/5GHz profiles.



- **Managed APs on Wireless Channels:** The chart shows the current number of managed APs with max. Tx power at each channel.
- Click 2.4GHz or 5GHz to switch to a different frequency band. Select the drop-down list to switch between different floor maps if available.

# Dashboard (Home)

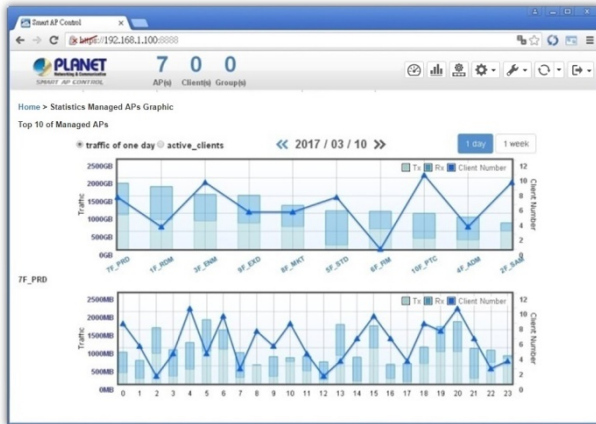


- **AP Summary:** In this area, you can view the pie charts including AP Status, Current Clients of Top APs.
- **The AP Status chart** shows the number of APs online or offline, or Wi-Fi disabled.
- **The Current Clients of Top APs chart** shows the real-time top 3 APs which have max. active clients.

# System Menu - Graphical Statistics



# System Menu – Graphical Statistics



[System Menu – Graphical Statistics]

- **Graphical Statistics:** On this page, you can view the charts including real-time traffic statistics of Top 10 managed APs and active clients.

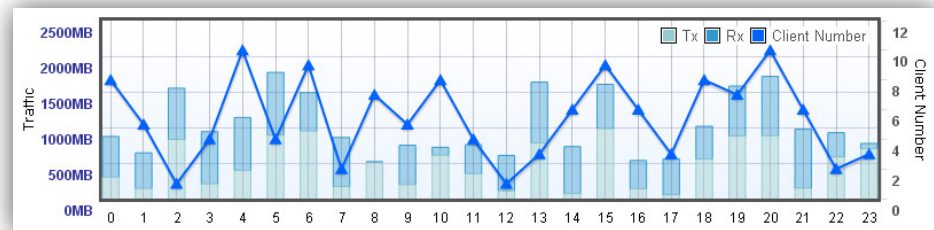
```
Name :Wi-Fi_11ac_AP
MAC :a8:f7:e0:29:43:76
Client Number :0
Total :0 B
```

- Move the cursor on any arrow point to view the hint of the AP status.



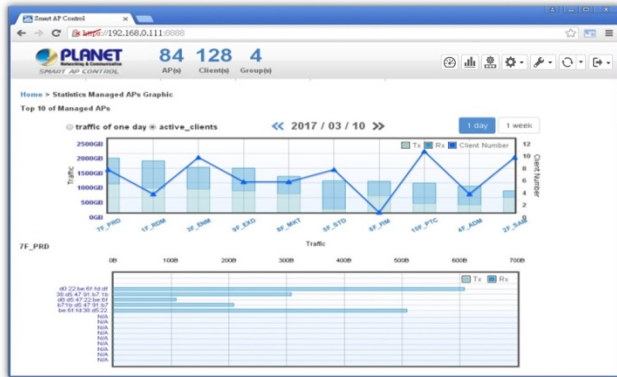
[Top Chart]

- **The Top 10 Managed APs chart** shows the real-time traffic statistics of Top 10.
- Switch for a 1-day traffic statistic view or a 1-week traffic statistic view.
- Click the **AP name** at the x-axis of the top chart to show the statistics of designated APs in the bottom chart.



[Bottom Chart]

# System Menu – Graphical Statistics



[System Menu – Graphical Statistics]

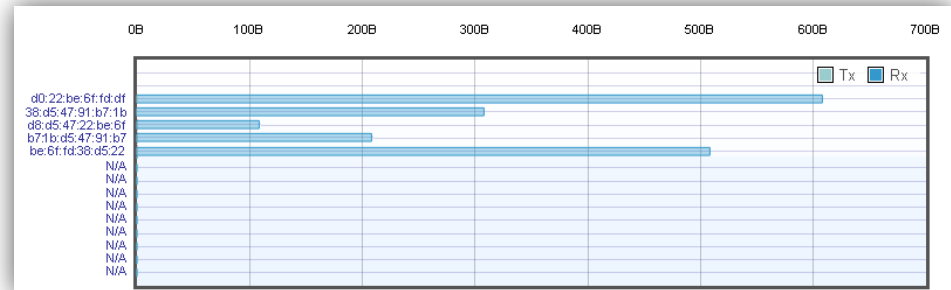


[Top Chart]

- Set the radio option to “**active clients**” and then click the **AP name** at the x-axis of the top chart to show the active clients’ statistics of designated AP in the bottom chart.

```
MAC :d0:22:be:6f:fd:df
Rx :608 B
Total :608 B
```

- Move the cursor on bar to view the hint of the client.



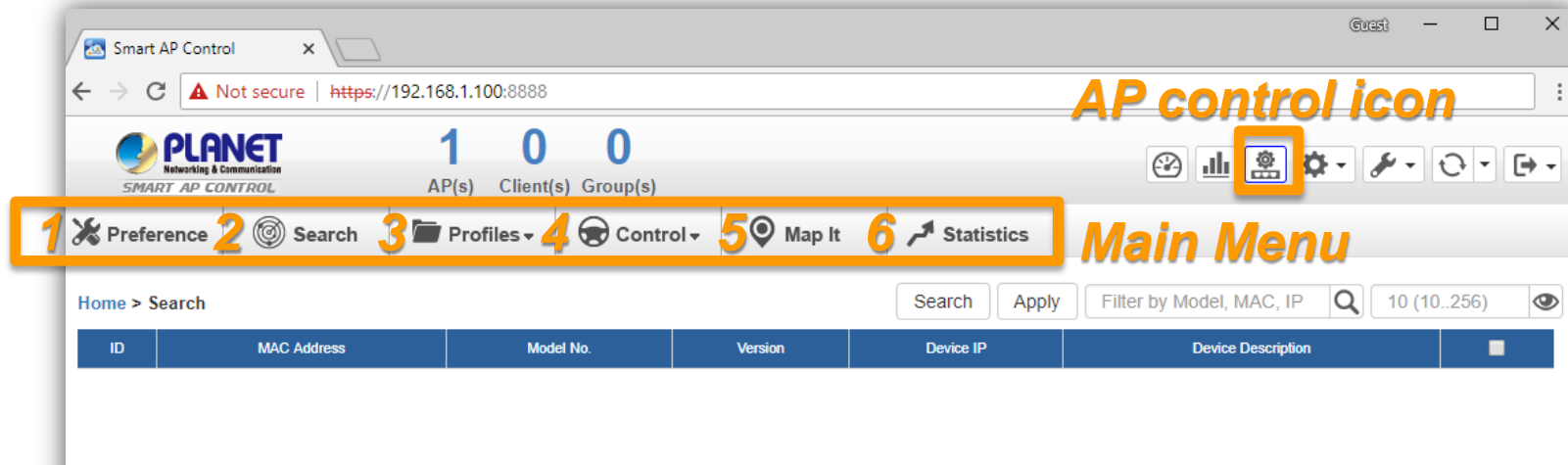
[Bottom Chart]

- **The Active Clients chart** shows the real-time traffic statistics of active clients. Switch to 1 day or 1 week to view the statistics per day or per week.

# System Menu - AP control

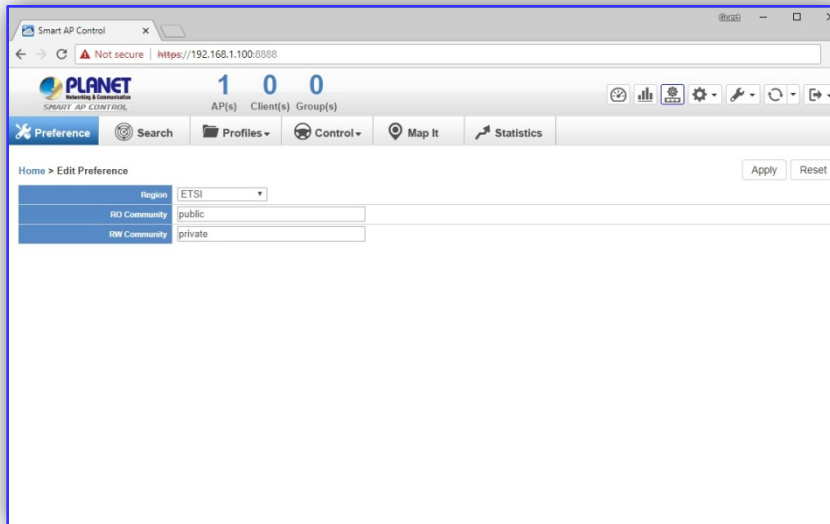


# AP control UI – Structure & Description



Item	Description	Remark
1	Preference	Edit region, RO community, RW community
2	Search	Find the supported AP
3	Profiles	Setup SSID, Radio ( 2.4G, 5G ) Profiles
4	Control	AP and AP group management
5	Map It	Edit the map of AP location and coverage
6	Statistics	Show the status of managed APs and active clients

# Main Menu – Preference



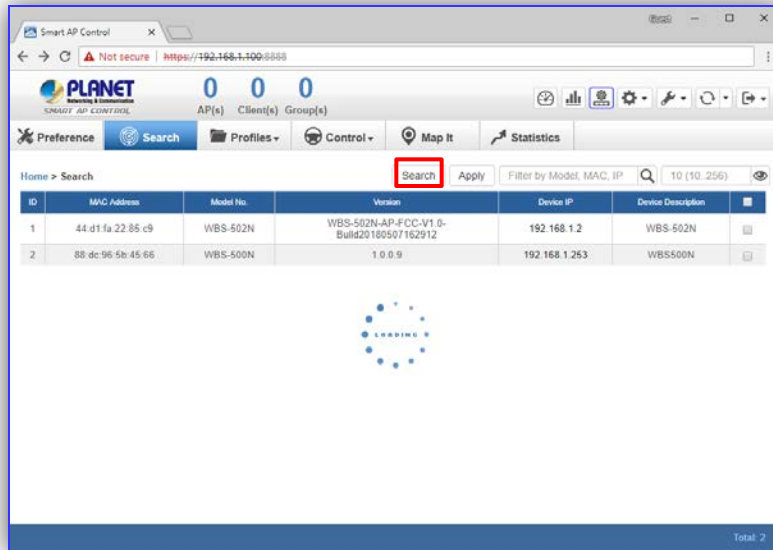
**Note:** Device of FCC and device of ETIS cannot show at the same time.

## [Preference]

- **Preference:** On this page, you can choose the device region of FCC or ETSI.
- Then edit RO community and RW community for public or private use
- Select Apply or Reset.



# Main Menu – Search

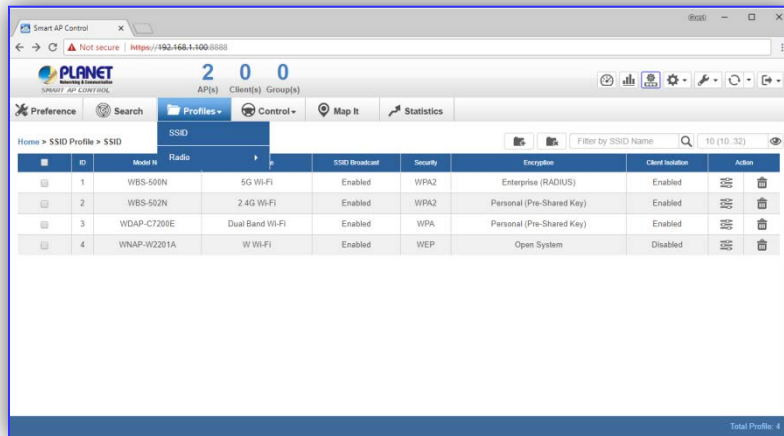


[Search]

- **Filter:** You can filter the search result by entering the keywords in the field next to the magnifier icon. The keywords include: Model, MAC Address and IP Address .
- **View items per page:** You can edit the number of devices (between 10 and 256 pcs) shown on one page.

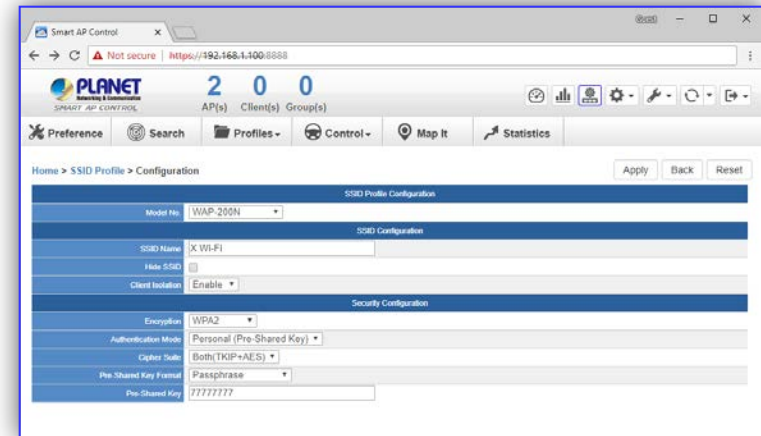
- **Search:** On this page, you can discover the managed APs on the network.
- Click the main menu “**Search**”, and then click the “**Search**” button (Please read the figure above within the red box.) to start to search device.
- Select the specific AP or select all APs by checking the check box to add to the control list for further configuration. After it is selected, please click the “**Apply**” button to take effect.

# Main Menu – Profiles







[Profiles]

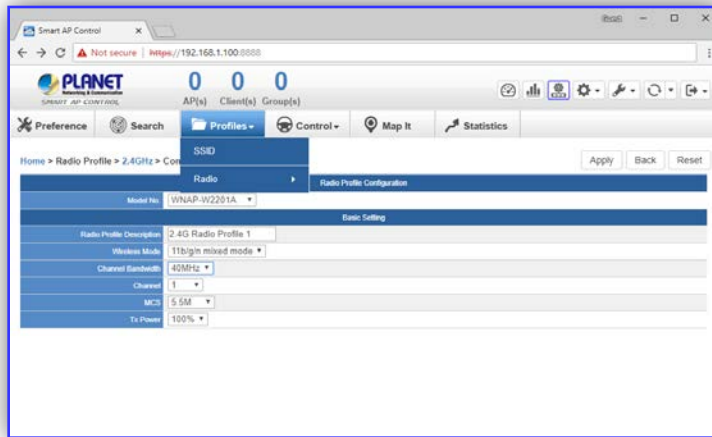
- **Profiles:** On this page, you can create the SSID and 2.4GHz/5GHz profiles for further AP provisioning.
- **SSID Profiles:** Click the “Add new profile” button to add a new SSID profile.
- **Radio Profiles:** Click the “Add new profile” button to add a new 2.4GHz radio profile or 5GHz radio profile.
- You can create up to 32 profiles respectively for each type of profiles (SSID, 2.4G radio, 5G radio).



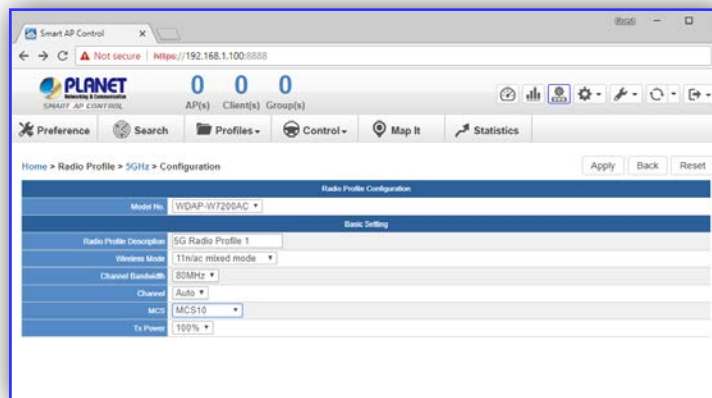
[SSID Profile Configuration]

- On the **SSID profile configuration** page, enter the value that you preferred and then click “**Apply**” to save the profile.
-  **Add new profile:** Click it to add a new profile.
-  **Delete selected item:** Click it to delete the selected profile.
-  **Edit:** Click it to edit the profile.
-  **Delete:** Click it to delete the single profile.
- **Filter:** you can filter the search result by entering the keywords in the field next to the magnifier icon. The keywords include: SSID Name

# Main Menu – 3/Profiles



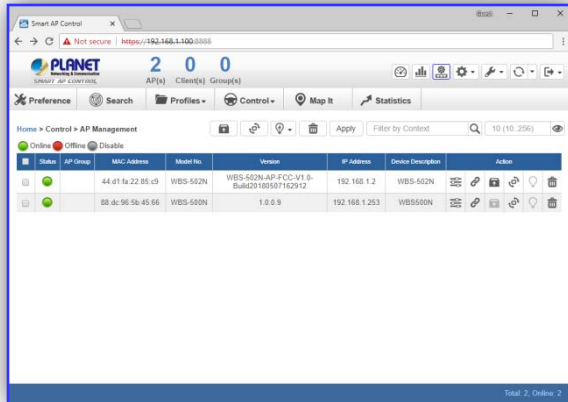
[2.4GHz Radio Profile Configuration]



[5GHz Radio Profile Configuration]

- On the Radio profile configuration page, enter the value that you preferred and then click “**Apply**” to save the profile.
- **Apply:** Click this button to save the settings.
- **Back:** Click this button to return to the previous page.
- **Reset:** Click this button to reset all fields to default value.
- **Remarks:**
  1. Strongly suggested to keep the values as default except the fields including Channel, Network Mode, Channel Bandwidth, Tx Power, IAPP, and Tx/Rx Restrict to prevent any unexpected error or impact on the performance.
  2. WMM Capable is not allowed to be disabled.

# Main Menu – Control



[Control - AP Management]

- **Control:** On this page, the system allows you to control the AP or AP group with specific actions.
- **AP Management:** Go to this page to control single AP or multiple APs respectively.
- **AP Group Management:** Go to this page to create multiple APs as a group or control AP group.
- **Filter:** You can filter the AP list by entering the keyword in the field next to the magnifier icon. The keyword should be any context belonging to the fields including: AP Group, MAC Address, Model, Version, IP Address, and Name.
- **Apply:** Click this button to apply the setting. The profile setting will not take effect until you click the **"Apply"** button on the Control's main page.

## ➤ Status:

- Connection status:** online, offline, Wi-Fi disabled
- In progress:** action in progress
- Finished/Success:** action finished and success.
- Failed:** action failed.

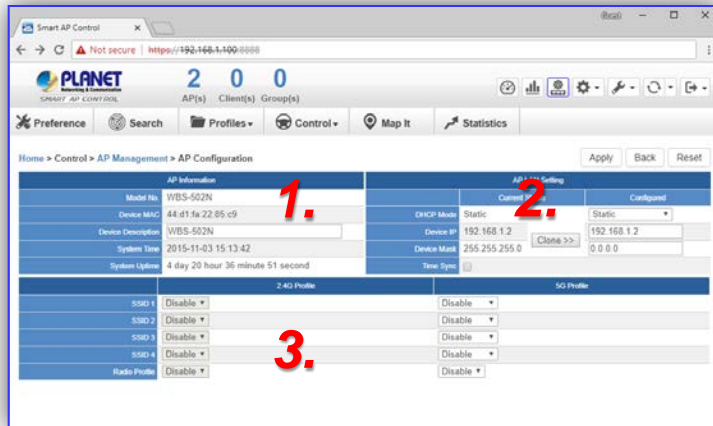
## ➤ Action:

- Setting:** edit setting and allocate profile to AP
- Link:** link to the AP's web page
- Firmware Update :** upgrade AP's firmware
- Reboot:** reboot the AP
- Delete:** delete the AP from the control list
- LED Control:** control the AP's LED.  
Mouse-click in a sequential order:  
LED blink-> LED off-> LED on

## ➤ Remarks:

To configure multiple APs at one time, select multiple APs, then choose one of the action icons on the top of the page. The **"Link"** action is not allowed for multiple APs.

# Main Menu – Control



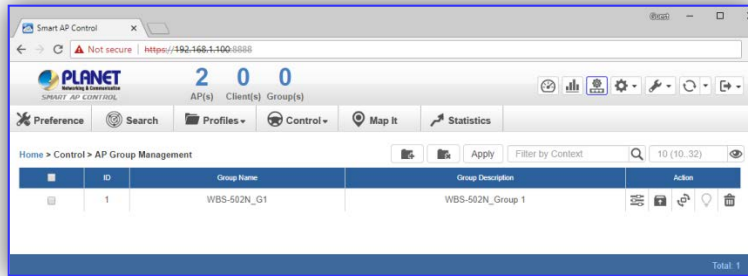
[AP Configuration]

## ➤ Procedure of configuring AP setting:

1. Edit the basic AP Information.
2. Click the “**Clone >>**” button if you want to use the same IP configuration as the previous LAN settings. Otherwise, please enter the preferred LAN setting.
3. If there are already profiles created, you can designate the SSID profile and Radio profile to this AP. You can do this step later once the AP basic setting is done.


- On the **AP Group Configuration** page, you can create an AP group with the same model of AP.
- **Apply:** Click this button to save the group/setting.
- **Back:** Click this button to return to the previous page.
- **Reset:** Click this button to reset all fields to default value.
- **Remarks:** The system allows to create up to 32 AP groups.


# Main Menu – Control



[3/Control - AP Group Management]

➤ On the **AP Group Management** page, you can create AP group and control one or more AP groups.

➤  **Add new group:** click it to add an AP group.

➤  **Delete selected item:** click it to delete the selected AP group.

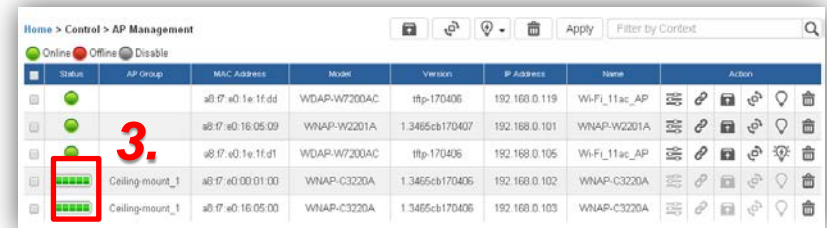
➤ **Apply:** Click this button to apply the setting. The profile setting will not take effect to a group until you click the **“Apply”** button.

➤ **Remark:**


To do profile provisioning to multiple AP groups at one time, select multiple AP groups, then click **“Apply”** button. The **“Link”** action is not allowed for multiple APs or AP group.

➤ **Procedure of profile provisioning to AP groups:**

1. Select the AP group.
2. Click the **“Apply”** button.
3. Go to **“3/Control-> AP Management”** to check the status like **“In progress”**. Wait until the status became **“Online”**.




➤ **Action:**

 **Setting:** Edit setting and allocate profile to group

 **Firmware Update :** Upgrade AP group’s firmware

 **Reboot:** Reboot the AP group

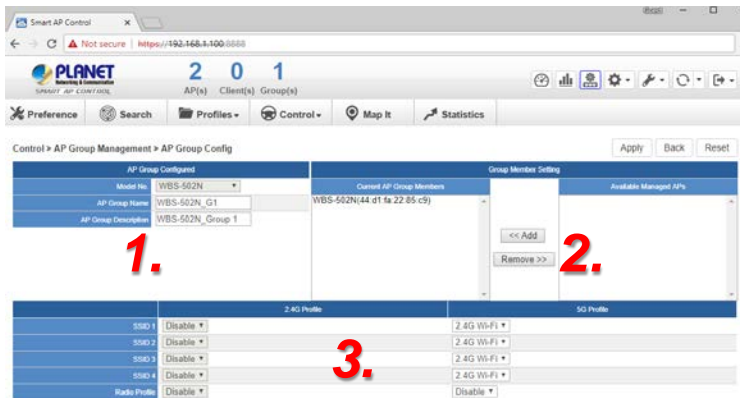
 **Delete:** Delete the AP group from the control list

 **LED Control:** Control the AP group’s LED.

Mouse-click in a sequential order:

LED blink-> LED off-> LED on

# Main Menu – Control

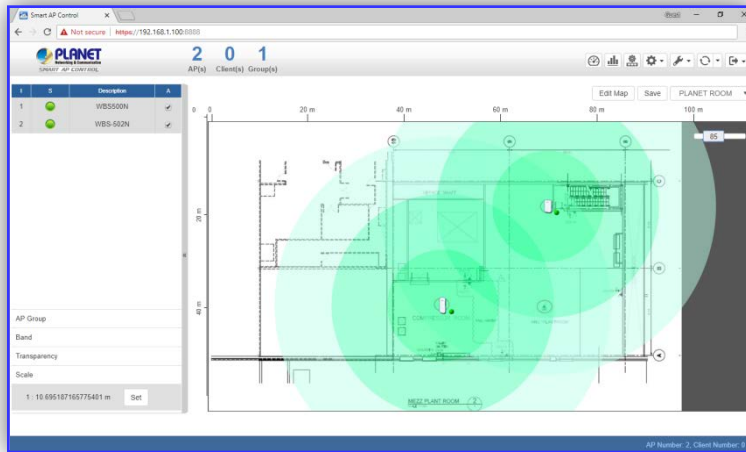


[AP Group Configuration]

- **Procedure of creating an AP group:**
  1. Choose the AP model from the drop-down list and enter the AP group name and description.
  2. Select the AP and click “<< **Add**” to the “**Current AP Group Members**” list.
  3. If there are already profiles created, you can designate the SSID profile and Radio profile to this group. You can do this step later once creating a group is done

- On the **AP Group Configuration** page, you can create an AP group with the same model of AP.
- **Apply:** Click this button to save the group/setting.
- **Back:** Click this button to return to the previous page.
- **Reset:** Click this button to reset all fields to default value.
- **Remarks:** The system allows to create up to 32 AP groups.

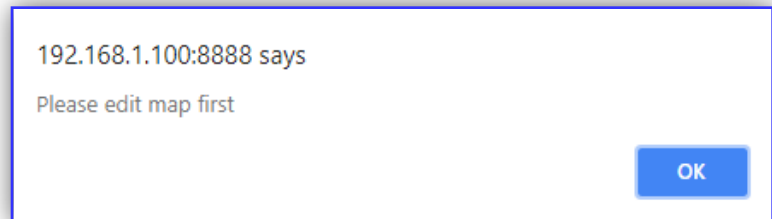
# Main Menu – Map It



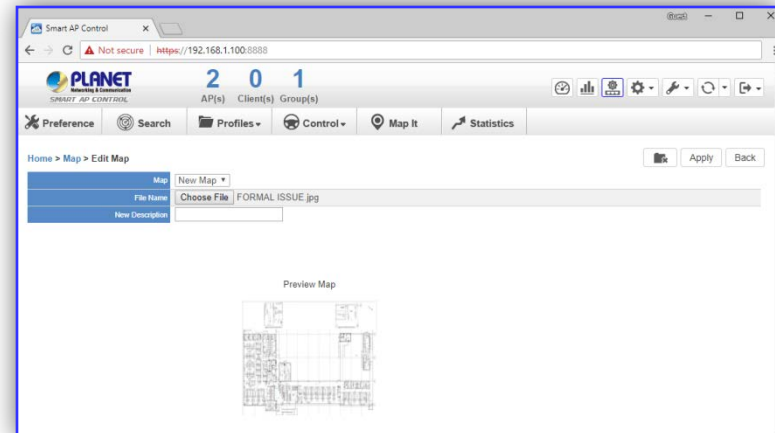
[Map It]

- **Map It:** On this page, the system allows you to upload your floor map to the system and you can add managed APs to the actual position against the floor map. This is convenient to user to view and adjust the actual deployment by reference to its real transmit power, channel allocation.
- The system allows user to upload up to 10 floor maps.

- A system message will prompt to remind you to edit map first if there is no any map available in the system. Click “OK” to continue.



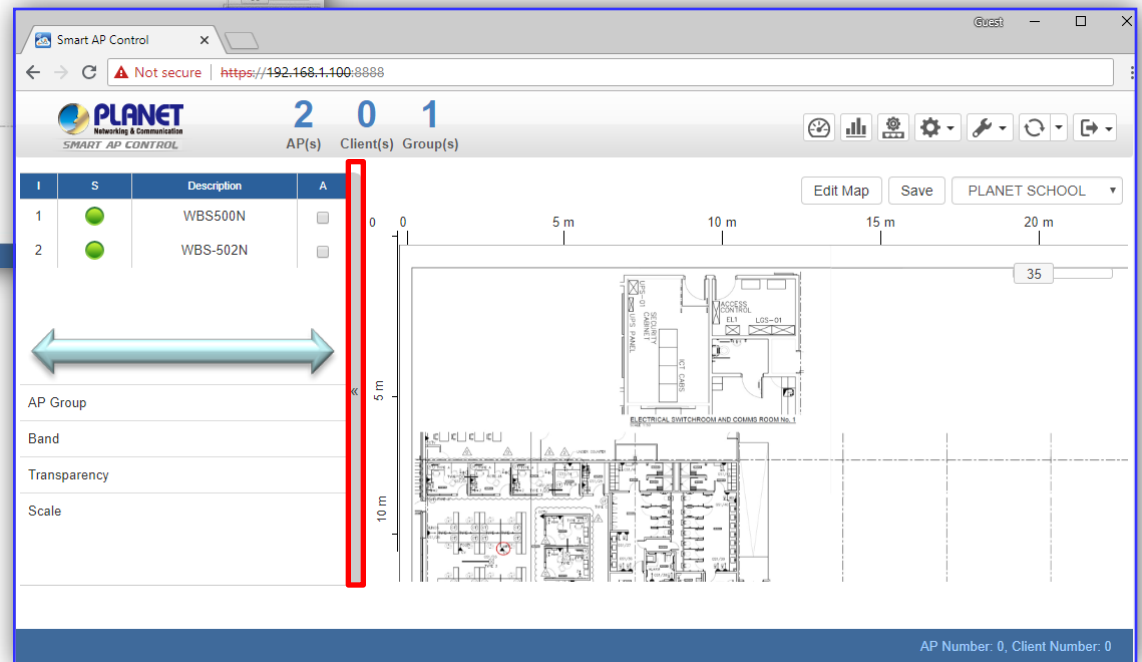
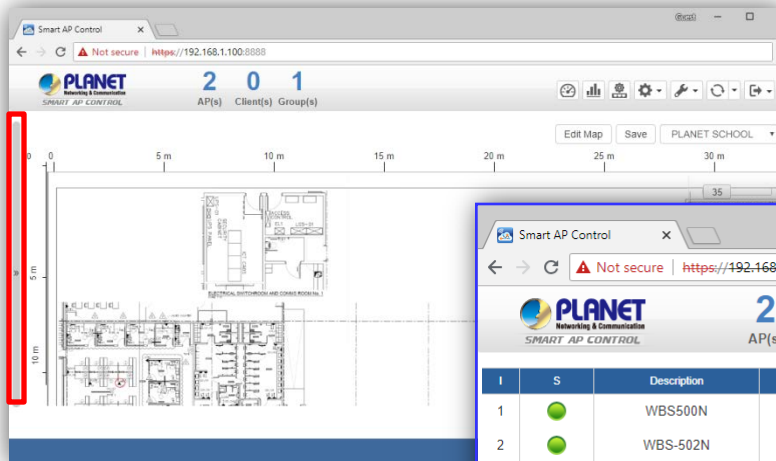
- On the **Edit Map** page, click “**Choose File**” and enter the map’s description. Then click “**Apply**” to upload the map.





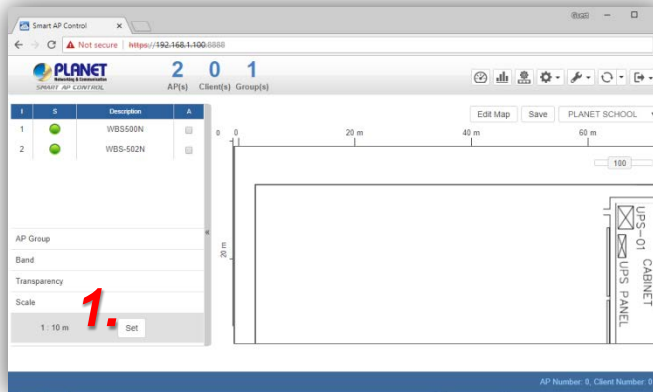
# Main Menu – Map It

- After finishing the map upload, you can click the sidebar at the left-side of the window to expand the AP list.

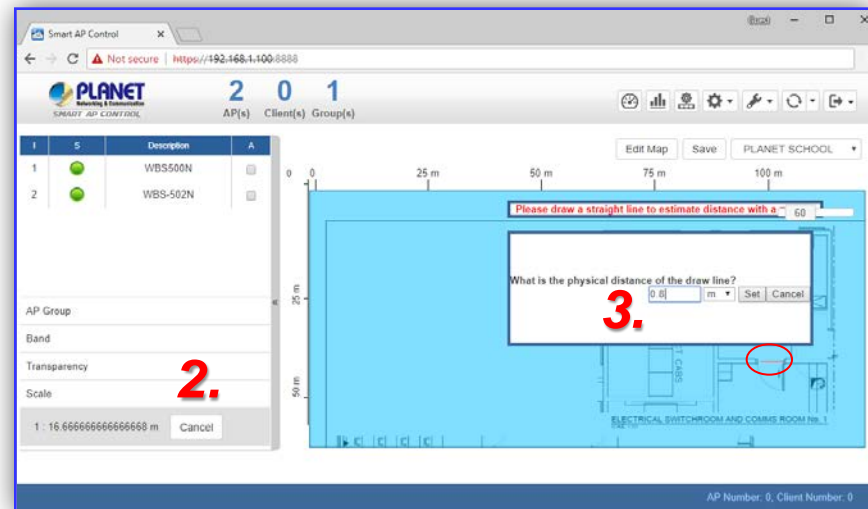


# Main Menu – Map It

- **Setting Scale:** 1. Click “Scale” to start to reset the map scale.

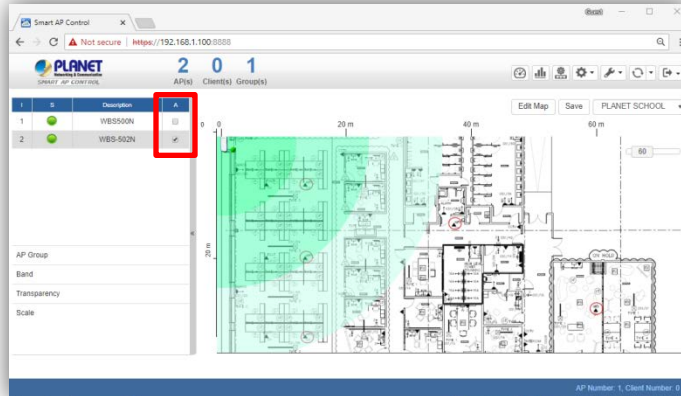


- Press the “Set” button to draw a line on the map. Fill its physical distance in the blank and then press “Set” or “Cancel”. For example, in the graph below set the door width to 0.8 m.

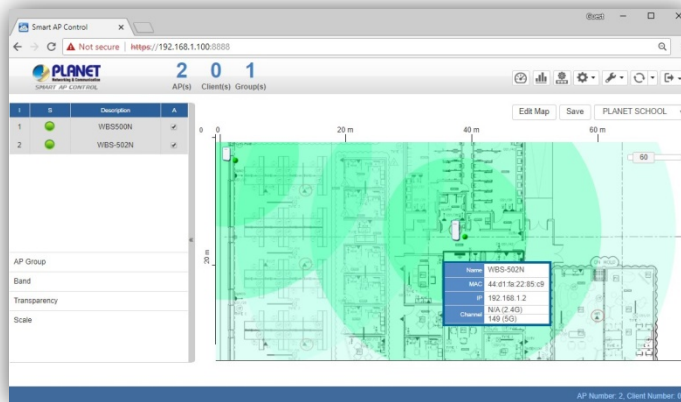
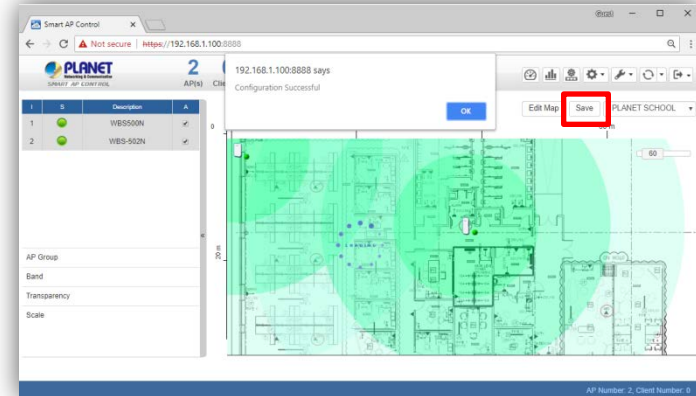


# Main Menu – Map It

- Drag and drop the AP onto the map or select multiple APs by clicking the checkbox.



- Once allocation is done, click “**Save**” to save the setting.



- To upload more maps or edit current map, click the “**Edit Map**” button to re-enter the **Edit Map** page.

# Main Menu – Map It

- The lower-left side area provides map control options.
- **AP Group:** To filter the managed APs shown on the map, and only display the selected AP group.

AP Group

W7200AC\_1F

- **Band:** Select “2.4GHz” to show APs with 2.4GHz frequency or select “5GHz” to show APs with 5GHz frequency.

Band

2.4GHz  5GHz

0 100

Band

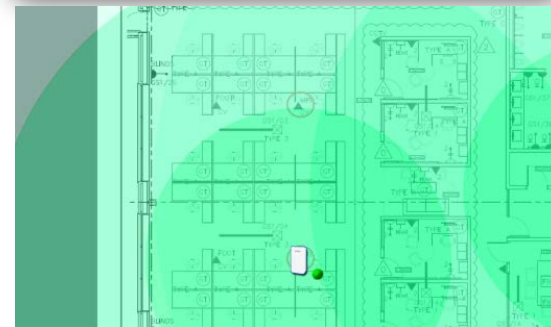
2.4GHz  5GHz

0 100

- **Transparency:** slide the bar to adjust the transparency of the map.

Transparency

0 100

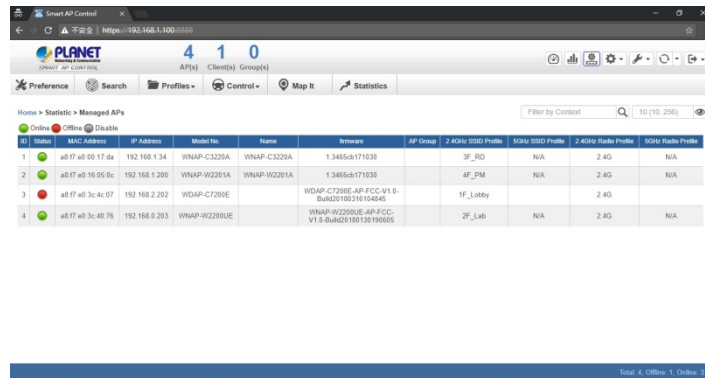


Transparency

0 100



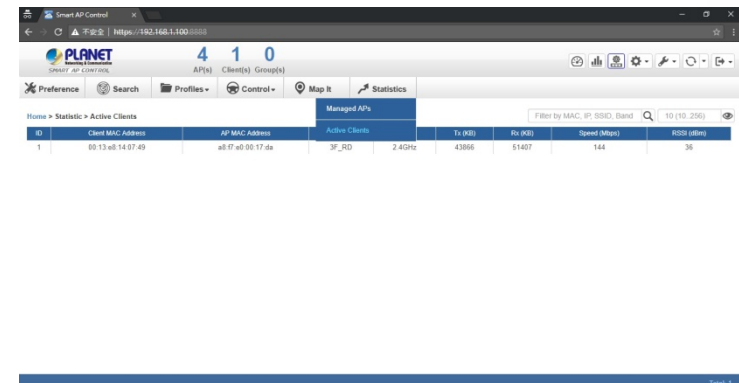
# Main Menu – Statistics



Status	MAC Address	IP Address	Model No.	Name	Firmware	AP Group	2.4GHz SSID Profile	5GHz SSID Profile	2.4GHz Radio Profile	5GHz Radio Profile
1	a8:7f:a8:9d:17:da	192.168.1.34	WNAP-C320A	WNAP-C320A	1.3465cb-771838		3F_RD	N/A	2.4G	N/A
2	a8:7f:a8:16:95:dc	192.168.1.208	WNAP-W2201A	WNAP-W2201A	1.3465cb-771838		4F_PM	N/A	2.4G	N/A
3	a8:7f:a8:3c:4c:07	192.168.2.202	WDAP-C7200E	WDAP-C7200E	WDAP-C7200E-AP-FCC-V1.8-Bulk0518031614845		1F_10by		2.4G	
4	a8:7f:a8:3c:40:76	192.168.8.203	WNAP-W2280UE	WNAP-W2280UE	WNAP-W2280UE-AP-FCC-V1.8-Bulk0218031819665		2F_Lab	N/A	2.4G	N/A

## [Statistics – Managed APs]

- **Managed APs:** On this page, you can observe the current configuration of all managed APs.
- **Filter:** You can filter the AP list by entering the keyword in the field next to the magnifier icon. The keyword should be any context belongs to the fields of this page.



Client MAC Address	AP MAC Address	Active Clients	Tx Rate	Rx Rate	Speed (Mbps)	RSSI (dBm)
08:13:a8:14:07:40	a8:7f:a8:9d:17:da	3F_RD	2.40Hz	4388	0.1407	-144

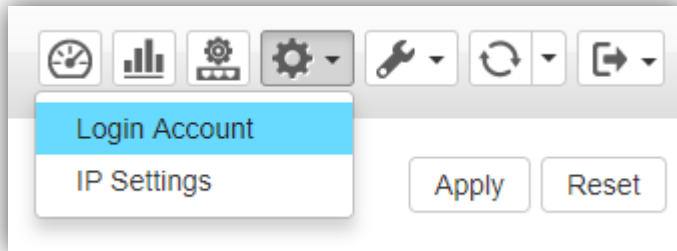
## [Statistics – Active Clients]

- **Active Clients:** On this page, you can observe the status of all associated clients including traffic statistics, transmit speed and RSSI signal strength.
- **Filter:** You can filter the search result by entering the keywords in the field next to the magnifier icon. The keywords include: MAC Address, IP Address, SSID and Band.

# System Menu - System Configuration



# System Menu – System Configuration



[System Menu – System Configuration]

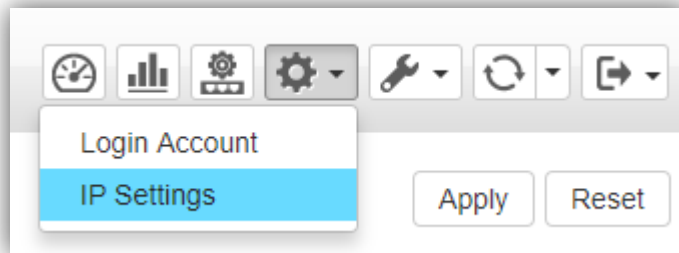


[Login Account]

- > **Login Account:** On this page, you can modify the login user name and password.
- > Enter the new user name and new password directly in the corresponding fields, then click **“Apply”** to apply the setting. The login window will prompt you to enter the new account to re-login the system.

- > **Username:**
  - ◆ Length = 5~32 characters
  - ◆ Format = A ~ Z, a ~ z, 0 ~ 9
- > **Password:**
  - ◆ Length = 5~32 characters
  - ◆ Format = A ~ Z, a ~ z, 0 ~ 9

# System Menu – System Configuration



[System Menu – System Configuration]

- **IP Settings:** On this page, you can configure the static ID of SAPC or choose it to become DHCP client.
- After configuration is ready, then click “**Apply**” to apply the setting. The window will be prompted to ask you to change network setting that will cause system to restart.



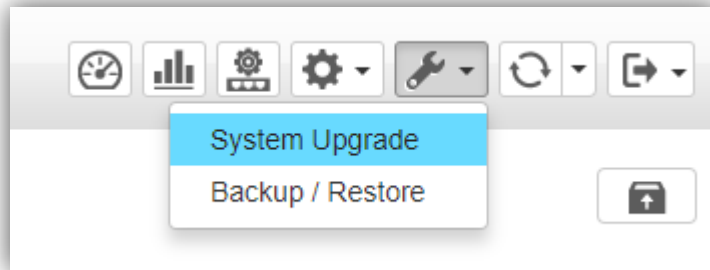
[IP Settings]



# System Menu - Maintenance

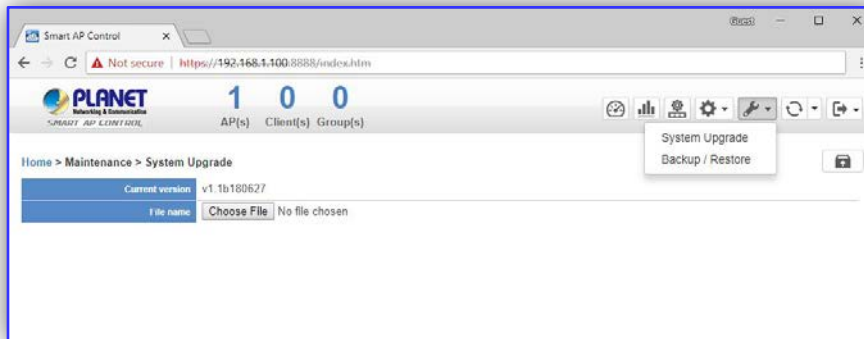


# System Menu – Maintenance



[System Menu – Maintenance]

- **System Upgrade:** On this page, you can upgrade the system to the latest version with new patch.
- Click "**Choose File**" to designate the system patch file for upgrade. Then, click the upgrade icon at the upper-right corner to start the system upgrade.
- Please regularly check PLANET official website for the system upgrade file

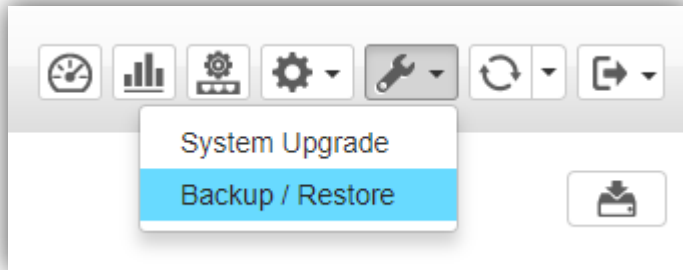


[System Upgrade]

- **Smart AP Control download path:**

<http://www.planet.com.tw/en/product/product.php?id=48976#dl>

# System Menu – Maintenance



[System Menu – Maintenance]



[Backup]



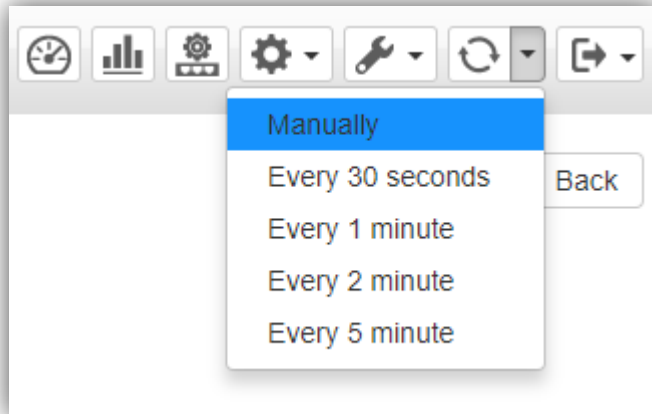
[Restore]

- **Backup/Restore:** On this page, you can back up and restore the system profiles with the system file(\*.tar.gz.enc).
- Click **"backup"** to start backing up the system profiles files.
- Use the **"Choose File"** button to choose the right system profiles file and Click **"restore"** to start restore the system.
- **Please use the system default file name to restore system, or it may fail.**

# System Menu - Refresh



# System Menu – Refresh



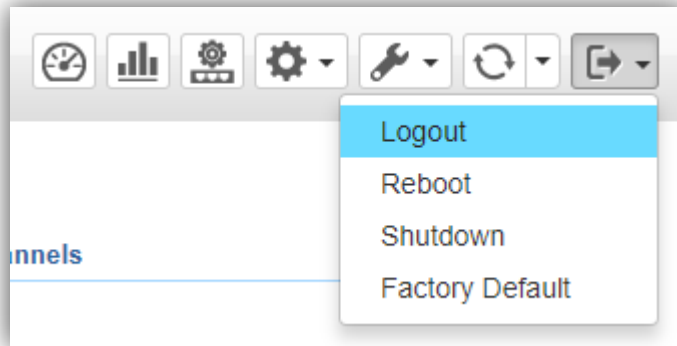
[System Menu – Refresh]

- **Refresh:** The page content will update every 1 minute automatically by default. You can modify the system update frequency to every 30 seconds, every 2 minutes or every 5 minutes.
- If you require the system to be updated immediately, you may click "**Manually**" to refresh the page content.

# System Menu - Exit

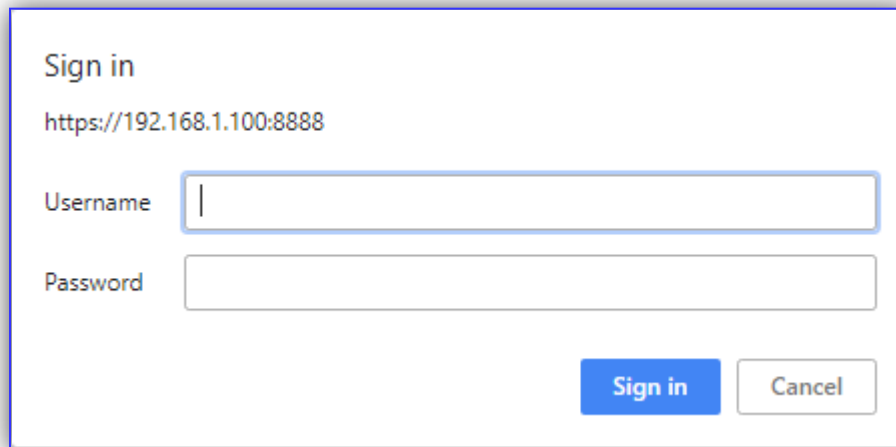


# System Menu – Exit



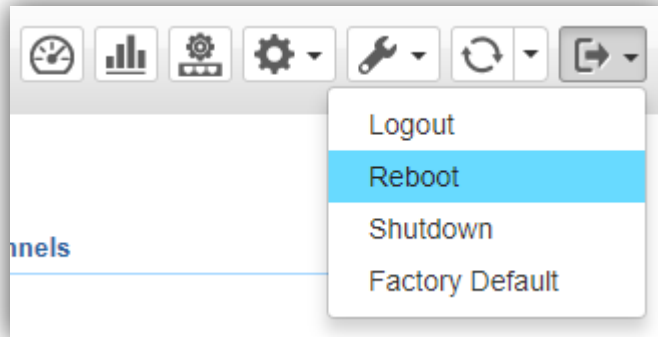
[System Menu – Logout]

- **Exit:** On this page, you can log out, reboot, shut down the system and reset system to factory default.
- **Logout:** click “Logout” to log out the system.
- Once clicked, the login window will be prompted to ask user to re-login the system.

A screenshot of a login window titled 'Sign in'. The URL 'https://192.168.1.100:8888' is displayed. There are two input fields: 'Username' and 'Password'. Below the fields are two buttons: 'Sign in' (blue) and 'Cancel' (white).

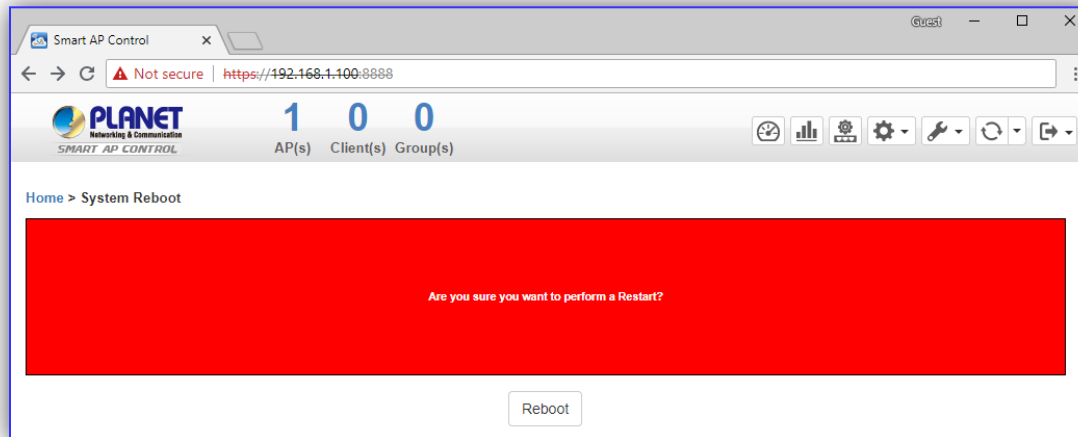
[Login Window]

# System Menu – Exit



[System Menu – Reboot]

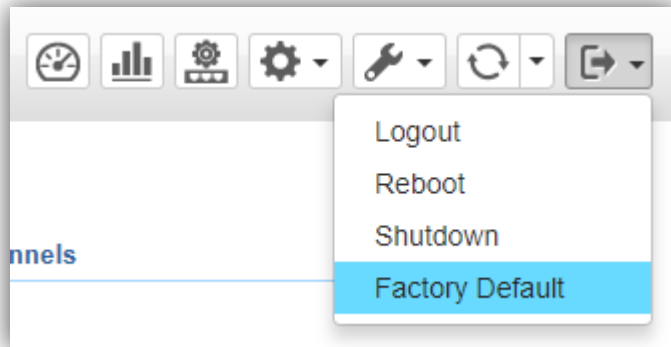
- **Exit:** On this page, you can log out, reboot, shut down the system and reset system to factory default.
- **Reboot:** click “**Reboot**” to restart the system.
- **Shutdown:** click “**Shutdown**” to close the system and shutdown the MV.
- Once clicked, the warning window will be prompted to ask user to reboot or shut down the system.



[Reboot Warning]

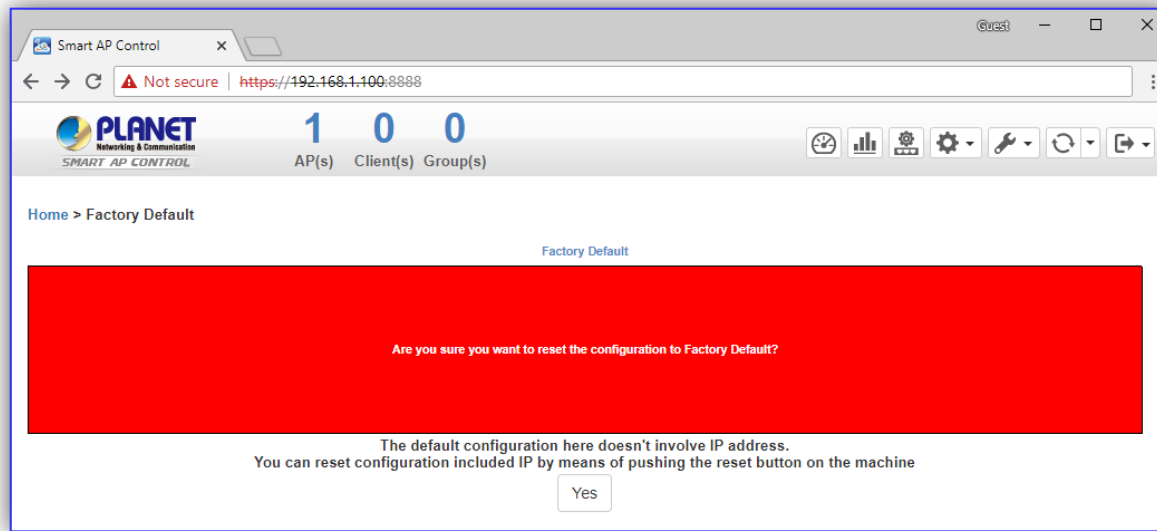


# System Menu – Exit



[System Menu – Factory Default]

- **Exit:** On this page, you can log out, reboot, shut down the system and reset system to factory default.
- **Factory Default:** Click “Factory Default” to reset the system to factory default.



[Factory Default Warning]



# ACTIVATING IP POWER