

# **DCN Wireless AP Operation Manual**

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## **1** Preface

#### **1.1 Manual Description**

This manual mainly helps users use AP products correctly with the three working modes of AP.

- FIT AP Mode
- FAT AP Bridge Mode
- FAT AP Routing Mode

This manual takes the WL8200-I3 (R2) as an example for configuration. Because there are certain differences in hardware and software specifications for each model, all issues involving product specifications need to be confirmed with Yunke China Information Technology Limited.

#### **1.2 Conventions**

In this manual,

- > For nouns such as buttons on the page, use "" to indicate them, such as "Edit";
- > Use >> to indicate the sequence of entering the configuration interface, such

as "first-level menu">> "second-level menu";

This manual also uses various eye-catching signs to indicate places that should be paid special attention to during operation. As following:

Caution & Attention: Remind the matters needing attention in the operation, and improper operation may cause the setting to be invalid, data loss or equipment damage.

**X** Instructions & Tips: Make necessary additions and explanations to the description of the operation content.

### **1.3 Revision Record**

Date	Modify the content	Modifier	
2020/1/12	Edit DCN Wireless AP Operation Manual	Kaizhan Sun	
2020/8/12	Add advanced configuration-RF	Yafei Li	
2020/ 8/ 12	configuration content		
2020/12/12	Edit DCN Wireless AP WL8200-X2 Operation	Linfoo	
2020/12/12	Manual	Liyfaa	
2021/6/20	Add WPA3 configure section	Sunkz	
, - ,		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	

### **1.4 Applicable version**

Version	Release time
3. 12. 1. x	2020. 12
4. 1. 1. x	2020. 7

# **2 APBasic Operations**

#### 2.1 WEBLogin

Use POE (or local power) to charge the AP, connect the network port of the management computer to the AP's LAN port (or the management host connects to the AP's WLAN wirelessly), open the browser (recommended: Google, Firefox or IE11) and enter the management IP address on the LAN side (the default is https://192.168.1.10) to access the web configuration interface of the wireless AP. The default login user name is admin, and the password is admin.



commended use: Chrome, Firefox, 360 browser (extreme mode) or more than IE11 browsers.

If the AP has no LAN port or no wired client, you can use the wireless client to connect to the AP's SSID (the default is DCN\_WLAN) to access the AP.

If the network accessed by the AP has a DHCP server, the address of the AP may be obtained dynamically. In this situation, the user should access the current IP address of the AP.

#### 2.2 AP Mode

After logging in the AP web page, if you want to switch to a certain mode, click "AP mode" in the left menu to enter the mode configuration page. AP can work in three modes: fat AP mode, Fit AP mode or cloud AP mode. In fat AP mode and cloud AP mode, AP exists as an independent individual in the network. In the Fit AP mode, the AP needs to be online on AC or other devices. Fat mode can be subdivided into two specific modes - routing mode and bridge mode. If the AP is a gateway device, please select the routing mode; If the AP is a bridging device, select the bridging mode. The cloud AP mode is a bridging device connected to the public cloud. The default mode is Fit mode, as shown in the following figure:

DCN	≔		China(CN)	Fit Mode	admin	Logou
Running Status	Running Status AP	Mode ×				
B AP Mode		ee modes: fat AP mode, thin AP mode or cloud AP mode. In fat AP mode and cloud AP mode, AP exists as an independent AC. Fat mode can be divided into two specific modes routing mode and bridge mode. If AP is a gateway device, select rou				
ී System Settings 🔻		AP mode is a bridge device, which is connected to the public cloud. The default mode is thin mode. If you need to modify it,				-
🐼 System Settings 🛛 🔻	Current AP Mode	Fit Mode				
Statistics	Current AP Mode Mesh Status	Fit Mode Off				

#### 2.2.1 Mesh mode

:

AP can turn on the mesh function, and the default mesh state is off. When the mesh state is enabled in the Fit AP mode, the AP is a slave AP, as shown in the following figure:

습	Running Status	Running Status AP Mode ×
Ð	Setup Wizard	AP can work in three modes: fat AP mode, thin AP mode or cloud AP mode. In fat AP mode as be divided into two specific modes routing mode and bridge mode. If AP is a gateway device,
88	AP Mode	cloud. The default mode is thin mode. If you need to modify it, please click the "Edit" button.
ঞ	Basic Settings 🔹 🔻	
٩	Advanced Settings 💌	
~	Statistics 🔹	Save Return
*	System Maintenance 🔻	

Click the Edit button on this page to edit the mesh status of the AP as "on (slave AP)". After saving the configuration, the AP will automatically restart. After restarting, the AP will switch to the mesh slave mode. At this time, the AP can only go online in the mesh master AP, and the wireless configuration and other contents are uniformly distributed through the mesh master AP (CAP).

Click "AP mode" in the menu on the left to configure the open mesh status (Master AP) on the AP mode page. After saving the configuration, the AP will restart automatically. After successful restart, it will be the Master mesh mode, as shown in the following figure:

습	Running Status	Running Status	AP List $\times$	AP Mode ×
Ð	Setup Wizard	be divided into	o two specific m	: fat AP mode, thin AP mode or cloud AP mode. In fat AP mode and cloud AP mode, AP exists as a nodes routing mode and bridge mode. If AP is a gateway device, select routing mode; if AP is a br
88	AP Mode	cloud. The de	-	nin mode. If you need to modify it, please click the "Edit" button.
ŝ	Basic Settings 🛛 👻			Route Mode   Bridge Mode
٩	Advanced Settings 🔻	Mesh Status	_	On (Master AP) Off
<b>2</b>	Statistics 👻	Maximum nur		
℅	System Maintenance 🔻	of slave APS	liber 52	
	Mesh Network		Sa	Return

When the AP is in the mesh master mode, it can manage the mesh slave AP and synchronize the wireless video and other configurations to the slave AP. When the mesh status is "on (Master AP)", the "maximum number of slave AP" parameter needs to be configured. After configuration, the master AP can manage the number of slave AP of this value at most, different models of AP can manage different numbers of slave AP. The parameter can be modified after being configured as the master AP. If the parameter takes effect, the AP needs to be restarted. If the number of connected slave AP reaches the specified number, the new slave AP will be rejected. After the AP is configured as the mesh Master mode, a column "Mesh Network" will be added in the left column of the AP to configure the unique functions of the mesh network, as shown in the following figure:

습	Running Status	Running Status AP Mode $\times$	
eð	Setup Wizard	be divided into two specific modes	mode, thin AP mode or cloud AP mode. In fat AP mode and cloud AP mode, AP exists as an indepe routing mode and bridge mode. If AP is a gateway device, select routing mode; if AP is a bridge devi
88	AP Mode	AP Mode Switch	le. If you need to modify it, please click the "Edit" button.
ŝ	Basic Settings 🛛 👻		
্ৰ	Advanced Settings 💌	Route	0
~	Statistics 🔹	Mesh Status  On (N)	aster AP) Off
℅	System Maintenance 🔻	Maximum number 32 of slave APS	
	Mesh Network	Save	Return
-	Mesh Settings		
-	AP List		
-	Client Statistics		
-	Network Settings		
-	AP Upgrade		
-	Blacklist		

#### 2.3 Running Status

After logging into the system, the homepage displays the system running status, including device information, network information, wireless information and system resource status. Ticking "Turn on Auto Refresh" in the system resource status panel, the interface will display the CPU utilization and memory utilization in real time, and refresh every 5 seconds.

DCN	≣				China(CN)	Fit Mode	admin	
Running Status	Running Status							
AP Mode	$\checkmark$ Device Information		✓ Network Informatic	tion				
💮 System Settings 🔻	Serial Number:	DCN0KJWH10F06AP60	IP Address:	3333:AAAA::	1005/128			
Statistics <b>•</b>	Device Model:	WL8200-13-R2	MAC Address:	00:03:10:06:6	50:10			
💥 System Maintenance 🔻	Startup Mode:	Warm Start	Default Gateway:	FE80::203:FF	F:FE33:3333			
	Firmware Version:	3.8.2.35	DNS Server:	2019::2019				
	Boot Version:	1.11	Downlink VLAN:	1				
	Running Time:	9 days 2 hours 11 minutes 58 seconds	Manage Status:	Have Been N	Nanaged 3333:a	aaaa::224		
	> Wireless Informatio							
	-	n Auto Refresh						
	100%		100%					
	80% -		80% -					
	60% -		60%	<b></b>				
	40%		40% - 20% -					
	0%	20s 25s 30s 35s 40s 45s 50s 55s 6	0%	5s 20s 25s 30s	35s 40s 45s 50s	55s 60s		

### 2.4 Statistics

The statistics contains three parts: flow statistics, radio statistics and client statistics.

#### 2.4.1 Flow Statistics

Flow Statistics interface shows the message sent and received by different SSIDs.As following:

Running Status Flow Statistics ×								
Refresh								
SSID		Trar	ismit					
2210	Total Packets	Total Bytes	Total Dropped Packets	Errors	Total Packets			
Guest Network	0	0	5358628	0	0			
DCN-RD-WIFI	175535291	147347438476	6142431	0	95893047			
12F-TV-hidden	8	7442	31796966	0	0			
DCN-WIFI-1X	395363	362773538	12544323	0	221962			

#### 2.4.2 Radio Statistics

Radio statistics interface displays different radio statistics sending and receiving message information from radio statistics perspective. As following:

G Running Status	Running Statu	IS Radio Statistics	×						
🔠 AP Mode	Refresh								
💮 System Settings 🔹		-							
Statistics	Radio	MAC Address	Status	Mode	Channel Bandwidth(MHZ)	Channel	Channel Utilization(%)	Transmit Power(dBm)	Total Packets
<ul> <li>Radio Statistics</li> </ul>	2.4G	00:03:10:06:60:10	Enabled	11ng	HT20	1	86	27	63531878
Client Statistics     System Maintenance	5G 1	00:03:10:06:60:20	Enabled	11ac	HT40+	44	28	20	85926979
	5G 2	00:03:10:06:60:30	Enabled	11ac	HT40+	149	8	23	64499689

#### 2.4.3 Client Statistics

Client statistics list displays all client information related with the device, including client IP address, client MAC address, SSID, radio, channel, RSSI, portal authenticated status, up-time, etc. As following:

🔓 Running Status	Running Status Clien	t Statistics ×						
AP Mode	This page shows the	basic information of all c	lients connected	to this wire	less network.			
🖏 System Settings 🛛 🔻	Refresh							
Statistics	Client Count	16						
<ul> <li>Flow Statistics</li> </ul>								
- Radio Statistics	Client IPv4 Address	Client MAC Address	SSID	Radio	Channel	RSSI	Portal Authenticated Status	Up-Time
<ul> <li>Client Statistics</li> <li>X System Maintenance </li> </ul>	172.30.1.146	9C:30:5B:C0:B4:DF	DCN-RD- WIFI	2.4G	1	<b></b> 30	Success	2019-12-18 15:47:28
	172.30.1.150	D4:6A:6A:34:4B:63	DCN-RD- WIFI	2.4G	1	<b></b> 26	Success	2019-12-20 09:09:09
	172.30.1.108	28:56:5A:91:D8:B3	DCN-RD- WIFI	2.4G	1	<b></b> 37	Success	2019-12-20 09:16:07
	172.30.1.124	F4:BF:80:F2:4A:D5	DCN-RD- WIFI	2.4G	1	<b>41</b>	Success	2019-12-20 15:37:26

### 2.5 System Maintenance

#### 2.5.1 Modify Password

Click "System Maintenance">> "Modify Password" on the left menu, you can modify the username and password on the AP management interface. When modifying password, enter the original password first, then enter the new password twice, and click "Save ". As following:

DCN	≣	CI	hina(CN)
Running Status	Running Status Client Sta	atistics × Modify Password ×	
B AP Mode	✓ Modify Password		
💮 System Settings 🔻	User Name	admin	
Statistics	Current Password	•••••	
- Flow Statistics	Current Password		
<ul> <li>Radio Statistics</li> </ul>	New Password	Please Input New Password	
- Client Statistics	Confirm Password	Please Input New Password	
🔀 System Maintenance 🔺		Save	
<ul> <li>Modify Password</li> </ul>			
<ul> <li>Configuration</li> </ul>			
Management			
<ul> <li>System Log</li> </ul>			

#### 2.5.2 Configuration Management

In this interface, the user can perform related operations such as configuration import and export, restore factory setting, system upgrade, reboot, etc. As following:

	DCN	E China(CN)	
습	Running Status	Running Status Configuration Management ×	
38	AP Mode	✓ Import Configuration	
<u>ت</u>	System Settings 🔹 🔻	Select the file Import	
	Statistics 🔹		
*	System Maintenance 📥	Export Configuration	
	Modify Password	Export	
	Configuration	✓ Restore factory setting	
	Management	• Restore ractory setting	
	System Log	After the device is reset to factory default setting, all configuration will be removed.	
	Radius Template	Reset	
	Authentication	✓ System Upgrade	
	Management		
	SNMP	Firmware Version: 3.8.2.35	
	SSL Certificate	Select the file Upgrade	
	Management	After upgrade completed, the device will be reboot automatically	
		✓ Reboot the Access Point	
		Reboot	

After the device is reset to factory default, all configurations will be deleted and restored to FIT mode.

### 2.5.3 System Log

The diagnostic log interface displays the latest log information of the device. It

is divided into two sections: remote host and local log.

The remote host includes the log host IP address and the log host port

configuration, which can store device logs to a remote syslog server.

The local log supports the log level setting and log packaging export function.

Click the "Export Log" to package and download all log information to the local. As following:

DCN	≣		China(CN) Fit Mode	admin	L	
🔓 Running Status	Running Status System Lo	ng ×				
🔠 AP Mode	✓ Remote Host					
🔅 System Settings 🔻	Host IP	Please Input Host IP		à	]	
Statistics 🔻	Host Port 514					
💥 System Maintenance 🔺						
- Modify Password		Save				
- Configuration	✓ Local Log					
Management						
— System Log	Conlog Level	INFO			~	
— Radius Template		Save Export Log Refresh				
<ul> <li>Authentication</li> </ul>	1 = 1 = 0 /	"fe80::203:fff:fe33:3333"}' &			^	
Management		:n user.notice dcn-mapd[1705]: ubus send udhcpc_notify '{"ap_ipv6":"3333:aaaa "fe80::203:fff:fe33:33333"}' &	:::1005", "ap_ipv6_prefix":128,			
- SNMP	ap_pv4_gateway: recozv3.m;recozv3.ss3.ss3.sf a Dec 20 16:11:36 Dcn user.notice dcn-mapd[1705]: ubus send udhcpc_notify '{"ap_lpv4":"172.30.111.106", "ap_lpv4_mask":"255.255.255.0", "ap_lpv4_gateway":"172.30.111.1")" &					
<ul> <li>SSL Certificate</li> </ul>		n user.notice dcn-mapd[1705]: ifconfig br-lan 172.30.111.106 netmask 255.255.	255.0			
Management		n user.notice dcn-mapd[1705]: route add default gw 172.30.111.1 dev br-lan				
wanagement	Dec 20 16:11:54 Dcn user.notice dcn-mapd[1705]; ifconfig br-lan up Dec 20 16:11:54 Dcn user.notice dcn-mapd[1705]; ubus send udhcpc. notify ("ap. lov6" "3333; aaaa::1005" "ap. lov6. prefix" 128					

#### 2.5.4 RadiusTemplate

Click"System Maintenance ">>" Radius Template "to maintain the Radius server template. As shown in Figure 23::

(1) Radius template name, authentication server IP address, and authentication

service shared key are required;

(2) The accounting server IP and the accounting shared key are optional. Both

of them must be filled in or not filled in at the same time, otherwise the system

prompts that they cannot be saved normally.

(3) The key requires 1-64 non-Chinese characters.

Running Status	Running Status	System Log × Radius	s Template 🛛 📉	
AP Mode	Add			
💮 System Settings 🔻 🔻	F	adius Template Name	Radius Auth Server IP	Radius Accounting Serve
Statistics 🔹	<			
💥 System Maintenance 🔺		_		_
<ul> <li>Modify Password</li> </ul>		Message		- 🛛 ×
<ul> <li>Configuration</li> </ul>		Radius Template Name∗	Please Input Radius Template Name	<u>ا</u>
Management		Radius Auth Server IP*	Please Input Radius Auth Server IP	
<ul> <li>System Log</li> </ul>				
<ul> <li>Radius Template</li> </ul>		Authentication Server Port*	1812	
<ul> <li>Authentication</li> </ul>		Auth Service Shared Key-	Please Input Auth Service Shared Key	<b>~</b>
Management		Radius Accounting Server IP	Please Input Radius Accounting Server IP(Optional)	
- SNMP				
<ul> <li>SSL Certificate</li> </ul>		Accounting Server Port	Please Input Accounting Server Port(Default:1813)(	Optional)
Management		Accounting Shared Key	Please Input Accounting Shared Key(Optional)	~ <del>@</del>
			Save	

#### 2.5.5 Authentication Management

Click "System Maintenance" >> "Authentication Management", the user can see authentication management configuration and Telnet status. As shown in Figure 24:

- (1) Select local authentication and save it directly.
- (2) To select Radius server authentication, you need to select a Radius server.

This Radius server has been maintained in the "Radius server template".

- (3) Select open or close the Telnet, you can control the Telnet application of AP.
- (4) Single landing to choose open or closed, allows a single device (a single

brower) or more(multiple browers)login to the AP.

DCN	=			
🔓 Running Status	Running Status Authenticati	on Management $\times$		
🛃 Setup Wizard	✓ Authentication Managem	ient		
🔐 AP Mode	Management Type	Local Authentication	Radius Server Authentication	
🕄 Basic Settings 🔹		Save		
Advanced Settings				
Statistics	✓ Telnet Status			
💥 System Maintenance 🔺	Telnet Status	On Off		
<ul> <li>Modify Password</li> </ul>		Save		
<ul> <li>Configuration</li> <li>Management</li> </ul>				
- System Log	✓ Web login	0		
- IP Session Control	Single landing	● On ○ Off		
<ul> <li>Network Timing</li> </ul>		Save		
<ul> <li>Radius Template</li> </ul>				
<ul> <li>Authentication</li> </ul>				
Management — SNMP				
— SSL Certificate				

## 2.5.6 SNMP Configuration

Click "System	Maintenance"	>>	"SNMP	Configuration"	to
			•••••		

configureSNMP related information. As shown in Figure 25:

	DCN	=	
습	Running Status	Running Status SNMP ×	
88	AP Mode	∽ snmp	
٩	System Settings 🔹 🔻	SNMP Version	) v2 Version 🔿 v3 Version
~	Statistics 🔹	Device Location	office
*	System Maintenance 🔺		
_	Modify Password	SNMP Password	•••••
_	Configuration	Trap Receiver lo	ocalhost
	Management	_	
-	System Log		Save
_	Radius Template		
_	Authentication		
	Management		
-	SNMP		
_	SSL Certificate		
	Management		

## 2.5.7 SSL Certificate Management

Click" System Maintenance ">>"SSL Certificate Management " to upload the

SSL certificate. As shown in Figure 26:

DCN	
🔓 Running Status	Running Status SSL Certificate Management ×
AP Mode	✓ SSL Certificate Management
💮 System Settings 🔻	Select Certificate File(.crt .key)
Statistics 🔹	File Name File Size File Status
💥 System Maintenance 🔺	
<ul> <li>Modify Password</li> </ul>	Start Upload
<ul> <li>Configuration</li> </ul>	
Management	
<ul> <li>System Log</li> </ul>	
<ul> <li>Radius Template</li> </ul>	
<ul> <li>Authentication</li> </ul>	
Management	
- SNMP	
<ul> <li>SSL Certificate</li> </ul>	
Management	

## 3 FIT AP Mode

When there are a large number of APs on the network, the configuration or management one by one will become more complicated. At this time, it is suitable to use the FIT AP mode + AC (AP controller) for unified management and configuration, thereby reducing the configuration and management costs.

The typical topology is as following:



The AP is shipped in FIT AP mode by default. You can also switch to FIT AP mode by restoring the factory setting or following the instructions in the AP mode chapter. The wireless configuration of the FIT mode is operated uniformly through the AC. For details about this part, please refer to the DCN related AC operation manual. Here, the AP's wired configuration, AC address setting, WDS configuration, and system management are mainly introduced.

#### 3.1 System Settings

#### 3.1.1 Ethernet Settings

Click "AP mode" in the menu on the left to enter the AP wired configuration page. The page has two parameters: AP mode and mesh status. The default is Fit mode. The wireless configuration of Fit mode is uniformly distributed through AC. please refer to the AC related operation manual of DCN for this part. The default mesh status is off, as shown in the following figure:



#### 3.2 System Settings

#### **3.2.1 Ethernet Settings**

Click "System Settings">> "Ethernet Settings" on the left menu to enter the AP Ethernet setting interface. In default, the current status of the uplink port (usually the POE interface) and the downlink port of the AP are displayed. As following:

	DCN	≔	
습	Running Status	Running Status Etherne	et Settings ×
88	AP Mode		
ු	System Settings 🔺	Uplink Setting	S
	Ethernet Settings	Management VLAN	1
-	Manage AC Settings	Untagged VLAN	1
_	WDS Settings	Connection Type	DHCP
~	Statistics 🗸	IP Address	172.30.111.106
℅	System Maintenance 📥	Subnet Mask	255.255.255.0
_	Modify Password	Default Gateway	172.30.111.1
-	Configuration	DNS Server	202.103.24.68
	Management		
-	System Log	IPv6 Connection	DHCP
-	Radius Template		
_	Authentication	IPv6 Address	3333:AAAA::1005
	Management	IPv6 Address Prefix	128
_	SNMP	Length	
_	SSL Certificate	Default IPv6 Gateway	FE80::203:FFF:FE33:3333
	Management		
		IPv6 DNS Server	2019::2019
		Downlink Setti	ings
		VLAN ID	1
			Edit

If you need to modify the related setting of the uplink port, you can click the "Edit" at the bottom of the interface to edit setting, where you can set the AP wired VLAN and the IP address configuration mode of the AP. As following:

G Running Status	Running Status Ethern	et Settings ×
B AP Mode	- Uplink Setting	JS
🕼 System Settings 🔺	Management	1
<ul> <li>Ethernet Settings</li> </ul>	VLAN*	
<ul> <li>Manage AC Settings</li> </ul>	Untagged VLAN*	1
— WDS Settings	Connection Type*	DHCP      Static IP
🖾 Statistics 🗸	IP Address	172.30.111.106
🔀 System Maintenance 🔺	Subnet Mask	255.255.255.0
<ul> <li>Modify Password</li> </ul>	Default Gateway	172.30.111.1
<ul> <li>Configuration</li> </ul>	DNS Server	202.103.24.68
Management — System Log	IPv6 Connection Type∗	DHCP Static IP
<ul> <li>Radius Template</li> </ul>		0000-000
<ul> <li>Authentication</li> </ul>	IPv6 Address	3333:AAAA::1005
Management	IPv6 Address Prefix Length	128
- SNMP	Lengui	
<ul> <li>SSL Certificate</li> </ul>	Default IPv6 Gateway	FE80::203:FFF:FE33:3333
Management		
	IPv6 DNS Server	2019::2019
	<ul> <li>Downlink Sett</li> </ul>	lings
	VLAN ID*	1
		Save Return

### **3.2.2 Manage AC Settings**

Click "System Settings">>"Manage AC Settings" on the left menu to enter theAC management settinginterface. From this page, you can view the static AC management address of the current AP setting. If you need to configure the address of the static management AC, you can click the "Edit" at the bottom of the page to enter the setting page, where you can configure multiple IP (v6) addresses of the management AC or domain names of the management AC. As shown below:

	DCN	≣	
습	Running Status	Running Status Manag	e AC Settings $\times$
88	AP Mode	AC IP Address 1	192.168.1.254
<u>ن</u>	System Settings 🔺	AC IP Address 2	
_	Ethernet Settings	AC IP Address 3	
	Manage AC Settings		
-	WDS Settings	AC IP Address 4	
2	Statistics 🗸 🗸	AC IPv6 Address 1	
℅	System Maintenance 🔺	AC IPv6 Address 2	
	Modify Password	AC IPv6 Address 3	
	Configuration	AC IPv6 Address 4	
	Management	AC URL Address	www.acaddr.com
	System Log		_
	Radius Template		Edit
	Authentication		
	Management		
	SNMP		
	SSL Certificate		
	Management		

Tip: In addition to static ACIP or AC domain name to find AC, you can also actively find AC through DHCP option. For details, refer to DCN AC related manuals or consult DCN staffs.

#### 3.2.3 WDSSettings

Click "System Settings">> "WDS Settings" on the left menu to view the WDS current status of the AP. If you need to bridge this AP with other ones, you can click the "Edit" at the bottom of the page to enter the WDS setting page, as shown below:

	DCN	≣	
습	Running Status	Running Status	WDS Settings $\times$
38	AP Mode	Status∗	Enabled Disabled
ූ	System Settings 🔺	Radio*	○ 2.4G ○ 5G
-	Ethernet Settings	SSID	Please Input SSID
-		BSSID	Please Input BSSID
	WDS Settings		
~	Statistics 🔹	Password	Please Input Password. If the encryption method is Open, there is
×	System Maintenance 🔻		Save Scan Return

If you want to manually enter the information of the target wireless network or the target wireless network is a hidden network, you can directly enter the corresponding wireless network information and save it.

If you want to connect it through the scanning method, you can first select the radio frequency band to be bridged on this page, click the "Scan" to start scanning, select the target BSSID, and then select "Connect" for WDS connection, as shown below:

	DCN	≔							China(CN)
습	Running Status	Running Sta	atus WDS Settin	gs ×					
88	AP Mode	Status	s* (•)	Enabled Obisab	led				
٩	System Settings 🔺	Radio	• 0	2.4G 💿 5G					
	Ethernet Settings	Message						-	- 🛛 ×
—	Manage AC Settings								^
-	WDS Settings	Number	SSID	BSSID	Channel	RSSI	Security Setting	Operation	- 8
~	Statistics 👻	1	DCN_WLAN	00:03:0f:8e:29:40	149	50	OPEN	Connect	brd
*	System Maintenance 🔻	2	Managed SSID 3	00:03:0f:2e:4f:72	149	42	OPEN	Connect	
		3	Managed SSID 2	00:03:0f:2e:4f:71	149	42	OPEN	Connect	
		4	hellopl- 789654321	00:03:0f:2e:4f:70	149	42	WPA2	Connect	
		5	12F-TV-hidden	00:03:10:02:61:22	157	37	WPA2	Connect	
		6	DCN-RD-WIFI	00:03:10:02:61:21	157	36	OPEN	Connect	~

# 4 FAT Bridge Mode

When there is no AC in the network, you can select the fat mode. If there is a DHCP server in the network, you can switch the AP to the fat bridge mode to use the wireless network.



#### 4.1 Setup Wizard

Clicking "Setup Wizard" on the left menu and then the "Setup Wizard-Start" interface will pop up, which introduces the role of the wizard. If you do not want to use the wizard, you can select "Exit Wizard".



If you want to use the wizard, you can click "Next Step" to enter the "Setup Wizard-Manage IP Settings" interface, where you can configure the AP's IP (v6) address connection method to be dynamic or static, as shown below:

DCN	≣		Chi
🔓 Running Status	Running Status Setup Wizard $ imes$		
🛃 Setup Wizard			
AP Mode	Setup Wizard - Manage IP Settings		
<ul> <li>Basic Settings</li> <li>Advanced Settings</li> <li>Statistics</li> <li>System Maintenance</li> </ul>	Connection Type» IP Address» Subnet Mask» Default Gateway DNS Server IPv6 Connection Type» IPv6 Address» IPv6 Address Prefix Length» Default IPv6 Gateway IPv6 DNS Server	<ul> <li>DHCP  <ul> <li>Static IP</li> </ul> </li> <li>172.18.18.2</li> <li>255.255.255.0</li> <li>172.18.18.254</li> <li>223.5.5.5</li> <li>DHCP  <ul> <li>Static IP</li> </ul> </li> <li>2018:1818::2001</li> <li>128</li> <li>FE80::203:FFF:FE06:511</li> <li>2018:172:18::186</li> </ul>	
	Previous Step Next	Step	

After the management address setting is completed, click "Next Step" to enter the "Setup Wizard-Wireless Settings" interface, where you can set wireless parameters such as wireless name (SSID) and security mode, as shown in the figure below:

DCN	≡		China(CN)	Fat Mode - Bridg
Running Status	Running Status Setup Wizard $\times$	_		
🛃 Setup Wizard				
AP Mode	Setup Wizard - Wireless Settings			- 🛛 ×
<ul> <li>Basic Settings</li> <li>Advanced Settings</li> </ul>		less network information. If you need to set more t - > "Wireless Settings" to configure.	han one SSID, ple	ease go to
	SSID★	DCN_WLAN		
	Radio★	🗹 2.4G 🗹 5G 1 🗹 5G 2		
	Client Isolation*	On Off		
	Hidden SSID*	On Off		- 1
	Security Setting*	WPA/WPA2-Personal		v
	Password*	Please Input Password		5
	Previous Step No	ext Step		-

Click "Next Step" and then click "Complete". Finally, before you click "Complete", you can click "Previous Step" to modify the parameters that have been set. After you click "Complete", all parameter settings will take effect.

#### 4.2 Basic Settings

#### **4.2.1 Ethernet Settings**

Click "System Settings">>"Ethernet Settings" on the left menu to enter the AP Ethernet setting page. The AP uplink (usually a POE interface) and the current status of the downlink are displayed by default. Then you can click the "Edit" at the bottom of the page to enter the page, where you can set the AP wired interface VLAN and the IP address configuration method of the AP. As shown below:

DCN	≔	
🔓 Running Status	Running Status Ethern	et Settings ×
Eo Setup Wizard	- Uplink Setting	js
B AP Mode	Management VLAN∗	1
<ul> <li>Basic Settings</li> <li>Ethernet Settings</li> </ul>	Untagged VLAN*	1
— Wireless Settings	Connection Type*	DHCP      Static IP
💮 Advanced Settings 🔻	IP Address	172.18.18.2
Statistics •	Subnet Mask	255.255.255.0
🔀 System Maintenance 🔻	Default Gateway	172.18.18.254
	DNS Server	223.5.5.5
	IPv6 Connection Type∗	DHCP      Static IP
	IPv6 Address	2018:1818::2001
	IPv6 Address Prefix Length	128
	Default IPv6 Gateway	FE80::203:FFF:FE06:511
	IPv6 DNS Server	2018:172:18::186
	— Downlink Set	tings
	VLAN ID*	1
		Save Return

### 4.2.2 Wireless Settings

Click "Basic Settings" >> "Wireless Settings" on the left menu to enter the wireless setting page, where you can set the basic parameters of the wireless

network, as shown below:

Add								
SSID	Vlan ID	Radio Enable	Client Isolation	Hidden SSID	WDS Mode	Multicast To Unicast	Security Setting	Operation
DCN_WLAN	1	2.4G/5G 1/5G 2	Off Off	Off	Disabled	Off	Open	<b>Edit</b> Delete
Country Co	de Settings							
Country Code	China		~	Save				

If you need to create a new wireless network, you can click "Add" and enter the

corresponding parameters, as shown below:

Message	— 🛛 ×
ID SSID*	Please Input SSID
VLAN ID*	Please Input VLAN ID
Radio*	✓ 2.4G ✓ 5G 1 ✓ 5G 2
Client Isolation*	On Off
Hidden SSID∗	On Off
WDS Mode*	Enabled   Disabled
Multicast To Unicast∗	On Off
Security Setting*	Open 🗸
Uplink Speed Limit(kBps)	Please Input Uplink Speed Limit(Range:0-10485760)(Optional)
Downlink Speed Limit(kBps)	Please Input Downlink Speed Limit(Range:0-10485760)(Optional)
Uplink Speed Limit Per Client(kBps)	Please Input Uplink Speed Limit Per Client(Range:0-10485760)(Opti
Downlink Speed Limit Per Client(kBps)	Please Input Downlink Speed Limit Per Client(Range:0-10485760)(C
	Save

The content marked with " \* " in the above picture is required, the others are

optional, and the brief introduction is as follows:

Client Isolation: Communication control between wireless clients. When being turned on, wireless clients cannot communicate with each other. Off by default.

Hidden SSID: When the hidden SSID is turned on, the wireless client will not be able to search for this SSID information.

Security Settings: This router supports three security settings, Open, WPA / WPA2-Personal, and WPA / WPA2-Enterprise.

Uplink Speed Limit: Control the uplink speed of all users under this SSID to not exceed the specified speed.

Downlink Speed Limit: Control the downlink speed of all users on a certain radio frequency under the SSID to not exceed the specified speed.

Uplink Speed Per Client: Controls the uplink speed of each client accessing the wireless.

Downlink Speed Per Client: Controls the downlink speed of a single client.

It should be noted that the bandwidth speed limit is for wireless to wired interfaces, and does not include the speed limit between wireless to wireless interfaces or between wireless clients to wireless clients under the same VAP. And one-way SSID speed limit and client speed limit cannot be used at the same time. In addition, each AP can set up to 16 SSIDs. The default SSID can only be edited and cannot be deleted.

In addition, the OPEN mode does not need to set a password, and the wireless client can directly access;

In WPA / WPA2-Persional mode, you need to set a password with a length of 8 to 63 characters;

WPA / WPA2-Enterprise mode is authenticated by the radius server, so you need to bind the radius template. For details, refer to section 2.5.4.

#### 4.3 Advanced Settings

#### 4.3.1 Radio Settings

Running Status Radio Settings

The radio setting page displays all radio information in a list with no new features. Click" Edit " in the operation column to modify the radio settings, including status, channel, channel bandwidth, transmit power, multicast rate, STBC mode, Beacon interval, DTIM period, RTS period, max clients, etc., as shown below:

Radio	Status	Mode	Channel Bandwidth	Channel	Transmit Power(dBm)	Multicast Rate(Mbps)	STBC Mode	Beacon Interval	DTIM Period	RTS Threshold	Max Clients	Operation
2.4G	Enabled	802.11ng	HT20	6	27	auto	Enabled	100	1	2346	127	Edit
5G 1	Enabled	802.11ac	HT40	52	20	auto	Enabled	100	1	2346	127	Edit
5G 2	Enabled	802.11ac	HT40	149	23	auto	Enabled	100	1	2346	127	Edit

Status: Setting the Radio on or off. On by default.

Mode: Configure the Radio mode, such as bgn, an, ac.

Channel Bandwidth: Configure the Radio bandwidth to 20Mhz, 40Mhz, 80Mhz.

Channel: Configure the Radio channel.

Transmit Power: Configure the Radio transmit power.

Multicast Rate: Configure the Radio to fixed multicast rate.

STBC mode: Setting the Radio STBC mode on of off. On by default.

Beacon Interval: Configurethe Radio beacon interval, 100ms by default.

DTIM Period: Configure the beacon DTIM period, 1 by default.

RTS Period: Configure the packets size that triggers RTS.

Max Clients: Configure the max number of associated client.

#### 4.3.2 WDSSettings

Click "Advanced Settings">> "WDS Settings" on the left menu to view the WDS current status of the AP. If you need to bridge this AP with other ones, you can click the "Edit" at the bottom of the page to enter the WDS setting page, as shown below:

Running Status	WDS Settings ×
Status*	Enabled Disabled
Radio*	2.4G 5G
SSID	Please Input SSID
BSSID	Please Input BSSID
Password	Please Input Password. If the encryption method is Open, there is no need to enter the password.
	Save Scan Return

If you want to manually enter the information of the target wireless network or the target wireless network is a hidden network, you can directly enter the related wireless network information and save it.

If you want to connect it through the scanning method, you can first select the radio frequency band to be bridged on this page, click the "Scan" to start scanning, select the target BSSID, and then select "Connect" for WDS connection, as shown below:
	Running Status	WDS Setting	js ×				
I	Status∗	۲	Enabled Disable	ed			
I	Radio∗	۲	2.4G 🔵 5G				
1	Message						-
						Q a surit s	
1	Number	SSID	BSSID	Channel	RSSI	Security Setting	Operation
	1	Guest Network	00:03:0f:62:12:20	11	70	OPEN	Connect
	2		00:03:0f:aa:88:00	1	60	WPA2	Connect

# 4.4 System Maintenance

# **4.4.1 IPSession Control**

Click "System Maintenance">>"IP Session Control" on the left menu to enter the IP session control page, where you can set the number of TCP connections that each client can use simultaneously. If the number of connections reaches the specified number, the new TCP connections will be rejected. Note that closed TCP connections are not counted in the number of connections.

The default is 0, which means unlimited. As shown below:

DCN	≡
🔓 Running Status	Running Status IP Session Control ×
E Setup Wizard	✓ IP Session Control Settings
AP Mode	This function is to limit the number of active TCP connections. The number of IP session controls is 0, which means unlimited.
ঠ্টে Basic Settings 🛛 🔫	
🔅 Advanced Settings 🔻	IP Session Limits 0
Statistics -	Save
💥 System Maintenance 🗕	
- Modify Password	
- Configuration	
Management	
<ul> <li>System Log</li> </ul>	
- IP Session Control	

# 4.4.2 Network Timing

Click "System Maintenance" >>" Network Timing", you can set NTP

network time, turn on or off the NTP server. It supports up to 4 NTP server settings.

🔓 Running Status	Running Status Networ	rk Timing X
Setup Wizard	$\checkmark$ Network Timing	
AP Mode	Current Time:	2019-12-20 16:28:09
ঠ্টি Basic Settings 🛛 🔻	Status	• On Off
Advanced Settings	Time Zone	UTC+8(Beijing, CCT)
Statistics 🔻	NTP Server1	cn.ntp.org.cn
💥 System Maintenance 🔺		
- Modify Password	NTP Server2	edu.ntp.org.cn
– Configuration	NTP Server3	hk.ntp.org.cn
Management	NTP Server4	tw.ntp.org.cn
🗕 System Log		Save
IP Session Control		
<ul> <li>Network Timing</li> </ul>		

As shown below:

# 4.5 Mesh Network

# 4.5.1 Mesh Setting

When the AP is in mesh Master mode, click "Mesh Network" - "Mesh Settings" in the menu on the left to enter the mesh settings page, which can configure some global functions of the mesh network, including airmatch, automatic channel adjustment, automatic power adjustment and public cloud connection switch, as shown in the following figure:

DCN	≡		
🔓 Running Status	Running Status	Mesh Settings	×
🛃 Setup Wizard	Connect to t	he public cloud	
吕 AP Mode	Status	<ul> <li>On</li> </ul>	Off
🔅 Basic Settings 🔹		Save	Cance
Statistics -			
💥 System Maintenance 🕶			
Mesh Network			
<ul> <li>Mesh Settings</li> <li>AP List</li> </ul>			
<ul> <li>Client Statistics</li> </ul>			
<ul> <li>Network Settings</li> </ul>			
<ul> <li>AP Upgrade</li> </ul>			
— Blacklist			

When mesh is Master mode, it is connected to the public cloud by default. At this
time, the Master AP of mesh will be online in the public cloud. When the connection
to the public cloud is enabled, some local configuration functions of the mesh
network will be turned off, and the configuration will be distributed by the public
cloud. After the "Connect to the public cloud" status is configured as off, the AP can
configure other global functions.

When the "Connect to the public cloud" is off, the airmatch function can be configured. It is on by default. The mesh network can adjust the airmatch, as shown in the following figure:

DCN		=		
🔓 Running Status	F	Running Status	Mesh Settings $\times$	
🛃 Setup Wizard		Air-Match	Automatic channel adjustment	Automatic power adjustment
AP Mode		Status∗	On Off	
🐼 Basic Settings	-			
Advanced Settings	-	threshold	5	
Statistics	-		Save Cancel	
💥 System Maintenance	-			
Mesh Network	•			
<ul> <li>Mesh Settings</li> </ul>				
— AP List				
<ul> <li>Client Statistics</li> </ul>				
<ul> <li>Network Settings</li> </ul>				
<ul> <li>AP Upgrade</li> </ul>				
— Blacklist				

The automatic channel function is on by default. The AP of mesh network can adjust the time according to the setting, and make an automatic channel adjustment at that time. You can also click the "Adjust now" button on the page to automatically adjust the AP channel in real time, as shown in the following figure:

	DCN	=			
습	Running Status	Running Status Mesh Settin	gs ×		
Eð	Setup Wizard	Air-Match Automatic ch	annel adjustment	Automatic power adjustment	Connect to the public cloud
	AP Mode	Status∗ ⊙ 0	n 🔿 Off		
<b>0</b>	Basic Settings   Advanced Settings	Radio 20	G 🗹 5G 🛛 Adju	ist now	
~	Statistics 🗸 🗸	Adjust time 5	hours 0	minutes	
℅	System Maintenance 🔻	Sav	e Cancel		
۲	Mesh Network 🔺				
-	Mesh Settings				
-	AP List				
_	Client Statistics				

The automatic power adjustment function is on by default. The AP of mesh network can automatically adjust the power according to the set adjustment cycle, as shown in the following figure:

	DCN	≘
습	Running Status	Running Status Mesh Settings ×
Ð	Setup Wizard	Air-Match Automatic channel adjustment Automatic power adjustment Connect to the public cloud
88	AP Mode	Status  On Off
ŝ	Basic Settings 🔹 🔻	
٩	Advanced Settings 👻	Adjustment 15 minutes T period*
~	Statistics -	Save Cancel
℅	System Maintenance 🔻	
	Mesh Network	
-	Mesh Settings	
_		
-		
_	Network Settings	

# 4.5.2 AP List

When the AP is in mesh master AP mode, click "Mesh network" - "AP List" in the left menu to enter the mesh AP list page, where all APS of the current mesh network can be displayed, as shown in the following figure:

Running Status	Running Status AP List $\times$	_									
Setup Wizard	Refresh										
8 AP Mode							Transmit				
🖇 Basic Settings 🛛 👻	SN	MAC Address	IP Address	Туре	Location	Channel	Power	Status	Running Time	Online Time	Operation
Advanced Settings 👻	WL024110K706000021 Master	00:03:0f.cc:ba:50	192.168.99.23	WL8200- X10		11/36/149	50/25/25	-	0 days 0 hours 12 minutes 34 seconds	-	statistical Client Manage
Statistics 🔹	WL024110K922000165	00:03:0f:e6:cd:80	192.168.99.94	WL8200- X10		1/36/149	100/100/100	Online	0 days 0 hours 28 minutes 55 seconds	0 days 0 hours 11 minutes 31 seconds	statistical Restart         Client Delete         Manage           Restart         Delete            Restore Factory         Join blacklist
Mesh Network	8102002V1XW27402 Slave	00:03:0f:74:f2:00	192.168.99.110	WL8200- XW2		1/36	5/5	Online	0 days 0 hours 22 minutes 52 seconds	0 days 0 hours 11 minutes 27 seconds	statistical Client Manage Restart Delete Restore Factory Join blacklist
<ul> <li>AP List</li> <li>Client Statistics</li> <li>Network Settings</li> </ul>	WL023810L318000076	00.03:0f:e3:2c:e9	192.168.99.96	WL8200- X2		1/157	100/100	Online	0 days 0 hours 6 minutes 6 seconds	0 days 0 hours 5 minutes 45 seconds	statistical Restant         Client Delete         Manage           Restant         Delete            Restore Factory         Join blacklist
<ul> <li>AP Upgrade</li> <li>Blacklist</li> </ul>	WL023410L110000042	00:03:0f:ef:ea:80	192.168.99.32	WL8200- X4		6/36	100/100	Offline	0 days 0 hours 0 minutes 0 seconds	0 days 0 hours 0 minutes 0 seconds	statistical     Client     Manage       Restart     Dalate       Restore Factory     Join blacklist
	wlan8200x4JF11 Slave	00.03:0f:73:11:a0	192.168.99.36	WL8200- X4	123123	1/36	100/100	Offline	0 days 0 hours 0 minutes 0 seconds	0 days 0 hours 0 minutes 0 seconds	statistical Client Manage Restart Dekte Restore Factory Join blacklist

This page can manage APS. Click the "statistics" button on the right side of the AP list to view the statistics of AP, including SSID and RF information, as shown in the following figure:

	Refrest	mation - 00:03												
Mode	Wireless Inior	mabon - 00.03	3.01.CC.D8.50											
c Settings 🛛 👻	SSID													
anced Settings 🔻		SSID VLAN Radio												
istics 👻				Guest Network				1			2.4G,5G1,5G2			
em Maintenance 🔫				ly-mesh-perf-acc				1	2.4G,5G1,5G2					
h Network 🔺														
h Settings										Transmit		Receive		
ist	Radio	Status	Mode	Channel Bandwidth	Channel	Transmit Power(%)	Channel Utilization(%)	Client Number	Total		Total			
nt Statistics				Danuwidui		Power(76)	ounzauon( ///	Number	Packets	Total Bytes	Packets	Total Bytes		
work Settings	2.4G	Enabled	11axg	HT20	11	100	78	5	3897	189063	4	1370		
lpgrade klist	5G1	Enabled	11axa	HT40+	36	100	70	13	33422	31236059	19514	2241980		

Click the "Client" button on the right side of the AP list to view the associated client

tup Wizard	Refresh												
Mode		Client - 00:03:0f.cc.ba	50									-	2 ×
ic Settings 🛛 🔫		Refresh											*
vanced Settings 👻	WL0241	Client IPv4 Address	Client MAC Address	Client Type	AP MAC Address	SSID	Radio	Channel	RSSI	Terminal User Type	Up- Time	Online Time	¢
rstem Maintenance 👻 lesh Network 🔶 lesh Settings	810200 WL0241	192.168.99.67	48.fd; a3:0c; 64:0b	Xiaomi Communications Co Ltd	00:03:0f.cc:ba:50	ly- mesh- perf- acc	5G2	149	<b>at]</b> 57	authentication user	2022- 03-21 15:15:10	0 days 0 hours 1 minutes 6 seconds	ł
P List ient Statistics etwork Settings	WL0241 WL0241	192.168.99.70	ec:d0:9f:db:06:4d	Android - Xiaomi Communications Co Ltd	00:03:0f:cc:ba:50	ly- mesh- perf- acc	5G2	149	<b></b> 51	authentication user	2022- 03-21 15:15:08	0 days 0 hours 1 minutes 8 seconds	ł
AP Upgrade Blacklist	810200	192.168.99.6	48:fd:a3:0c:7d:dd	Xiaomi Communications Co Ltd	00:03:0f:cc:ba:50	ly. mesh- perf- acc	5G2	149	<b>.111</b> 62	authentication user	2022- 03-21 15:15:10	0 days 0 hours 1 minutes 6	Ļ

information under the AP, as shown in the following figure:

Click the "Manage" button on the right side of the AP list to configure the RF parameters AP and LAN ports of each AP separately, as shown in the following figure:

Running Status	unning Status AP List ×								
Setup Wizard	Refresh						-		
AP Mode	_			Manage - 00:03:0f:c	c.ba:50	- 🛛 ×			
🖇 Basic Settings 🛛 🔫	SN	MAC Address	IP Add	Basic Settings	Downlink Settings		ime	Online Time	Operation
🖇 Advanced Settings 🛛 👻	WL024110K706000021 Master	00.03:0f:cc:ba:50	192.168	Radio	🗹 2.4G 🗹 5G 1 🗹 5G 2		urs 41		statistical Client Manage
🗄 Statistics 🛛 👻				Channel(2.4G)	auto	×	urs	0 days 0 hours	statistical Client Manage
🗧 System Maintenance 🔫	WL023910L412000016 Slave	00:03:0f.e3:33:20	192.168	Channel(5G1)	auto	-	0	0 minutes 10 seconds	Restart Delete Restore Factory Join blacklist
🖯 Mesh Network 🔺				Channel(5G2)	auto	*	urs	0 days 0 hours	statistical Client Manage
<ul> <li>Mesh Settings</li> <li>AP List</li> </ul>	8102002V13C00124 Slave	00:03:0f:73:00:00	192.168	Transmit Power(2.4G)	auto	~	0	0 minutes 10 seconds	Restart Delete Restore Factory Join blacklist
Client Statistics     Network Settings	WL023810L318000076 Stave	00:03:0f:e3:2c:e9	192.168	Transmit Power(5G1)	auto	-	urs 0	0 days 0 hours 0 minutes 10 seconds	statistical Client Manage Restart Delete Restore Factory Join blacklist
- AP Upgrade - Blacklist	WL8200XW2ConsoleError Slave	00:03:0f:74:ff:00	192.168	Transmit Power(5G2)	auto	×	urs 0	0 days 0 hours 0 minutes 10 seconds	statistical Client Manage Restart Delete Restore Factory Join blackist
	9102002V13C00123 Slave	00:03:0f:66:00:00	192.168	Location	Save Cancel		urs 0	0 days 0 hours 0 minutes 10 seconds	Statistical Client Manage Restant Delete Restore Factory Join blacklist

Click the "Restart" button on the right side of the AP list to restart the slave AP. When slave AP offline from Master AP, you can click the "Delete" button on the right side of the AP list to delete the slave AP data. This button will not be illuminated when the AP is online.

Click the "Restore Factory" button on the right side of the AP list to restore the from the AP to the factory. After restoring the factory, the AP is a Fit AP, the mesh is from the AP state, and other configurations are cleared.

Click the "Join to Blacklist" button on the right side of the AP list to add the slave AP to the blacklist list and kick the slave AP off the line. The slave AP cannot go online on the Master AP.

# 4.5.3 Client Statistics

When the AP is in mesh master AP mode, click "Mesh Network" - "Client Statistics" in the left menu to enter the mesh client statistics list page, where all client information of the current mesh network can be displayed, as shown in the following figure:

Setup Wizard	Refresh											
AP Mode	Client IPv4	Client MAC	Client Type	AP MAC	SSID	Radio	Channel	RSSI	Terminal User	Up-Time	Online Time	Operation
Basic Settings 🛛 🔻	Address	Address		Address					Туре			-,
Statistics 👻	192.168.99.90	48:fd:a3:0c:5c:81	Xiaomi Communications Co Ltd	00:03:0f:cc:bf:a0	ly-mesh- perf-acc	5G2	149	<b>all</b> 52	authentication user	2022-03-21 15:22:02	0 days 0 hours 4 minutes 43 seconds	Join blacklis
System Maintenance 🔻 Mesh Network 🛛 🔺	192.168.99.88	0c:1d:af:59:c2:e2	Android - Xiaomi Communications Co Ltd	00:03:0f:cc:bf:a0	ly-mesh- perf-acc	5G2	149	<b></b> 55	non- authenticated user	2022-03-21 15:22:01	0 days 0 hours 4 minutes 44 seconds	Join blacklis
Mesh Settings AP List	192.168.99.129	0c:1d:af:5a:6c:8e	Android - Xiaomi Communications Co Ltd	00:03:0f:cc:bf:a0	ly-mesh- perf-acc	5G2	149	<b></b> 51	authentication user	2022-03-21 15:22:01	0 days 0 hours 4 minutes 44 seconds	Join blacklis
Client Statistics Network Settings	192.168.99.98	0c:1d:af.59.86.b1	Android - Xiaomi Communications Co Ltd	00.03:0f:cc.bf:a0	ly-mesh- perf-acc	5G2	149	<b></b> 54	authentication user	2022-03-21 15:22:01	0 days 0 hours 4 minutes 44 seconds	Join blacklis
AP Upgrade Blacklist	192.168.99.83	ec:d0:9f:17:c8:18	Xiaomi Communications Co Ltd	00:03:0f.cc.bf.a0	ly-mesh- perf-acc	5G2	149	<b></b> 51	authentication user	2022-03-21 15:22:01	0 days 0 hours 4 minutes 44 seconds	Join blacklis
	192.168.99.80	ec:d0:9f:12:27:12	Xiaomi Communications Co Ltd	00:03:0f:73:07:00	ly-mesh- perf-acc	5G1	36	<b>atl</b> 57	authentication user	2022-03-21 15:22:49	0 days 0 hours 3 minutes 56 seconds	Join blackle
	192.168.99.64	ec:d0:9f:0b:a1:22	Xiaomi Communications Co Ltd	00:03:0f:cc:ba:50	ly-mesh- perf-acc	5G2	149	<b></b> 47	authentication user	2022-03-21 15:22:46	0 days 0 hours 3 minutes 59	Join blacklis

# 4.5.4 Network settings

When the AP is in the mesh master AP mode, click "mesh network" - "network settings" in the left menu to enter the mesh network settings page. On this page, the device finger status of the current mesh network can be displayed and configured. When it is turned on, the AP of the mesh network can identify the client

type associated with the mesh network. The configuration page is as follows:

😥 Running Status	Running Status Client Statistics × Network Settings ×	
🛃 Setup Wizard		
8 AP Mode	SSID	Device Finger
	Guest Network	
Basic Settings -	ly-mesh-perf-acc	
💮 Advanced Settings 💌	if most port and	
🖂 Statistics 👻		
💥 System Maintenance 🔻		
Mesh Network		
<ul> <li>Mesh Settings</li> </ul>		
- AP List		
<ul> <li>Client Statistics</li> </ul>		
<ul> <li>Network Settings</li> </ul>		
<ul> <li>AP Upgrade</li> </ul>		
— Blacklist		

# 4.5.5 AP Upgrade

When the AP is in mesh master AP mode, click "mesh network" - "AP Upgrade" in the left menu to enter the mesh AP upgrade page, where the version information and upgrade status of all APS in the current mesh network can be displayed. Select the AP to be upgraded through the check box on the left side of the AP list. You can select one or more APS to upgrade. When selecting multiple APS, you can only select APS of the same model, otherwise the upgrade cannot succeed.

Setup Wizard	Refresh								
8 AP Mode	Select All	SN	MAC Address	IP Address	Type	Upgrade Status	Status	Boot Version	Firmware Version
Basic Settings 🗧		WL024110K706000021 Master	00-03:0f.cc.ba:50	192 168 99 23	WL8200-X10	Not upgraded		2.3.2	4 14 2 16
Advanced Settings 👻		WL023910L412000038 Slave	00.03.0f.e3.35.e0	192.168.99.73	WL8200-XW2	Not upgraded	Online	2.3.3	4.14.2.16.1
Statistics 👻		WL023910L412000016 Slave	00:03:0f.e3:33:20	192.168.99.10	WL8200-XW2	Not upgraded	Online	2.3.3	4.14.2.16.1
System Maintenance 👻		WL023910L412000029 Slave	00.03.0f.e3.34.c0	192.168.99.13	WL8200-XW2	Not upgraded	Online	2.3.3	4.14.2.16.1
Mesh Network 🔺		WL023910L412000012 Slave	00:03:0f e3:32 a0	192 168 99 9	WL8200-XW2	Not upgraded	Online	2.3.3	4.14.2.16.1
Mesh Settings		8102002V1XW27401 Stave	00:03:0f 74:01:00	192.168.99.74	WL8200-XW2	Not upgraded	Online	2.3.3	4 14 2 16 1
		8102002V1XW27402 Slave	00:03:01:74:12:00	192.168.99.110	WL8200-XW2	Not upgraded	Online	2.3.3	4.14.2.16.1
- AP List		9102002V13C00123 Slave	00.03.0f 66.00.00	192 168 99 15	WL8200-XW2	Not upgraded	Online	2.3.3	4.14.2.16.1
<ul> <li>Client Statistics</li> </ul>		9102002V13C00127 Slave	00.03.0f.74.f1.00	192.168.99.107	WL8200-XW2	Not upgraded	Online	2.3.3	4.14.2.16.1
<ul> <li>Network Settings</li> </ul>		WL024110K706000077 Slave	00:03:7f.ba:db:00	192.168.99.86	WL8200-X10	Not upgraded	Online	2.3.3	4.14.2.16.1
AP Upgrade		WL024110K706000019 Stave	00:03:0f.cc:b9:d0	192.168.99.3	WL8200-X10	Not upgraded	Online	2.3.3	4.14.2.16.1
Blacklist		WL024110K706000022 Slave	00:03:0f.cc.ba.90	192.168.99.82	WL8200-X10	Not upgraded	Online	2.3.3	4 14 2 16 1
		8102002V13C00134 Stave	38 d0 8d e2 f0 8d	192.168.99.30	WL8200-X10	Not upgraded	Online		4 14 2 16 1
		WL024110K706000042 Stave	00:03:0f.cc.bf.a0	192.168.99.34	WL8200-X10	Not upgraded	Online	2.3.3	4.14.2.16.1

Click the "Select the file" button at the bottom of the page to select the local version file, and then click the "Upgrade" button to upgrade the selected AP, as shown in the following figure:

Running Status     Run	nning Status Clier	at Statistics × Network Settings × Al	P Upgrade 🛛 🗙				
🛃 Setup Wizard	$\checkmark$	9102002V13C00125 Slave	00:03:0f:66:20:00	192.168.99.18	WL8200-XW2	Not upgraded	0
B AP Mode	$\checkmark$	WL024110K922000165 Slave	00:03:0f:e6:cd:80	192.168.99.94	WL8200-X10	Not upgraded	0
🖄 Basic Settings 🛛 🔻	$\checkmark$	8102002V13C00124 Stave	00:03:0f:73:00:00	192.168.99.85	WL8200-X4	Not upgraded	O
	<b>~</b>	8102002yafei00123 Stave	00:03:0f:12:68:20	192.168.99.35	WL8200-X4	Not upgraded	0
💮 Advanced Settings 👻	$\checkmark$	8102002V13X47307 Slave	00:03:0f:73:07:00	192.168.99.31	WL8200-X4	Not upgraded	O
Statistics •	$\checkmark$	WL8200X2SUNKZ003 Slave	00:03:0f:72:12:30	192.168.99.21	WL8200-X2	Not upgraded	0
💥 System Maintenance 🔫	$\checkmark$	WL8200X2NoConsole11FJfAP Slave	00:11:06:72:ff:b0	192.168.99.20	WL8200-X2	Not upgraded	O
Mesh Network		8102002V13C00126 Slave	00:03:7f:12:eb:c7	192.168.99.33	WL8200-X4	Not upgraded	0
<ul> <li>Mesh Settings</li> </ul>	$\checkmark$	WL023810L318000075 Slave	00:03:0f:e1:09:40	192.168.99.37	WL8200-X4	Not upgraded	O
– AP List	×	WL023410L110000042 Slave	00:03:0f:ef:ea:80	192.168.99.32	WL8200-X4	Not upgraded	0
<ul> <li>Client Statistics</li> </ul>	$\checkmark$	WL8200XW2ConsoleError Slave	00:03:0f:74:ff:00	192.168.99.14	WL8200-XW2	Not upgraded	O
<ul> <li>Network Settings</li> </ul>	<ul> <li>Image: A set of the set of the</li></ul>	WL023710L110000001 Slave	06:12:a1:00:72:00	192.168.99.19	WL8200-X2	Not upgraded	0
- AP Upgrade		WL023810L318000076 Stave	00:03:0f:e3:2c:e9	192.168.99.96	WL8200-X2	Not upgraded	O
— Blacklist	Firmware Version: 4.14.2.16						
	Select the file	Upgrade					
	After upgrade comp	leted, the device will be reboot automatically					

# 4.5.6 Blacklist

When the AP is in mesh master AP mode, click "Mesh Network" - "Blacklist" in the left menu to enter the mesh blacklist page, where the AP blacklist and client blacklist of the current mesh network can be displayed. If the MAC of the slave AP is in the AP blacklist, the slave AP cannot join the mesh network. There is a "Add" button on the page. Click to add a new AP blacklist; There is a "Cancel blacklist" button on the right side of the blacklist MAC list. Click to delete the blacklist parameter.

🕞 Running Status 🛛 🤻 R	tunning Status Blacklist ×		
🛃 Setup Wizard	AP Blacklist Client Blacklist		
88 AP Mode			
ියි Basic Settings 🗸 🗸 🗸	Add Refresh		
💮 Advanced Settings 👻	D	MAC Address	Operation
Statistics 🗸	1	10:11:22:33:44:55	Cancel blacklist
💥 System Maintenance 👻	Prev 1 Next total 1 items 10item/page 🗸		
Mesh Network			
<ul> <li>Mesh Settings</li> </ul>			
🗕 AP List			
<ul> <li>Client Statistics</li> </ul>			
<ul> <li>Network Settings</li> </ul>			
<ul> <li>AP Upgrade</li> </ul>			
— Blacklist			

If the MAC of the client is in the "Client Blacklist", the client cannot connect to the wireless of the mesh network. There is a "Add" button on the page. Click to add a new client MAC blacklist; There is a "Cancel blacklist" button on the right side of the blacklist MAC list. Click to delete the blacklist parameter.

Running Status	Running Status Blacklist ×		
🛃 Setup Wizard			
88 AP Mode	AP Blacklist Client Blacklist		
💿 Basic Settings 🛛 👻	Add Refresh		
Advanced Settings	ID	MAC Address	Operation
🖂 Statistics 🗸 🗸	1	82.68.7D EE:C3.89	Cancel blacklist
💥 System Maintenance 🔻	Prev 1 Next total 1 items 10item/page 🗸		
Mesh Network			
<ul> <li>Mesh Settings</li> </ul>			
<ul> <li>AP List</li> </ul>			
<ul> <li>Client Statistics</li> </ul>			
<ul> <li>Network Settings</li> </ul>			
<ul> <li>AP Upgrade</li> </ul>			
Blacklist			

# 4.6 Configuration example

# 4.6.1 Open Wireless Connection

#### 4.6.1.1 Networking Requirements

In order to ensure that staff can access the internal network resources of the department anytime and anywhere,need to achieve through the deployment of the AP.Device administrators can configure wireless access in open mode, the specific requirements are as follows:

- AP provides the SSID is 'service' and the security is the open mode.
- In order to high bandwidth requirements, and compatible with existing
   802.11n wireless networks, adopt 802.11axg (2.4GHz) radio frequency mode.
- In order to high bandwidth requirements, and compatible with existing
   802.11ac wireless networks, adopt 802.11axa (5GHz) radio frequency mode.

Wirelessnetwork with open mode:



#### 4.6.1.2 Configuration Steps

Message	- 2 >	×
SSID*	server	
VLAN ID*	1	
Radio∗	✓ 2.4G ✓ 5G	
Client Isolation*	On Off	
Hidden SSID∗	On Off	
WDS Mode*	Enabled   Disabled	
Multicast To Unicast*	On Off	
Security Setting*	Open 💌	
Speed Limit Mode*	SSID Speed Limit     Client Speed Limit	
Uplink Speed Limit(kBps)	Please Input Uplink Speed Limit(Range:0-524286)(Optional)	
Downlink Speed Limit(kBps)	Please Input Downlink Speed Limit(Range:0-524286)(Optional)	
	Save	

Login AP basic setting, enter the wireless setting page.

- Radio 2.4G、5Gcheck to enable
- VLAN ID configure according to actual situation
- SSID configure to "service"
- Security setting select "Open"
- Click <save> button

#### 4.6.1.3 Verify configuration results

Enter the client statistics page, you can view the successfully online client.

# 4.6.2 WPA2-PSK Wireless Connection

#### 4.6.2.1 Networking Requirements

In a small office, device administrators can complete WPA2-PSK wireless access configuration through the web page, the specific requirements are as follows:

- AP provides the SSID is 'service' and the security is the WPA2-PSK.
- In order to high bandwidth requirements, and compatible with existing
   802.11n wireless networks, adopt 802.11axg (2.4GHz) radio frequency mode.
- In order to high bandwidth requirements, and compatible with existing

802.11ac wireless networks, adopt 802.11axa (5GHz) radio frequency mode.

Wirelessnetwork with WPA2-PSK mode:



#### 4.6.2.2 Configuration Steps

Login AP basic setting, enter the wireless setting page.

SSID*	psk
VLAN ID*	1
Radio*	✓ 2.4G ✓ 5G
Client Isolation*	On Off
Hidden SSID*	On Off
WDS Mode*	Enabled Disabled
Multicast To Unicast*	On Off
Security Setting*	WPA/WPA2-Personal
Password*	>
Speed Limit Mode*	SSID Speed Limit Client Speed Limit
Uplink Speed Limit(kBps)	Please Input Uplink Speed Limit(Range:0-524286)(Optional)
Downlink Speed Limit(kBps)	Please Input Downlink Speed Limit(Range:0-524286)(Optional)
	Save

- Radio 2.4G、5G check to enable
- VLAN ID configure according to actual situation
- SSID configure to "psk"
- Security setting select "WPA/WPA2-Personal"
- Security configure to "12345678"
- Click <save> button

#### 4.6.2.3 Verify configuration results

• Operation station connects to wireless network (ssid: psk) ,enter password

12345678. After the client successfully associates with the AP, it can access the

wireless network.

• Enter the client statistics page, you can view the successfully online client.

# 4.6.3 WPA2-Enterprise Wireless Connection

#### 4.6.3.1 Networking Requirements

In a company's office, employees need to be able to access the office environment through wireless, mobile devices that are not employees of the company cannot be accessed, Administrators can configureWPA2-Enterprise by the web page, specific requirements are as follows:

- AP provides the SSID is 'WPA-Enterprise' and the security is the WPA2-Enterprise.
- In order to high bandwidth requirements, and compatible with existing
   802.11n wireless networks, adopt 802.11axg (2.4GHz) radio frequency mode.
- In order to high bandwidth requirements, and compatible with existing

802.11ac wireless networks, adopt 802.11axa (5GHz) radio frequency mode.

Wirelessnetwork with WPA2-Enterprise:



#### 4.6.3.2 Configuration Steps

1. Login system maintenance, enter Radius template page.

Message		-	2	$\times$
Radius	Template Name∗	Please Input Radius Template Name		
Radius	Auth Server IP∗	Please Input Radius Auth Server IP		
Authent	ication Server Port∗	Please Input Authentication Server Port		
Auth Se	rvice Shared Key∗	Please Input Auth Service Shared Key	<del>، ر</del>	*
Radius	Accounting Server IP	Please Input Radius Accounting Server IP(Optional)		
	ting Server Port	Please Input Accounting Server Port(Default:1813)(Optional)		
Accoun	ting Shared Key	Please Input Accounting Shared Key(Optional)	<del>بر</del>	ĸ

- Configure Radiustemplate name to 'Radius'
- Configure the authentication server IP address and server port according to the actual Radius server address
- Configure shared key for authentication server settings
- Click <save> button
- 2. Logging APweb, edit wireless configuration

Message	- 🛛 ×
SSID*	Dot1X
VLAN ID*	1
Radio*	✓ 2.4G ✓ 5G
Client Isolation*	On Off
Hidden SSID∗	On Off
WDS Mode*	Enabled Oisabled
Multicast To Unicast*	On Off
Security Setting*	WPA/WPA2-Enterprise
Radius Server*	Radius
Speed Limit Mode*	SSID Speed Limit     Client Speed Limit
Uplink Speed Limit(kBps)	Please Input Uplink Speed Limit(Range:0-524286)(Optional)
Downlink Speed Limit(kBps)	Please Input Downlink Speed Limit(Range:0-524286)(Optional)
	Save

- Radio 2.4G、5G check to enable
- VLAN ID configure according to actual situation
- SSID configure to "Dot1X"
- Security setting select "WPA/WPA2- Enterprise"
- Radius server is selected as the configured Radius
- Click <save> button

#### 4.6.3.3 Verify configuration results

• The wireless client configures wireless network settings in windows, click

<add>button, enter in the "Network Name (SSID)" in the pop-up window "WPA-Enterprise", Select "WPA/WPA2- Enterprise " for the network authentication type, clicknext. Change connection settings, click<setting>in safe page, select EAP authentication method "Secure password (EAP-MSCHAP v2)",cancel "Verify server identity by verifying certificate", click ok. Refresh the wireless network list, select the configured network service (WPA-Enterprise) in the list, click<connect>,enter the user name and password existing in the Radius server in the pop-up box. After the client successfully associates with the AP, it can access the wireless network.

• Enter the client statistics page, you can view the successfully online client.

#### 4.6.4 WPA3-Open-Transition Wireless Connection

#### **4.6.4.1** Networking Requirements

In order to ensure that staff can access the internal network resources of the department anytime and anywhere,need to achieve through the deployment of the AP.Device administrators can configure wireless access in open mode, the specific requirements are as follows:

- AP provides the SSID is 'service-owe' and the security is the owemode.
- In order to high bandwidth requirements, and compatible with existing
   802.11n wireless networks, adopt 802.11axg (2.4GHz) radio frequency mode.
- In order to high bandwidth requirements, and compatible with existing
   802.11ac wireless networks, adopt 802.11axa (5GHz) radio frequency mode.

Wirelessnetwork with OWE mode:



#### 4.6.4.2 Configuration Steps

Login AP basic setting, enter the wireless setting page, Click "Add" button.

SSID*	service-owe
VLAN ID*	1
Radio*	🗸 2.4G 🖌 5G 1 🖌 5G 2
Client Isolation*	On Off
Hidden SSID∗	● On Off
WDS Mode*	Enabled   Disabled
Multicast To Unicast*	On Off
Security Setting*	WPA3-Open-Transition
Speed Limit Mode*	SSID Speed Limit Client Speed Limit
Uplink Speed Limit(kBps)	Please Input Uplink Speed Limit(Range:0-52428
Downlink Speed Limit(kBps)	Please Input Downlink Speed Limit(Range:0-524
	Save

• Radio 2.4G、5Gcheck to enable

- VLAN ID configure according to actual situation
- SSID configure to "service-owe"
- Security setting select "WPA3-Open-Transition"
- Click <save> button

#### 4.6.4.3 Verify configuration results

Enter the client statistics page, you can view the successfully online client.

# 4.6.5 WPA2/WPA3-Personal Wireless Connection

#### 4.6.5.1 Networking Requirements

In order to ensure that staff can access the internal network resources of the department anytime and anywhere,need to achieve through the deployment of the AP.Device administrators can configure wireless access in open mode, the specific requirements are as follows:

- AP provides the SSID is 'service-sae' and the security is the WPA2/WPA3-Personal mode.
- In order to high bandwidth requirements, and compatible with existing
   802.11n wireless networks, adopt 802.11axg (2.4GHz) radio frequency mode.
- In order to high bandwidth requirements, and compatible with existing

802.11ac wireless networks, adopt 802.11axa (5GHz) radio frequency mode.

Wirelessnetwork with WPA2/WPA3-Personal mode:



#### 4.6.5.2 Configuration Steps

Login AP basic setting, enter the wireless setting page.

SSID*	service-sae
VLAN ID*	1
Radio*	✓ 2.4G ✓ 5G 1 ✓ 5G 2
Client Isolation*	On Off
Hidden SSID*	• On Off
WDS Mode*	Enabled   Disabled
Multicast To Unicast*	On Off
Security Setting*	WPA2/WPA3-Personal
Password*	
Speed Limit Mode*	SSID Speed Limit     Client Speed Limit
Uplink Speed Limit(kBps)	Please Input Uplink Speed Limit(Range:0-524286)(Optional)
Downlink Speed Limit(kBps)	Please Input Downlink Speed Limit(Range:0-524286)(Optional)
	Save

- Radio 2.4G、5Gcheck to enable
- VLAN ID configure according to actual situation
- SSID configure to "service-sae"

- Security setting select "WPA2/WPA3-Personal"
- Security configure to "12345678"
- Click <save> button

#### **4.6.5.3 Verify configuration results**

Enter the client statistics page, you can view the successfully online client.

# **4.6.6 WPA2/WPA3-Enterprise Wireless Connection**

#### 4.6.6.1 Networking Requirements

In a company's office, employees need to be able to access the office environment through wireless, mobile devices that are not employees of the company cannot be accessed, Administrators can configureWPA2/WPA2-Enterprise by the web page, specific requirements are as follows:

- AP provides the SSID is 'WPA3-Enterprise' and the security is the WPA2/WPA3-Enterprise.
- In order to high bandwidth requirements, and compatible with existing
   802.11n wireless networks, adopt 802.11axg (2.4GHz) radio frequency mode.
- In order to high bandwidth requirements, and compatible with existing
   802.11ac wireless networks, adopt 802.11axa (5GHz) radio frequency mode.

Wirelessnetwork with WPA2/WPA3-Enterprise:



#### 4.6.6.2 Configuration Steps

3. Login system maintenance, enter Radius template page.

Message		—	2	×
Radius Template Name∗	Please Input Radius Template Name			
Radius Auth Server IP*	Please Input Radius Auth Server IP			
Authentication Server Port*	Please Input Authentication Server Port			
Auth Service Shared Key*	Please Input Auth Service Shared Key		<del>کر</del> (	~
Radius Accounting Server IP	Please Input Radius Accounting Server IP(Optional)			
Accounting Server Port	Please Input Accounting Server Port(Default:1813)(Optional)			
Accounting Shared Key	Please Input Accounting Shared Key(Optional)		<del>، بر</del>	*
	Save			

- Configure Radiustemplate name to 'Radius'
- Configure the authentication server IP address and server port according to the actual Radius server address
- Configure shared key for authentication server settings
- Click <save> button
- 4. Logging APweb, edit wireless configuration

SSID*	WPA3-Enterprise
VLAN ID*	1
Radio*	✓ 2.4G ✓ 5G 1 ✓ 5G 2
Client Isolation*	On Off
Hidden SSID∗	● On Off
WDS Mode*	Enabled Oisabled
Multicast To Unicast∗	On 💿 Off
Security Setting*	WPA2/WPA3-Enterprise
Radius Server*	Radius
Speed Limit Mode*	SSID Speed Limit Client Speed Limit
Uplink Speed Limit(kBps)	Please Input Uplink Speed Limit(Range:0-524286)(Optional)
Downlink Speed Limit(kBps)	Please Input Downlink Speed Limit(Range:0-524286)(Optional)
	Save

- Radio 2.4G、5G check to enable
- VLAN ID configure according to actual situation
- SSID configure to "WPA3-Enterprise"
- Security setting select "WPA2/WPA3- Enterprise"
- Radius server is selected as the configured Radius
- Click <save> button

#### 4.6.6.3 Verify configuration results

• The wireless client configures wireless network settings in windows, click

<add>button, enter in the "Network Name (SSID)" in the pop-up window "WPA-Enterprise", Select "WPA2/WPA3- Enterprise " for the network authentication type, clicknext. Change connection settings, click<setting>in safe page, select EAP authentication method "Secure password (EAP-MSCHAP v2)",cancel "Verify server identity by verifying certificate", click ok. Refresh the wireless network list, select the configured network service (WPA-Enterprise) in the list, click<connect>,enter the user name and password existing in the Radius server in the pop-up box. After the client successfully associates with the AP, it can access the wireless network.

Enter the client statistics page, you can view the successfully online client.

# **5 FAT Routing Mode**

The AP in the FAT routing mode can access broadband lines to provide DHCP and wireless access for LAN phones, laptops, etc. to achieve the shared Internet access. The typical topology is as follows:



On the WAN side of the AP, set the WAN port address through PPPoE, DHCP, or static address, and then connect to the Internet or other network through the gateway device. LAN and WLAN constitute a private subnet. Devices on this network apply to the AP for dynamic or static IP addresses through DHCP. The WAN side and the LAN (WLAN) side network are isolated by a firewall. The LAN side host performs IP masquerading (NAT) and is not visible to the WAN side device.

### 5.1 WEBLogin

Unlike the fit mode and the fat bridge mode, in the fat routing mode the AP can only be accessed from the LAN side, so it can only be accessed by using a LAN-side wired device connected to the AP's LAN port or a wireless client connected to the AP's SSID (the default is DCN\_WLAN). Open the browser after connecting and enter the LAN side management IP address (the default address is: 192.168.1.10), you can access the web setting interface of the wireless AP, recommended use: Google, Firefox, 360 browser (speed mode) or IE11 browser. The default username is: admin, and the password is: admin, which supports https access.



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Recommended use: Chrome, Firefox, 360 browser (extreme mode) or more than IE11 browsers.

# 5.2 Setup Wizard

Click "Setup Wizard" on the left menu to configure the device. The detailed

steps are as shown below:

DCN	≡
🔓 Running Status	Running Status Setup Wizard ×
🛃 Setup Wizard	Setup Wizard - Start – 🖾 🗙
AP Mode	With this wizard, you can set up the basic network parameters needed for accessing the Internet. Even if
① Network Parameters	you're not familiar with the network and the product, you can easily follow the tips to complete the setup. If you are an expert, you can exit and go to the menu to select the settings modify directly .
ᅙ Wireless Settings	To continue, please click "Next Step".
<sup>((</sup> )) Radio Settings	
DHCP Server	Exit Wizard Next Step
Statistics 🔻	
🔀 System Maintenance 🔻	

There are three Internet access modes supported by the device: PPPoE,

dynamic IP and static IP, which can be configured according to the Internet access provided by the network service provider. As shown below:

DCN	≡
Running Status	Running Status Setup Wizard ×
🛃 Setup Wizard	Setup Wizard - Internet Connection Type — 🖓 🗙
AP Mode	This device supports three commonly used ways of accessing the Internet. Please choose according to your
Wetwork Parameters	own situation.
奈 Wireless Settings	ADSL virtual dialing method using required username and password (PPPoE)     Getting the IP address automatically allocated by DHCP from the internet service provider (DHCP)
<sup>((</sup> † <sup>.))</sup> Radio Settings	Getting the IP address automatically allocated by DHCP from the internet service provider (DHCP)     Using the static IP address provided by the internet service provider (Static IP)
DHCP Server	Previous Step Next Step
Statistics 🔻	
🔀 System Maintenance 🔻	I I

If the selected Internet access method is PPPoE, you need to fill in your Internet account and password, as shown in the figure below:

DCN	I	≡								
🔓 Running Status	F	Running Status Setup Wizar	d ×							
🛃 Setup Wizard		Setup Wizard - PPPoE		- 🛛 ×						
AP Mode		When you apply for	ADSL virtual dialing service, the internet service provide	r will provide you with the						
① Network Parameter	ers 🔻	Internet account and password, please enter the box below. If you forget or do not know clearly, please consult your internet service provider.								
Wireless Settings		Internet Account*	Please Input Internet Account							
<sup>((</sup> )) Radio Settings		Internet	Please Input Internet Password	×						
DHCP Server	-	Password★								
Statistics	-	Previous Step	Next Step							
🏀 System Maintenand	ice 🔻									

If the selected Internet access method is dynamic IP, it will directly jump to the next wireless setting.

If the selected Internet access method is static IP, you need to configure a static

IP address, as shown below:

	DCN	≡						
â	Running Status	Running Status Setup W	izard ×					
6	Setup Wizard	Setup Wizard - Static IP						
38	AP Mode	When you apply for	Ethernet Width Service with a static IP address, the internet service provider will pr					
₿	Network Parameters 🔻	you with some basic network parameters, please fill in the following box. If you forget or do not kn please consult your internet service provider.						
(((•	Wireless Settings	IP Address*	0.0.0.0					
(°1))	Radio Settings	Subnet Mask*	0.0.0.0					
	DHCP Server 🔹	Default Gateway	0.0.0.0					
2	Statistics 🔹	DNS Server	0.0.0.0					
%	System Maintenance 🔻	Previous Step	Next Step					

If the Internet access mode is set, the next step is wireless settings, as shown

below:

	DCN	≔		
습	Running Status	Running Status Setup Wizard ×		
Ę	Setup Wizard	Setup Wizard - Wireless Settings	- 🛛 >	ĸ
	AP Mode	This page configures wirele	ess network information. If you need to set more than one SSID, please go to	
	Network Parameters 🔻		<ul> <li>&gt; "Wireless Settings" to configure.</li> </ul>	
	Wireless Settings	SSID★	DCN_WLAN	
	Radio Settings	Radio*	🗹 2.4G 🗹 5G 1 🗹 5G 2	
	DHCP Server 🔹	Client Isolation*	On Off	
	Statistics 🔻	Hidden SSID*	On Off	
	System Maintenance 🔻	Security Setting*	Open 👻	
		Previous Step Nex	xt Step	

Click "Next Step" and then click "Complete". Finally, before you click "Complete", you can click "Previous Step" to modify the parameters that have been set. After you click "Complete", all parameter settings will take effect.

# **5.3 Network Parameter Settings**

# 5.3.1 LANPort Setting

Click "Network Parameters">>"LAN Port Settings" on the left menu to set the LAN side IP address and subnet mask. When the LAN port IP parameters are changed, to ensure that the DHCP server can work normally, the address pool, static address set in the DHCP server and the new LAN port IP should be on the same network segment. After saving the settings, please enter IP address to visit this page.

As shown below:

	DCN	≣		
습	Running Status	Running Status LAN	Port Setti	ngs ×
Ð	Setup Wizard	This page shows the	e basic net	work parameters of LAN port.
38	AP Mode	MAC Address		00:03:0F:8C:B8:81
۲	Network Parameters 🔺	IP Address		192.168.1.10
-	LAN Port Settings	Subnet Mask		255.255.255.0
-	WAN Port Settings		-	
((:	Wireless Settings			Edit
(°¶»)	Radio Settings			
	DHCP Server 🔹			

MAC Address: The MAC address of the AP to the LAN is used to identify the local area network and cannot be changed.

IP Address: The IP address of the AP to the LAN. The factory default value of this IP address is 192.168.1.10 and you can change it if needed.

Subnet Mask: The subnet mask of this AP to the LAN. You can enter different subnet masks based on the actual network status.

# **5.3.2 WANPort Settings**

Click "Network Parameters">> "WAN Port Settings" on the left menu to modify the basic parameters of the WAN port.

There are currently three ways to obtain the IP address of the WAN port: static IP, dynamic IP, and PPPoE, which can be set according to the Internet access method provided by the service provider. Compared to the setup wizard, the information configured on this page is more comprehensive.

If the selected IP address acquisition method is static IP, as shown below:

	DCN	≣	
습	Running Status	Running Status WAN Port Set	ttings ×
Đ	Setup Wizard	This page shows the basic r	network parameters of WAN port.
88	AP Mode	MAC Address	00:03:0F:60:12:20
۲	Network Parameters 🔺	Connection Type*	Static IP
-	LAN Port Settings	IP Address*	172.18.18.2
-	WAN Port Settings		
((:	Wireless Settings	Subnet Mask*	255.255.255.0
((†))	Radio Settings	Default Gateway	172.18.18.254
	DHCP Server 🔹	DNS Server	172.18.0.186
~	Statistics 🔹	Packet MTU*	1500
×	System Maintenance 🔻		Save Return

IP Address: The IP address of the AP to the WAN. Please enter the public IP address provided by the ISP. It must be set.

Subnet Mask: The subnet mask of this AP to the WAN. Please enter the subnet mask provided by the ISP. According to different network types, the subnet mask is different, generally 255.255.255.0 (class C).

Default Gateway: Please enter the gateway provided by the ISP. It is the IP address of the connected ISP.

DNS Server: Please enter the DNS server provided by the ISP.

Packet MTU: The MTU is a data transmission unit throughout, and the default

value is 1500. Please ask the ISP if you need to change it, but don't change it unless

it is specifically needed.

If the selected IP address acquisition method is dynamic IP, as shown below:

🔓 Running Status	Running Status LAN	N Port Settings × WAN Port Settings ×
Setup Wizard	This page shows t	the basic network parameters of WAN port.
B AP Mode	MAC Address	00:03:0F:60:12:20
Network Parameters	Connection Type*	* Static IP
<ul> <li>LAN Port Settings</li> </ul>	IP Address*	172.18.18.2
<ul> <li>WAN Port Settings</li> </ul>		
🛜 Wireless Settings	Subnet Mask <b>∗</b>	255.255.255.0
(† <sup>1)</sup> Radio Settings	Default Gateway	172.18.18.254
DHCP Server	DNS Server	172.18.0.186
📰 Statistics 🔻	Packet MTU*	1500
🗶 System Maintenance 🔻		Save Return

DNS Server: This shows the DNS server address automatically obtained from

the ISP.

Packet MTU: The MTU is a data transmission unit throughout, and the default value is 1500. Please ask the ISP if you need to change it, and don't change it unless it is specifically needed.

If the selected IP address acquisition method is PPPoE, as shown below:

	DCN	=		China(CN)	Fa
G	Running Status	Running Status LAN Port Set	tings × WAN Port Settings ×		
Ð	Setup Wizard	This page shows the basic	network parameters of WAN port.		
88	AP Mode	MAC Address	00:03:0F;60:12:20		
۲	Network Parameters 🔺	Connection Type*	PPPoE		
-	LAN Port Settings	Internet Account*	pppoe		
()	WAN Port Settings Wireless Settings	Internet Password*			
((†))	Radio Settings	Packet MTU*	1492		
	DHCP Server -	Connection Mode*	Connect on demand, automatically connect when accessed.     Automatic connection, automatic connection after boot and	disconnection.	
~	Statistics 👻	Automatic break waiting	Manual connection, manually connected by users.  15		
×	System Maintenance 🔻	time*			
			Save Return		

Internet Account and Password: Please enter the Internet account and - 68 -

password provided by the ISP correctly. This item must be filled in.

On-demand Connection: If you select the on-demand connection mode, the system will automatically connect when there is a network access request from the local area network. If there is no network request within the set time (automatic disconnection waiting time), the system will automatically disconnect. For users who are billed based on usage time, this connection method can be selected to effectively save Internet access costs.

Automatic Connection: If the automatic connection mode is selected, the system will automatically connect after power on. During use, if the network is disconnected due to external reasons, the system will try to connect at regular intervals until the connection is successful. If your network service is a monthly subscription, you can choose this connection method.

Manual Connection: Select this option to require the user to dial-up manually after power-on. If there is no network request within the specified time (automatic disconnection waiting time), the system will automatically disconnect. You can choose this connection method if your Internet service pays according to the time of use

Automatic Break Waiting Time: The default value is 15 minutes. If there is no network access traffic for this set period of time, the network connection will be automatically disconnected to protect your online resources. This setting is only effective for "On-demand connection" and "Manual connection".

Packet MTU: The MTU is a data transmission unit throughout. The default value

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is 1492. Please ask the ISP if you need to change it, and don't change it unless it is specifically needed.

# **5.4 Wireless Settings**

The wireless settings mainly set the basic parameters of the router wireless network. The first SSID is reserved by the system and can be edited but not deleted. The maximum number of SSIDs is 16. As shown below:

Client Isolation: Communication control between wireless clients. After being turned on, wireless clients cannot communicate with each other. Off by default.

Hidden SSID: When the hidden SSID is turned on, the wireless client will not be able to search for this SSID information.

Security Settings: This router supports six security settings:open, WPA /

WPA2-Personal, WPA / WPA2-Enterprise, WPA3-Open-Transition,

WPA2/WPA3-Personal, WPA2/WPA3-Enterprise

Running Status	Running Status Wireless Settings ×		
Setup Wizard	Message		- 🛙 ×
B AP Mode	SSID*	DCN_WLAN	
🕃 Basic Settings 🛛 🔺	VLAN ID*	1	
<ul> <li>Ethernet Settings</li> </ul>	Radio*	🗹 2.4G 🗹 5G1 🗹 5G2	
Wireless Settings	Client Isolation*	On Off	
Advanced Settings Radio Settings	Hidden SSID*	On Off	
- WDS Settings	WDS Mode*	Enabled   Disabled	
🗾 Statistics 🛛 👻	Multicast To Unicast∗	On Off	
🖉 System Maintenance 🔫	Security Setting*	Open	
🌐 Mesh Network 🛛 🔫	Speed Limit Mode*	Open	
	Uplink Speed Limit(kBps)	WPA/WPA2-Personal	
	Downlink Speed Limit(kBps)	WPA/WPA2-Enterprise WPA2/WPA3-Personal WPA2/WPA3-Enterprise	

The OPEN or WPA3-Open-Transition mode does not need to set a password, and the wireless client can directly access;

In WPA / WPA2-Persional or WPA2/WPA3-Personalmode, the user need to set a password with a length of 8 to 63 characters;

WPA / WPA2-Enterprise or WPA2/WPA3-Enterprise mode is authenticated by the radius server, so you need to bind the radius template. For details, refer to section 2.5.4.

### 5.5 Radio Settings

The radio setting page displays all radio information in a list with no new features. Click " Edit " in the operation column to modify the radio settings,

including status, channel, channel bandwidth, transmit power, multicast rate, STBC mode, Beacon interval, DTIM period, RTS period, max clients, etc., as shown below:

Running Status Radio Settings ×													
R	adio	Status	Mode	Channel Bandwidth	Channel	Transmit Power(dBm)	Multicast Rate(Mbps)	STBC Mode	Beacon Interval	DTIM Period	RTS Threshold	Max Clients	Operation
2	.4G	Enabled	802.11ng	HT20	6	27	auto	Enabled	100	1	2346	127	Edit
5	G 1	Enabled	802.11ac	HT40	52	20	auto	Enabled	100	1	2346	127	Edit
5	G 2	Enabled	802.11ac	HT40	149	23	auto	Enabled	100	1	2346	127	Edit

# 5.6 DHCPServer

DHCP refers to the Dynamic Host Control Protocol. The WL8200-T3 (IT3) has a built-in DHCP server that can automatically assign IP addresses to computers in the local area network. It is not easy for users to configure TCP / IP protocol parameters for all computers in the local area network. It includes IP address, subnet mask, gateway, DNS server, etc. The DHCP service can solve these problems.

# 5.6.1 DHCP Server

Click "DHCP Server">> "DHCP Server" on the left menu to set the DHCP server parameters. As shown below:

DCN	≣	
🔓 Running Status	Running Status DHCP Serve	r ×
🛃 Setup Wizard	The DHCP server is built in	this device. It can automatically configure the TCP/IP protocol of your computer in LAN.
🔠 AP Mode	LAN Port IP Address	192.168.1.10
① Network Parameters	DHCP Server*	Enabled Disabled
🛜 Wireless Settings	IP Pool Start Address*	192.168.1.100
<sup>((</sup> † <sup>))</sup> Radio Settings	IP Pool End Address.	192.168.1.199
DHCP Server	Lease(minutes)*	120
DHCP Server	Default Gateway	0.0.0.0
<ul> <li>Client List</li> <li>Static IP Distribution</li> </ul>	DNS Server	0.0.0.0
Statistics		Save Return
🔀 System Maintenance 🔻		

IP Pool Start Address and IP Pool End Address: These two items are the start address and end address when the DHCP server automatically allocates IP addresses. After setting these two items, the IP address obtained by the intranet host will be between these two addresses.

Address Lease: This item refers to the valid use time of the dynamic IP address assigned by the DHCP server to the client host. During this time, the server will not assign IP addresses to other hosts.

Default Gateway: This item should be filled in the IP address of the router LAN port. The default is 192.168.1.10.

DNS Server: Enter the DNS server provided by the ISP.

# 5.6.2 Client List

Click "DHCP Server"->"Client List" on the left menu, you can see the information of all the hosts that have obtained the IP address through the DHCP

#### server.As shown below:

DCN	≣				China(CN)	Fat Mode - Route Mode	admin	Log
🔓 Running Status	Running Stat	us Client List ×						
🛃 Setup Wizard	This pa	ge shows the informa	tion of all hosts that get the IP	address through the DHC	P server. Click 'Refre	sh' button to update the informa	ition in the	table.
吕 AP Mode	ID	Client Name	MAC Address	IP Address	Eff	fective Time	Status	5
① Network Parameters	1	fupsde-iPad	BC:B8:63:94:ED:29	192.168.1.104	0days1hours	19minutes55seconds	Offlir	ne
🛜 Wireless Settings	Refres	h						
<sup>((</sup> † <sup>1))</sup> Radio Settings								
DHCP Server								
<ul> <li>DHCP Server</li> </ul>								
<ul> <li>Client List</li> <li>Static IP Distribution</li> </ul>								
Statistics								
📈 System Maintenance 🔻								

Client Name: This field displays the client name that has obtained the IP address.

MAC Address: This field displays the MAC address of the client that obtained the IP address.

IP Address: This field displays the IP address assigned by the DHCP server to the client host.

Effective Time: This item refers to the lease period of the IP address obtained by the client host. Each IP address has a certain lease time, and the client software will automatically renew the lease before it expires.

Status: The online / offline status of the client that has obtained the IP address is displayed here.

# 5.6.3 Static IP Distribution

Click "DHCP Server">>"Static IP Distribution" on the left menu to manually set a static IP address.

The static reserved IP address assignment function can reserve IP addresses for specific clients, allowing IP addresses to establish a fixed binding relationship with MAC addresses.

For a client that has established a binding relationship, when requesting an IP address, the DHCP server preferentially assigns a bound IP address to it. As shown below:

DCN	≡			0	China(CN) Fat M	ode - Route Mode a	dmin Logout
🔓 Running Status	Running Statu	s Static	IP Distribution ×				
Eo Setup Wizard	This pag	e sets the s	tatic address assignment function of	the DHCP server.			
AP Mode					-		
① Network Parameters		ID	MAC Address	IP Address	Status	Operation	
🛜 Wireless Settings		1	BC:B8:63:94:ED:29	192.168.1.104	Effective	Edit Delet	te
<sup>((</sup> † <sup>))</sup> Radio Settings	New En	try D	isable Entry Enable Entry	Delete Entry Refresh			
DHCP Server							
<ul> <li>DHCP Server</li> </ul>							
— Client List							
<ul> <li>Static IP Distribution</li> </ul>							
🖂 Statistics 🔹							
💥 System Maintenance 🔻							

MAC Address: The MAC address of the client that will reserve the IP address.

IP address: Refers to the IP address reserved for the client.

Status: The status displays "Effective" or "Ineffective", that is, only binding rules marked as "Effective" will take effect.

New Entry: Click this button, you can add a new reserved address entry in the subsequent interface, as shown below:

Running Status	Static IF	PDistribution ×				
This page :	sets the sta	tic address assignment	t function of the	DHCP server.		
	ID	MAC Addre	ess	IP Address	Status	Operation
	1	BC:B8:63:94:E	D:29	192.168.1.104	Effective	Edit Delete
New Entry		Vessage This page sets the MAC Address* IP Address* Status*	static address ass BC:B8:63:94 192.168.1.11 Effective Save		:P server.	

Enable Entry: Click this button to make the selected item effective.

Disable Entry: Click this button to invalidate selected items.

Delete Entry: Click this button to delete all entries in the table..

# 5.7 System Maintenance

# **5.7.1 IPSession Control**

Click "System Maintenance"-"IP Session Control" on the left menu to enter the IP session control page, where you can set the number of TCP connections that each client can use simultaneously. If the number of connections reaches the specified number, the new TCP connections will be rejected. Note that closed TCP connections are not counted in the number of connections.

The default is 0, which means unlimited. As shown below:

DCN	≣
Running Status	Running Status         Static IP Distribution $\times$ IP Session Control $\times$
Eo Setup Wizard	✓ IP Session Control Settings
AP Mode	This function is to limit the number of active TCP connections. The number of IP sessic
Wetwork Parameters	
Wireless Settings	IP Session Limits 0
<sup>((</sup> ) <sup>))</sup> Radio Settings	Save
DHCP Server	
Statistics -	
💥 System Maintenance 📥	
<ul> <li>Modify Password</li> </ul>	
<ul> <li>Configuration</li> </ul>	
Management	
– System Log	
<ul> <li>IP Session Control</li> </ul>	

# 5.7.2 Network Timing

Click "System Maintenance" >>" Network Timing", you can set NTP network time, turn on the off status and NTP server. It supports up to 4 NTP server settings. As shown below:

	DCN	=		China(CN)					
습	Running Status	Running Status Network Timing ×							
Ę	Setup Wizard	$\sim$ Network Timing							
88	AP Mode	Current Time:	2019-12-20 17:14:03						
۲	Network Parameters 🔻	Status	● On ◯ Off						
(((·	Wireless Settings	Time Zone	UTC+8(Beijing, CCT)						
((†)) 	J	NTP Server1	cn.ntp.org.cn						
	DHCP Server	NTP Server2	edu.ntp.org.cn						
	Statistics 🔹	NTP Server3	hk.ntp.org.cn						
	System Maintenance A	NTP Server4	tw.ntp.org.cn						
	<ul> <li>Modify Password</li> <li>Configuration</li> </ul>		Save						
	Management								
_	System Log								

- Network Timing

# **Appendix A FAQS**

# Question 1: How to restore the factory settings if the user forgets the device password?

Take WL8200-I3 (R2) as an example. In the power-on state, long press the Reset button for 5 seconds and release the reset button, the AP will restore the factory settings and restart. After restart, the user name and password are reset to the initial user name and password.

After restoring the factory settings, all settings will be deleted and restored to fit mode.

There may be differences between different products. For details, please refer to the product specifications.

Question 2: Can't open the device webpage using the default address of 192.168.1.10?

The address 192.168.1.10 is the default static address of the device. It may happen that the device webpage cannot be opened through this address in the following situations:

1. When the AP is in fit mode or fat bridge mode

(1) The device may have obtained another IP address through the POE port.

Please access it through the current address of the AP.

(2) The IP address of the device may be modified;

2. When the AP is in fat routing mode:

(1) The device used to access the AP is located on the WAN side of the AP.

Please access the AP from the lan side.

(2) The address on the LAN side of the device may have been modified by the administrator;

# Question 3: After switching from thefit mode or the fat bridge mode to the fat routing mode, the page cannot be returned, and refresh cannot be accessed?

When switching from other modes to routing mode to access the network, in order to ensure security, WAN-side device access is blocked by default. If the device is accessed from the POE port side before the switching, the switching will fail to return and cannot access. You need to ensure that you are accessing the device using https://192.168.1.10 on the LAN side or WLAN device.