AP Group

What is AP group?

To be more user-centric, the AP Group function reduces repetitive AP configuration and eases AP provision. Users can apply SSID profiles to other APs in the same group easily.

For Example, DCS can be activated by selecting a group AP to prevent network interruption as shown in Figure 1-1.

Figure 1-1
Design Concept

Add AP group profile.

Radio profile contains

- All of managed APs have the same SSID profiles but different channels.
- Channel setting
- Output power setting

Make global settings become local settings

- Load Balance by AP Group
- DCS by radio profile
Convert Configuration

Benefits of AP Group

- Easier to configure and adjust
- Less profiles needed
- Easier to provision
- Fits into all scenarios

<table>
<thead>
<tr>
<th>Item</th>
<th>Before</th>
<th>New (4.20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP Group</td>
<td>N/A</td>
<td>Configuration &gt; Wireless &gt; AP Management &gt; AP Group.</td>
</tr>
</tbody>
</table>
| SSID Profile| AP Profile > Radio Profile > SSID Profile | 1. AP Management > AP Group Setting > SSID Profile  
                                       | 2. AP Management > Mgmt. AP List > Override Group SSID Setting > SSID Profile |
| Output Power| AP Profile > Radio Profile > Show Advanced Settings | 1. AP Management > AP Group Setting > output power  
                                       | 2. AP Management > Mgmt. AP List > Override Group Output power |
| DCS         | Global Setting DCS          | 1. AP Profile > Radio Profile > DCS                                       
<pre><code>                                   | 2. AP Management &gt; Mgmt. AP List &gt; DCS Now Button                   |
</code></pre>
<table>
<thead>
<tr>
<th>Load Balance</th>
<th>Global Setting</th>
<th>AP Management &gt; AP Group Setting &gt; Load Balancing</th>
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<tbody>
<tr>
<td></td>
<td>Load Balancing</td>
<td><img src="image1.png" alt="Load Balancing Diagram" /></td>
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</table>

| LAN Provision | Global Setting | 1. AP Management > AP Group Setting  
2. AP Management > Mgmt. AP List |
|---------------|----------------|-------------------------------------------------|

Table 1-2: 4.20 Controller GUI changed table

*Note: RF Output Power- Maximum power setting will vary by channel and according to individual country regulations.*
AP Group Profile Introduction

1. There are two AP group profiles in the system default setting. One is default, and the other is Unclassified as shown in Figure 1-2-1.

By default, the AP Group profile of NXC controller is a default group. When a new member of the AP is joined by the NXC controller, the controller will assign a default group setting to the AP. The Wi-Fi service of the managed AP will be provisioned automatically by the default AP group.

Unclassified AP group profile means that the radio profile is inactivate status.

If you want Wi-Fi service on some of the managed APs which were not provisioned automatically, you can select the default AP group “Unclassified” as shown in Figure 1-2-2.
2. In every AP Group profile, the user can configure slot1/slot2 RADIO profile, output-power setting, SSID profile, and VLAN setting, port setting, and load-balancing setting. When a managed AP joins to the AP Group profile, all these configurations will be sent to the managed AP.
3. Application scenario - Hotel:

The NXC controller – managed APs that have not established CAPWAP connection yet. From the default AP group, select the APs that are the members of the unclassified AP group list. There’re two separate hotel buildings.

Building 1 of AP profiles has been established already, building 2 was not ready yet. The administrator can select the APs to be an unclassified AP Group from the member list. Building 2 of AP Group profile will not be shown in the field of building 1 as shown in Figure 1-2-3.

- Scenario
Figure 1-2-4
1-3 Configuring AP Group Flow

Summary Steps
1. AP Profile > SSID Profile > Security Profile
2. AP Profile > Radio Profile / SSID Profile
3. AP Management > AP Group Setting > Default / Unclassified

The figure showed the AP profile relationship of the AP Group in the new design concept. The Radio Profile is a global setting, which will affect the APs’ entire configuration. When changing the setting of the radio profile, it will affect all of wireless profiles. Each AP needs the AP Profile to provide the wireless service.

The administrator can configure the following wireless profiles:
- Radio Profile: This profile type defines the properties of an AP’s radio transmitter.
- SSID Profile: Used to configure the radio profile. Now, the user can configure it in the AP Group profile, or in edit AP list.
Security Profile: This profile type defines the security settings used by a single SSID.

Note:

When you click on the button "Override Member AP Setting", all of member list of the AP configuration will be belong the AP Group.

The management AP list override can only choose one of AP configuration settings, such as Group Radio Setting, the output power setting, and SSID setting. The user should notice if one of the APs was involved in the member list of AP Group. When you click on the override button "Override Member AP Setting" of the AP group, it will disable all overrides in the management AP and send the group configuration to management APs. The configuration of the management AP will be replaced by AP Group.

Override settings made with the WLAN override values of the configuration will be retained permanently.
1-4. AP Group combination

To be an AP Group of condition, the administrator should notice some different specifications of the AP. Refer to Table 1-4:4.20 Controller Supported Models. From this table, you can see that some of AP models only support Signal Radio, local bridge mode, and different bandwidth.

We suggest using an AP Group combination that uses the same model type of AP, because it can prevent configuration conflicts.

**Note:** It cannot be an AP Group rule:
- Different VLAN
- Different country code of AP
- Different forwarding mode
- Supported 802.11ac product or 802.11a/b/g/n product.

<table>
<thead>
<tr>
<th>WLAN Controller</th>
<th>WLAN Access Point</th>
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<tbody>
<tr>
<td>Series</td>
<td>NWA3000-N Series</td>
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<tr>
<td></td>
<td>NWA5000-N Series</td>
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<td>NWA5301-NJ</td>
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<td>WAC6500 Series</td>
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<tr>
<td>Signal Radio</td>
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<tr>
<td></td>
<td>NWA5121-N</td>
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<tr>
<td></td>
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</tr>
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<td></td>
<td>NWA5301-NJ</td>
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<td></td>
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<td>(2.4/5GHz)</td>
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<tr>
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<td>WAC6553D-E</td>
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<td>Local / Tunnel</td>
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<td>Bandwidth (MHz)</td>
<td>20/40</td>
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</table>

Table 1-4: 4.20 Controller Supported Models

Example:

If you choose a different model type of AP to be in the same AP group, what would happen?

Such as Employee1 will be a tunnel mode type of ZyMesh AP group; however, the NWA5123-NI does not support tunnel mode in the WLAN network. So, the AP Group list will show an error message “**Config Conflict**”, as shown in Figure 1-4-1.

![Figure 1-4-1](image-url)
1-5. Configuring an AP Group

Refer to Figure 1-4-3 for this scenario. Create two AP Groups in the Hotel field.

**Step 1:** Add a security profile
Create a security profile for **Guest**.

![Security Profile Image]

**Step 2-1:** Add SSID Profile
Create a SSID profile for **Guest**.

![SSID Profile Image]

**Step 2-2:** Add Radio Profile
Create a Radio profile for **Guest**.

![Radio Profile Image]
Step 3-1: Select the default group “Unclassified”.

Step 3-2: Select the AP to be a member of the Unclassified AP list from the default AP Group.
Step 3-3-1: Create an AP Group 1.

- Fill in the Group Name
- Select the Radio 1 AP Profile
- Fill in the Output Power
- Select SSID Profile

- Select the Radio 2 AP Profile
Select the AP list to be a member of **AP_Group_1**.

**Step 4**: Override the **AP_Group_1** of member AP setting.
Step 5-1: Refer to Mgmt. AP List

Step 5-2: Override Group Output Power Setting
The AP Group settings

Find the AP Group to be configured, and click the corresponding icon in the operation column to enter the configuring AP group member.

When you click on "Override Member AP setting" it will disable all overrides in management AP and send group configuration to management APs as shown in Figure 1-5-1(a). Then a warning message “Override Member AP Setting?” will appear as shown in Figure 1-5-1(b). Then, click on the “Yes” button.

![Figure 1-5-1(a)](image1)

![Figure 1-5-1(b)](image2)
AP List Override

If one of the AP needs to modify some settings in the AP Group, choose the override group, override Group Output Power Setting or Override Group SSID setting. When a user changes the setting of the AP profile, the AP List Override will still be effective as shown in Figure 1-5-2.
ZyMesh in AP group setting

When the license of ZyMesh in the AP group is not active, the user cannot choose the root AP mode of "OP Mode" in the AP group as shown in Figure 1-5-3. After registering the ZyMesh license on myzyxel.com 2.0, the user can modify the root AP mode in the AP group as shown in Figure 1-5-4.
Move DCS into Radio profile setting

The DCS has been changed from **Global** to **Local** as shown in Figure 1-5-5.

![Edit Radio Profile Guest_A_24](Image)

Figure 1-5-5
Move Load Balancing into Radio profile setting

The **Load balancing Setting** has been changed from “Global” to “Local” as shown in Figure 1-5-6.

![Figure 1-5-6](image-url)
LAN Provision

Choose the model type that supports the LAN Provision function as shown in Figure 1-5-8.
Convert Config

When upgrading the NXC Controller firmware from 4.10 to 4.20, all of the group profiles can be converted and backup as shown in Figure 1-5-9, Figure 1-5-10 and Figure 1-5-11.
Scenario

This is a campus environment. There are three buildings that are separated by VLAN groups, VLAN 10, VLAN 20 and VLAN 30. NWA3560-N has established the ZyMesh topology for VLAN10 of employee group that is configured as tunnel mode. NWA5123-NI uses Load Balancing for VLAN 20 of student group that is configured as local bridge mode. The last group uses the DCS function for VLAN 30 of the guest group.
DHCP Server:
Create Interface VLAN 10, VLAN 20 and VLAN 30 on DHCP server device.

NXC2500:
Step 1: Create SSID Profiles for Employee, Student and Guest group.

Edit SSID Profile Employee for VLAN 10
Edit SSID Profile Student for VLAN 20

Edit SSID Profile Guest for VLAN 30
Step 2: Create VLAN interface for VLAN 10, VLAN 20 and VLAN 30

Edit VLAN 10 interface for **employee**

VID 10, TX Tagging
Edit VLAN 20 interface for **employee**
VID 20, TX Tagging
Edit VLAN 30 interface for **employee**
VID 30, TX Tagging
Step 3: Edit AP group
Go to the web GUI of the Controller.
**Configuration > AP Management > AP Group**
Radio one is for 2.4GHz service and Radio Two it for 5GHz for ZyMesh.

Step 3-1: Edit Employee1
Step 3-2: Edit Employee2.
Step 3-3: Edit the **student** AP Group Profile.
Step 3-4: Edit the **guest** group profile. Click the **"DCS Now"** button on the AP management.
Step 4: After completing the configuration of the AP group profile. Check the AP management list.

Step 5: Verify the ZyMesh link status.