

Eweb Configuration Sample For Fit AP&AC

RGOS Version 11.1(5) B5



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I Preface

Audience

Ruijie business partners and customers who are responsible for configuring and maintaining Ruijie wireless devices.

Revision Record

Version	Release Date	Contents	Author
V1.0	2015.10	First Release	Scott
V1.1	2016.8	Add Custom Landing Page Template	Oscar

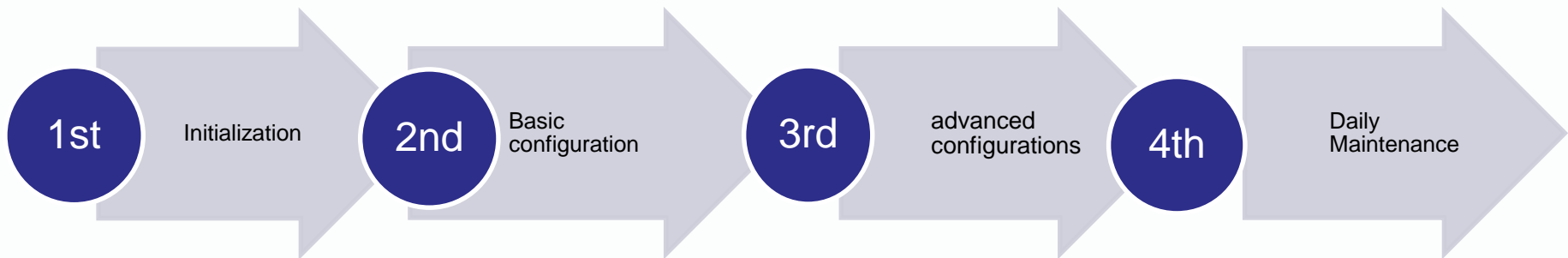
Note :

For more detail configuration , see configuration guide for each product . you can download configuration guide at <http://www.ruijienetworks.com>

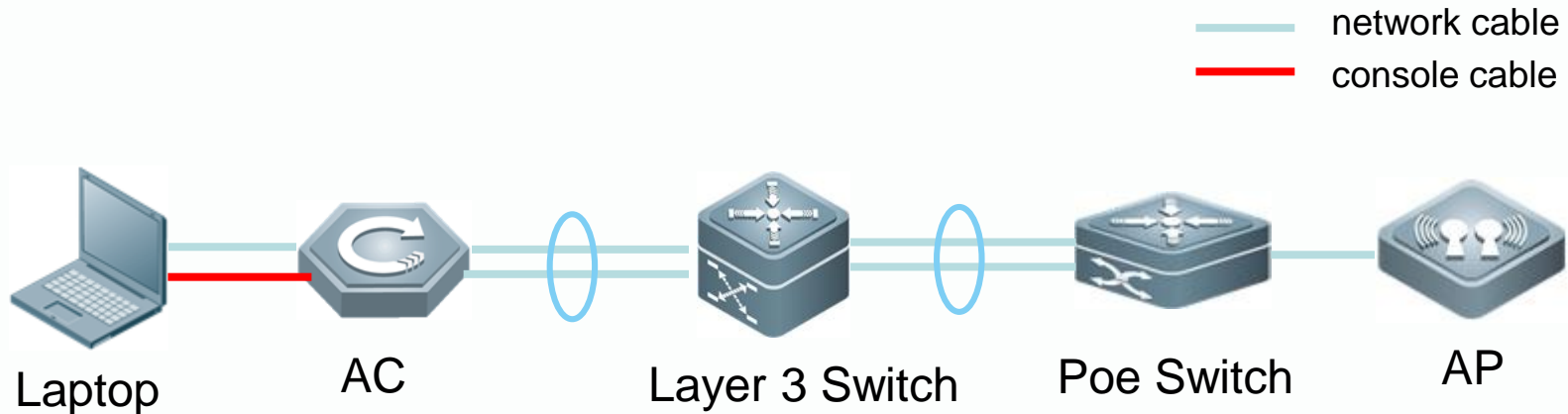
For more technical enquiry , you can visit Ruijie Service portal at <http://case.ruijienetworks.com> . You need to sign up before submit a case.

I Preface

- This slide is going to guide you how to configure Ruijie Wireless Controller(aka . AC) and Fit AP with web management tool----- Eweb
- In 1st part , you will study how to initialize AC .
- In 2nd part , it contains one practical configuration scenarios .
- In 3rd part , there are some advanced configurations .
- In 4th part , daily maintenance
- The brief workflow is as below :

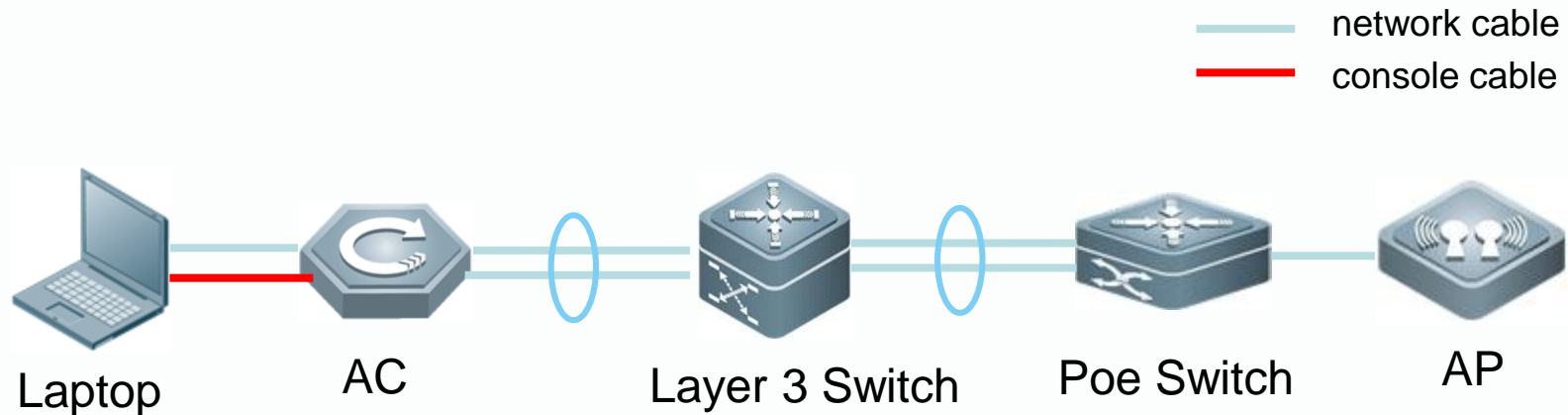


Initialization : Initialize AC and AP



- ❑ As shown in above diagram , it is a very typical Layer 3 Enterprise network. (Aggregate port is optional) .
- ❑ Connect laptop to AC directly .By default , the IP address of AC is 192.168.110.1/24 , so you need to assign IP address 192.168.110.2/24 to laptop. Then , laptop should be able to communicate with AC.
- ❑ By default , AP is in Fit mode , connect AP to PoE switch to power it on

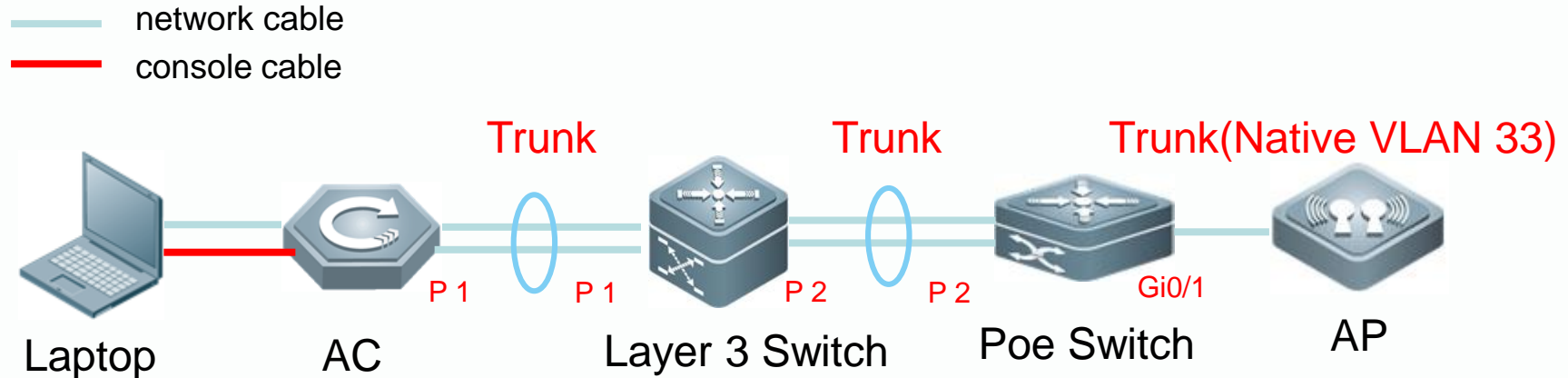
Initialization : Network Design



Design :

- In this example , we create three VLANs : VLAN 2 is for AC & Switch Management ; VLAN 5 is for wireless users ; VLAN 33 is for AP Management.
- Set Layer 3 switch as gateway for VLAN 2, 5 and 33 , a.k.a 192.168.2.254/24 , 192.168.5.254/24 and 192.168.33.254/24
- Set wireless controller as DHCP Server for VLAN 5.

Initialization : Initialize Layer 3 Switch and POE switch



Layer 3 Switch

```
Ruijie(config-if-AggregatePort 1)#switchport mode trunk  
Ruijie(config-if-AggregatePort 2)#switchport mode trunk
```

Poe Switch

```
Ruijie(config-if-AggregatePort 2)#switchport mode trunk  
Ruijie(config-if-GigabitEthernet 0/1)#switchport mode trunk  
Ruijie(config-if-GigabitEthernet 0/1)#switchport trunk native vlan 33  
//In this case , we define AP management vlan as Vlan 33
```

Note: Above commands are based on Ruijie Switch.

I Initialization : Login Web Management Page

- ❑ Open browser and visit <http://192.168.110.1>. You will see below login page
The default identity is that **Username: admin** & **Password: admin**

1.input username : admin

2.input password : admin

Initialization : Configure Aggregate Port on AC(Optional)

- ❑ As per design , this feature is optional .
Go to Advanced -->Port --> Aggregate Port .

The screenshot shows the Ruijie AC configuration interface. On the left is a blue sidebar menu with options: Home, VLAN, Port, Route, DHCP, Multicast/Unicast, STP, Load Balancing, and VRRP. The 'Advanced' section is highlighted. The main content area has tabs for 'Port-VLAN', 'Aggregate Port', and 'Port Settings'. The 'Aggregate Port' tab is active. At the top of this tab, there are buttons for '+ Add Aggregate Port' and 'X Delete Selected Aggregate Port'. Below this, a red box highlights the '+ Add Aggregate Port' button with the text '1. Click "Add aggregate Port"'. Below that, a red box highlights the 'Port Number' input field containing the value '1' with the text '2. input Port number'. Below the input field, there are radio buttons for 'Port Type': 'L2 Port(Switching Port)' (selected) and 'L3 Interface(Routing Interface)'. Below the radio buttons, there is a 'Select Port:' section with a row of eight port icons labeled Gi0/1 through Gi0/8. A red box highlights this section with the text '3. Select Port members'. At the bottom right, there are two buttons: a blue 'Save' button and a grey 'Cancel' button. A red box highlights the 'Save' button with the text '4. Save'.

Initialization : Configure Trunk Port on AC

- ❑ You need to set uplink port to Trunk to allow more VLANs pass through . Go to Advanced -->Port --> Port-Vlan , select “Aggregate Port 1” , click “Edit” in the right .

The screenshot displays the Ruijie AC web management interface. On the left, a navigation menu is visible with options: VLAN, Port, Route, DHCP, Multicast/Unicast, STP, Load Balancing, and VRRP. The 'Advanced' section is active. The main content area shows the configuration for 'AggregatePort 1(Gi0/7,Gi0/8)'. The 'Edit Port-VLAN' window is open, showing the following settings:

- Port: Gi0/7 and Gi0/8 (Blue: Up, Grey: Down)
- Mode: ACCESS TRUNK
- Default VLAN: 1
- Allowed VLAN: 1-4094

Red boxes highlight the 'TRUNK' mode selection, the default settings, and the 'Save' button.

Initialization : Configure VLAN and assign IP address

- ❑ Besides default IP address settings , we are going to create 3 more VLANs and assign IP address to SVI accordingly. **Vlan 2 is for AC & Switch management , Vlan 33 is for AP management , Vlan 5 is for wireless users.**
- ❑ Go to “Advanced” ---> “VLAN”

The screenshot displays the Ruijie Network configuration interface. On the left is a navigation menu with options: Home, VLAN, Port, Route, DHCP (under Advanced), Multicast/Unicast, STP, Load Balancing, and VRRP. The main area shows 'VLAN Settings' with a table of existing VLANs and an 'Add VLAN' dialog box.

VLAN ID	IPv4	IPv4 Mask
1	192.168.110.1	255.255.255.0
2	192.168.2.2	255.255.255.0
5	192.168.5.253	255.255.255.0
33	192.168.33.253	255.255.255.0

The 'Add VLAN' dialog box contains the following fields and options:

- VLAN ID : (Range: 1-4094)
- IP:
- Advanced Settings:
- Buttons: Save, Cancel

Red annotations on the image indicate the following steps:

1. Click "Add VLAN"
2. Fill in VLAN number and assign IP address
3. Save

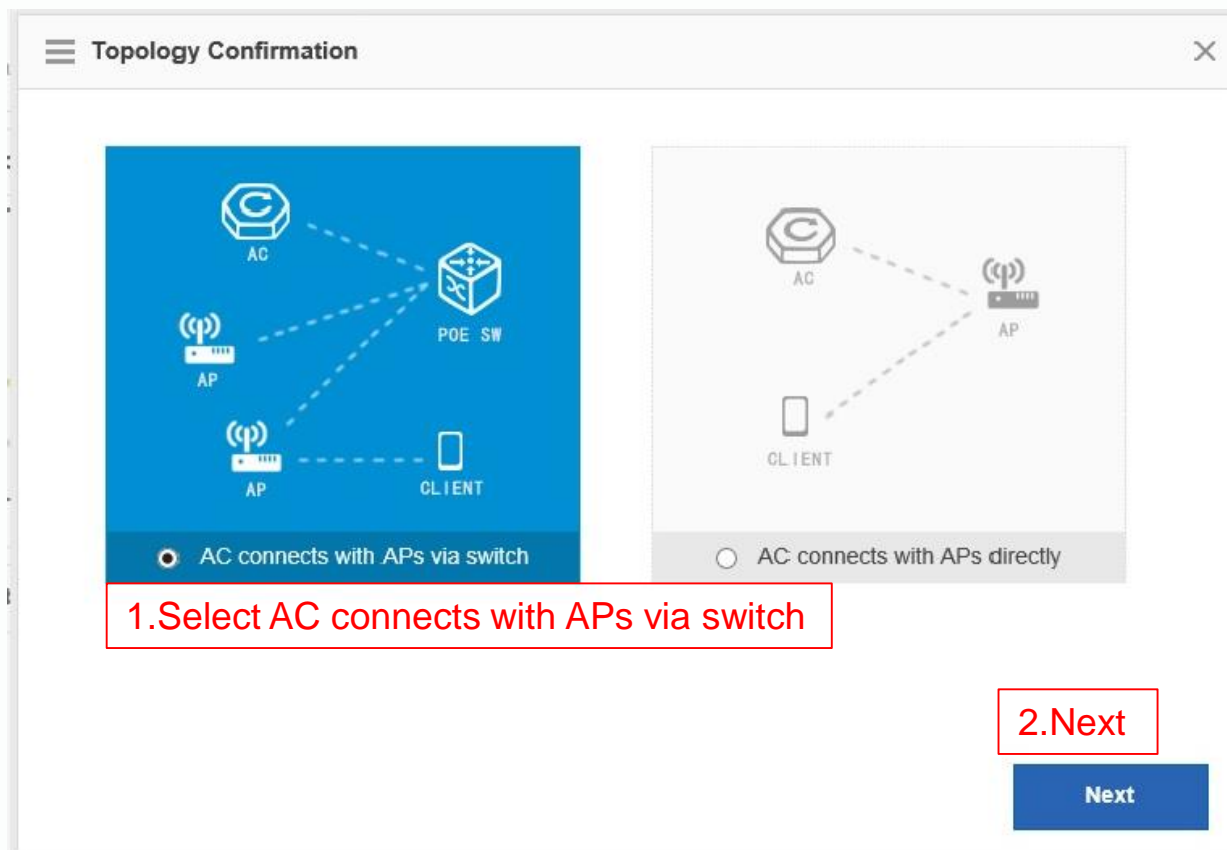
Initialization : Configure Default Route

- Go to “Advanced” ---> “Route” , we are going to point one default route to Layer 3 switch.

The screenshot displays the Ruijie network configuration interface. On the left is a blue sidebar menu with options: VLAN, Port, Route, Advanced (selected), DHCP, Multicast/Unicast, STP, Load Balancing, and VRRP. The main content area is titled 'Route Settings' and contains a note about route selection. Below the note are three buttons: '+Add Static Route', '+Add Default Route' (highlighted with a red box and the annotation '1. Click "Add Default Route"'), and 'X Delete Selected Route'. A table with columns 'Destination Subnet', 'Subnet Mask', 'Next Hop Address', and 'Egress Port' is visible, with the text 'No Record Found' below it. The 'Add Default Route' form is active, showing 'IP Type' set to IPv4, 'Egress Port' set to 'VLAN 2' (highlighted with a red box and the annotation '2. Specify communication VLAN and next hop'), 'Next Hop Address' set to '192.168.2.254', and 'Routing' set to 'Primary Route'. At the bottom right of the form are 'Save' and 'cancel' buttons, with 'Save' highlighted by a red box and the annotation '3. Save'.

I Basic Wireless Configuration : Select operational mode

- ❑ This Chapter will guide you how to step by step set up a basic wireless network with PSK(pre-share key) authentication. Firstly , log on to EWB and click “Quick Settings” in the upper right corner, then below window pops up.



Basic Wireless Configuration : AC-AP Interconnection

- ❑ Fill in blank as shown in below diagram

The screenshot shows the 'AC-AP Interconnection' configuration page in the Ruijie management interface. The page includes a sidebar with 'WiFi/WLAN', 'AP', 'AP Upgrade', and 'Restart' options. The main configuration area is titled 'WiFi/WLAN Settings' and contains the following fields:

- Tunnel Port:** A dropdown menu with 'Ag1' selected.
- Tunnel IP:** A text input field containing '1.1.1.1'.
- Tunnel VLAN ID:** A text input field containing '2'.
- AP Network Configuration:** A section with a '+Add' button and a table-like structure. The first entry has 'Vlan ID : 33' and 'DHCP: Configured on switch/gate'. Below this entry are two links: '[Configure DHCP on AC]' and '[Configure VLAN gateway for AP]'. The 'DHCP' dropdown is highlighted with a red box.

Three red callout boxes provide definitions for the configuration fields:

- Tunnel Port :** The uplink port which communicates with AP
- Tunnel IP :** The IP address of loopback port which communicates with AP
- Click "Configure DHCP on AC" to set DHCP Server for AP**

At the bottom right, there are 'Back' and 'Next' buttons.

Basic Wireless Configuration : DHCP Settings for AP

- ❑ This page , we are going to set DHCP server on AC for AP , as know as VLAN 33 . Fill in blank as shown in below diagram

The screenshot shows the 'Configure DHCP on AC' interface. At the top, there are buttons for '+Add DHCP', 'X Delete Selected DHCP', and 'Excluded Address Range', along with a 'DHCP: ON' toggle. A red box highlights the '+Add DHCP' button with the text '1. click "Add DHCP"'. Below this, a table lists DHCP pools, with a 'Show No.: 10' dropdown and 'Total Count: 0'. A second red box highlights the 'Add DHCP' form fields with the text '2. Set default gateway on .254 which is core switch'. The form fields include: 'Pool Name: ForAP', 'Type: IPv4 (selected) / IPv6', 'Address Range: 192.168.33 / 100 to 200', 'Default Gateway: 192.168.33.254', 'Lease Time: 8 hour(s)', 'Preferred DNS Server: 8.8.8.8', 'Secondary DNS Server: (empty)', 'Option 43: (empty)', and 'Option 138: 1.1.1.1'. A third red box highlights the 'Option 138' field with the text '3. Option 138 is the key for communication between AC and AP'. At the bottom right, there are 'Save' and 'Cancel' buttons.

| Basic Wireless Configuration : DHCP Settings for AP

- This page , we are going to set static routes for AP to ensure the connectivity between AP and tunnel ip when the dhcp pool of AP is not on AC, the command are shown as follow :

```
AP(config)#ip route 1.1.1.1 255.255.255.0 192.168.33.254  
//192.168.33.254 could be any ip address of AC as long as it can connect  
with AP.
```

Basic Wireless Configuration : DHCP Settings for Wireless Users

- This page , we are going to set DHCP server on AC for Wireless Users , as known as VLAN 5 . Fill in blank as shown in below diagram

The screenshot shows the 'Add DHCP' configuration window. The 'Pool Name' field is filled with 'ForUsers'. The 'Type' is set to 'IPv4'. The 'Address Range' is set to '192.168.5' to '200'. The 'Default Gateway' is set to '192.168.5.254'. The 'Lease Time' is set to '8' hours. The 'Preferred DNS Server' is set to '8.8.8.8'. The 'Secondary DNS Server' is empty. The 'Option 43' and 'Option 138' fields are empty. There are two red boxes with annotations: one around the 'Pool Name' field with the text '1.Fill in Pool name', and another around the 'Default Gateway' field with the text '2.Set default gateway on .254 which is core switch'. At the bottom right, there are 'Save' and 'Cancel' buttons.

Pool Name: ForUsers * 1.Fill in Pool name

Type: IPv4 IPv6

Address Range: 192.168.5 100 to 200 *

Default Gateway: 192.168.5.254 * 2.Set default gateway on .254 which is core switch

Lease Time: 8 hour(s) *

Preferred DNS Server: 8.8.8.8

Secondary DNS Server:

Option 43: ?

Option 138: ?

Save Cancel

Basic Wireless Configuration : AC-AP Interconnection

- Since we have create DHCP pool , select DHCP pool “ForAP” in the drop-down list , then click “Next”

AC-AP Interconnection

Tunnel Port: Ag1

Tunnel IP: 1.1.1.1

Tunnel VLAN ID: 2

AP Network Configuration:

Vlan ID	DHCP
33	ForAP

[Configure DHCP on AC] [Configure VLAN gateway for AP]

Back Next

1. Select DHCP Pool for AP Management

2. Click "Next"

| Basic Wireless Configuration : WiFi Configuration

- ❑ In this page , we are going to define SSID name ,authentication type and password.

WiFi/WLAN Configuration

SSID: Ruijie WPA

Encryption Type: WPA/WPA2-PSK

WiFi Password: ●●●●●●●● Show Password

>> Advanced Settings

Back Next

1. Fill in SSID name and password keep encryption type in "WPA / WPA2-PSK"

2. Click "Next"

| Basic Wireless Configuration : AP Group Mapping

- ❑ In this page , we are going to Map WLAN ID to VLAN ID in AP group. Since we have created VLAN 5 for wireless users and also DHCP setting is done, **we map SSID “Ruijie WPA” to VLAN 5 in Deafult AP Group.**

☰ Network Access Configuration ✕

Associated AP Group ?	STA VLAN ID ?	STA DHCP Service ?	Action
Default ▼	5	ForUsers ▼	✕ + Add

1. Use default AP group

2. Fill in VLAN ID 5 , and select DHCP pool in drop-down list

3. Finish

Back Finish

| Basic Wireless Configuration : Verification

- ❑ Go to Home page , view lower right “AP state” , AP is online now.

☰ AP State [Detail](#)

AP Name	Online STA Count	CPU	Free Memory	Speed
1414.4b63.5ac6	1	7%	22%	12Kbps

- ❑ “Ruijie WPA” is broadcasting now .To verify ,connect to it and obtain IP address accordingly.

无线网络连接

Ruijie WPA

D-Link_DIR-613

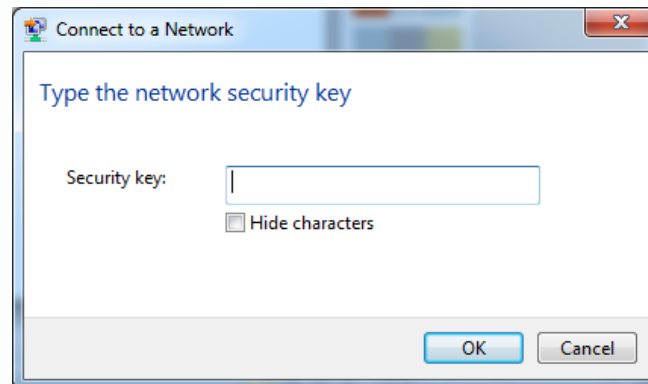
Ruijie-EG150-OPEN81

LWX

weilin

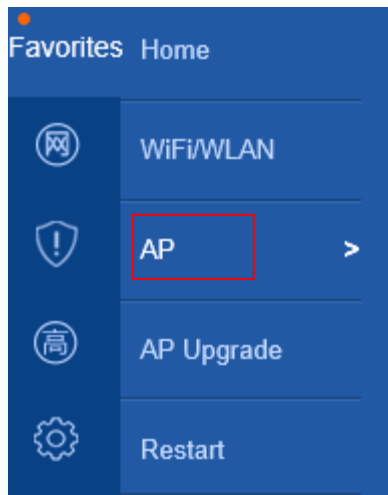
hbx_test

wly_200



Advance Configurations: Assign Static IP address to AP

- ❑ Usually , we assign IP address to AP via DHCP for flexible purpose. This example displays how to assign static IP address to AP If you have such special requirement .
- ❑ Firstly , AP should be online which indicates that you still need to assign IP address to AP via DHCP fist and make sure CAPWAP tunnel is built between AC and AP , so that AC manages to control AP.
- ❑ Go to “AP” in the left menu , check the “State” , now we have one AP online.



<input type="checkbox"/>	AP Name	IP	MAC	Location	State	Online STA	Traffic (kbps)	Action
<input type="checkbox"/>	1414.4b63.5ac 6	192.168.33.10 0	1414.4b63.5ac 6	-	Online	0	0	Edit Chan nel

Show No.: Total Count:1

« First ◀ Pre 1 Next ▶ Last » [GO](#)

Advance Configurations: Assign Static IP address to AP

- ❑ Click “Edit” , then unfold “Advanced Settings” .
- ❑ Input “1.1.1.1” to Tunnel IP , then click “Save”.

(As to the reason , please go to Page 12 , we have set Tunnel IP to 1.1.1.1 ,and it is the loopback port on AC which communicates with AP for CAPWAP tunnel)

- ❑ Click “Edit” again, new options appears. Now you can assign static IP address. Here We assign “192.168.33.133/24” to AP and set gateway to “192.168.33.254”

The screenshot shows the 'Edit AP' configuration page. The 'Advanced Settings' section is expanded, showing the following fields:

- AP Name: 1414.4b63.5ac6 *
- MAC: 1414.4b63.5ac6 * (The MAC of online AP can not be modified)
- Location: [Empty]
- AP Group: default
- Telnet Account: [Empty]
- Telnet Password: [Empty] Show Password
- Tunnel IP: 1.1.1.1 ?

A red box highlights the Tunnel IP field with the text "input 1.1.1.1". At the bottom, there are 'Save' and 'Cancel' buttons.

The screenshot shows the 'Edit AP' configuration page with the 'Advanced Settings' section expanded. The following fields are visible:

- Location: [Empty]
- AP Group: default
- Telnet Account: [Empty]
- Telnet Password: [Empty] Show Password
- Tunnel IP: 1.1.1.1 ?
- AP IPv4: 192.168.33.133
- AP IPv4 Mask: 255.255.255.0
- AP IPv4 Gateway: 192.168.33.254

A red box highlights the AP IPv4, AP IPv4 Mask, and AP IPv4 Gateway fields. At the bottom, there are 'Save' and 'Cancel' buttons, with a red box around the 'Save' button containing the text "Click 'Save'".

Advance Configurations: Assign Static IP address to AP

- ❑ After click “Save”, AP will go offline for a while ,then back to online soon.
- ❑ Check current AP IP address , it has been static IP now.

<input type="checkbox"/>	AP Name	IP	MAC	Location	State	Online STA	Traffic (kbps)	Action
<input type="checkbox"/>	1414.4b63.5ac 6	192.168.33.10 0	1414.4b63.5ac 6	-	Offline	-	-	Edit

Show No.: Total Count:1

⏪ First ◀ Pre **1** Next ▶ Last ⏩ [GO](#)

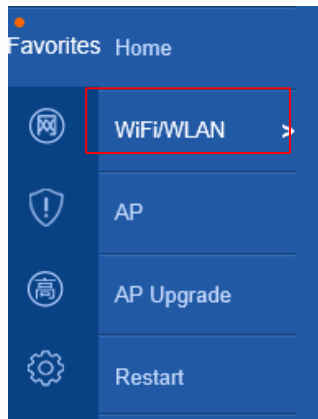
<input type="checkbox"/>	AP Name	IP	MAC	Location	State	Online STA	Traffic (kbps)	Action
<input type="checkbox"/>	1414.4b63.5ac 6	192.168.33.13 3	1414.4b63.5ac 6	-	Online	0	0	Edit Chan nel

Show No.: Total Count:1

⏪ First ◀ Pre **1** Next ▶ Last ⏩ [GO](#)

Advance Configurations: Modify SSID name and Password

- ❑ Go to “Wifi/WLAN” in the left, select “wlan name” in the right ,and click “Edit”
- ❑ Modify SSID name to “Ruijie PSK”, also modify password , then click “Next”
- ❑ Keep settings in “Network Access Configuration” , click “Finish”



1.select SSID and click “Edit” in the right

<input type="checkbox"/>	SSID	Associated AP Group	Associated STA Count	Packet Forwarding Mode	Action
<input type="checkbox"/>	Ruijie WPA	Default	0	Forwarded by AC	Edit Rate Limit Detail

Show No.: 10 Total Count:1

First Pre 1 Next Last GO

WiFi/WLAN Configuration

SSID: Ruijie PSK

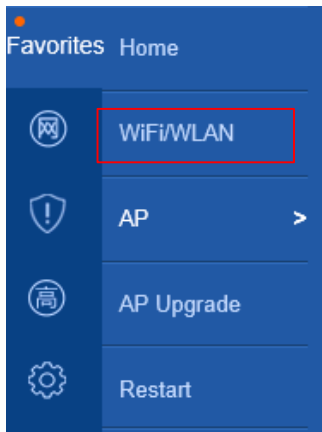
Encryption Type: WPA/WPA2-PSK

WiFi Password: ●●●●●●●● Show Password

>> Advanced Settings

Advance Configurations: Channel ,power and STA limitation

- Go to “AP” in the left manu ,select specific AP in right windows , click “Channel”
- Adjust “Channel” , “RSSI “ a.k.a Signal Strength , and “Max STA Count ” for both 2.4G and 5G radios .



<input type="checkbox"/>	AP Name	IP	MAC	Location	State	Online STA	Traffic (kbps)	Action
<input type="checkbox"/>	1414.4b63.5ac6	192.168.33.100	1414.4b63.5ac6	-	Online	0	1	Edit Channel

Show No.: Total Count:1 First Pre 1 Next Last

WiFi Channel Settings

Tips: If you feel RSSI instable or weak, modify the following parameters manually.
Note: Pay attention also other factors such as antenna setup, signal interference, magnetic fields, walls.

2.4GHz Network [Switch 2.4GHz to 5GHz compulsorily.](#)

Country:

WiFi Channel: Current WiFi Channel: auto

RSSI:

Max STA Counts: Max Accessible STA Count (Range 1-128)

Frequency Bandwidth:

Antenna Enabled: Receiving Sending

5GHz Network [Switch 5GHz to 2.4GHz compulsorily.](#)

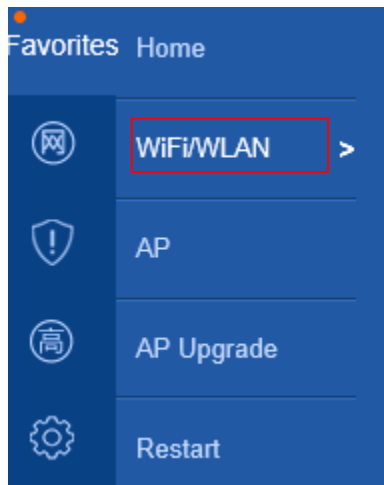
1.Adjust channel. Channel “1” , “6” and “11” are recommended in 2.4G

2.Adjust RSSI level. Select mode in drop down box

3.Adjust station limitation.

Advance Configurations: Rate limit

- Go to “WiFi/WLAN” in the left manu , select “SSID” in the right window , click “Rate limit” . The Unit is 8Kbits = 1KBytes , for example, input 256 if you want to limit each wireless STA at speed 256KB/s



1.Click Rate limit , input bandwidth

<input type="checkbox"/>	SSID	Associated AP Group	Associated STA Count	Packet Forwarding Mode	Action
<input type="checkbox"/>	Ruijie PSK	Default	0	Forwarded by AC	Edit Rate Limit Details

Show No.: Total Count:1

« First «

Downlink: ×8kb/s

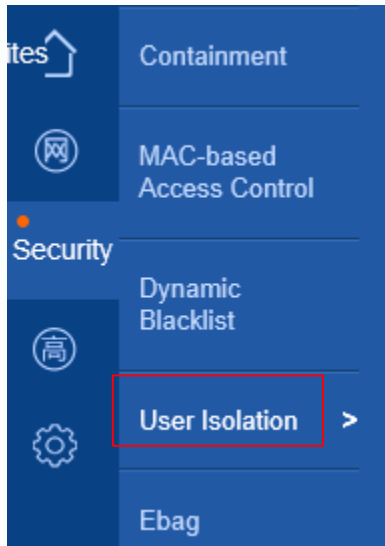
Uplink: ×8kb/s

2.Save configuration

Note : It is recommended to set rate limit to make bandwidth allocation more regular and reasonable .

| Advance Configurations: User Isolation

- ❑ Go to “Security ” ->“User isolation” in the left .
- ❑ Wireless STA that is not in “Allowed MAC” list cannot visit other STA.
- ❑ Wireless STA that is in “Allowed MAC” list can visit other STA



[User Isolation](#)

Note: The function prevents users from communicating with each other without affecting their access to the network, ensuring service

User Isolation: ON **1. Turn on User Isolation**

Allowed MAC: Username: MAC: * X **+Add**

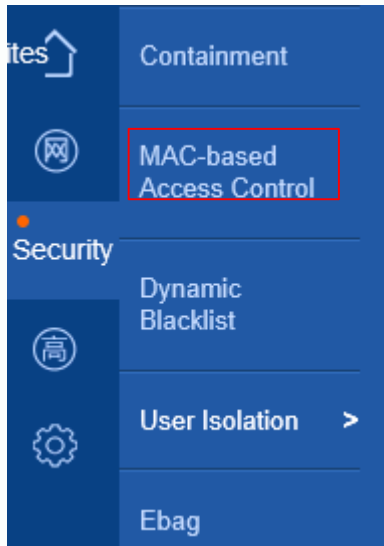
Current MAC: 5869.6c20.7236 **2. Fill in “Allowed MAC” (optional)**

Save **3. Save configuration**

Note : This feature prevents wireless users from communicate with each others, this may somehow increase security level ,but decrease user experience .Enable this feature based on detail requirement .

Advance Configurations: AP based static Black & White list

- ❑ Go to “Security” ->“MAC based Access Control” in left manu.
- ❑ By default , the mode is “AP based Access Control”
- ❑ If “blacklist” is enable ,STA in blacklist is unable to access **all AP**.
- ❑ If “whitelist” is enable , only STA in whitelist is able to access **all AP**.



MAC-based Access Control Settings

Note: The function specifies the users allowed to access the WiFi or denied from accessing the WiFi . The MAC address is the hardware address of the client (such as lap with the AP.

1.Select “blacklist “ or “whitelist ” mode

MAC-based Access Control Type: Deny MAC address from accessing WiFi (Blacklist) Permit MAC address to access WiFi (Whitelist)

2.Add MAC address, username is optional

Username: MAC: * X +Add

Current MAC: 5869.6c20.7236

[\[SSID-based Access Control\]](#)

Switch to “SSID based Access Control”

Save

3.Save configuration

Advance Configurations : SSID based static Black & White list

- ❑ Click “SSID based Access Control” shown in previous page.
- ❑ If “SSID based blacklist” is enable ,STA in blacklist is unable to access **WIFI**.
- ❑ If “SSID based white” is enable , only STA in whitelist is able to access **WIFI**.

Username: MAC: 1234.1234.1234 * X +Add

Current MAC: 1414.4b63.226a [SSID-based Access Control] 1.Select “SSID-based” mode ,switch to below UI

MAC-based Access Control Settings Ruijie PSK 2.Select SSID

Note: The function specifies the users allowed to access the WiFi or denied from accessing the WiFi . The MAC address is the hardware address of the device with the AP.

3.Select “blacklist” or “Whitelist” mode

MAC-based Access Control Type: Deny MAC address from accessing WiFi (Blacklist) Permit MAC address to access

4.Add MAC address, username is optional

Username: MAC: * X +Add

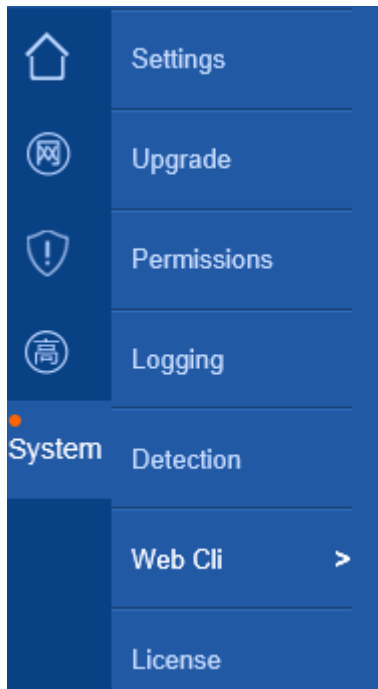
Current MAC: 5869.6c20.7236

Save

5.Save configuration

Advance Configurations : Timing Switch off WIFI

- ❑ This example displays **how to disable SSID “Ruijie PSK” broadcasting during off hours from 18:00 to 9:00 on workdays.**
- ❑ First of all , check current time is correct. You can view current system time on “Home page”
- ❑ Go to “System” --->”Web Cli” , execute below commands :



```
Ruijie#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)#schedule session 1
Session 1 is created now.
Ruijie(config)#schedule session 1 time-range 1 period Mon to Fri time 18:00 to 09:00
Ruijie(config)#wlan-config 1
Ruijie(config-wlan)#schedule session 1
Ruijie(config-wlan)#end
Ruijie#write
Building configuration...
[OK]
Ruijie#
```

Note : One SSID maps to one WLAN ID .To find out what WLAN ID it is , search WLAN ID by keyword as shown below:

```
Ruijie#show run | b PSK
wlan-config 1 "Ruijie PSK"
```


Advance Configurations : Built-in Web Authentication

- ❑ This page displays how to set up a web authentication using wireless controller built-in web portal and local credentials .
- ❑ Go to “Network” --->“authentication” in the left menu , select “Iportal authentication” in the right window.
- ❑ Authentication package : you can utilize default built-in web authentication page or you can customize it . For more information about page customization , see configuration guide accordingly.
- ❑ Authentication mode: This option indicates the place you store user accounts. You can store in remote Radius Server or in local system.

The screenshot displays the Ruijie NMS interface. On the left is a blue navigation sidebar with icons for Home, Network, Authentication, and Settings. The main content area shows the 'Iportal Authentication' configuration page. At the top, there are three tabs: 'Eportal Authentication', 'Iportal Authentication' (which is selected), and 'Advanced Settings'. Below the tabs, the configuration options are as follows:

- Authentication Package:** Three radio buttons are present: 'Default Package' (selected), 'Custom Package', and 'Local User'. There are also two links: '[Local User]' and '[Online User]'.
- Authentication Mode:** A dropdown menu is set to 'Use local user information only'.
- Iportal Server Port:** An empty text input field with a note: '(Range: 1025-65535. Default: 8081)'.
- SSID:** A dropdown menu is set to 'Ruijie PSK'.

At the bottom of the configuration area are two buttons: 'Save' (in blue) and 'Clear' (in grey). Three red annotations are overlaid on the image:

1. Select type of “authentication page”, here we select “default package”
2. Select “authentication mode”, here we select “use local user information only”
3. Select SSID which you want to apply web authentication to.

Advance Configurations : Create local user accounts

- ❑ Click “Local User” , enter Local user management.
- ❑ Click “Add User” , fill in the “Username” and “Password” . Click “Save” when finished.

4.Create Local users

Authentication Package: Default Package Custom Package [\[Local User\]](#) [\[Online User\]](#)

Local User ✕

5.Add user

[+Add User](#) [X Delete Selected User](#) Username-based: [Search](#)

<input type="checkbox"/>	Username	Action
<input type="checkbox"/>	scott	Edit Delete

Show No.: Total Count:1 ⏪ First ⏴ Pre 1 Next ⏵ Last [GO](#)

Add User ✕

6.Fill in Username and password , click save when finish

Username: *

Password: *

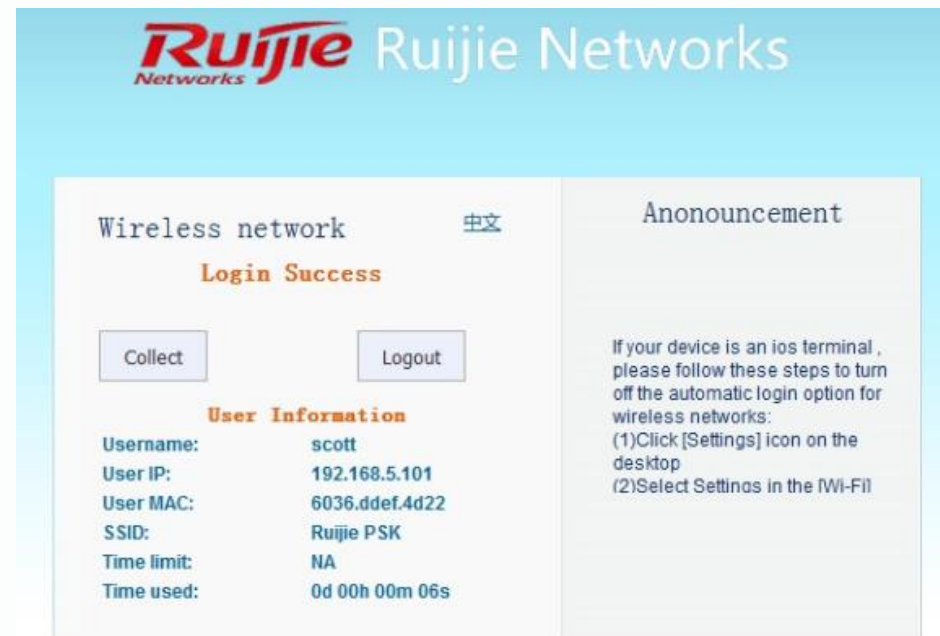
[Save](#) [Cancel](#)

Advance Configurations : Built-in Web Authentication Verification

- ❑ Before verification , it is recommend that turn off “Encryption Type” cause usually , we apply only one authentication method to a WLAN
- ❑ Connect your STA to SSID, then it succeeds to obtains IP address and DNS.
- ❑ Visit any website ,you will be redirected to authentication page .
- ❑ Input your credentials , pass the authentication and visit Internet



The screenshot shows the Ruijie Networks authentication interface. At the top left is the Ruijie Networks logo. Below it, there are two main sections: "Wireless network" and "Anouncement". The "Wireless network" section contains a "Username" input field, a "Password" input field, a "Clear saved user information" link, a "Login" button, and a "Remember me" checkbox. The "Anouncement" section contains the text "network (4)Turn off the wireless network settings [automatic login]". At the bottom center, there is a copyright notice: "© 2012 Ruijie Networks Co., Ltd."



The screenshot shows the Ruijie Networks authentication interface after a successful login. At the top left is the Ruijie Networks logo. Below it, there are two main sections: "Wireless network" and "Anouncement". The "Wireless network" section displays "Login Success" in orange, followed by "Collect" and "Logout" buttons. Below these is a "User Information" section with the following details:

Username:	scott
User IP:	192.168.5.101
User MAC:	6036.ddef.4d22
SSID:	Ruijie PSK
Time limit:	NA
Time used:	0d 00h 00m 06s

The "Anouncement" section contains the text: "If your device is an ios terminal , please follow these steps to turn off the automatic login option for wireless networks: (1)Click [Settings] icon on the desktop (2)Select Settings in the [Wi-Fi]".

| Advance Configurations : Extra Features – Logon Redirection

- ❑ The setup and clarified basic Built-in Web-Auth (iPortal) must be done.
- ❑ Basic template for redirection page
 - ❑ `online-popup http://domain.name` //The URL will popup after success logon on iPortal.
 - ❑ `login-popup http://domain.name` //The URL will popup while the iportal landing page loading.
 - ❑ `time-interval xx` //Config iportal login-popup time interval, count by hour, enter 0 for always popup.
- ❑ Example:

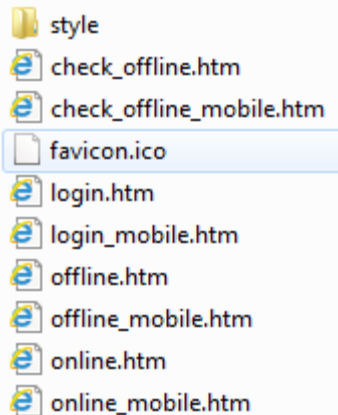
```
web-auth template iportal  
page-suite default  
authentication /  
accounting iportal_account  
time-interval 0  
login-popup http://www.ruijie.com.cn  
online-popup http://www.ruijienetworks.com
```

Advance Configurations : Custom Landing Page Template (Copy out from AC)

- ❑ Find the template landing page
- ❑ dir flash:/portal/zip

```
xlab-ws6108#dir flash:/portal/zip
Directory of flash:/portal/zip
Number  Properties  Size           Time           Name
-----  -
  1      -rwx       86.7k         Tue Jul 26 21:20:07 2016 gateway.zip
  2      -rwx       91.0k         Tue Jul 26 21:20:07 2016 default.zip
2 files, 0 directories
281,903,104 bytes data total (196,956,160 bytes free)
536870912 bytes flash total (196,956,160 bytes free)
xlab-ws6108#
```

- ❑ Copy out through tftp server
- ❑ copy flash:/portal/zip/default.zip tftp://192.168.1.1/default.zip
- ❑ Unzip the default.zip to a new folder.



Description:

- [login.htm](#) > PC login page
- [login_mobile.htm](#) > mobile login page
- [offline.htm](#) > PC offline page
- [offline_mobile.htm](#) > mobile offline page
- [online.htm](#) > PC online page
- [online_mobile.htm](#) > mobile online page



Advance Configurations : Custom Landing Page Modification

- ❑ Right click the login.htm file, then choose Wordpad.exe to edit the basic html coding.
- ❑ Find and match the bottom content and URL link.
- ❑ Browser



- ❑ Wordpad edit

```
<!--底层链接处理-->
<div class="shadow">
  <a href="http://www.ruijie.com.cn"
align="center" target="_black"> &copy; 2012 Ruijie Networks Co., Ltd.</a>
</div>
</div>
</div>
</body>
```

Advance Configurations : Custom Landing Page Modification

- ❑ Original content: “© 2012 Ruijie Networks Co., Ltd.”
- ❑ Change to “Welcome to Ruijie Networks.”
- ❑ Original URL: “http://www.ruijie.com.cn”
- ❑ Change URL to http://www.ruijienetworks.com



- ❑ Repeat all the html file with same content modification.
- ❑ Zip those html files into zip file. (Don't include the main folder!)

Advance Configurations : Custom Landing Page Upload

- On the AC iPortal page, choose [Custom package] to upload new modified template.

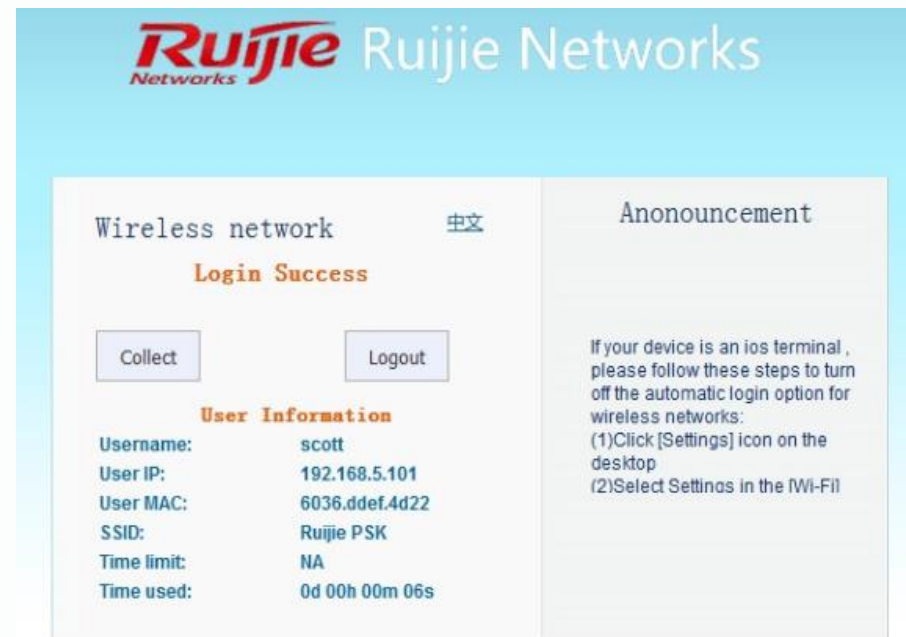
The screenshot displays the AC iPortal configuration interface. The left sidebar shows the 'Authentication' menu item. The main configuration area is titled 'iportal Authentication' and includes the following settings:

- Authentication Package: Default Package Custom Package [Local User](#) [Online User](#)
- Authentication Mode: Use local user information onl
- Iportal Server Port: 8081
- SSID: RMA-Test

Buttons for 'file...', 'Upload', and 'Save' are visible. A file explorer window titled 'Choose File to Upload' is open, showing the file 'template01.zip' selected in the 'Original zip' folder. The 'Open' button in the file explorer is highlighted in yellow.

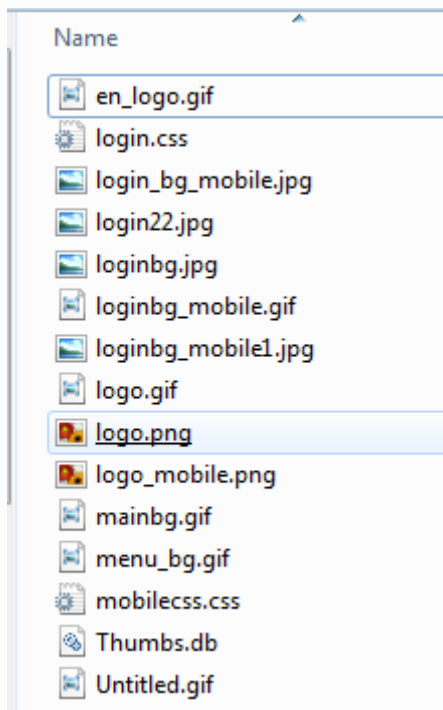
Advance Configurations : Custom iPortal Verification

- ❑ Connect your STA to SSID, then it succeeds to obtains IP address and DNS.
- ❑ Visit any website ,you will be redirected to authentication page .
- ❑ Input your credentials , pass the authentication and visit Internet



Advance Configurations : Custom iPortal logon page

- ❑ Enter folder Style , will get below file list .
- ❑ prepare a gif format picture with dimensions 468 x 105, name it as en_logo.gif , cover the original one to replace the logo on English PC login page



en_logo.gif	Date modified: 2012/7/9 15:45	Size: 6.70 KB
GIF File	Dimensions: 468 x 105	Date created: 2012/7/9 15:45



en_logo.gif	Date modified: 2015/11/24 10:31	Size: 13.7 KB
GIF File	Dimensions: 468 x 105	Date created: 2015/11/24 10:31

Advance Configurations : Custom iPortal logon page

- ❑ When finished , open login.htm to verify.The Chinese login page remains the same , now switch to “English”.
- ❑ The logo on English login page has changed.



Ruijie Networks 锐捷网络


无线网络 [English](#)

用户名

密码

[清除已保存的用户信息](#)

记住我



विश्वविद्यालय UNIVERSITY

Wireless network [中文](#)

Username

Password

[Clear saved user information](#)

Remember me

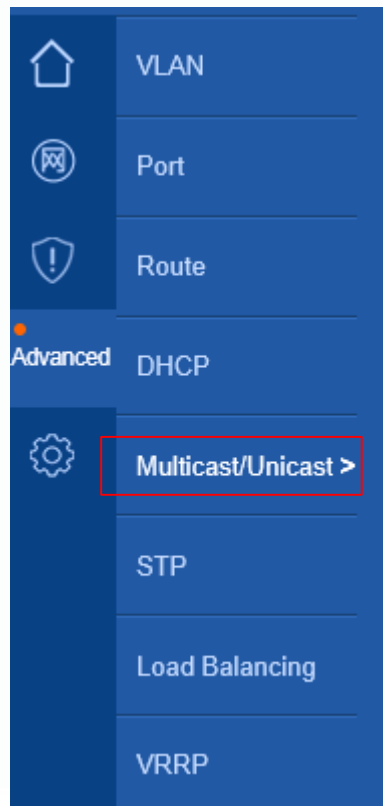
Anouncement

If your device is an ios terminal , please follow these steps to turn off the automatic login option for wireless networks:

- (1)Click [Settings] icon on the desktop
- (2)Select Settings in the [Wi-Fi] or [wireless network]
- (3)Select the wireless network you want to connect, click the

Advance Configurations : Multicast

- ❑ By default , Wireless Controller & AP do not transfer Multicast traffic due to multicast traffic consumes more wireless resources which may decrease wireless user experience .
- ❑ Go to “Advanced” ---> “Multicast/Unicast” , this example displays how to configure two practical multicast scenarios -----”Simple” and “Standard”



Multicast/Unicast

Simple Multicast:It is applied in broadcast teaching in classes, where PCs of teachers and students are in need to cross over different devices and segments..

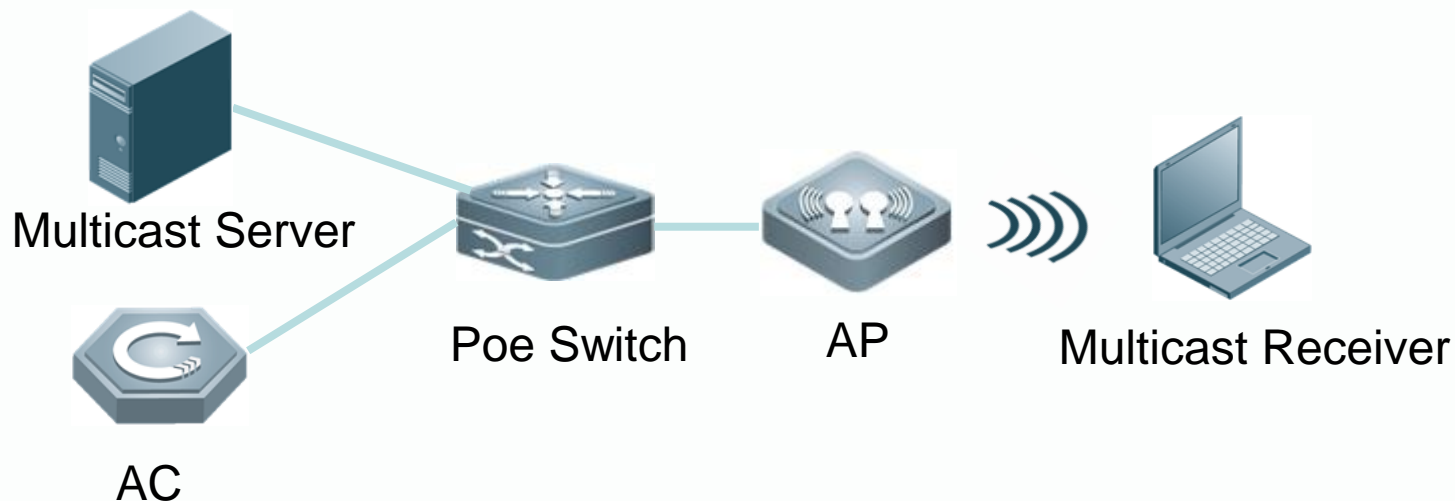
Standard Multicast:It is applied in school-wide broadcast in colleges who have own multicast video server

Multicast: Simple Standard Close

Save

| Advance Configurations : Simple Multicast Mode

- ❑ “Simple “ Mode is applicable in a small total layer 2 network , it indicates that multicast Server and Receiver are in a same broadcast domain and IP segment , just as shown in below diagram.



Multicast/Unicast

Simple Multicast: It is applied in broadcast teaching in classes, where PCs of teach need to cross over different devices and segments..

Standard Muticast: It is applied in school-wide broadcast in colleges who have own

Multicast: Simple Standard Close

Save

Note : In “Simple” Mode , AC simply enable the feature to transfer multicast & broadcast without any other additional optimizations, so it may not guarantee performance and stability.

Advance Configurations : Standard Multicast Mode

- Below parameters are relative to “IGMP Snooping” , “IGMP Snooping Querier” and “Multicast-to-Unicast Conversion” . For more information about these feature , see <wireless controller configuration guide>
- In below best practical sample, you should enable “IGMP Snooping Querier” on layer 3 switch and enable IGMP Snooping on AC.



Multicast: Simple Standard Close

AC

Dynamic Aging Time: (Range: 1-65535. Default: 260)

Ignore Query Timer: Enabled

Query Interval: (Time range:1-18000 second)

Response Time: (Time range:1-65535 second)

Proxy Server: IP:

VLAN-based Multicast: All

Vid=1 Vid=2 Vid=5 Vid=10 Vid=33

Multicast-to-Unicast Conversion: OFF

“IGMP” Snooping” table aging time , keep default setting.

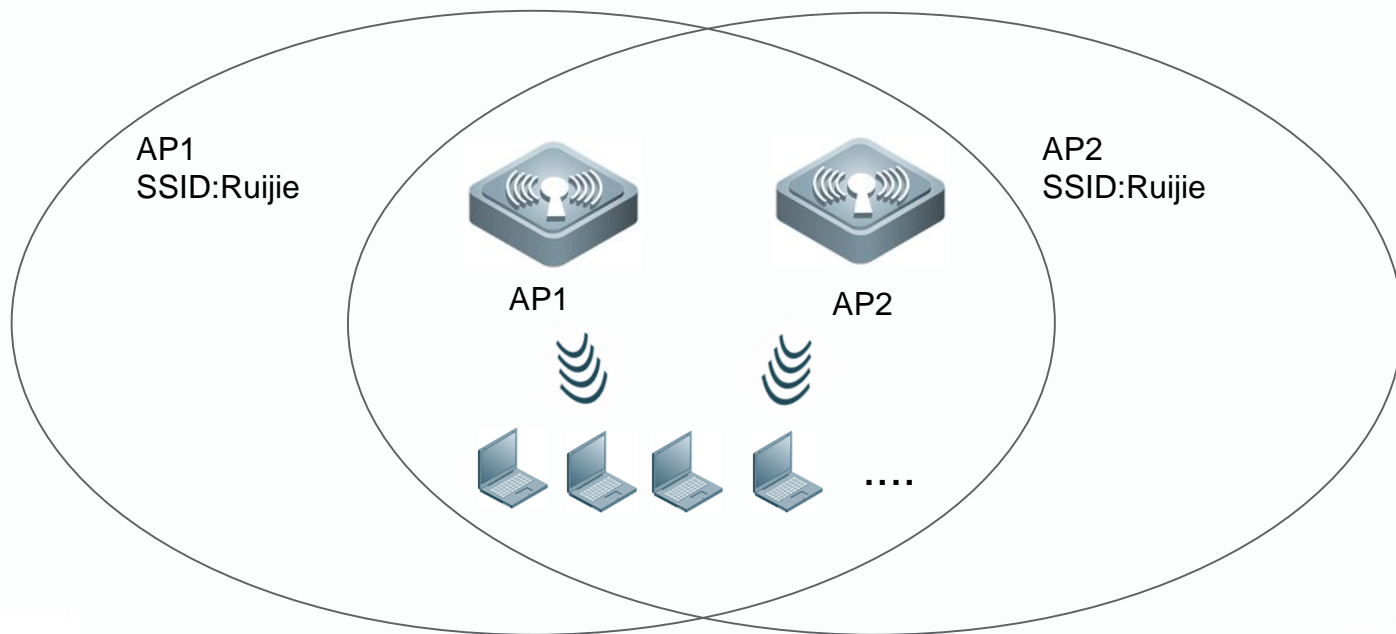
“IGMP Snooping Querier” Settings . In this example , we do not enable IGMP Snooping querier feature

Enable “IGMP Snooping” on wireless user VLAN.



| Advance Configurations : AP Load Balancing

- ❑ “AP Load Balance” allows APs which broadcasts overlapped wireless coverage has the similar workload .
- ❑ As per shown in below diagram , AP1 and AP2 are broadcasting overlapped wireless signal and same SSID “Ruijie” . All laptops are able to receive both signal and may connect to AP1 or AP2 randomly .In the extreme case , all laptops connect to AP1 and make AP1 overloaded , but meanwhile AP2 is idle.



Advance Configurations : AP Load Balancing

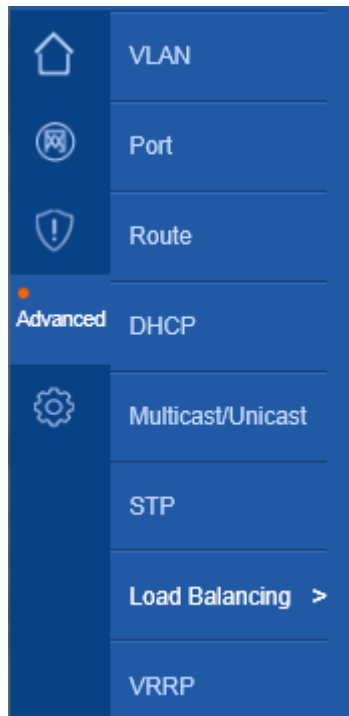
- ❑ Go to “Advanced” --->”Load Balancing” in the left menu .
- ❑ This example displays how to configure Load Balance Group .

“**User Threshold**” : The premise to enable load balance .

“**When the difference of STA numbers reaches**” : Just as the description .

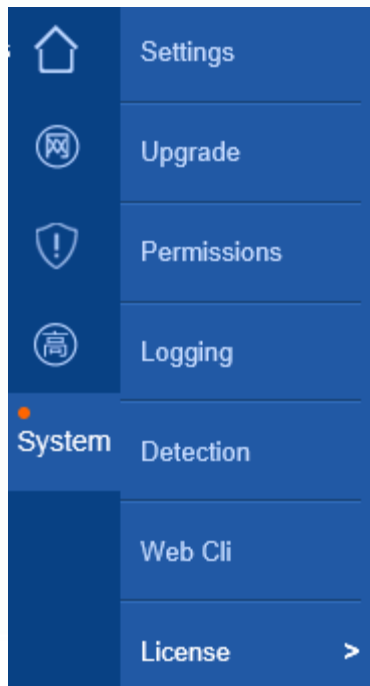
Note : Usually , we set both parameters the same value.

“**Balance Type**” : Support “STA-count-based” and “AP-traffic-based”



Daily maintenance : License

- ❑ By default , E.g. wireless controller WS6108 supports manage 32 APs for free. License is required If more APs are managed.
- ❑ After you have purchased **License code** , visit Ruijie Service Portal at <http://case.ruijienetworks.com> , submit a case , enclosing **License code** and **Serial Number** to apply for **License file** .
- ❑ Go to “System” --->”License” , upload and install **License file** , then adjust “Max AP Counts”



The image shows the 'License' configuration page in the Ruijie network management interface. The page includes a note about license installation, a 'Maxi APCounts' field set to 32, a 'File Upload' section with a 'Browse...' button and an 'Install' button, and a table showing 'No Record Found'. A red box highlights the text '2. adjust Max AP counts' and another red box highlights the text '1. upload and install License File'.

License

Note: The installation of license files enables the AC to manage more APs. First login the Web and enter product SNs and upload the file on this page.

2. adjust Max AP counts

Maxi APCounts: 32 Save

File Upload: Browse... Install [How to get license file]

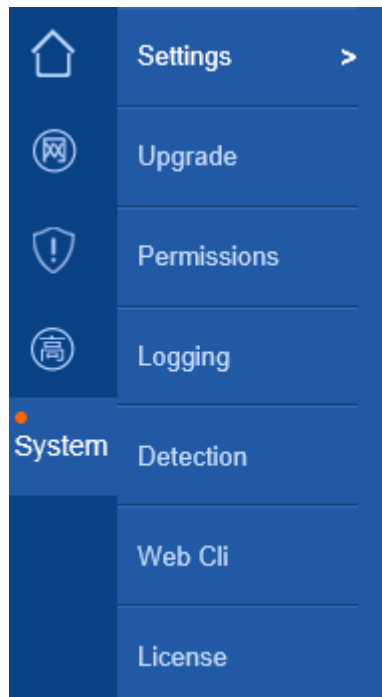
1. upload and install License File

License
No Record Found

Show No.: 10 Total Count:0

Daily maintenance : Modify super administrator Password

- ❑ Go to “Settings” in the left menu , select “Password” in the right window.
- ❑ You can modify Eweb Login password and Telnet password.



Time Password Restore Enhancement

≡ Web Management Password

Username: admin

Old Password *

New Password: *

Confirm Password: *

Save

Fill in old and new password

≡ Telnet Password(Telnet Password and Enable Password)

Username: admin

New Password: *

Confirm Password: *

Save

double input new password

Daily maintenance : Create new administrator

- ❑ Go to “System” ->“Permissions” in the left menu .
- ❑ You can create new administrator and grant authority accordingly.

Permissions

+ Add Administrator **1. Add administrator**

Username	Action
guest	Edit

Show No.: 10 Total Count: 1

First Pre 1 Next Last GO

Add Administrator

Username: scott * **2. Fill in username & password**

Password: *

Confirm Password: *

Permission: All Pages
 Favorites
 Network
 Security
 Advanced
 System
 Guide **3. Grant authorization**

4. Save Save Cancel

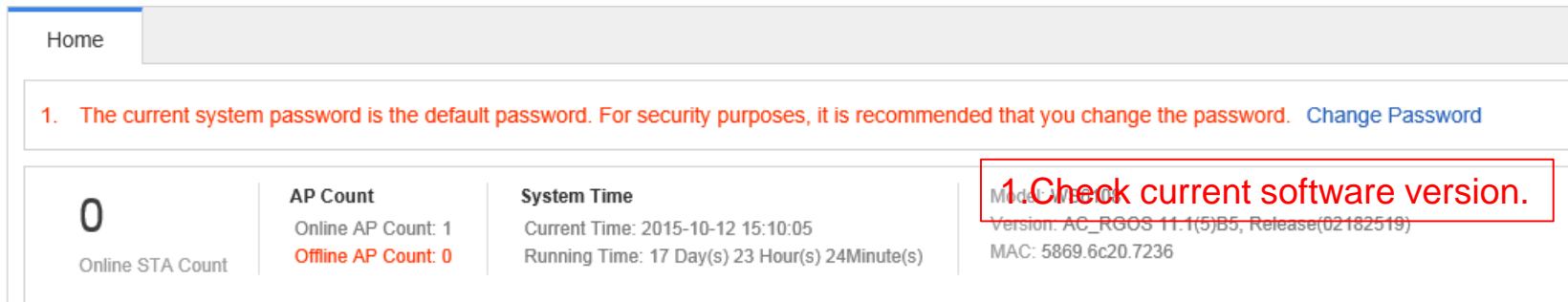
I Daily maintenance : Configure Log Server

- ❑ Go to “System” -> “Logging” in the left menu.
- ❑ By default , logs are stored in local buffer . If you would like to save logs permanently , send logs to log server.
- ❑ You need to install a tool on server to receive logs , like Syslog server.

The screenshot displays the Ruijie Networks management interface. On the left, a blue sidebar contains navigation options: Settings, Upgrade, Permissions, Logging (highlighted with a right arrow), System (selected with a red dot), Detection, Web Cli, and License. The main content area is titled 'Logging' and includes a note: 'Note: Local logs are sent to the corresponding server in order of priority level'. Below the note, there are three configuration fields: 'Server Logging' with a toggle switch set to 'ON' (highlighted by a red box labeled '1.Enable Server Log'), 'Server IP' with an empty text input field (highlighted by a red box labeled '2.Input Log Server IP'), and 'Logging Level' with a dropdown menu set to 'Informational(6)' (highlighted by a red box labeled '3.Select the log level. E.g you select level 6 , then all logs of level 1 - 6 are sent to log server.'). A blue 'Save' button is located at the bottom of the configuration area.

Daily maintenance : Upgrade Wireless Controller

- ❑ In this part , it is applicable for upgrade from 11.x version to 11.x version . Not application for upgrade from 10.4 to 11.x version .
- ❑ If 10.4 to 11.x upgrade is required , see Appendix.
- ❑ Get in touch with your local post sales for the latest firmwares , read Release Note carefully .
- ❑ Check current firmware version before upgrade. Go to “Home Page”

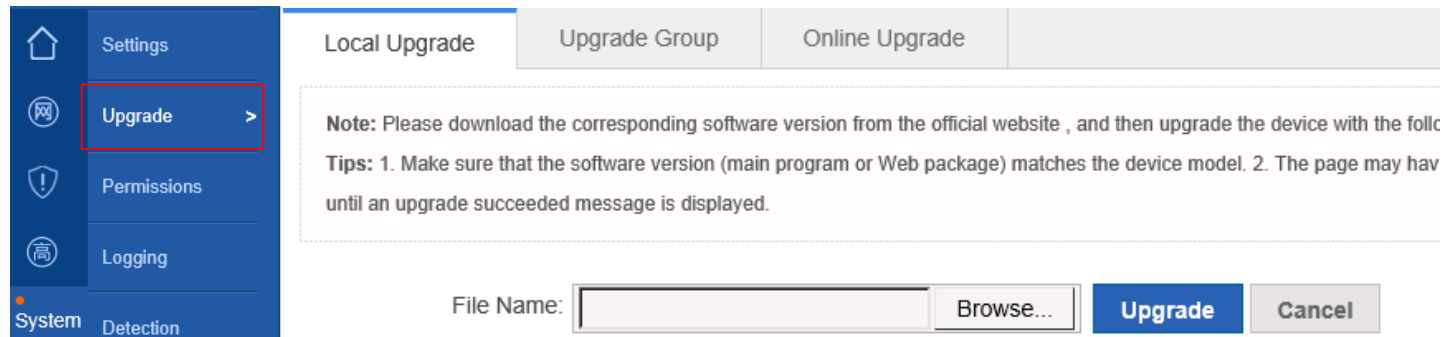


Home

1. The current system password is the default password. For security purposes, it is recommended that you change the password. [Change Password](#)

0 Online STA Count	AP Count Online AP Count: 1 Offline AP Count: 0	System Time Current Time: 2015-10-12 15:10:05 Running Time: 17 Day(s) 23 Hour(s) 24Minute(s)	Model: W7236 1. Check current software version. Version: AC_RGOS 11.1(5)B5, Release(02182519) MAC: 5869.6c20.7236
-----------------------	--	---	---

- ❑ Go to “System” ---->”Upgrade” ----> “Local Upgrade” ,



Settings
Upgrade >
Permissions
Logging
System Detection

Local Upgrade Upgrade Group Online Upgrade

Note: Please download the corresponding software version from the official website , and then upgrade the device with the following
Tips: 1. Make sure that the software version (main program or Web package) matches the device model. 2. The page may have until an upgrade succeeded message is displayed.

File Name: Browse... Upgrade Cancel

I Daily maintenance : Upgrade Wireless Controller

- ❑ Browse and upload firmware, then click “Upgrade”. System starts to verify firmware bin file and will restart automatically
- ❑ Do NOT POWER OFF AP or do any other operation during upgrade is in progress

Local Upgrade Upgrade Group Online Upgrade


Note: Please download the corresponding software version from the official website , and then upgrade the device with the following tips.
Tips: 1. Make sure that the software version (main program or Web package) matches the device model. 2. The page may have no response dur until an upgrade succeeded message is displayed.

File Name:

74%


1. Upload firmware

2. Upgrading

 Checking upgrade bin. The device will be restarted. Please do not perform any other operation and wait for about two minutes before upgrade is complete.

3. Succeed

Message from webpage

 Main program upgrade succeeded.

OK



| Daily maintenance : Verification

- ❑ Go back to “Home page” , verify current firmware version.

Home

4. Verify current firmware version.

0

Online STA Count

AP Count

Online AP Count: 1

Offline AP Count: 0

System Time

Current Time: 2015-10-12 15:35:00

Running Time: 0 Day(s) 00 Hour(s) 03Minute(s)

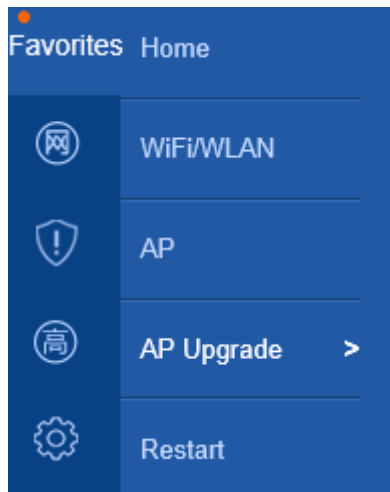
Model: WS6108

Version: AC_RGOS 11.1(5)B5, Release(02192708)

MAC: 5869.6c20.7236

I Daily maintenance : Upgrade AP

- ❑ In this part , it is applicable for upgrade from 11.x version to 11.x version . Not application for upgrade from 10.4 to 11.x version .
- ❑ If 10.4 to 11.x upgrade is required , see Appendix.
- ❑ Get in touch with your local post sales for the latest firmwares , read Release Note carefully .
- ❑ Check current firmware version before upgrade. Go to “AP Upgrade”



The screenshot shows the 'AP Upgrade' page. A red box highlights the 'Upload Software' link with the text '2.Click “Upload Software”'. Another red box highlights the 'Version' column of the table with the text '1.Check current software version'. A third red box highlights the 'Upload Software' modal window with the text '3.Browse and Upload software'. The modal shows an 'Upload File:' field with a file path and 'Browse...', 'Upload', and 'Cancel' buttons. Below the modal is a table with columns: File Name, File Size, Modification Date, and Action.

AP Name	Model	MAC	Version	Action
1414.4b63.5ac6	AP320-I	1414.4b63.5ac6	AP_RGOS 11.1(5)B5, Release(02182520)	Upgrade

Upload File: C:\Users\Administrator\Desktop\A Browse... Upload Cancel

File Name	File Size	Modification Date	Action
-----------	-----------	-------------------	--------

Note : System allows only one firmware exists for specified AP model. System prompts error when you upload different version firmware for a same AP model.

Daily maintenance : Configure Upgrade Group(Optional)

- ❑ Imagine that you are going to upgrade hundreds of APs in production network. Theoretically , AC has to transfer firmware to every AP simultaneously ,may even utilize full uplink bandwidth ,which may have improper impact on production network.
- ❑ To avoid this situation , it is recommend that configure Upgrade Group .Go to “System” ---> “Upgrade” ---> “Upgrade Group”

Local Upgrade | **Upgrade Group** | Online Upgrade

Note: To configure upgrade groups and limit upgrade bandwidth leaves sufficient bandwidth for AP upgrade and smooth service.

+ Add Upgrade Group | X Delete Selected Group

Add Upgrade Group

Upgrade Group Name: * 1. Input AP name

Concurrent Upgrade AP Count: * (1-200) 2. Configure concurrent upgrade AP number

Upgrade Bandwidth: (6-1024KB) 3. Configure bandwidth for EACH AP

Member AP: * 4. Select Group Member

Save | Cancel

Daily maintenance : Upgrade AP

- ❑ Click “Upgrade” , select firmware and click “Use this file for upgrade”.
- ❑ AC starts to transfer firmware to AP ,then AP reboots and upgrade automatically.
- ❑ Verify current AP software version in this page.

AP Upgrade

[Upload Software](#) Batch Upgrade: OFF

4.Click “Upgrade”

AP Name	Model	MAC	Version	Action
1414.4b63.5ac6	AP320-I	1414.4b63.5ac6	AP_RGOS 11.1(5)B5, Release(02182520)	Upgrade

Show No.: 10 Total Count:1

« First ◀ Pre 1 Next ▶ Last » 1 GO

Upgrade AP

5.Select firmware and upgrade

Upload File: [Browse...](#) [Upgrade](#) [Cancel](#)


File Name	File Size	Modification Date	Action
AP_RGOS11.1(5)B5_S1 N2-02_02192710_install.bin	21.3MB	2015-10-12 15:47:35	Use this file for upgrad

Show No.: 10 Total Count:1

« First ◀ Pre 1 Next ▶ Last » 1 GO

6.AP starts to upgrade automatically

Message from webpage

 Configuration succeeded. The device will upgrade automatically later.1414.4b63.5ac6

OK

Daily maintenance : Upgrade AP

- ❑ CTips : To view AP upgrade process , go to “System” --->”Web Cli” ,execute command “show ap-config updating-list”

AP Upgrade

[Upload Software](#) Batch Upgrade: OFF

4.Click “Upgrade”

AP Name	Model	MAC	Version	Action
1414.4b63.5ac6	AP320-I	1414.4b63.5ac6	AP_RGOS 11.1(5)B5, Release(02182520)	Upgrade

Show No.: 10 Total Count:1

« First ◀ Pre 1 Next ▶ Last » 1 GO

Upgrade AP

5.Select firmware and upgrade

Upload File: [Browse...](#) [Upgrade](#) [Cancel](#)


File Name	File Size	Modification Date	Action
AP_RGOS11.1(5)B5_S1 N2-02_02192710_install.bin	21.3MB	2015-10-12 15:47:35	Use this file for upgrad

Show No.: 10 Total Count:1

« First ◀ Pre 1 Next ▶ Last » 1 GO

6.AP starts to upgrade automatically

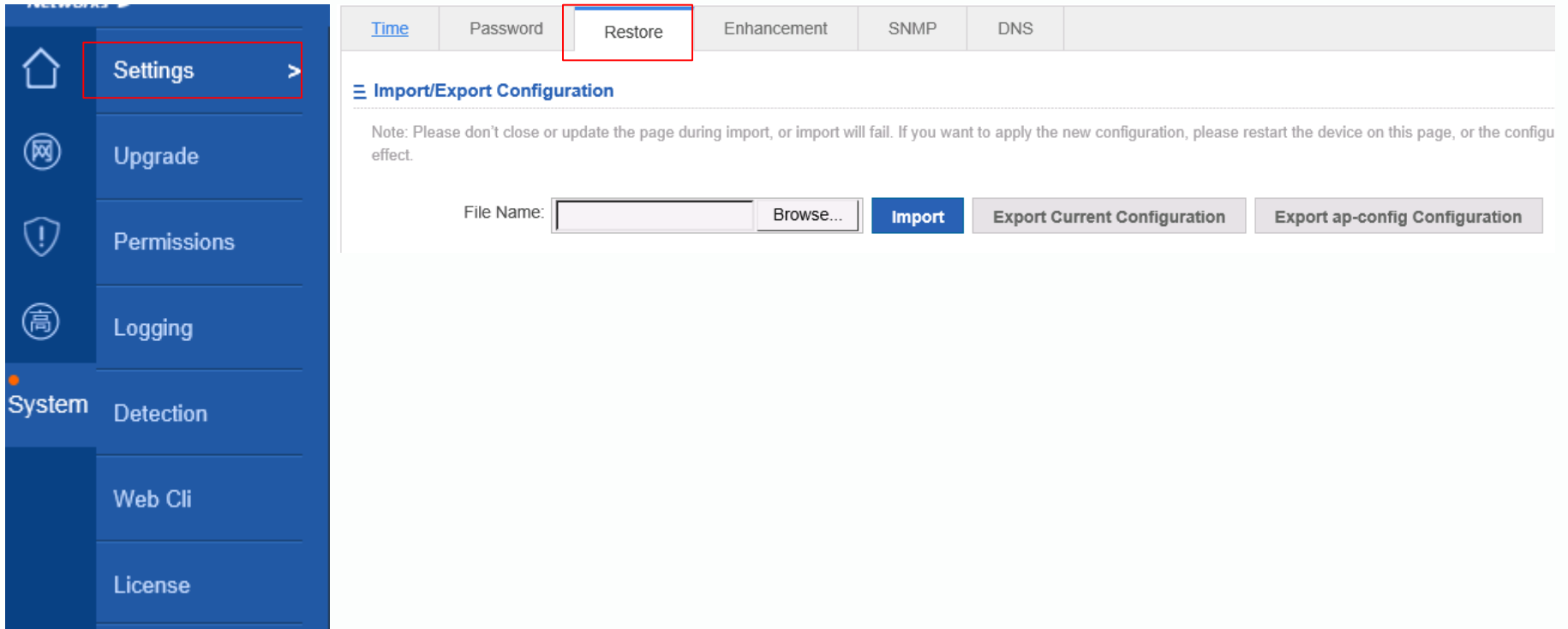
Message from webpage

 Configuration succeeded. The device will upgrade automatically later.1414.4b63.5ac6

OK

I Daily maintenance : Import/Export Current Config

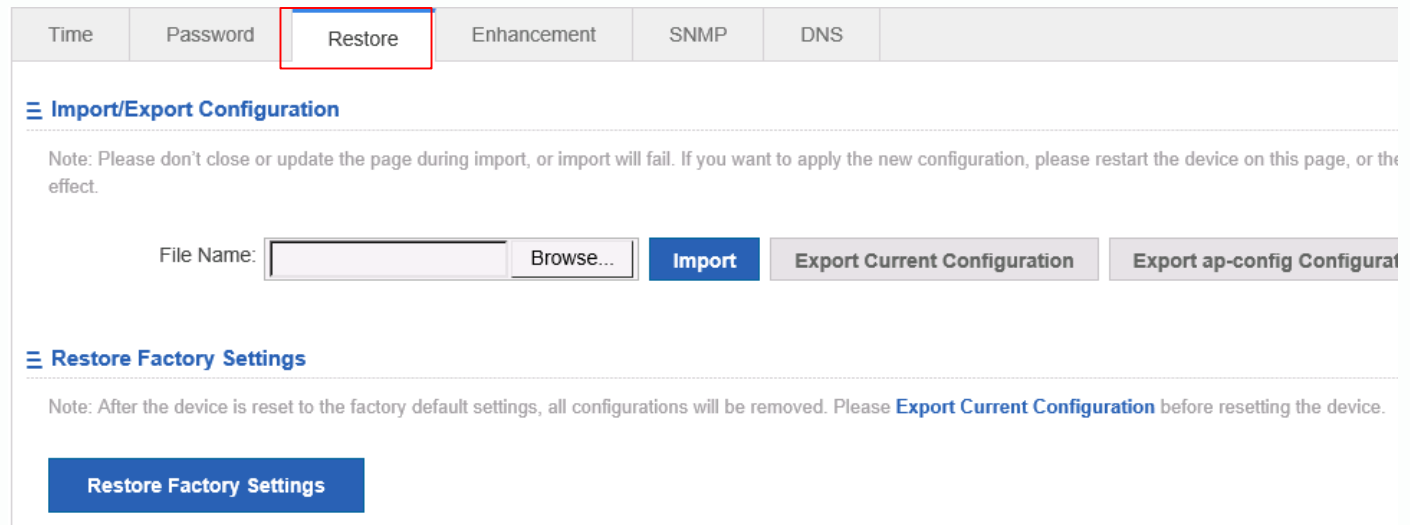
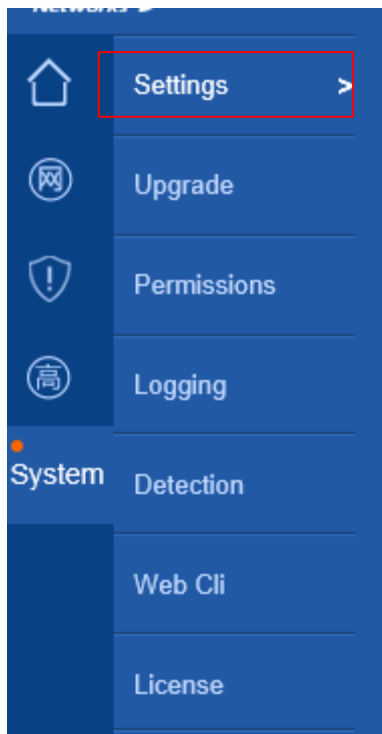
- ❑ Go to “System” ->“Setting” in the left menu , select “Restore” in the right window
- ❑ Export Current configuration files to backup.
- ❑ Import saved configuration files to restore.



The screenshot displays the Ruijie Networks management interface. On the left, a blue sidebar menu contains the following items: Home, Settings (highlighted with a red box), Upgrade, Permissions, Logging, System (with a red dot), Detection, Web Cli, and License. The main content area shows a navigation bar with tabs: Time, Password, Restore (highlighted with a red box), Enhancement, SNMP, and DNS. Below the navigation bar, the page title is "Import/Export Configuration". A note reads: "Note: Please don't close or update the page during import, or import will fail. If you want to apply the new configuration, please restart the device on this page, or the config effect." At the bottom, there is a "File Name:" input field, a "Browse..." button, an "Import" button, and two disabled buttons: "Export Current Configuration" and "Export ap-config Configuration".

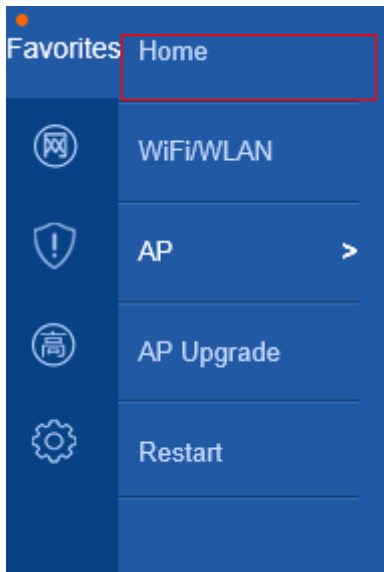
Daily maintenance : Restore Factory Setting on AC

- ❑ Go to “System” ->“Setting” in the left menu , select “Restore” in the right window
- ❑ Click “Restore factory settings” , all configurations on AC are removed



Daily maintenance : Restore Factory Setting on AP

- ❑ Go to “AP” in the left menu , select specified AP in the right list.
- ❑ Click “Restore factory settings” , all configurations on AP are removed



AP Group Name: Default

[+ Add AP](#) [X Delete AP](#) [↻ Restart AP](#) [↻ Restore Factory Settings](#) [AP Group](#)

AP Name [Search](#)

<input type="checkbox"/>	AP Name	IP	MAC	Location	State	Online STA	Traffic (kbps)	Action
<input type="checkbox"/>	1414.4b63.5ac 6	192.168.33.13 3	1414.4b63.5ac 6	-	Online	0	1	Edit Chan nel

Show No.: Total Count: 1

◀ First ◀ Pre 1 Next ▶ Last ▶ [GO](#)

I Appendix : Upgrade from 10.4 to 11.x

- ❑ The software version RGOS 11.x is released in late 2014 , compare with old 10.4 version , it supports better performance and more features .Nearly all the Wireless Controller and AP support upgrade to 11.x software version.
- ❑ Most Wireless Controller Model and Access Point shipped in late 2015 ,like WS6108&AP520I , install RGOS 11.x by factory default.

Below example displays how to upgrade WS5302 and AP320-I from 10.4 to 11.x software version with TFTP Server via CLI .

- ❑ **Step 1 Upgrade AC** Log on to AC CLI via console / telnet , verify that Current version is 10.4.

Ruijie#show version

- ❑ **Step 2** Setup TFTP Server, prepare firmware..

- ❑ **Step 3.**Remember to save and backup configuration file before upgrade.

Note : You need to upgrade both AC&AP twice.

In 1st upgrade , AC upgrades from 10.4 to 11.x interim version.

In 2nd upgrade , AC upgrades from 11.x interim to 11.x latest version

I Appendix : Upgrade from 10.4 to 11.x

1st upgrade :

```
Ruijie#copy tftp://192.168.1.100/AC_RGOS10.x_TO_11.x(Mid)_G1C5-01_02172111.bin  
flash:rgos.bin  
Ruijie#reload
```

2nd upgrade :

```
Ruijie#upgrade download tftp://192.168.1.100/ AC_RGOS11.1(5)B5_G1C5-  
01_02182519_install.bin  
Upgrade the device must be auto-reset after finish, are you sure upgrading  
now?[Y/n]y
```

❑ **Step 4** Verification AC version

```
Ruijie#show version
```

❑ **Step 5 Upgrade AP** . Copy both AP320I interim and latest firmware to WS5302.

```
copy tftp://192.168.1.100/AP_RGOS10.x_TO_11.x(Mid)_S1N2_02_02180521.bin  
flash:ap320-mid.bin
```

```
copy tftp://192.168.1.100/AP_RGOS11.1(5)B5_S1N2-02_02182520_install.bin  
flash:ap320i.bin
```


I Appendix : Upgrade from 10.4 to 11.x

□ Step 6 Set upgrade parameters on AC

```
Ruijie#configure terminal
Ruijie(config)#ac-controller
Ruijie(config-ac)#
Ruijie(config-ac)# active-bin-file ap320i.bin
Ruijie(config-ac)# active-bin-file ap320-mid.bin rgos10
Ruijie(config-ac)# ap-serial 320 AP320-I hw-ver 1.x
Ruijie(config-ac)# ap-image auto-upgrade
Ruijie(config-ac)# ap-image ap320-up.bin 320
```

If AP320 is online now , AC will transfer firmware to it automatically, upgrade begins.
To check upgrade process , execute command :

```
Ruijie#show ap-config updating-list
```

□ Step 7 Verification AP version.

```
Ruijie#show version all
```

THANKS

Ruijie
Networks

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