



Altai Service Controller (SC1600) Training

V1.5

Date: By Technical Support
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Confidential Information
Not for Distribution

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Basic Specification Overview

Hardware Specifications



	SC 1600 specifications
CPU	Tilera Tile-Gx36 CPU (36-core)
CPU speed	1.2 GHz per core
RAM	2 x SODIMM DDR3 slots 2 x 2 GB DDR3 installed
Storage	1 GB Onboard NAND
Architecture	Tile GX
Gigabit ports	12
SFP ports	4
Micro USB	Yes
Standard forwarding	8 mpps
Fastpath forwarding	24 mpps
Throughput	Up to 16 Gbps
Throughput	Up to 16 Gbps
Concurrent users	2,500

Firmware Capacity

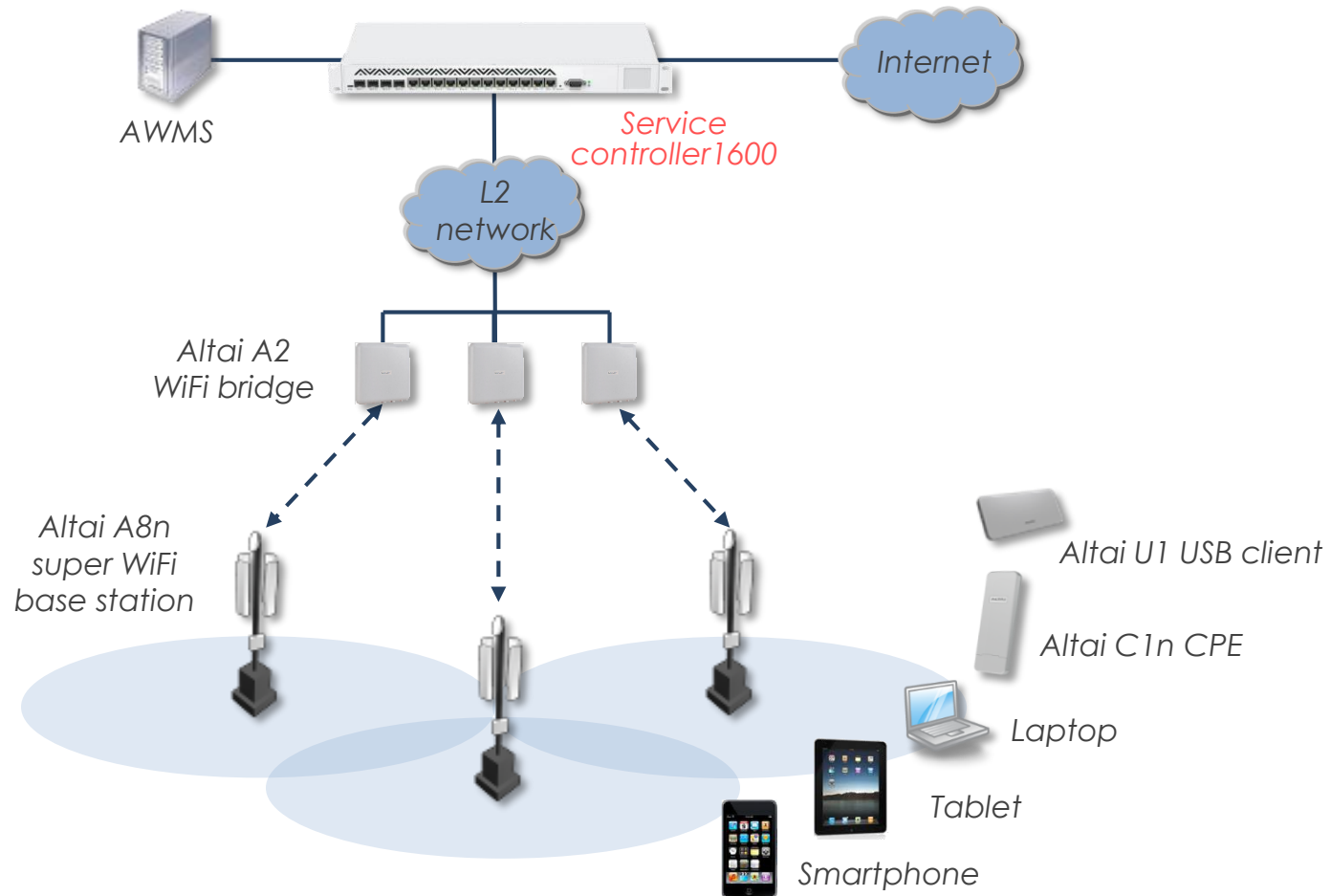
Firmware version	ROS v6 (64bit), level 6 license
Wireless AP	Yes
Wireless client and bridge	Yes
RIP, OSPF, BGP protocols	Yes
EoIP tunnel	Unlimited
PPPoE tunnel	Unlimited
PPTP tunnel	Unlimited
L2TP tunnel	Unlimited
OVPN tunnel	Unlimited
VLAN interfaces	Unlimited
P2P firewall rules	Unlimited
NAT rules	Unlimited
RADIUS client	Yes
Queues	Unlimited
Web proxy	Yes
Synchronous interface	Yes

Physical & Electrical Specifications

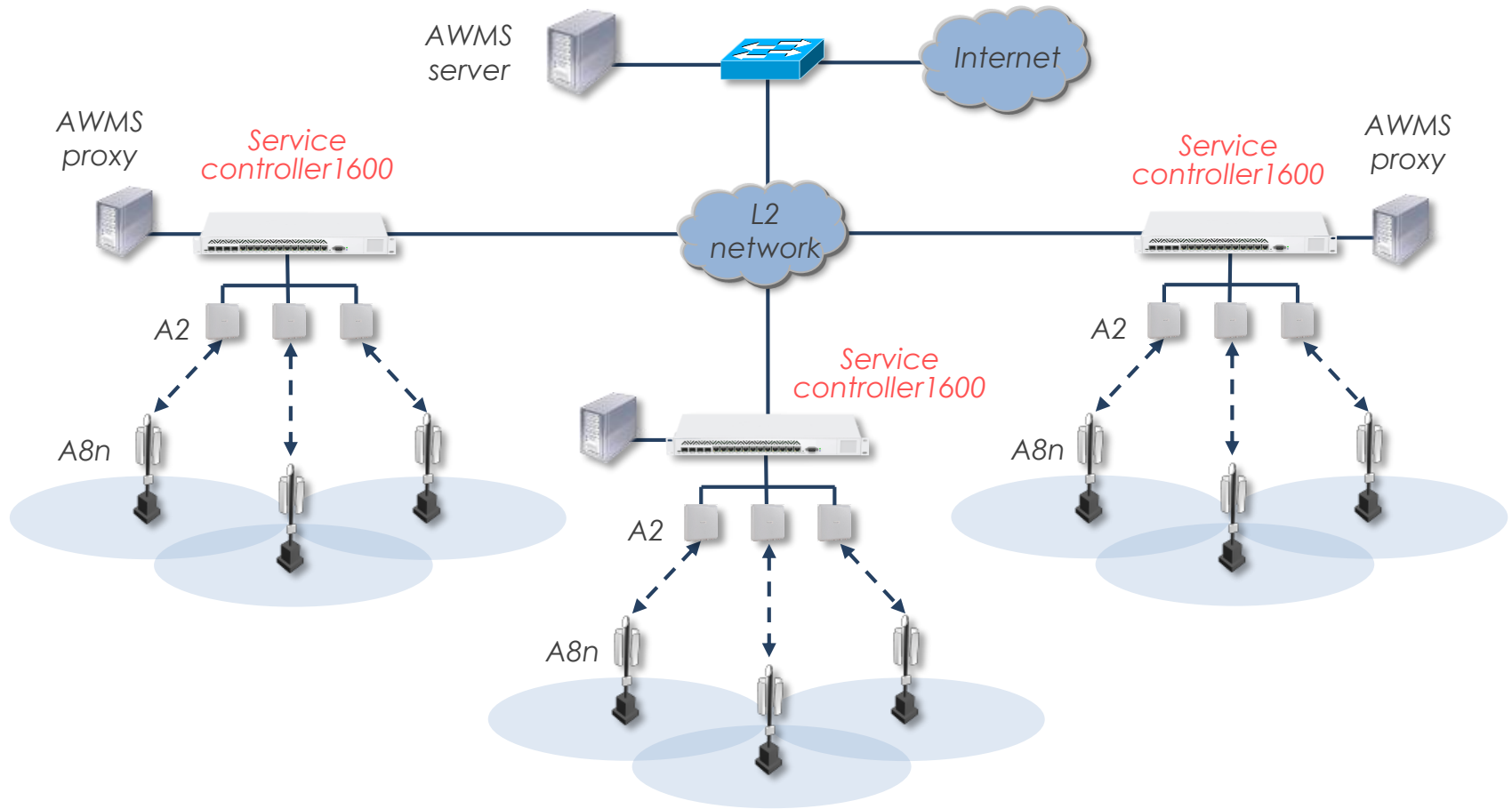
	Specifications
Case	1U rack mount
Display	Color touchscreen LCD
Dimension (mm)	355mm x 145mm x 55mm
Temperature	Max 50°C at 1.2 GHz Max 70°C at 1GHz CPU core frequency
Power	IEC C14 standard connector 110/220V (PSU included) Up to 60W power consumption
Extras	Reset switch, speed controlled fan, beeper, voltage, current and temperature monitoring

Deployment Scenario and Market Applications

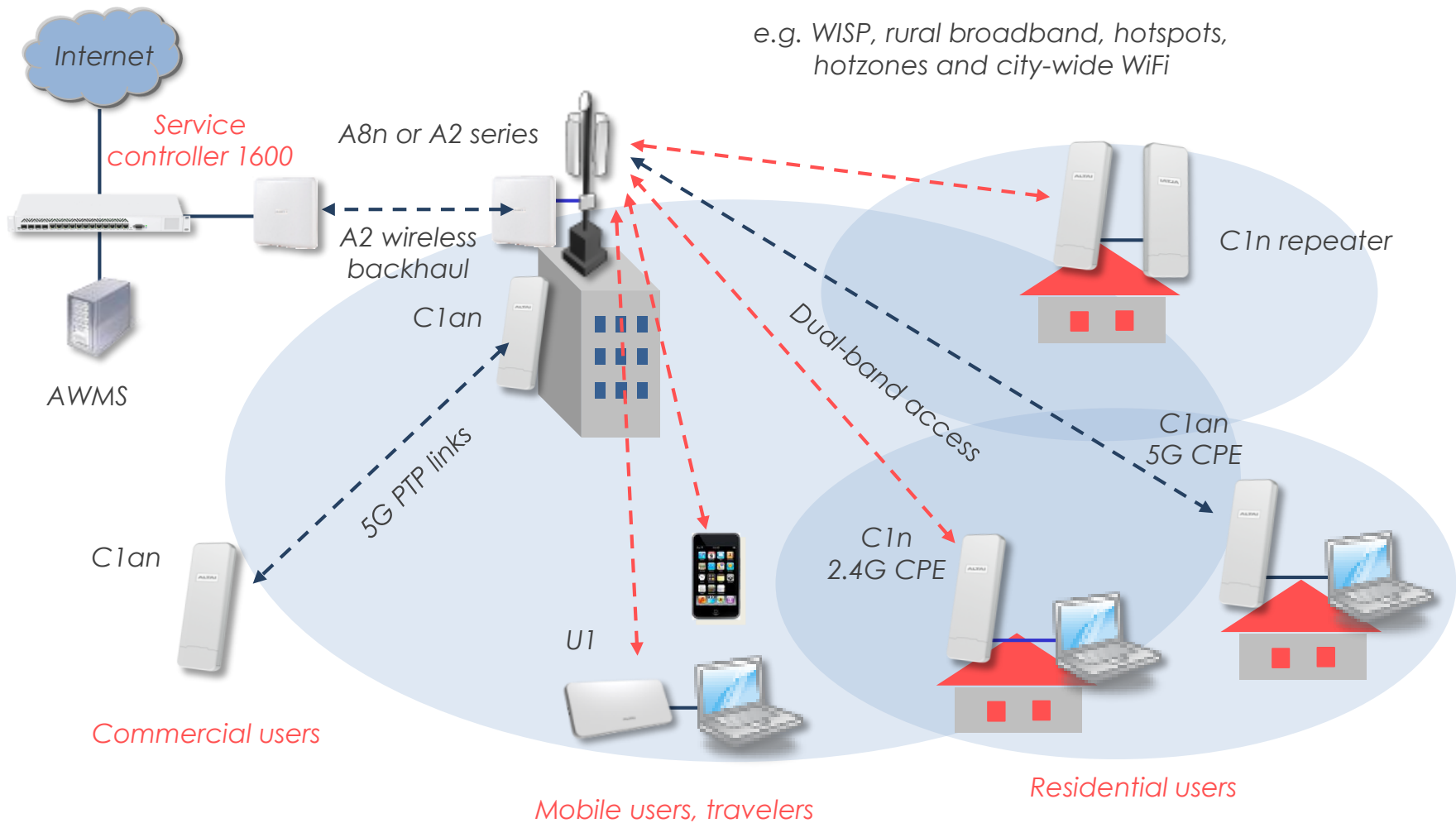
Single Region Deployment Scenario



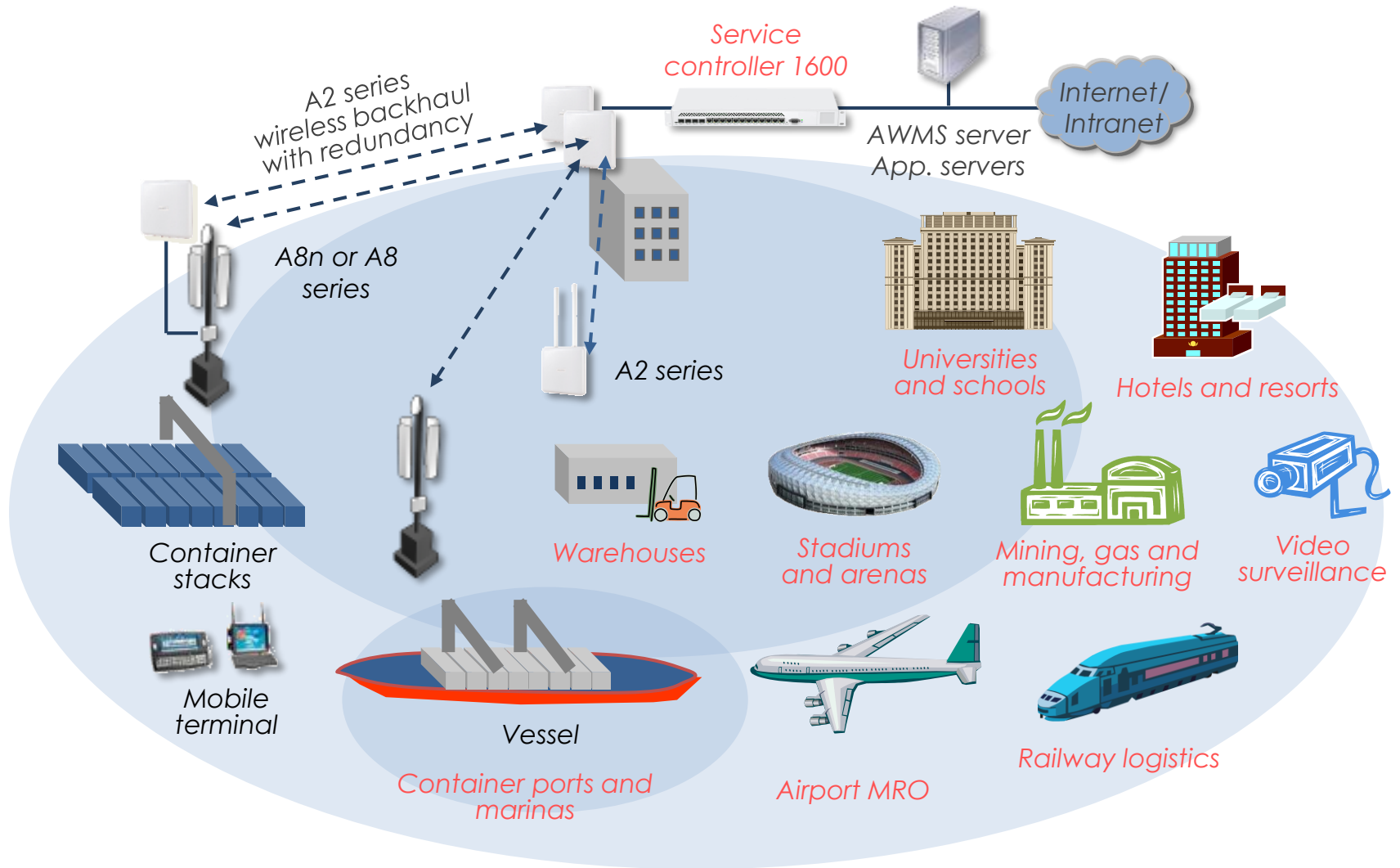
Multiple Regions Deployment Scenario



Wireless Broadband Application



Private Network Applications

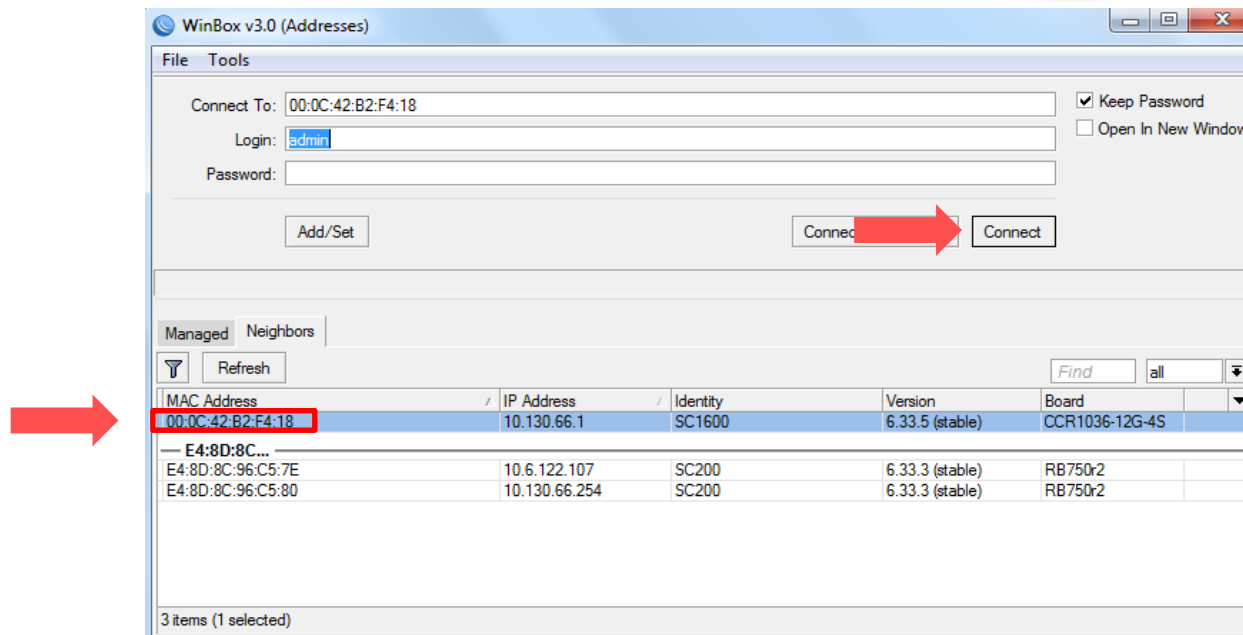


Product Features and Basic Configurations

Access to Service Controller (For First Login)

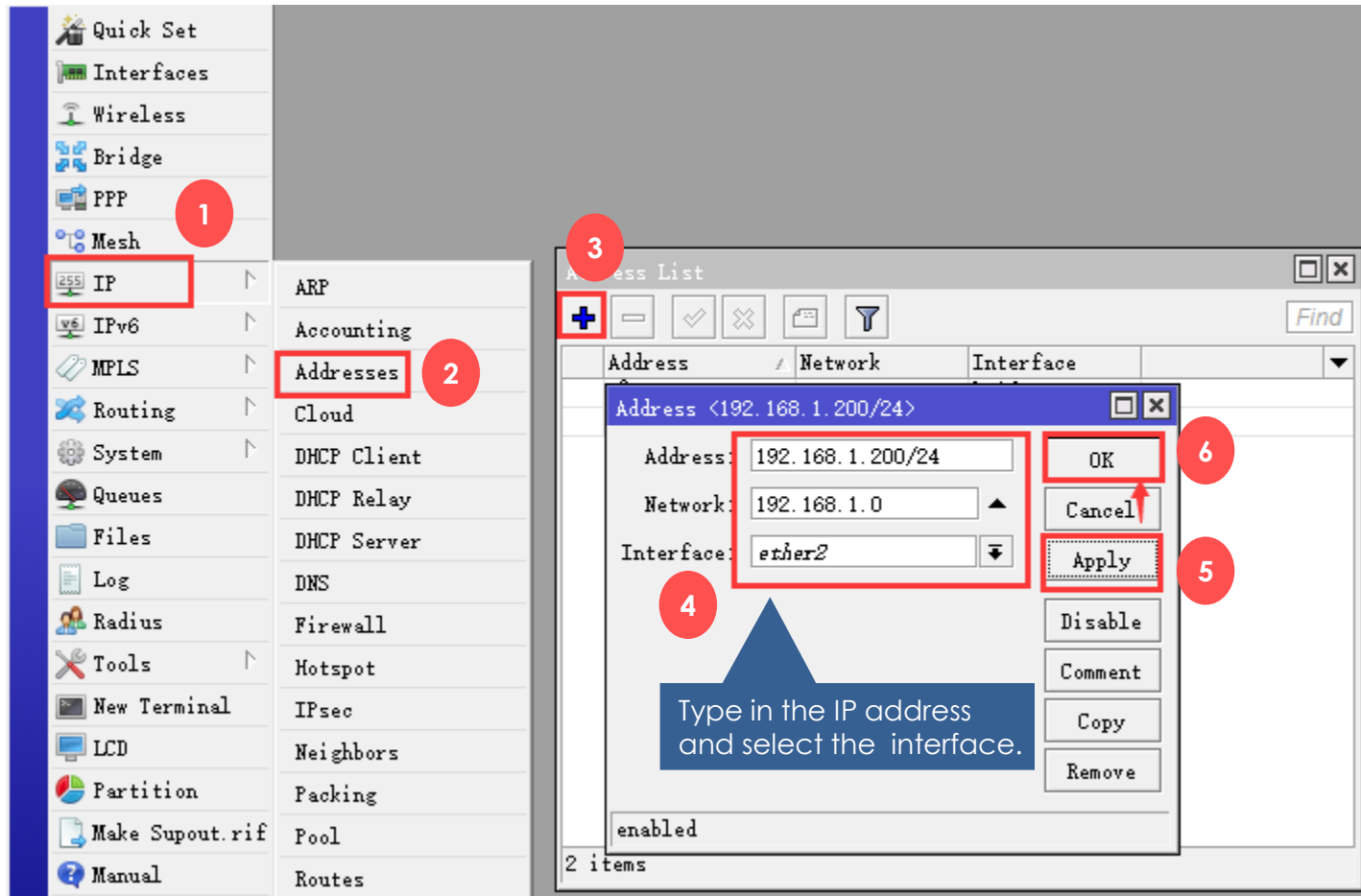
For first time access

- Connect the laptop to one of the GE interfaces
- Use WinBox as a tool to access SC locally
- Click the MAC address
- Default Login: admin; Password: Blank
- Click "Connect" button



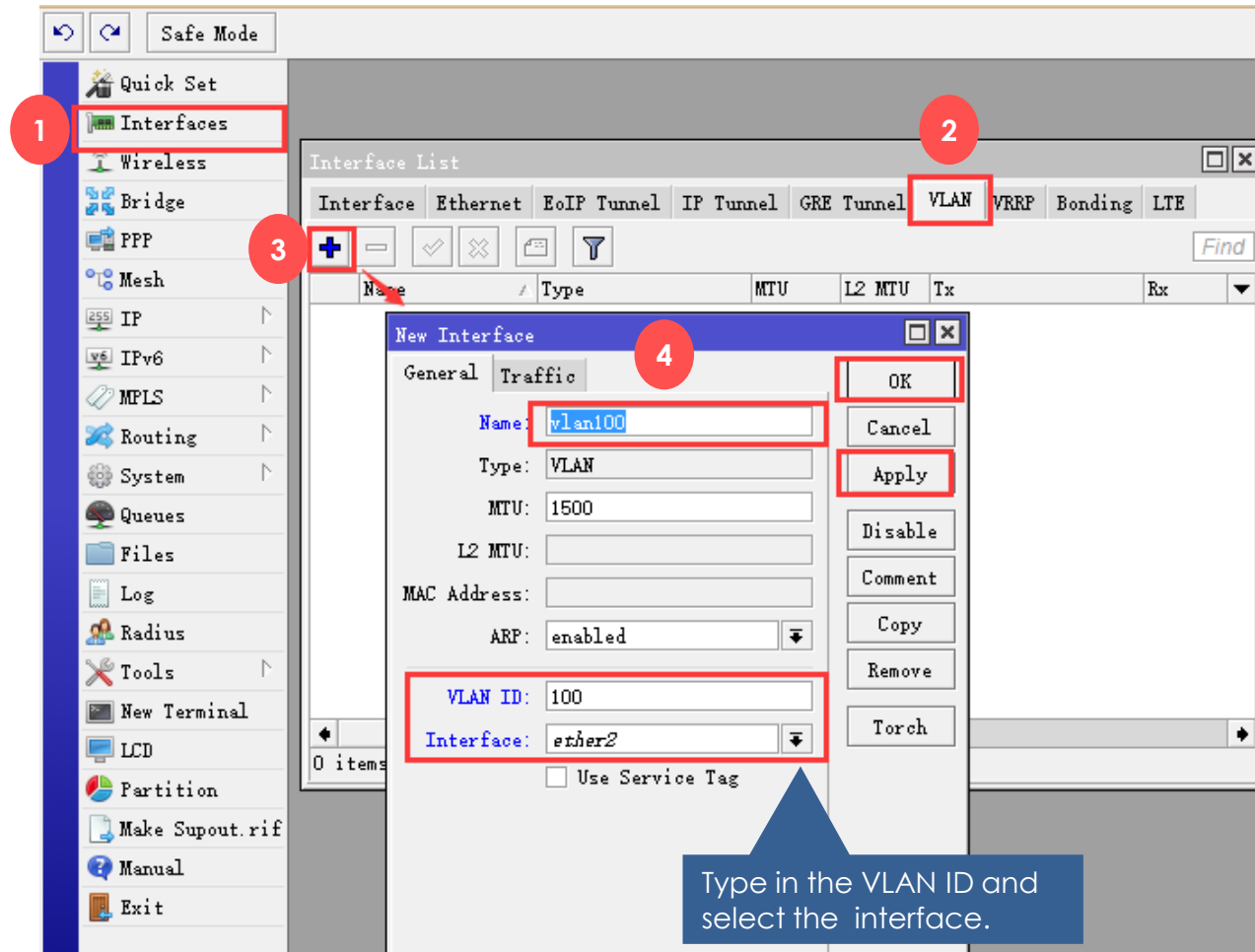
IP address Assignment

- Assign specified Interface an IP Address.
- Following screenshot shows an IP address assignment for VLAN Ethernet 2 as an example.



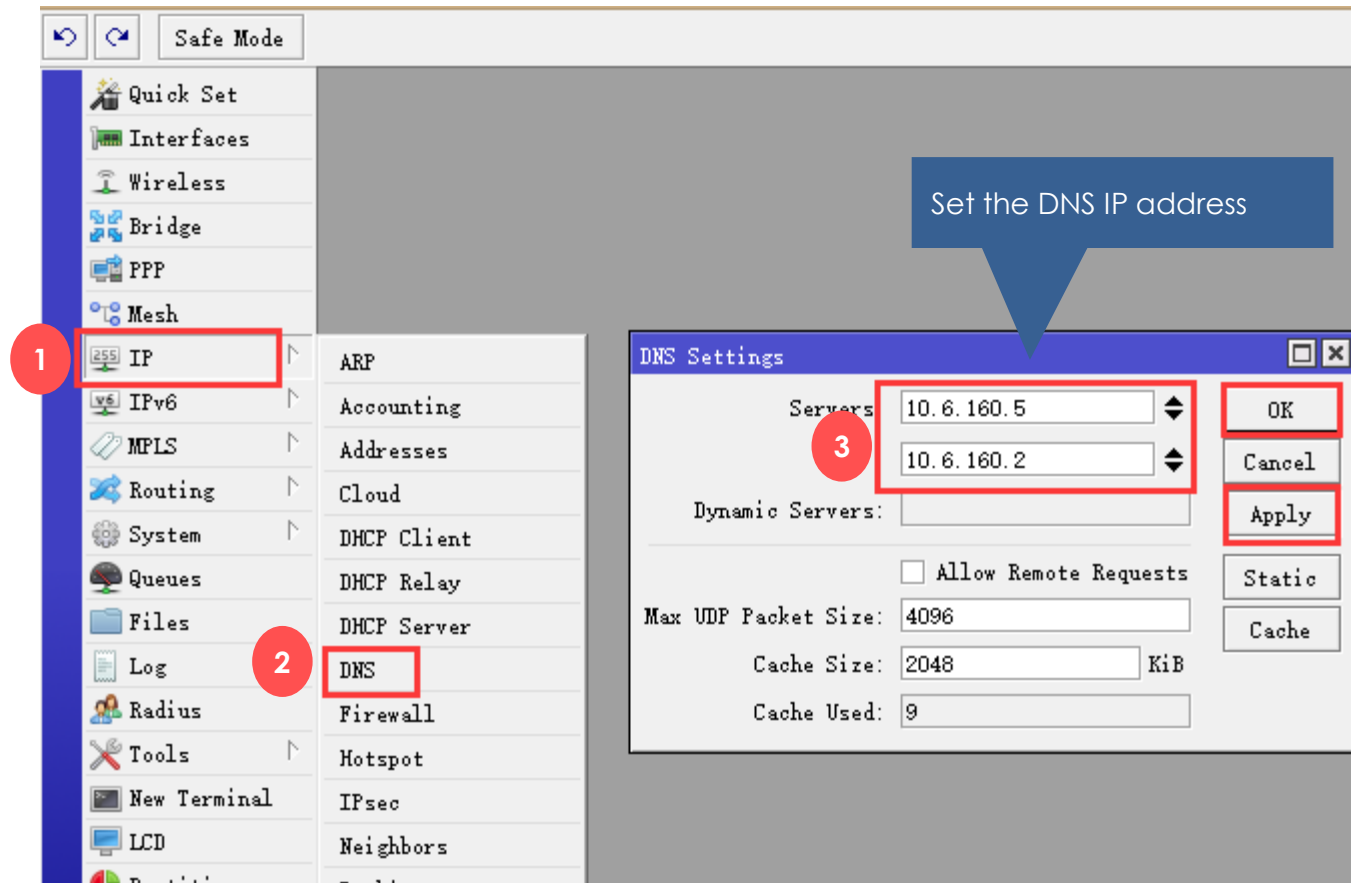
VLAN Creation

- Create the VLAN for specified interface;
- If multiple VLAN for one interface, the interface will be as trunk port.



DNS Setting

- Set DNS for the SC. It's mainly for the hotspot server.



Router Setting

- Set the default gateway for the SC.

The screenshot displays the ALTAI Super WiFi router configuration interface. The left sidebar contains a menu with various settings categories. The main area shows the 'New Route' configuration window.

Numbered steps for configuration:

1. Select **IP** in the left sidebar.
2. Select **Routes** in the left sidebar.
3. Click the **+** button to add a new route.
4. Set the **Gateway** to **192.168.1.1** in the 'New Route' window.

A callout box points to the Gateway field with the text: "Set the default gateway for the SC."

The 'New Route' window shows the following fields:

- General** tab selected.
- Dst. Address:** 0.0.0.0/0
- Gateway:** 192.168.1.1
- Check Gateway:** (dropdown menu)
- Type:** unicast
- Distance:** (dropdown menu)
- Scope:** 30
- Target Scope:** 10
- Routing Mark:** (dropdown menu)
- Pref. Source:** (dropdown menu)

Buttons on the right side of the 'New Route' window include: OK, Cancel, Apply, Disable, Comment, Copy, and Remove.

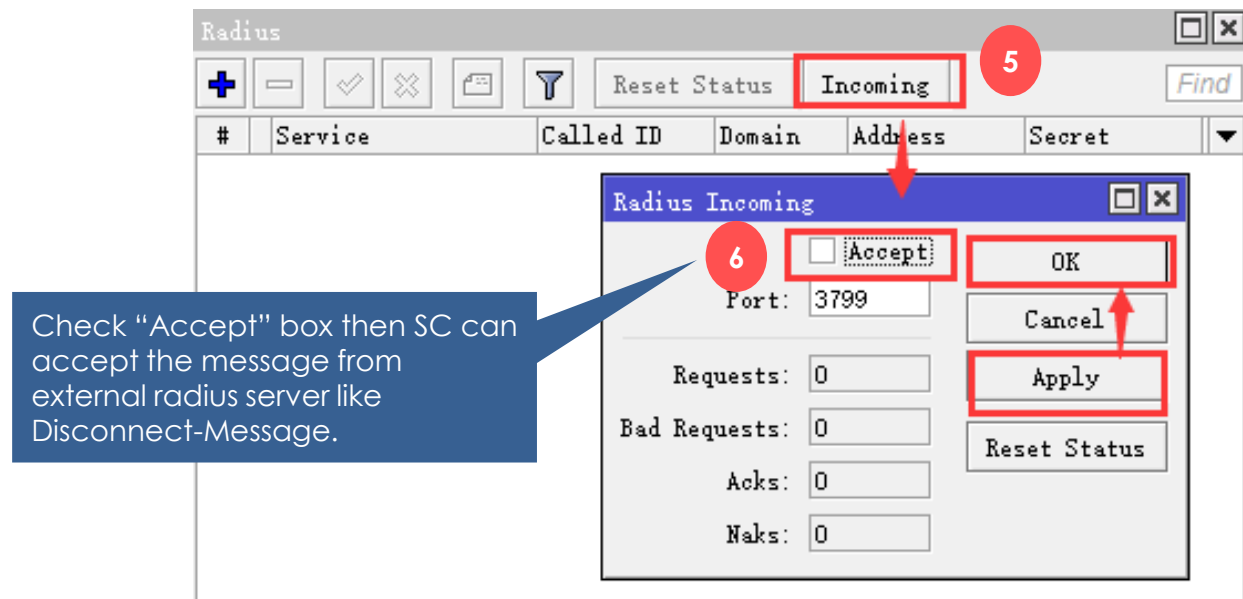
External Radius Server Setting

- Enable the SC support external radius server.

The screenshot shows the RouterOS WinBox interface. On the left sidebar, the 'Radius' menu item is highlighted with a red box and the number 1. In the main window, the 'Radius' tab is active. A red box with the number 2 highlights the '+' button in the top toolbar. A red box with the number 3 highlights the 'General' tab and the 'Service' section, which contains checkboxes for 'PPP', 'hotspot', 'dhcp', 'login', and 'wireless'. A red box with the number 4 highlights the 'Address' and 'Secret' input fields. A blue callout box points to the 'hotspot' checkbox with the text: 'Select the external radius server available for what kind of server. If the hotspot server need work with external server, then check the hotspot here.' Another blue callout box points to the 'Address' and 'Secret' fields with the text: 'Type in the external radius server IP and secret.' The 'Address' field contains '0.0.0.0'. The 'Secret' field is empty. Other fields include 'Called ID', 'Domain', 'Authentication Port' (1812), 'Accounting Port' (1813), 'Timeout' (300 ms), 'Accounting Backup' (unchecked), 'Realm', and 'Src. Address'. The 'OK', 'Apply', 'Cancel', 'Disable', 'Comment', 'Copy', 'Remove', and 'Reset Status' buttons are on the right. The status at the bottom is 'enabled'.

External Radius Server Setting

- Enable the SC support external radius server.



Hotspot Server Setting

- It is mainly for Portal Authentication and MAC Authentication on users.

The screenshot displays the ALTA Super WiFi configuration interface. On the left, a sidebar menu contains various system settings. A red box labeled '1' highlights the 'IP' option. To the right of the sidebar, a list of services is shown, with 'Hotspot' highlighted by a red box labeled '2'. The main window is titled 'Hotspot' and contains several tabs: 'Servers', 'Server Profiles', 'Users', 'User Profiles', 'Active', 'Hosts', 'IP Bindings', 'Service Ports', and 'Walled Garden'. The 'Servers' tab is selected and highlighted by a red box labeled '3'. Below the tabs, there are icons for adding, deleting, and filtering servers, along with a 'Reset HTML' button and a 'Hotspot Setup' button highlighted by a red box labeled '4'. A table with columns 'Name', 'Interface', 'Address Pool', 'Profile', and 'Address...' is visible. A modal dialog box titled 'Hotspot Setup' is open, showing the text 'Select interface to run HotSpot on'. Inside the dialog, the 'HotSpot Interface:' dropdown menu is set to 'vlan100' and is highlighted by a red box labeled '5'. At the bottom of the dialog, there are 'Back', 'Next' (highlighted by a red box labeled '6'), and 'Cancel' buttons. A blue callout box points to the 'Next' button with the text: 'Select the interface applied with the hotspot server.'

Hotspot Server Setting

Hotspot Setup

Set HotSpot address for interface

Local Address of Network: 10.5.50.1/24

☒ Masquerade Network

7

Back Next Cancel

Hotspot Setup

Set pool for HotSpot addresses

Address Pool of Network: 10.5.50.2-10.5.50.25

8

Back Next Cancel

Hotspot Setup

Select hotspot SSL certificate

Select Certificate: none

9

Back Next Cancel

Hotspot Setup

Select SMTP server

IP Address of SMTP Server: 0.0.0.0

10

Back Next Cancel

Hotspot Setup

Setup DNS configuration

DNS Servers: 10.6.160.5

10.6.160.2

11

Back Next Cancel

Hotspot Setup

DNS name of local hotspot server

DNS Name: www.training.com

12

Back Next Cancel

Hotspot Setup

Create local HotSpot user

Name of Local HotSpot User: admin

Password for the User:

13

Back Next Cancel

. If it is left blank, the portal login page will show the virtual IP address of the VLAN VRRP group; Otherwise, domain name will be turned up in the URL link of portal login page

Hotspot Server Setting — Portal Authentication

Hotspot

Servers **Server Profiles** Users User Profiles Active Hosts

+ - Filter

Name	DNS Name	HTML Directory	Rate
default		hotspot	
hsprofil	www.training.com	hotspot	

Hotspot Server Profile <hsprofil>

General Login RADIUS

Name: hsprofil

Hotspot Address: 10.5.50.1

DNS Name: www.training.com

HTML Directory: hotspot

Rate Limit (rx/tx):

HTTP Proxy:

HTTP Proxy Port: 0

SMTP Server:

OK Cancel Apply Copy

default

Double click the Hotspot profile you just create.

Select the HTML Directory (Login portal page). "Hotspot" is default login page, you can download it and customize it then upload to SC. (The way to download and upload file to SC will be present in below section.)

Hotspot Server Setting — Portal Authentication

4

Hotspot Server Profile <hsprofil>

General Login **RADIUS**

— Login By —

☐ MAC ☐ Cookie

☒ HTTP CHAP ☐ HTTPS

☐ HTTP PAP ☐ Trial

☐ MAC Cookie

Auth. Password:

Cookie Lifetime: 3d 00:00:00

Certificate: none

☐ Split User Domain

Trial Uptime Limit: 00:30:00

Trial Uptime Reset: 1d 00:00:00

Trial User Profile: default

default

OK Cancel Apply Copy Remove

Select HTTP CHAP/PAP as portal protocol

User Account (Username/Password) will be defined in external RADIUS server.

5

Hotspot Server Profile <hsprofil>

General Login **RADIUS**

☒ Use RADIUS

Default Domain:

Location ID:

Location Name:

MAC Format: XX:XX:XX:XX:XX:XX

☒ Accounting

Interim Update:

NAS Port Type: 19 (wireless-802.11)

default

OK Cancel Apply Copy Remove

Hotspot Server Setting — Portal Authentication

- If built-in radius server used for the hotspot instead of external radius server, then you need to create account with client username/password in SC for portal authentication.

Hotspot

Users **User Profiles** Active Hosts

2 **+**

1 Create user profile with necessary settings like Idle timeout

3

New Hotspot User Profile

General Queue Advertise Scripts

Name: uprofl

Address Pool: none

Session Timeout:

Idle Timeout: none

Keepalive Timeout: 00:02:00

Status Autorefresh: 00:01:00

Shared Users: 1

Rate Limit (rx/tx):

☒ Add MAC Cookie

MAC Cookie Timeout: 3d 00:00:00

Address List:

Incoming Filter:

Outgoing Filter:

Incoming Packet Mark:

Outgoing Packet Mark:

Open Status Page: always

☒ Transparent Proxy

OK Cancel Apply Copy Remove

Hotspot

Server Profiles **Users** User Profiles Active Hosts IP Bind

4

5 **+**

6

New Hotspot User

General Limits Statistics

Server: all

Name: user1

Password:

Address:

MAC Address:

Profile: Profile1

Routes:

Email:

OK Cancel Apply Disable Comment Copy Remove Reset Counters Reset All Counters

enabled

Create the user with the username/password, available hotspot server and profile just created.

Hotspot Server Setting — Mac Address Authentication

1 Click on the **Server Profiles** tab in the top navigation bar.

Name	DNS Name	HTML Directory	Rate Limit (r...
default		hotspot	
hsprof1	www.training.com	hotspot	

2 Double click the Hotspot profile you just create (hsprof1).

3 In the **Hotspot Server Profile <hsprof12>** dialog, select **Login** and **RADIUS** tabs. Under **Login By**, select ☒ **MAC**. Under **MAC Auth. Mode**, select **MAC as username**.

4 Click **OK** to save the settings.

Double click the Hotspot profile you just create.

Select login type as MAC and select the MAC as username for MAC Auth. Mode

User Account (Username/Password) will be defined in external RADIUS server.

4 In the **Hotspot Server Profile <hsprof1>** dialog, click on the **RADIUS** tab. Check ☒ **Use RADIUS**.

Default Domain:

Location ID:

Location Name:

MAC Format:

☒ Accounting

Interim Update:

NAS Port Type:

default

OK, Cancel, Apply, Copy, Remove buttons are visible on the right.

Hotspot Server Setting — Portal Authentication

- If built-in radius server used for the hotspot instead of external radius server, then you need to create account with client mac address as username/password in SC for mac authentication.

Hotspot

Users **User Profiles** Active Hosts

1 Create user profile with necessary settings like Idle timeout

2

Name	Session T...	Idle Timeout	Rate Limit (r...
default		none	1

New Hotspot User Profile

General Queue Advertise Scripts

3

Name: uprofl

Address Pool: none

Session Timeout:

Idle Timeout: none

Keepalive Timeout: 00:02:00

Status Autorefresh: 00:01:00

Shared Users: 1

Rate Limit (rx/tx):

☒ Add MAC Cookie

MAC Cookie Timeout: 3d 00:00:00

Address List:

Incoming Filter:

Outgoing Filter:

Incoming Packet Mark:

Outgoing Packet Mark:

Open Status Page: always

☒ Transparent Proxy

OK Cancel Apply Copy Remove

Hotspot

Server Profiles **Users** User Profiles Active Hosts IP Bind...

4

5

Server	Name	Address	MAC Address
all	admin		

New Hotspot User

General Limits Statistics

6

Server: all

Name: user1

Password:

Address:

MAC Address:

Profile: Profile1

Routes:

Email:

OK Cancel Apply Disable Comment Copy Remove Reset Counters Reset All Counters

enabled

Create the user with the username/password, available hotspot server and profile just created.

Hotspot Server Setting — Trial User

- You can provide the trial internet for the client with the specified trial time. After trial time finish, the login page will pop up automatically.

Hotspot

Servers **Server Profiles** Users User Profiles Active Hosts

Name	DNS Name	HTML Direct	Rat
default		hotspot	
hsprofl	www.training.com	hotspot	

Hotspot Server Profile <hsprofl>

General **Login** RADIUS

— Login By —

☐ MAC ☐ Cookie

☒ HTTP CHAP ☐ HTTPS

☐ HTTP PAP ☒ Trial

☐ MAC Cookie

MAC Auth. Password:

HTTP Cookie Lifetime: 3d 00:00:00

SSL Certificate: none

☐ Split User Domain

Trial Uptime Limit: 00:30:00

Trial Uptime Reset: 1d 00:00:00

Trial User Profile: default

OK Cancel Apply Copy Remove

Double click the Hotspot profile you just create.

Set the trial time / uptime reset/ user profile for the trial service.

Hotspot Server Setting — Walled Garden

- Specified webpage or server can be allowed in walled garden before user pass the authentication, mainly used for the case that user will be redirect to specified webpage for registering or buying the account before login.

The screenshot displays the ALTA Super WiFi configuration interface. On the left sidebar, the 'IP' menu item is highlighted (1), and the 'Hotspot' sub-menu is selected (2). The main window shows the 'Walled Garden IP List' tab (3). A red box highlights the 'Add' button (+) (4). A dialog box titled 'New Walled Garden IP Entry' is open, showing the 'Action' set to 'accept' (5), the 'Server' set to 'hotspot1', and the 'Dst. Address' set to '0.0.0.0'. The dialog also includes fields for 'Src. Address', 'Protocol', 'Dst. Port', and 'Dst. Host', along with buttons for 'OK', 'Cancel', 'Apply', 'Disable', 'Comment', 'Copy', and 'Remove'. The status 'enabled' is shown at the bottom of the dialog.

Set the Action/Hotspot server available/target destination address to be allowed/dropped/rejected.

Bandwidth Control — Based on IP address

- Create Queues to limit the bandwidth based on the IP address so that every IP address will get the same bandwidth control.

Queue List

#	Name	Target	Upload Max Limit	Download Max ...	Packet
0	hs-<hotspot1>	vlan100	unlimited	unlimited	

New Simple Queue

General | Advanced | Statistics | Traffic | Total | Total Statistics

Name: Training

Target: 0.0.0.0/0

Dst.:

Target Upload		Target Download	
Max Limit:	<u>unlimited</u> bits/s	<u>unlimited</u> bits/s	
Burst			
Burst Limit:	<u>unlimited</u> bits/s	<u>unlimited</u> bits/s	
Burst Threshold:	<u>unlimited</u> bits/s	<u>unlimited</u> bits/s	
Burst Time:	<u>0</u> s	<u>0</u> s	
Time			
Time: <u>00:00:00</u> - <u>1d 00:00:00</u>			
☒ sun	☒ mon	☒ tue	☒ wed
☒ thu	☒ fri	☒ sat	

enabled

Buttons: OK, Cancel, Apply, Disable, Reset Counters, Reset All Counters, Torch

Callouts:

- 1: Select 'Queues' in the left sidebar.
- 2: Click the '+' button to add a new queue.
- 3: Configure the 'New Simple Queue' dialog.

Apply the queues to the specified IP range.

Set the bandwidth control for this queues.

Bandwidth Control — Based on Users (1)

- Different user will get different bandwidth control: If the user created in SC, then set the bandwidth limitation in SC for the user directly.

The screenshot illustrates the WinBox interface with the following steps highlighted by red boxes and numbers:

- 1**: Select **IP** in the left sidebar.
- 2**: Select **Hotspot** in the left sidebar.
- 3**: Select the **Users** tab in the Hotspot section.
- 4**: Click the **+** button to add a new user.
- 5**: In the **New Hotspot User** dialog, select the **Limits** tab and configure the bandwidth limitations (Limit Uptime, Limit Bytes In, Limit Bytes Out, Limit Bytes Total). The **OK**, **Cancel**, and **Apply** buttons are also highlighted.

A blue callout box at the bottom of the dialog states: "Set the bandwidth limitation for the user."

Bandwidth Control — Based on Users (2)

- Different user will get different bandwidth control: If the SC work with the external radius server, and the users created in the radius server, then the radius server need to include the bandwidth limit attribute in the access-accept message.

Mikrotik-Recv-Limit - total receive limit in bytes for the client

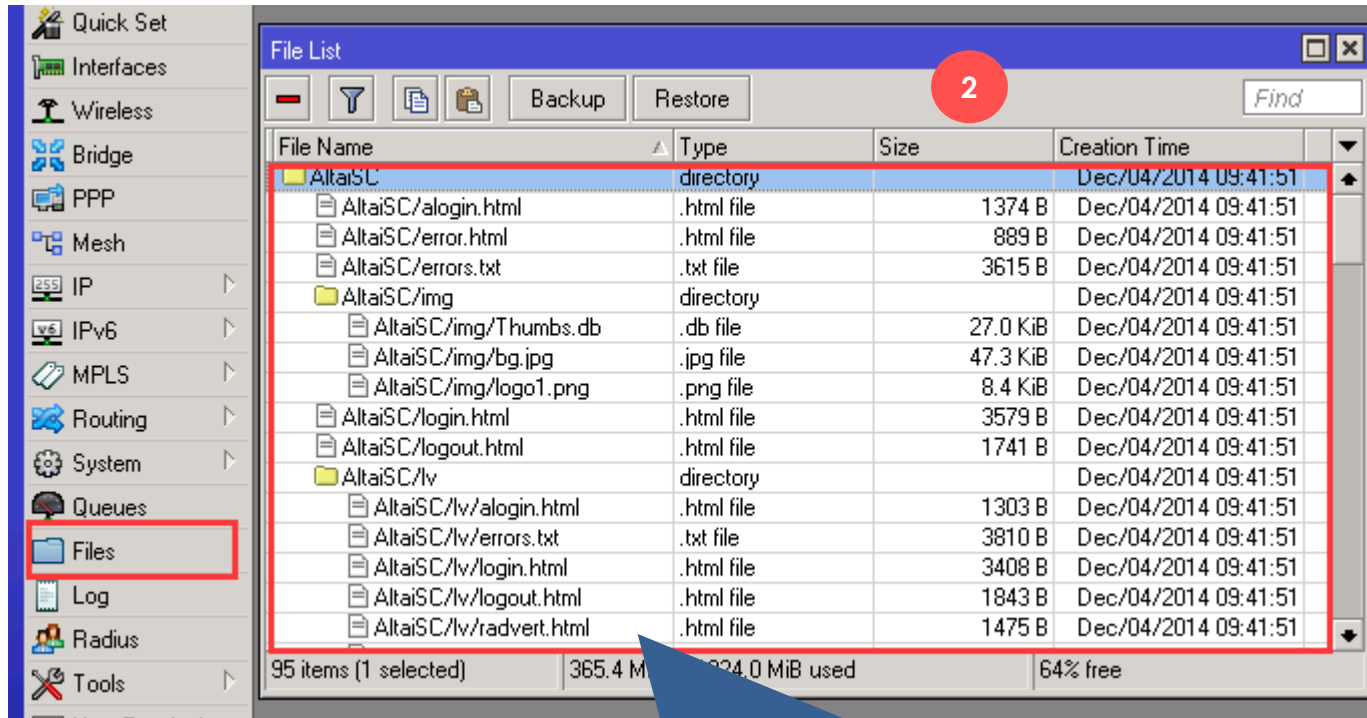
Mikrotik-Recv-Limit-Gigawords - 4G (2^{32}) bytes of total receive limit (bits 32..63, when bits 0..31 are delivered in Mikrotik-Recv-Limit)

Mikrotik-Xmit-Limit - total transmit limit in bytes for the client

Mikrotik-Xmit-Limit-Gigawords - 4G (2^{32}) bytes of total transmit limit (bits 32..63, when bits 0..31 are delivered in Mikrotik-Recv-Limit)

Hotspot File and Director

- Default/customized Hotspot HTML Portal Pages are stored in the following folder under root directory.



Folder and Files can be transfer by simply "Drag and Drop" method.

Note: Make sure the hotspot folder are located under root directory!

Hotspot File and Director

- Another way for file transfer: FTP

The image shows two screenshots illustrating the process of setting up and using FTP for file transfer on a RouterOS device.

Left Screenshot (RouterOS WinBox): The 'Services' menu item is highlighted with a red box and a red circle labeled '1'. The 'IP' menu item is also highlighted with a red box and a red circle labeled '2'.

Right Screenshot (FileZilla): The 'IP Service List' window shows the 'ftp' service enabled, highlighted with a red circle labeled '2'. A blue callout bubble points to this service with the text: "Make sure the FTP service enable in the SC." The FileZilla interface shows a successful connection to the host 10.130.23.248 with username 'admin' and password '*****'. The local site is 'C:\Users\taylorwan\Desktop\HKE\SC Config\HEC_Guest_Hotspot\' and the remote site is '/'. The remote site directory listing shows several folders and files, including 'HEC_Guest_Hotspot', 'HEC_Public_Hotspot', 'HEC_Public_Hotspot_v2', 'Site Survey', and 'Technical Meeting - 20160127'. A blue callout bubble points to the FileZilla interface with the text: "Suggest using FTP instead of 'drag and drop' for clear picture of file structure".

Connect and Login Hotspot Client Checking

The screenshot displays the ALTAI Super WiFi management interface. On the left sidebar, the 'IP' menu item is highlighted with a red box and labeled with a red circle '1'. Below it, the 'Tools' menu item is highlighted with a red box and labeled with a red circle '2'. In the main content area, the 'Hotspot' menu item is highlighted with a red box. To the right, the 'Hotspot' configuration page is shown, with the 'Active' and 'Hosts' tabs highlighted with red boxes and labeled with a red circle '3'. Two blue callout boxes provide instructions: 'Active: Check the login users.' and 'Hosts: Check the connect users.'

1

2

3

Hotspot

Server Profiles Users User Profiles Active Hosts IP Bindings Ser

MAC Address To Add

Active: Check the login users.

Hosts: Check the connect users.

0 items

Logging - Local

admin@10.130.23.248 (CP-ALTAI-SC01) - WinBox v6.33.3 on CCR1036-12G-4S (tile)

Sessions Settings Dashboard

Safe Mode Session: 10.130.23.248

Log

Freeze

all

Jun/15/2016 12:52:37	memory	hotspot, account, info...	34:4D:F7:3A:C5:C7 (10.130.44.205): logged in
Jun/15/2016 12:52:42	memory	hotspot, info, debug	34:4D:F7:3A:C5:C7 (10.130.44.205): logged out: host removed: limiting addresses per mac
Jun/15/2016 12:52:42	memory	hotspot, info, debug	34:4D:F7:3A:C5:C7 (10.130.44.206): trying to log in by mac
Jun/15/2016 12:52:42	memory	hotspot, account, info...	34:4D:F7:3A:C5:C7 (10.130.44.206): logged in
Jun/15/2016 12:52:42	memory	hotspot, info, debug	34:4D:F7:3A:C5:C7 (10.130.44.206): logged out: host removed: limiting addresses per mac
Jun/15/2016 12:52:42	memory	hotspot, info, debug	34:4D:F7:3A:C5:C7 (10.130.44.205): trying to log in by mac
Jun/15/2016 12:52:42	memory	hotspot, account, info...	34:4D:F7:3A:C5:C7 (10.130.44.205): logged in
Jun/15/2016 12:54:54	memory	hotspot, info, debug	34:4D:F7:3A:C5:C7 (10.130.44.205): logged out: keepalive timeout
Jun/15/2016 13:15:02	memory	dhcp, info	dhcp7 deassigned 10.130.44.225 from 6C:72:E7:8D:A7:FD
Jun/15/2016 13:18:33	memory	hotspot, info, debug	34:4D:F7:3A:C5:C7 (10.130.44.205): trying to log in by mac
Jun/15/2016 13:18:33	memory	hotspot, account, info...	34:4D:F7:3A:C5:C7 (10.130.44.205): logged in
Jun/15/2016 13:18:50	memory	dhcp, info	dhcp7 assigned 10.130.44.225 to 6C:72:E7:8D:A7:FD
Jun/15/2016 13:18:52	memory	hotspot, info, debug	6C:72:E7:8D:A7:FD (10.130.44.225): trying to log in by mac
Jun/15/2016 13:18:52	memory	hotspot, account, info...	6C:72:E7:8D:A7:FD (10.130.44.225): logged in
Jun/15/2016 13:26:36	memory	system, info, account	user admin logged in from 10.130.65.254 via ftp
Jun/15/2016 13:28:27	memory	system, info, account	user admin logged out from 10.130.65.254 via winbox
Jun/15/2016 13:31:38	memory	system, info, account	user admin logged out from 10.130.65.254 via ftp
Jun/15/2016 13:52:22	memory	hotspot, info, debug	6C:72:E7:8D:A7:FD (10.130.44.225): logged out: keepalive timeout
Jun/15/2016 13:55:40	memory	system, info, account	user admin logged in from 10.130.65.254 via winbox
Jun/15/2016 13:59:17	memory	system, info, account	user admin logged out from 10.130.65.254 via winbox
Jun/15/2016 14:09:00	memory	hotspot, info, debug	6C:72:E7:8D:A7:FD (10.130.44.225): trying to log in by mac
Jun/15/2016 14:09:00	memory	hotspot, account, info...	6C:72:E7:8D:A7:FD (10.130.44.225): logged in
Jun/15/2016 14:10:44	memory	system, info, account	user admin logged in from 10.130.65.254 via winbox
Jun/15/2016 14:32:00	memory	hotspot, info, debug	34:4D:F7:3A:C5:C7 (10.130.44.205): logged out: keepalive timeout
Jun/15/2016 15:11:06	memory	hotspot, info, debug	6C:72:E7:8D:A7:FD (10.130.44.225): logged out: keepalive timeout
Jun/15/2016 15:16:12	memory	dhcp, info	dhcp7 deassigned 10.130.44.205 from 34:4D:F7:3A:C5:C7
Jun/15/2016 15:31:54	memory	system, info, account	user admin logged in from 10.130.65.254 via ftp
Jun/15/2016 15:32:51	memory	system, info, account	user admin logged in from 10.130.65.254 via ftp
Jun/15/2016 15:32:54	memory	system, info, account	user admin logged out from 10.130.65.254 via ftp
Jun/15/2016 15:33:45	memory	system, info, account	user admin logged in from 10.130.65.254 via ftp
Jun/15/2016 15:34:45	memory	system, info, account	user admin logged out from 10.130.65.254 via ftp
Jun/15/2016 15:38:15	memory	system, info, account	user admin logged out from 10.130.65.254 via ftp
Jun/15/2016 15:47:37	memory	dhcp, info	dhcp7 deassigned 10.130.44.225 from 6C:72:E7:8D:A7:FD

Logging – Remote

The screenshot illustrates the configuration of remote logging in RouterOS WinBox. The steps are numbered 1 through 9:

1. Click on the **System** menu in the sidebar.
2. Click on the **Logging** menu in the sidebar.
3. In the **Logging** window, click on the **Actions** tab.
4. In the **Actions** list, select **remote** as the log type.
5. Click on the **Log Action <remote>** dialog box.
6. Click the **OK** button in the **Log Action <remote>** dialog box.
7. In the **Logging** window, click on the **Rules** tab.
8. In the **New Log Rule** dialog box, select a topic from the **Topics** list.
9. In the **New Log Rule** dialog box, select an action from the **Action** dropdown menu.

The **Log Action <remote>** dialog box shows the following configuration:

- Name: remote
- Type: remote
- Remote Address: 10.130.65.11
- Remote Port: 514
- Src. Address: 0.0.0.0
- ☐ BSD Syslog

The **Logging** window shows the following rules:

Topics	Prefix	Action
* critical		echo
* critical		remote
* error		memory
* error		remote
* info		memory
* info		remote
* warning		memory
* warning		remote

Configuration Backup/Restore

admin@10.130.23.248 (CP-ALTAI-SC01) - WinBox v6.33.3 on CCR1036-12G-4S (tile)

Sessions Settings Dashboard

Safe Mode Session: 10.130.23.248

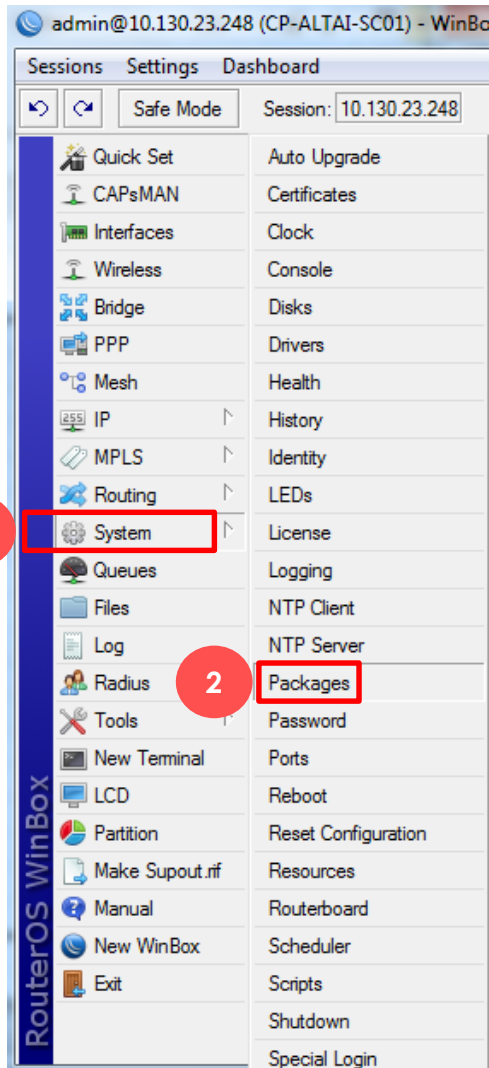
1 Quick Set CAPsMAN Interfaces Wireless Bridge PPP Mesh IP MPLS Routing System Queues **Files** Log Radius Tools New Terminal LCD Partition Make Supout.rf Manual New WinBox Exit

2 File List Backup Restore Find

File Name	Type	Size	Creation Time
CP-ALTAI-SC01-2.backup	backup	149.4 KiB	Dec/30/2015 18:47:21
CP-ALTAI-SC01-20160205.backup	backup	66.5 KiB	Feb/05/2016 16:12:53
CP-ALTAI-SC01-20160211.backup	backup	67.0 KiB	Feb/11/2016 15:11:11
CP-ALTAI-SC01-20160305.backup	backup	67.0 KiB	Mar/05/2016 12:22:15
CP-ALTAI-SC01-Backup.backup	backup	131.0 KiB	Dec/30/2015 17:07:47
HEC_Guest_Hotspot	directory		Jun/09/2016 21:54:12
HEC_Guest_Hotspot/login.html	.html file	1293 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/error.html	.html file	898 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/errors.txt	.txt file	3615 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/img	directory		Jun/09/2016 21:54:12
HEC_Guest_Hotspot/img/Alt...	.png file	5.1 KiB	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/img/hk...	.jpg file	27.3 KiB	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/login.html	.html file	6.1 KiB	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/logout.html	.html file	1813 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/lv	directory		Jun/09/2016 21:54:12
HEC_Guest_Hotspot/lv/alog...	.html file	1303 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/lv/error...	.txt file	3810 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/lv/logi...	.html file	3408 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/lv/logo...	.html file	1843 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/lv/radv...	.html file	1475 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/lv/stat...	.html file	2760 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/md5.js	.js file	6.8 KiB	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/radver.html	.html file	1481 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/redirect.html	.html file	318 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/rlogin.html	.html file	850 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/status.html	.html file	3009 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/xml	directory		Jun/09/2016 21:54:13
HEC_Guest_Hotspot/xml/WI...	.xsd file	4251 B	Jun/09/2016 21:54:13
HEC_Guest_Hotspot/xml/alo...	.html file	821 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/xml/err...	.html file	416 B	Jun/09/2016 21:54:12
HEC_Guest_Hotspot/xml/fl...	.html file	361 B	Jun/09/2016 21:54:13

158 items 149.3 MiB of 1024.0 MiB used 85% free

OS Upgrade



Package List

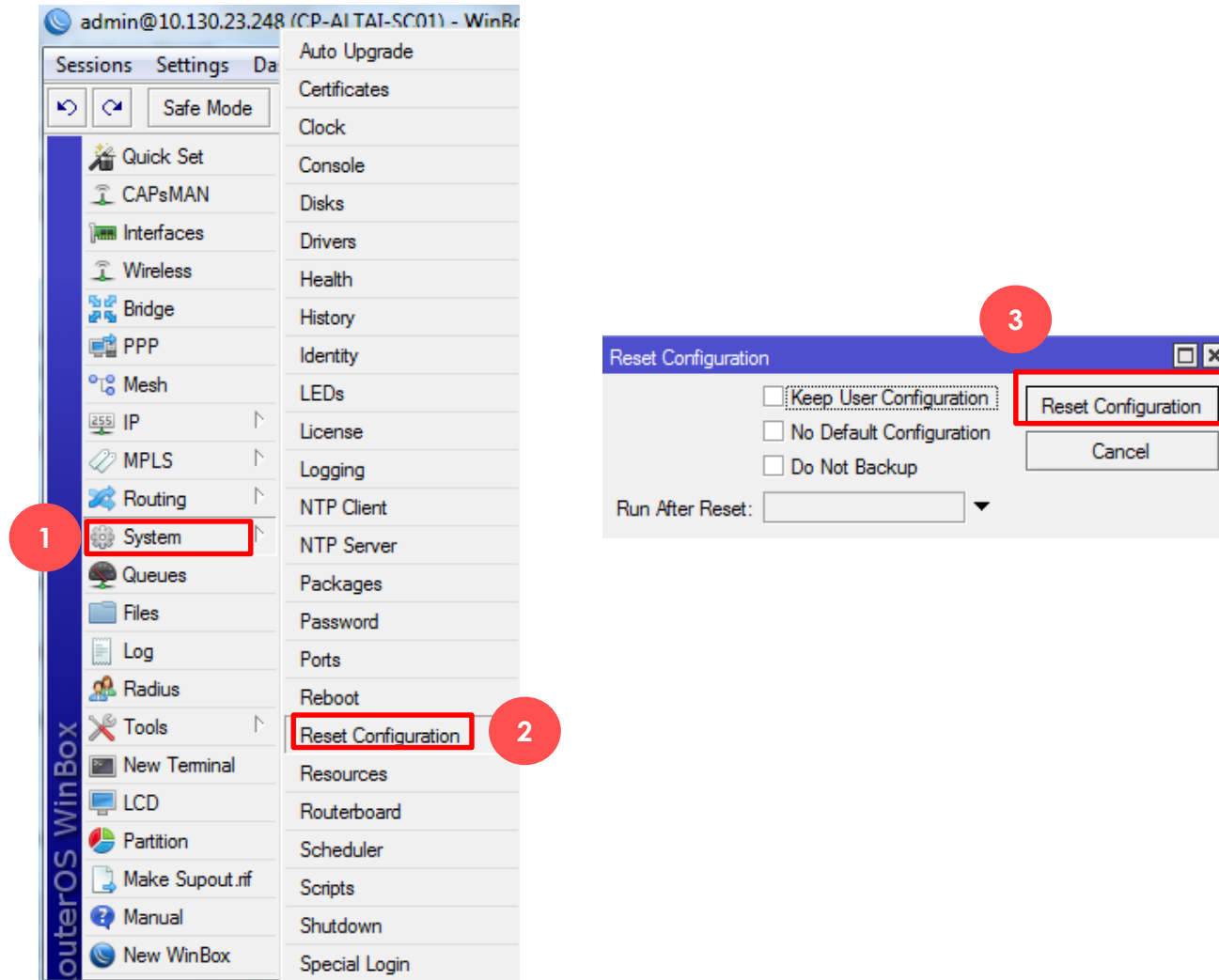
Check For Updates Enable Disable Uninstall Unschedule Downgrade Check Installation Find

Name	Version	Build Time	Scheduled
ntp	6.33.3	Dec/03/2015 16:08:10	
routeros-tile	6.33.3	Dec/03/2015 16:08:10	
advanced-t...	6.33.3	Dec/03/2015 16:08:10	
dhcp	6.33.3	Dec/03/2015 16:08:10	
hotspot	6.33.3	Dec/03/2015 16:08:10	
ipv6	6.33.3	Dec/03/2015 16:08:10	
mpls	6.33.3	Dec/03/2015 16:08:10	
ppp	6.33.3	Dec/03/2015 16:08:10	
routing	6.33.3	Dec/03/2015 16:08:10	
security	6.33.3	Dec/03/2015 16:08:10	
system	6.33.3	Dec/03/2015 16:08:10	
wireless-cm2	6.33.3	Dec/03/2015 16:08:10	
wireless-fp	6.33.3	Dec/03/2015 16:08:10	
user-manager	6.33.3	Dec/03/2015 16:08:10	

14 items

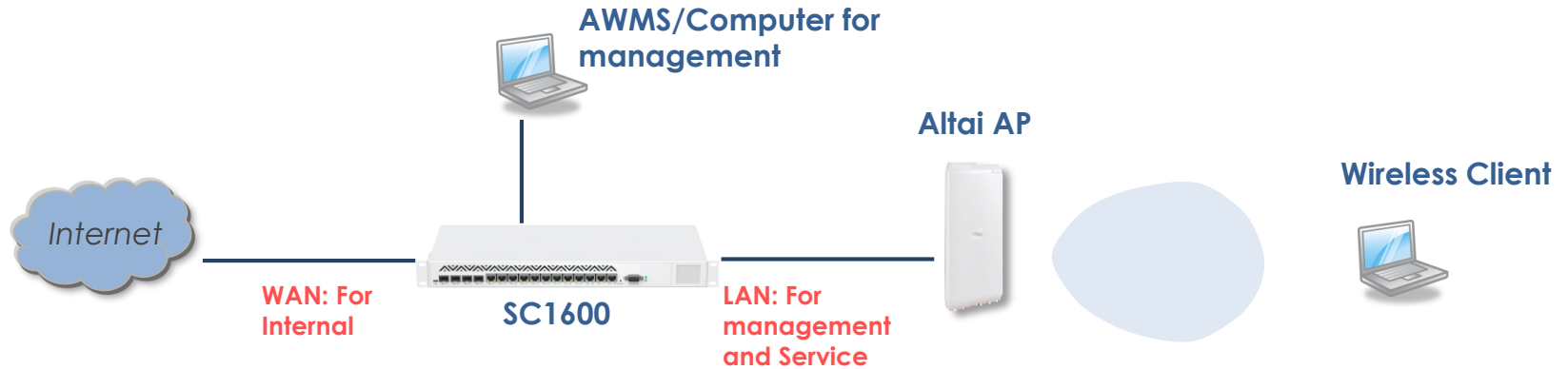
Showing all Components installed with current version

Factory Reset



Example Configuration

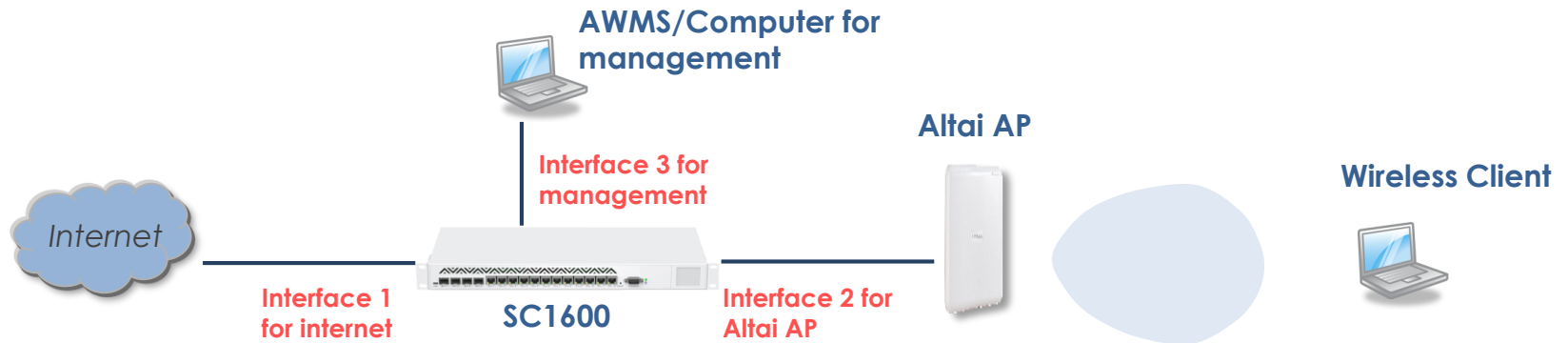
Example Network Diagram



Configuration Overview

- Create a WAN interface for SC to internet, in this example, using DHCP for internet in SC.
- Create LAN interface for SC to pass the management traffic and service traffic from the Altai AP.
- Create the VLAN100 for management and VLAN200 for service.
- Create IP address 192.169.1.100 as the management IP for SC, also this IP used for AP management. Create a port in SC for AWMS/computer to manage the SC and Altai AP with IP address 192.168.1.xxx.
- Create a Hotspot server for the service, and set up the portal authentication with SC built-in radius server.

Example Configuration Plan



- Create interface 1 of SC1600 as the WAN port for internet: using DHCP client.
- Create interface 2 of SC1600 as a trunk port to pass through management traffic and service traffic.
- Create interface 3 of SC1600 as access port for management VLAN, assign management IP address for VLAN100 interface.
- Create hotspot server on VLAN200 interface, using the default portal for authentication and create the test user account in the SC1600.

Example Configuration — Altai AP Configuration

StatusConfigurationAdministrationToolsAbout

SystemNetworkWirelessThin AP

GeneralVLANDHCPPort ForwardSafe Mode

General Network Setting

Network Setting

Network Setting: Switch Mode

Enable IPv6: ☐

WAN/LAN Interface Assignment

Ethernet: ☒ WAN ☐ LAN

Radio0(2.4G): ☐ WAN ☒ LAN

Radio1(5G): ☐ WAN ☒ LAN

Enable NAT Mode: ☒

WAN Setting(IPv4)

Internet Connection Type: Static

IPv4 Address: 192 . 168 . 1 . 222

IPv4 Subnet Mask: 255 . 255 . 255 . 0

IPv4 Default Gateway: 192 . 168 . 1 . 1

IPv4 DNS Server IP Address:

DHCP Option 60 Enterprise Code: 3902 (0-65535)

LAN Setting(IPv4)

LAN IP Address: 192 . 168 . 98 . 1

LAN IP Address Mask: 255 . 255 . 255 . 0

Assign the management IP address for AP (in this example, just keep the default IP address as management IP for AP.)

Example Configuration — Altai AP Configuration

The screenshot shows the Altai AP Configuration web interface. The top navigation bar includes tabs for Status, Configuration, Administration, Tools, and About. The Configuration tab is selected, and the sub-tabs are System, Network, Wireless, and Thin AP. The Network sub-tab is selected, and the sub-sub-tabs are General, VLAN, DHCP, Port Forward, and Safe Mode. The VLAN sub-tab is selected, and the page title is VLAN Configuration. The form contains the following fields:

- Enable VLAN:** ☒
- Native VLAN Tagging:** ☐
- Native VLAN TagId:** (1-4094)
- Management VLAN TagId:** (1-4094)

At the bottom right, there is a Submit button and a Help link.

Assign the management VLAN for AP (in this example, the management VLAN ID is 100.)

Example Configuration — Altai AP Configuration

Status

Configuration

Administration

Tools

About

System

Network

Wireless

Thin AP

Radio0(2.4G) - Radio1(5G)

Radio0(2.4G) Setting

General

WLAN

Advanced

QoS

WEP

WLAN Configuration

Enable WLAN	SSID	Max Clients	Isolation	VLAN Pass-Through/ID	Auth Mode	Access Traffic Right	WLAN Uplink/Downlink Control		Station Uplink/Downlink Control		Detail
☐	SC training exam	32	☐	200	open	Full Access					More...
	☐ Hide SSID			☐ Pass through							

Create a SSID and matched to the service VLAN200.

Example Configuration — SC1600 Configuration (1)

The screenshot displays the ALTA SC1600 configuration interface with several steps highlighted by red circles and a blue callout box:

- 1**: The **IP** menu item in the left sidebar is highlighted.
- 2**: The **DHCP Client** option in the right sidebar is highlighted.
- 3**: The **DHCP Client** tab in the main configuration area is highlighted.
- 4**: The **+** button (Add) in the DHCP Client list is highlighted.
- 5**: The **New DHCP Client** dialog box is shown with the following settings:
 - Interface**: *ether1*
 - ☒ **Use Peer DNS**
 - ☒ **Use Peer NTP**
 - Add Default Route**: *yes*
 - Default Route Distance**: *0*The **OK** and **Apply** buttons are also highlighted.

A blue callout box with a white arrow points to the **Interface** dropdown in the dialog, containing the text: **Set interface 1 of SC as DHCP for internet.**

Example Configuration — SC1600 Configuration (2)

The screenshot displays the SC1600 configuration interface. On the left, a sidebar menu contains various configuration categories. A red box labeled '1' highlights the 'IP' category. Another red box labeled '2' highlights the 'DNS' option within the 'IP' category. The main window shows the 'DNS Settings' dialog box. A red box labeled '3' highlights the 'Servers' field, which contains the IP addresses '10.6.160.5' and '10.6.160.2'. A blue callout bubble points to this field with the text 'Set the DNS for SC.'. The 'Servers' field is also highlighted with a red box. The 'OK' button is highlighted with a red box. The 'Apply' button is highlighted with a red box. The 'Cache' button is highlighted with a red box. The 'Static' button is highlighted with a red box. The 'Cache' button is highlighted with a red box. The 'Cache' button is highlighted with a red box.

Set the DNS for SC.

1

2

3

DNS Settings

Servers: 10.6.160.5
10.6.160.2

Dynamic Servers:

☐ Allow Remote Requests

Max UDP Packet Size: 4096

Cache Size: 2048 KiB

Cache Used: 11

OK
Cancel
Apply
Static
Cache

Example Configuration — SC1600 Configuration (3)

The screenshot displays the ALTAI Super WiFi configuration interface. The left sidebar contains a tree view of configuration categories. The main area shows the 'Route <0.0.0.0/0>' configuration window.

Numbered callouts indicate the steps:

1. Select **IP** in the left sidebar.
2. Select **Routes** in the left sidebar.
3. Click the **+** button to add a new route.
4. Set the **Gateway** to **10.6.161.1**.

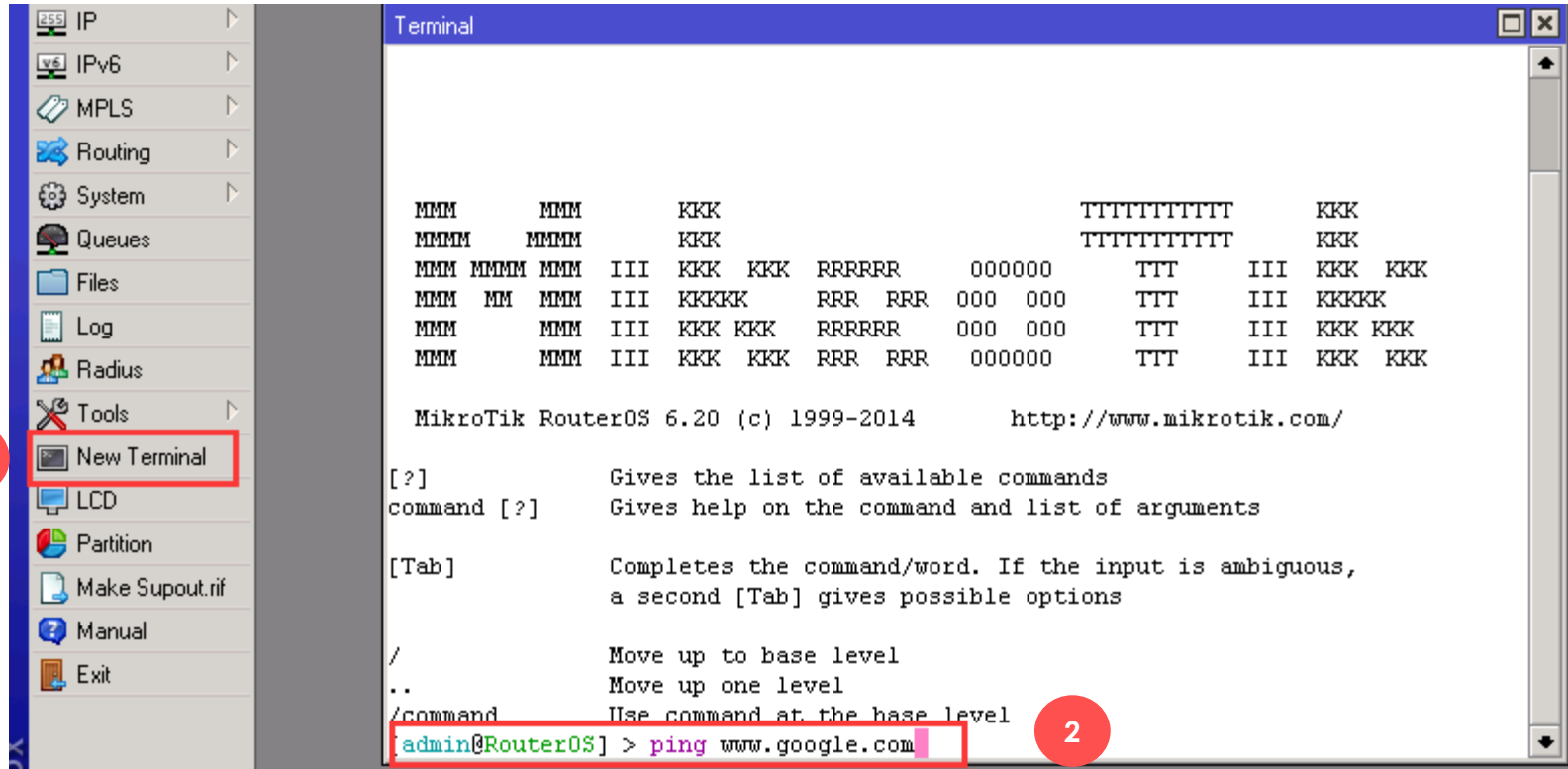
A blue callout box points to the Gateway field with the text: **Set the default gateway for the SC.**

The 'Route <0.0.0.0/0>' window shows the following fields:

- Dst. Address:** 0.0.0.0/0
- Gateway:** 10.6.161.1
- Check Gateway:** (unchecked)
- Type:** unicast
- Distance:** 1
- Scope:** (empty)
- Target Scope:** (empty)

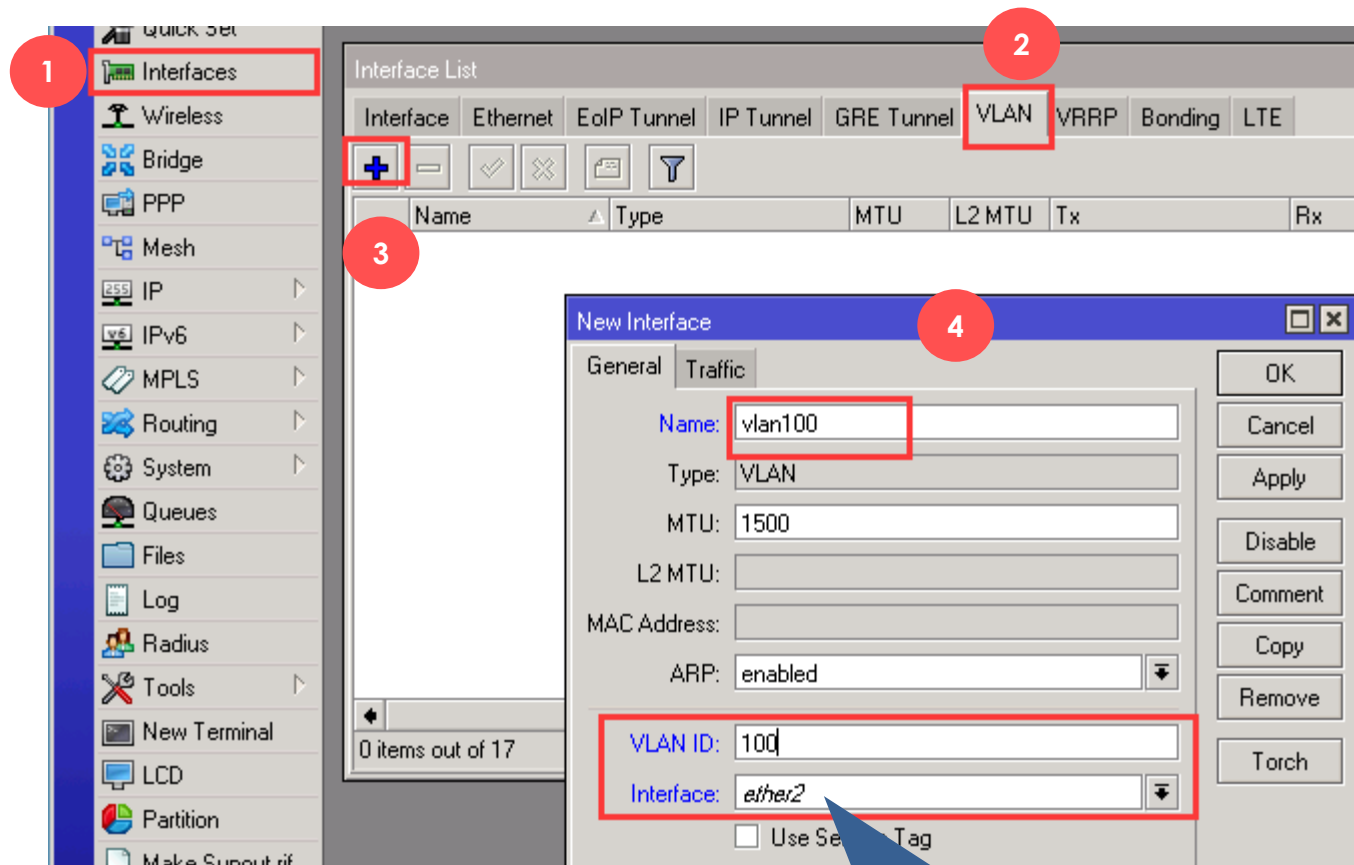
Buttons on the right include OK, Cancel, Apply, Disable, Comment, Copy, and Remove.

Example Configuration — SC1600 Configuration (4)

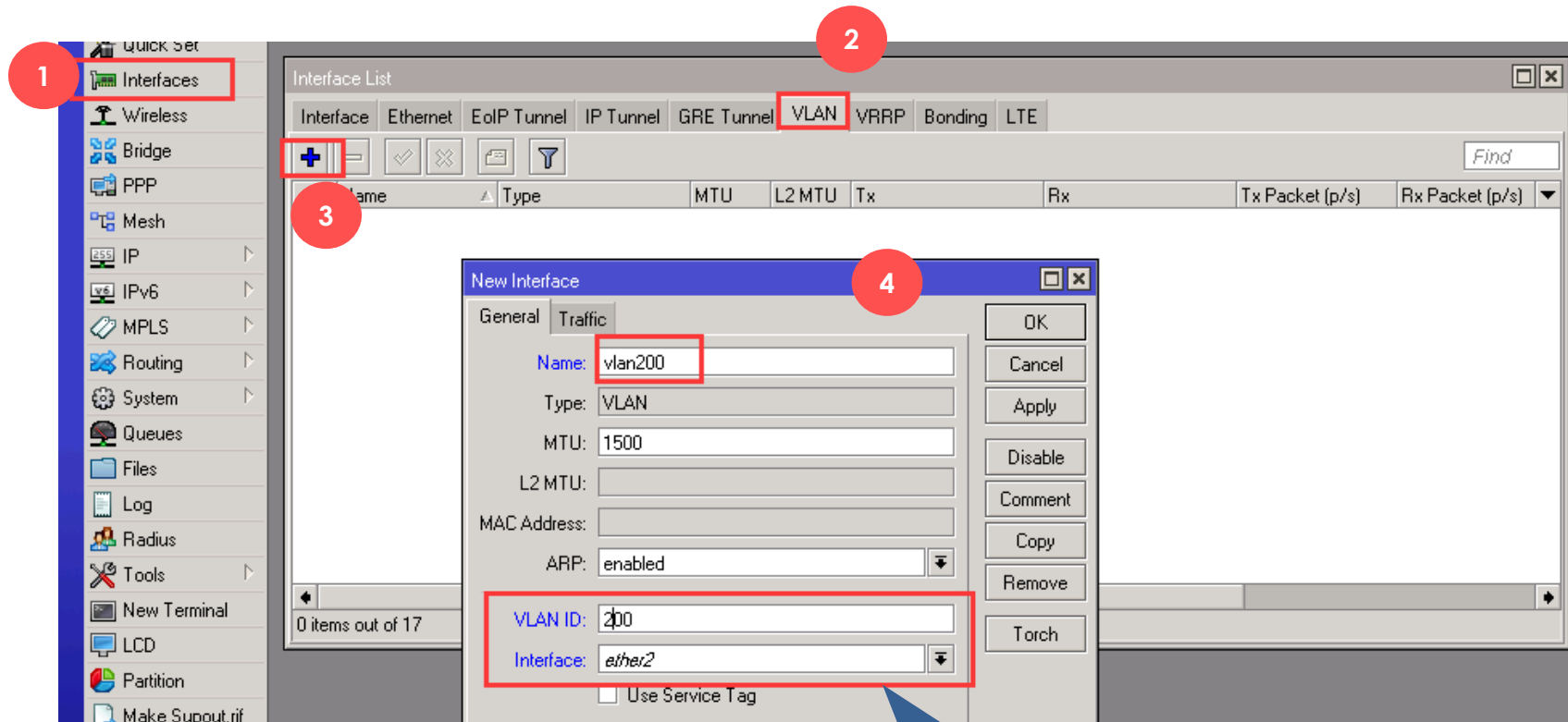


Open the New Terminal and use ping to test the internet available or not.

Example Configuration — SC1600 Configuration (5)



Example Configuration — SC1600 Configuration (6)



Example Configuration — SC1600 Configuration (7)

The screenshot displays the ALTA SC1600 configuration interface. On the left, a sidebar menu is shown with the following items: Mesh, IP, IPv6, MPLS, Routing, System, Queues, Files, Log, Radius, Tools, New Terminal, LCD, Partition, Make Supout.tif, and Manual. The 'IP' item is highlighted with a red box and a red circle labeled '1'. In the main panel, the 'Addresses' option under the 'IP' category is highlighted with a red box and a red circle labeled '2'. A red circle labeled '3' points to the '+' button in the 'Address List' table. A red circle labeled '4' points to the 'Interface' dropdown menu in the 'Address <192.168.1.200/24>' dialog box. The dialog box shows the 'Address' field set to '192.168.1.100/24', the 'Network' field set to '192.168.1.0', and the 'Interface' dropdown set to 'vlan100'. A blue callout box with a pointer to the 'Interface' dropdown contains the text: 'Assign the management IP address 192.168.1.100 for the VLAN100 interface.'

1

2

3

4

Assign the management IP address 192.168.1.100 for the VLAN100 interface.

Example Configuration — SC1600 Configuration (8)

The screenshot displays the ALTA SC1600 configuration interface. On the left, a sidebar menu has 'IP' highlighted with a red box and a red circle labeled '1'. Below it, 'Tools' is also highlighted with a red box and a red circle labeled '2'. The main panel shows the 'Hotspot' configuration page, with 'Hotspot Setup' highlighted by a red box and a red circle labeled '3'. A modal window titled 'Hotspot Setup' is open, showing 'Select interface to run HotSpot on' with 'vlan200' selected in the 'HotSpot Interface' dropdown, highlighted by a red box and a red circle labeled '4'. At the bottom of the modal, the 'Next' button is highlighted by a red box and a red circle labeled '5'. A blue callout bubble points to the 'Next' button with the text: 'Create a hotspot server for VLAN200 interface.'

Example Configuration — SC1600 Configuration (9)

Hotspot Setup

Set HotSpot address for interface

Local Address of Network: 10.5.50.1/24

☒ Masquerade Network

6

Back Next Cancel

Hotspot Setup

Set pool for HotSpot addresses

Address Pool of Network: 10.5.50.2-10.5.50.25

7

Back Next Cancel

Hotspot Setup

Select hotspot SSL certificate

Select Certificate: none

8

Back Next Cancel

Hotspot Setup

Select SMTP server

IP Address of SMTP Server: 0.0.0.0

9

Back Next Cancel

Hotspot Setup

Setup DNS configuration

DNS Servers: 10.6.160.5

10.6.160.2

10

Back Next Cancel

Hotspot Setup

DNS name of local hotspot server

DNS Name: www.training.com

11

Back Next Cancel

Hotspot Setup

Create local HotSpot user

Name of Local HotSpot User: admin

Password for the User:

12

Back Next Cancel

Create a test account for the hotspot server. For testing, using admin/admin as the username and password.

Example Configuration — SC1600 Configuration (11)

The screenshot displays the 'Hotspot' configuration window in the ALTAI Super WiFi management interface. The 'Server Profiles' tab is selected, showing a table of profiles. The 'hsprof2' profile is highlighted. A red box labeled '1' points to the 'Server Profiles' tab. A red box labeled '2' points to the 'hsprof2' profile in the table. A red box labeled '3' points to the 'HTML Directory' dropdown menu in the 'Hotspot Server Profile <hsprof2>' dialog, which is set to 'hotspot'. A blue callout box points to the 'hotspot' option in the dropdown, stating: 'Select the default portal HTML directory for testing.'

Hotspot

Servers **Server Profiles** Users User Profiles Active Hosts IP Binding

+ - Filter

Name	DNS Name	HTML Directory	Rate Limit (rx/tx)
* default		hotspot	
hsprof2		hotspot	

Hotspot Server Profile <hsprof2>

General Login RADIUS

Name: hsprof2

Hotspot Address: 10.5.50.1

DNS Name:

HTML Directory: hotspot

Rate Limit (rx/tx):

HTTP Proxy:

HTTP Proxy Port: 0

SMTP Server:

OK Cancel Apply Copy

Select the default portal HTML directory for testing.

Example Configuration — SC1600 Configuration (12)

1

2

3

4

5

6

7

8

9

Create a bridge.

Add the VLAN100 in the bridge just created.

Add the interface 3 of SC in the bridge just created.

Example Configuration — Testing.

- Follow the example diagram to connect the AP, SC1600 and AWMS/Computer.
- Test 1: ping the SC (192.168.1.100) and Altai AP (192.168.1.222) from the AWMS/Computer which connected to interface 3 of SC1600 to test the management setting.
- Test 2: using the wireless client to connect to the SSID from the Alta AP, the wireless client should be able to get a IP address from the 10.5.50.xxx range, and login page will pop up.
- Test 3: using the admin/admin as username and password to login, then the wireless client can go to the internet.

Thank You