

Application Scenarios for Nusoft LAC-100

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Application Scenarios

Scenario 1. Authentication

By using the local RADIUS database or an external RADIUS / LDAP server, wireless devices (i.e., smartphone, tablet, etc) now can be provided with access to the Internet through Nusoft APs.

1.1 Authorizing Users to Access the Internet through

Nusoft APs

Network Configuration

Set the LAN subnet to 172.19.123.1/16.
Assign 172.19.123.252 to Nusoft Lite APC (hereinafter referred to as “LAC-100”).

Step 1. Connect Nusoft APs and LAC-100 to the same LAN switch. Nusoft APs will be using the configuration profile on the LAC-100 that is pre-configured. The SSID by default is “LCA-100”. It can be changed as desired by using the corresponding **Modify** button. (Figure 1-1)

Default SSID Settings

SSID 1: LAC-100

SSID 2: None

SSID 3: None

SSID 4: None

SSID 5: None

SSID 6: None

SSID 7: None

SSID 8: None

OK

1 / 1 Go

SSID	Authentication	Configuration
LAC-100	Open System	Modify

1 / 1 Go

New Entry

Figure 1-1 The Default SSID That Nusoft APs Use

Step 2. On the menu panel, click **AP Controller > Configuration > SSID Settings** and then configure as below: (Figure 1-2)

- Tick the box of “Captive Portal”.
- Click **OK** to complete the settings.

The screenshot shows the 'Modify SSID Settings' window. The title bar is 'Modify SSID Settings'. The window contains the following fields and controls:

- Network Name(SSID): LAC-100 (Max. 32 characters)
- SSID Visibility: Enabled
- Client Isolation: Disabled (with a Help button)
- Client Limit: Disabled
- Max. Clients: 0 (1 - 64)
- Captive Portal: ☒ Enabled
- Authentication: Open System
- Encryption: Disabled
- Key Type: HEX
- Key Size: 64 Bits
- Key Index: 1 (1 - 4)
- Network Key: (Empty) (Exact 10 characters) ☐ Show Key
- Confirm Key: (Empty) (Exact 10 characters)

At the bottom right are 'OK' and 'Cancel' buttons.

Figure 1-2 Enabling Captive Portal for the SSID

Step 3. The default configuration profile for the APs associated with LAC-100 is shown under **AP Controller > Configuration > AP Profile**. (Figure 1-3)

The screenshot shows the 'Modify AP Profile' window. The title bar is 'Modify AP Profile'. The window contains the following fields and controls:

- IP Address: 172.19.123.10
- MAC Address: 00:03:7F:11:40:24
- Name: 00:03:7F:11:40:24 (Max. 32 characters)
- SSID 1: LAC-100
- Multiple SSIDs: ☐ (with a plus icon)
- Advanced Settings: ☐ (with a plus icon)

At the bottom right are 'OK' and 'Cancel' buttons.

Figure 1-3 The Default AP Profile on LAC-100

Step 4. Click **RADIUS Server > Settings** and then configure the **RADIUS Server Settings** as below: (Figure 1-4)

- Tick the box of “Enable RADIUS server”.
- The **Server Port** is defaulted to “1812”.
- Click **OK** to complete the settings.

RADIUS Server Setting

☒ Enable RADIUS server

Server Port: (1025 - 65535, ex. 1812)

☐ Enable external LDAP server

External LDAP IP or Hostname : (Max. 80 characters)

External LDAP Port : (1025 - 65535, ex. 389)

LDAP Base DN : (Max. 255 characters, ex.)

LDAP Bind DN : (Max. 255 characters, ex. (objectClass=*))

Username : (Max. 255 characters, ex.)

Password : (Max. 20 characters)

☐ Enable RADIUS proxy server

Remote RADIUS IP or Hostname : (Max. 80 characters)

Remote RADIUS Port : (1025 - 65535, ex. 1812)

Remote RADIUS Shared Secret : (Max. 128 characters)

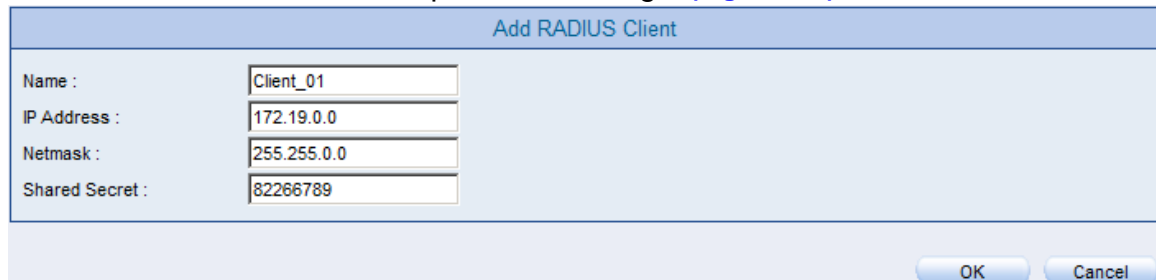
OK Cancel

Figure 1-4 Enabling RADIUS Server Settings

Step 5. Click **RADIUS Server > RADIUS Client** and then configure as below:

(Figure 1-5)

- Enter a client name.
- Specify the client's IP and netmask to allow access to the RADIUS server.
- Specify the shared secret for connecting to the RADIUS server.
- Click **OK** to complete the settings. (Figure 1-6)



Add RADIUS Client

Name : Client_01

IP Address : 172.19.0.0

Netmask : 255.255.0.0

Shared Secret : 82266789

OK Cancel

Figure 1-5 Adding a RADIUS Client

Name	RADIUS Client IP	Netmask	Shared Secret	Configuration	
Client_01	172.19.0.0	255.255.0.0	82266789	Modify	Remove

New Entry

Figure 1-6 RADIUS Client Successfully Added

Step 6. Click **RADIUS Server > User Account** and then configure as below:
(Figure 1-7)

- Enter an account name and a password, respectively. Next, repeat the password in the **Confirm Password** field.
- Click **OK** to complete the settings. (Figure 1-8)

Account Name : ken (Max. 20 characters)

Password : ••••• (Max. 20 characters)

Confirm Password : ••••• (Max. 20 characters)

☐ Enable validation period

Valid from : 2013 / 09 / 14

Valid to : 2013 / 09 / 14

OK Cancel

Figure 1-7 Adding a RADIUS User Account

Account Name ▲	Valid Date	Configuration
ken	---	Modify Remove

New Entry

Figure 1-8 RADIUS User Account Successfully Added

Step 7. Click **AP Controller > Configuration > Authentication** and then configure as below: [\(Figure 1-9\)](#)

- Under the **Authentication Settings** section:
 - ◆ Specify a URL to redirect authenticated users.
- Under **RADIUS Server IP / Shared Secret Settings** section:
 - ◆ Specify the RADIUS server IP, port number and shared key.
- Click **OK** to complete the settings.

Authentication Settings

Authentication Idle Timeout : minute(s) (Range : 1 - 1000)

Log off users that have logged in for hour(s) (Range : 0 - 24, 0: unlimited)

Post-Authentication Redirect URL : (Max. 80 characters)

RADIUS Server IP / Shared Secret Settings

IP Address :

Port : (1 - 65535, ex. 1812)

Shared Key : (Max. 20 characters)

Upload an image as the background for the authentication screen: 未選擇檔案。 [Preview](#)
(Max. file size:1 MB; Resolution : 1022 x 622 pixels; File types : jpg, jpeg, jpe, gif, bmp, png...)

Message for authentication users: (Max. 4096 characters; HTML format supported) [Preview](#)

Message for successful authentications: (Max. 4096 characters; HTML format supported) [Preview](#)

Message for failed authentications: (Max. 4096 characters; HTML format supported) [Preview](#)

Figure 1-9 Configuring the Authentication Settings

Step 8. Enable the Wi-Fi connection on your mobile device to access the Internet.

- Select the default SSID “LAC-100” (there could be more than one SSID on your network). (Figure 1-10)
- When seeing the authentication screen upon an attempt to access the Internet, supply with the following: (Figure 1-11)
 - ◆ The RADIUS user credentials from the step 6.
 - ◆ Click **Login**.
- User is redirected to the specified URL after being authenticated.(Figure 1-12)

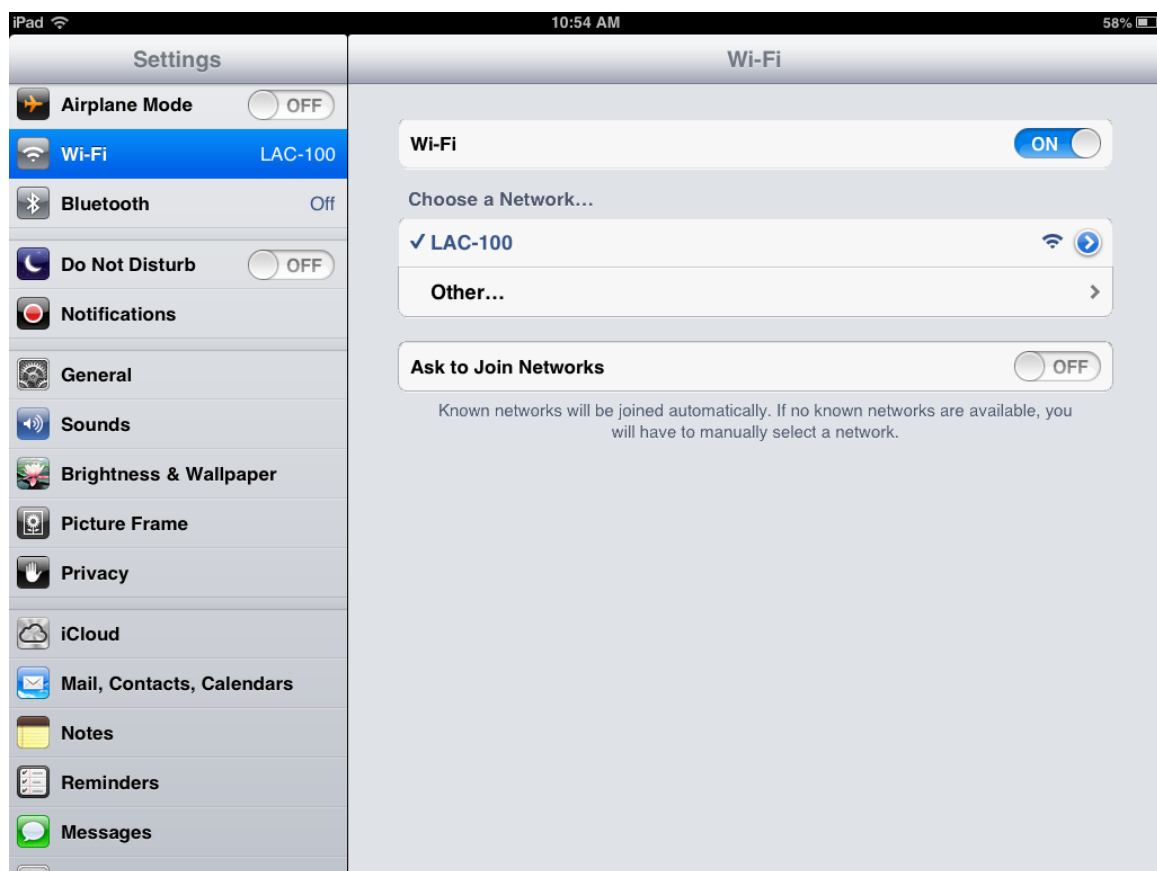
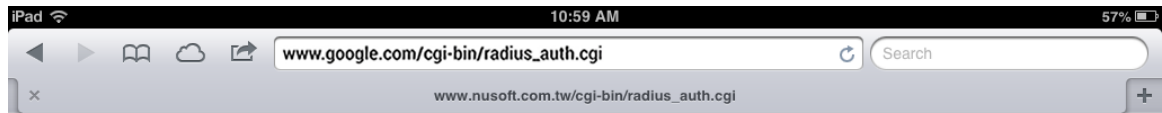


Figure 1-10 Using Mobile Device to Connect to the SSID “LAC-100”



User Authentication - Login	
Username :	<input type="text" value="ken"/>
Password :	<input type="password" value="*****"/>
<input type="button" value="Login"/>	

Figure 1-11 Supplying the RADIUS User Credentials

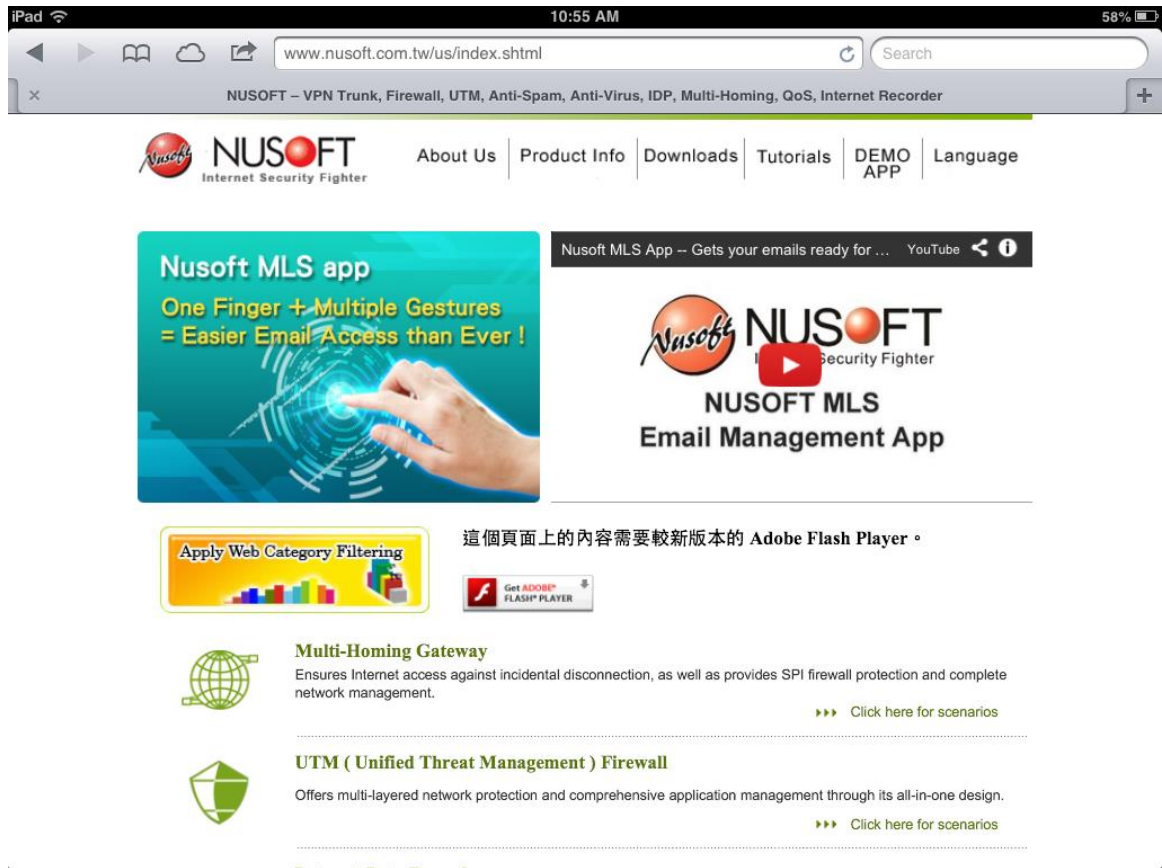
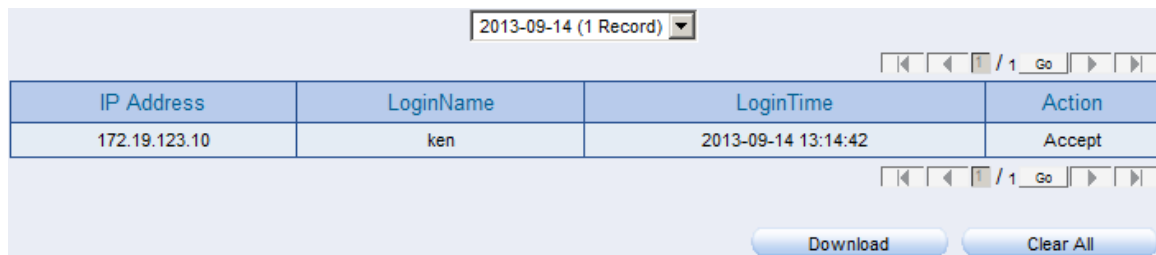


Figure 1-12 Authenticated User Being Redirected to the Specified URL

Step 9. The log corresponded to the user authentication is generated under **RADIUS Server > Logs**. (Figure 1-13)



The screenshot displays a web-based interface for viewing RADIUS logs. At the top, a dropdown menu shows the selected date and record count: '2013-09-14 (1 Record)'. To the right of this menu is a pagination control with arrows and the text '/ 1 Go'. Below this is a table with four columns: 'IP Address', 'LoginName', 'LoginTime', and 'Action'. The table contains one data row with the values '172.19.123.10', 'ken', '2013-09-14 13:14:42', and 'Accept'. Below the table is another pagination control identical to the one above. At the bottom right of the interface are two buttons: 'Download' and 'Clear All'.

IP Address	LoginName	LoginTime	Action
172.19.123.10	ken	2013-09-14 13:14:42	Accept

Figure 1-13 The Corresponding Authentication Log

Scenario 2. AP Group

2.1 Performing Management on a Group of Nusoftware APs

APs

Step 1. All SSIDs created are shown under **AP Controller > Configuration > SSID Settings**. (Figure 2-1)

Default SSID Settings

SSID 1: LAC-100

SSID 2: LAC-100-2

SSID 3: None

SSID 4: None

SSID 5: None

SSID 6: None

SSID 7: None

SSID 8: None

OK

1 / 1 Go

SSID	Authentication	Configuration
LAC-100	Open System	Modify
LAC-100-2	WPA / WPA2 Personal	Modify
250_sharekey	Shared Key	Modify Remove
250_WPA_E	WPA / WPA2 Enterprise	Modify Remove
250_Open	Open System	Modify Remove
250_802.1X	802.1X	Modify Remove
250_WPA_P	WPA / WPA2 Personal	Modify Remove

1 / 1 Go

New Entry

Figure 2-1 The SSIDs Created

Step 2. Click **AP Controller > Configuration > AP Profile** and then configure as below: (Figure 2-2)

- To modify the name of an AP, click the corresponding **Modify** button. (Figure 2-3, 2-4)

Export AP profiles : [Export](#)
 Import AP profiles : [瀏覽...](#) 未選擇檔案。 [Import](#) (Max. file size: 1 MB)

Status	Name	IP Address	MAC Address	Connection Uptime	Configuration
	00:03:7F:11:40:24	172.19.123.10	00:03:7F:11:40:24	0:35:40	Modify Remove Reboot Update FW
	00:03:7F:11:40:50	172.19.123.41	00:03:7F:11:40:50	0:23:19	Modify Remove Reboot Update FW

Figure 2-2 The APs Currently Associated with LAC-100

Modify AP Profile

IP Address : 172.19.123.10
 MAC Address : 00:03:7F:11:40:24
 Name : (Max. 32 characters)
 SSID 1 :

☒ Multiple SSIDs

SSID 2 :
 SSID 3 :
 SSID 4 :
 SSID 5 :
 SSID 6 :
 SSID 7 :
 SSID 8 :

☒ Advanced Settings

Wireless Mode :
 Auto Channel Selection :
 Channel :
 Channel Width :
 Extension Channel :
 Beacon Interval : ms (Range : 40 - 3500)
 DTIM Interval : times (Range : 1 - 255)
 Transmit Power :
 Spanning Tree Protocol :
 Ack Timeout : us (Range : 1 - 372)
 Short GI :

[OK](#) [Cancel](#)

Figure 2-3 The Name of the First AP Successfully Changed to “AP_01”

Modify AP Profile

IP Address : 172.19.123.41

MAC Address : 00:03:7F:11:40:50

Name : (Max. 32 characters)

SSID 1 :

☒ Multiple SSIDs

SSID 2 :

SSID 3 :

SSID 4 :

SSID 5 :

SSID 6 :

SSID 7 :

SSID 8 :

☒ Advanced Settings

Wireless Mode :

Auto Channel Selection :

Channel :

Channel Width :

Extension Channel :

Beacon Interval : ms (Range : 40 - 3500)

DTIM Interval : times (Range : 1 - 255)

Transmit Power :

Spanning Tree Protocol :

Ack Timeout : us (Range : 1 - 372)

Short GI :

Figure 2-4 The Name of the Second AP Successfully Changed to “AP_02”

Step 3. Click **AP Controller** > **Configuration** > **AP Group** and then configure as below:

- Click **Modify** corresponding to the “Group_1”. (Figure 2-5)
- Enter a group name.
- Add AP group members from the **Available Host** column to the **Applied Host** column. (Figure 2-6)
- Click **OK** to complete the settings. (Figure 2-7)
- Click **Config** corresponding to the “AP_GROUP_1”. (Figure 2-8)
- Assign an SSID (select from the drop-down list) to the corresponding SSID, i.e., SSID 1, SSID 2, SSID 3, and SSID 4.
- Set **Wireless Mode** to “802.11n only”.
- Set **Channel Width** to “20 MHz”.
- Click **OK** to complete the settings. (Figure 2-9)

Group Name : GROUP_1	Modify	Config	Reboot	Update FW
Group Name : GROUP_2	Modify	Config	Reboot	Update FW
Group Name : GROUP_3	Modify	Config	Reboot	Update FW
Group Name : GROUP_4	Modify	Config	Reboot	Update FW
Group Name : GROUP_5	Modify	Config	Reboot	Update FW

Figure 2-5 Modifying the Profile of a Group AP

Figure 2-6 Adding the AP Group Members

Group Name : AP_GROUP_1 (2) Modify Config Reboot Update FW				
AP_01	AP_02			
Group Name : GROUP_2 Modify Config Reboot Update FW				
Group Name : GROUP_3 Modify Config Reboot Update FW				
Group Name : GROUP_4 Modify Config Reboot Update FW				

Figure 2-7 AP Group Successfully Created

Group Name : AP_GROUP_1 (2) Modify Config Reboot Update FW				
AP_01	AP_02			
Group Name : GROUP_2 Modify Config Reboot Update FW				
Group Name : GROUP_3 Modify Config Reboot Update FW				
Group Name : GROUP_4 Modify Config Reboot Update FW				

Figure 2-8 Configuring the Profile of a Group AP

Modify AP Group Profile	
Name :	AP_GROUP_1
SSID 1 :	LAC-100
<input checked="" type="checkbox"/> Multiple SSIDs	
SSID 2 :	250_sharekey
SSID 3 :	250_WPA_E
SSID 4 :	250_WPA_P
SSID 5 :	None
SSID 6 :	None
SSID 7 :	None
SSID 8 :	None
<input checked="" type="checkbox"/> Advanced Settings	
Wireless Mode :	802.11n only
Auto Channel Selection :	Enabled
Channel :	1 (2412 MHz)
Channel Width :	20 MHz
Extension Channel :	Upper
Beacon Interval :	100 ms (Range : 40 - 3500)
DTIM Interval :	1 times (Range : 1 - 255)
Transmit Power :	100%
Spanning Tree Protocol :	Disabled
Ack Timeout :	64 us (Range : 1 - 372)
Short GI :	Disabled
<div style="text-align: right;"> <input type="button" value="OK"/> <input type="button" value="Cancel"/> </div>	

Figure 2-9 The Profile of a Group AP Successfully Changed

- Step 4. Click **AP Controller > Configuration > AP Profile** and then configure as below:
- Click **Modify** to view the changes applied to the corresponding group members. (Figure 2-10, 2-11)

Modify AP Profile

IP Address : 172.19.123.10

MAC Address : 00:03:7F:11:40:24

Name : AP_01 (Max. 32 characters)

SSID 1 : LAC-100

☒ Multiple SSIDs

SSID 2 : 250_sharekey

SSID 3 : 250_WPA_E

SSID 4 : 250_WPA_P

SSID 5 : None

SSID 6 : None

SSID 7 : None

SSID 8 : None

☒ Advanced Settings

Wireless Mode : 802.11n only

Auto Channel Selection : Enabled

Channel : 1 (2412 MHz)

Channel Width : 20 MHz

Extension Channel : Upper

Beacon Interval : 100 ms (Range : 40 - 3500)

DTIM Interval : 1 times (Range : 1 - 255)

Transmit Power : 100%

Spanning Tree Protocol : Disabled

Ack Timeout : 64 us (Range : 1 - 372)

Short GI : Disabled

OK Cancel

Figure 2-10 Changes Successfully Applied to “AP_01”

Modify AP Profile	
IP Address :	172.19.123.41
MAC Address :	00:03:7F:11:40:50
Name :	AP_02 (Max. 32 characters)
SSID 1 :	LAC-100
<input checked="" type="checkbox"/> Multiple SSIDs	
SSID 2 :	250_sharekey
SSID 3 :	250_WPA_E
SSID 4 :	250_WPA_P
SSID 5 :	----- None -----
SSID 6 :	----- None -----
SSID 7 :	----- None -----
SSID 8 :	----- None -----
<input checked="" type="checkbox"/> Advanced Settings	
Wireless Mode :	802.11n only
Auto Channel Selection :	Enabled
Channel :	1 (2412 MHz)
Channel Width :	20 MHz
Extension Channel :	Upper
Beacon Interval :	100 ms (Range : 40 - 3500)
DTIM Interval :	1 times (Range : 1 - 255)
Transmit Power :	100%
Spanning Tree Protocol :	Disabled
Ack Timeout :	64 us (Range : 1 - 372)
Short GI :	Disabled
<div>OK Cancel</div>	

Figure 2-11 Changes Successfully Applied to “AP_02”

Scenario 3. E-Map

3.1 Placing Nusoft APs on a Floor Map

Preparations

Use Nusoft APs to build a wireless LAN.

Step 1. On the menu panel, click **AP Controller > Configuration > SSID Settings** and then configure as below: ([Figure 3-1](#))

Default SSID Settings

SSID 1: Nusoft_Guest

SSID 2: NuSoft_Employee

SSID 3: None

SSID 4: None

SSID 5: None

SSID 6: None

SSID 7: None

SSID 8: None

OK

1 / 1 Go

SSID	Authentication	Configuration
Nusoft_Guest	Open System	Modify
NuSoft_Employee	WPA / WPA2 Personal	Modify

1 / 1 Go

New Entry

Figure 3-1 SSIDs Successfully Created

Step 2. Click **AP Controller > Configuration > AP Profile** and then configure as below:

- To modify the name of an AP, click the corresponding **Modify** button. ([Figure 3-2, 3-3, 3-4](#))

Modify AP Profile

IP Address : 172.19.200.210

MAC Address : 00:11:A3:1C:0B:85

Name : (Max. 32 characters)

Latitude : (Optional)

Longitude : (Optional)

PoE Passthrough :

2.4G :

SSID 1 :

☒ Mutiple SSIDs

SSID 2 :

SSID 3 :

SSID 4 :

SSID 5 :

SSID 6 :

SSID 7 :

SSID 8 :

☒ Advanced Settings

Figure 3-2 The First AP Specified with a Name that Indicates Its Location

Modify AP Profile

IP Address : 172.19.200.211

MAC Address : 00:11:A3:1C:0B:88

Name : (Max. 32 characters)

Latitude : (Optional)

Longitude : (Optional)

2.4G :

SSID 1 :

☒ Mutiple SSIDs

SSID 2 :

SSID 3 :

SSID 4 :

SSID 5 :

SSID 6 :

SSID 7 :

SSID 8 :

☒ Advanced Settings

Figure 3-3 The Second AP Specified with a Name that Indicates Its Location

Export AP profiles : [Export](#)

Import AP profiles : [瀏覽...](#) 未選擇檔案。 [Import](#) (Max. file size: 1 MB)



Status	Name	IP Address	MAC Address	Connection Uptime	Configuration			
	Big_Conference_Room	172.19.200.210	00:11:A3:1C:0B:85	0:08:27	Modify	Remove	Reboot	Update FW
	Small_Conference_Room	172.19.200.211	00:11:A3:1C:0B:88	0:07:28	Modify	Remove	Reboot	Update FW

Figure 3-4 The Location of Each AP Successfully Changed

Step 3. Click **AP Controller > Configuration > E-Map** and then configure as below:

- Enter a map name. ([Figure 3-5](#))
- Select “Custom” for the location method.
- Click **Browse** to load your floor plan.
- Click **OK** to starting loading. ([Figure 3-6](#))
- Drag Nusoft APs one by one to the floor plan. ([Figure 3-7](#))
- Click **OK** to complete the settings. ([Figure 3-8](#))

Add E-Map

Name : (Max: 64 characters)

Located by : ☒ Custom ☐ Google Maps

Upload E-Map Office_Floor_Plan.jpg

Figure 3-5 Loading a Floor Plan

Modify E-Map

Name : (Max: 64 characters)

Upload E-Map 未選擇檔案。

Big_Conference_Room ×

MAC Address	00:11:A3:1C:0B:85
IP Address	172.19.200.210
Users	0
Connection Uptime	02:01:48

Small_Conference_Room ×

MAC Address	00:11:A3:1C:0B:88
IP Address	172.19.200.211
Users	0
Connection Uptime	01:48:42

Research & Development Department

Testing Department

Sales & Marketing Department

Big Conference Room

Small Conference Room

All APs

Figure 3-6 Floor Plan Successfully Loaded

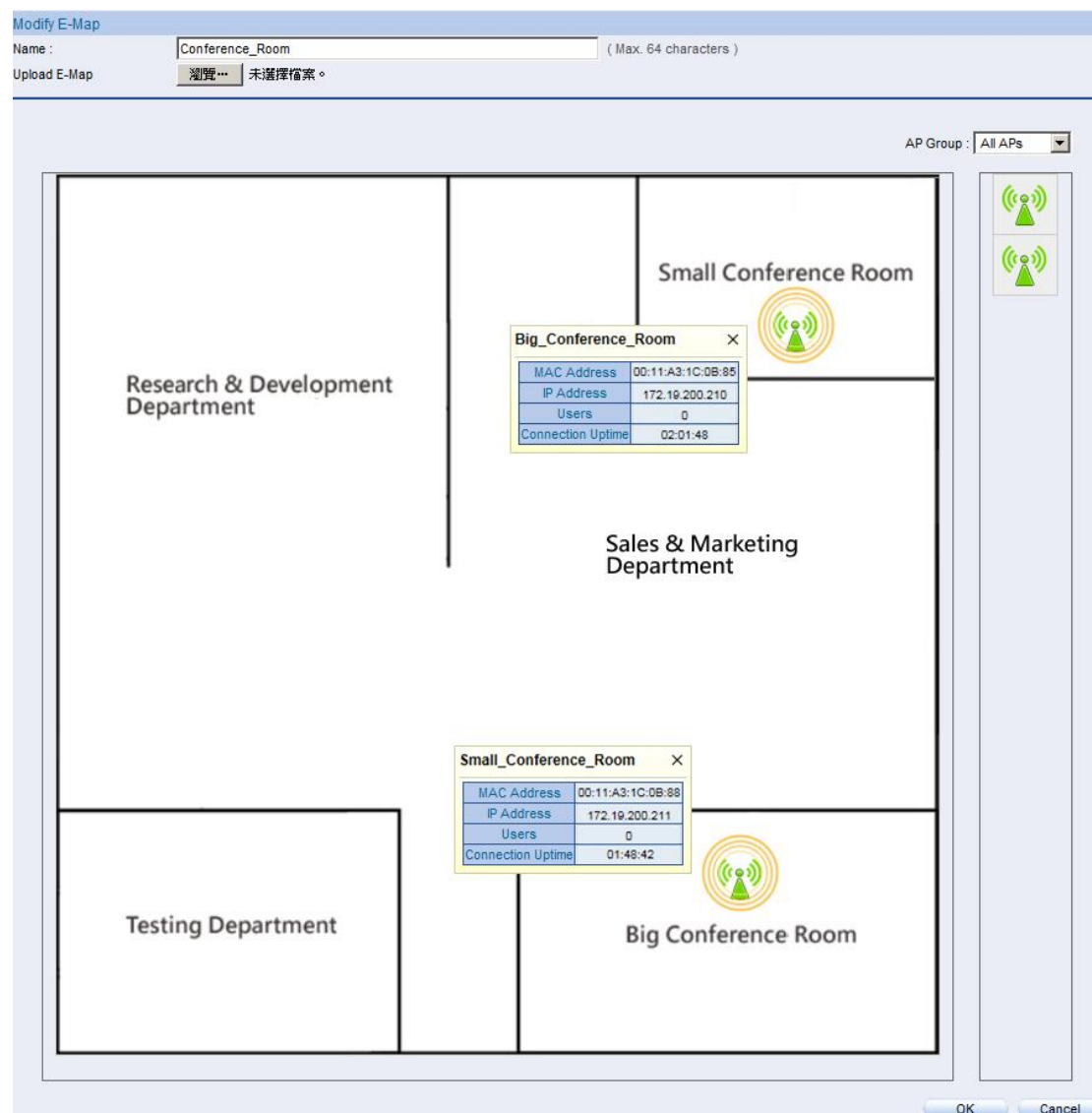


Figure 3-7 Nusoft APs Placed on the Floor Plan

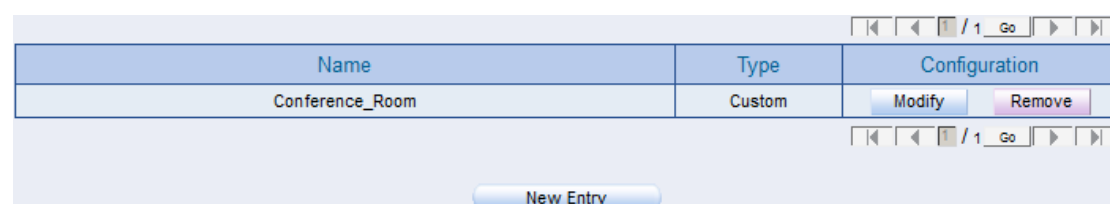


Figure 3-8 An E-Map Succussfully Created

Step 4. To view the location of an AP, click on the name of the AP under **AP Controller > Configuration > AP Profile**. (Figure 3-9, 3-10)

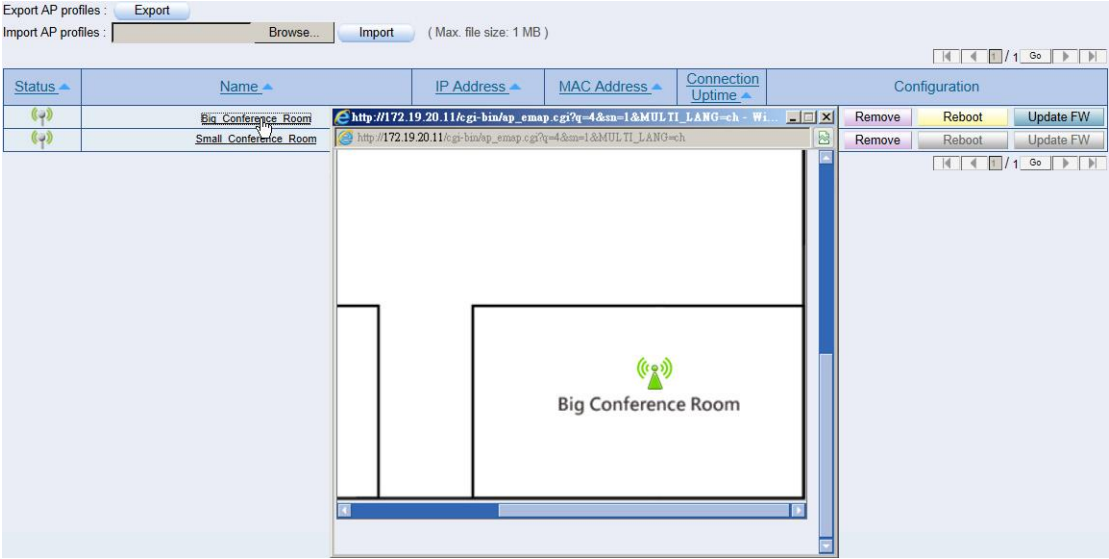


Figure 3-9 The Location of the First AP

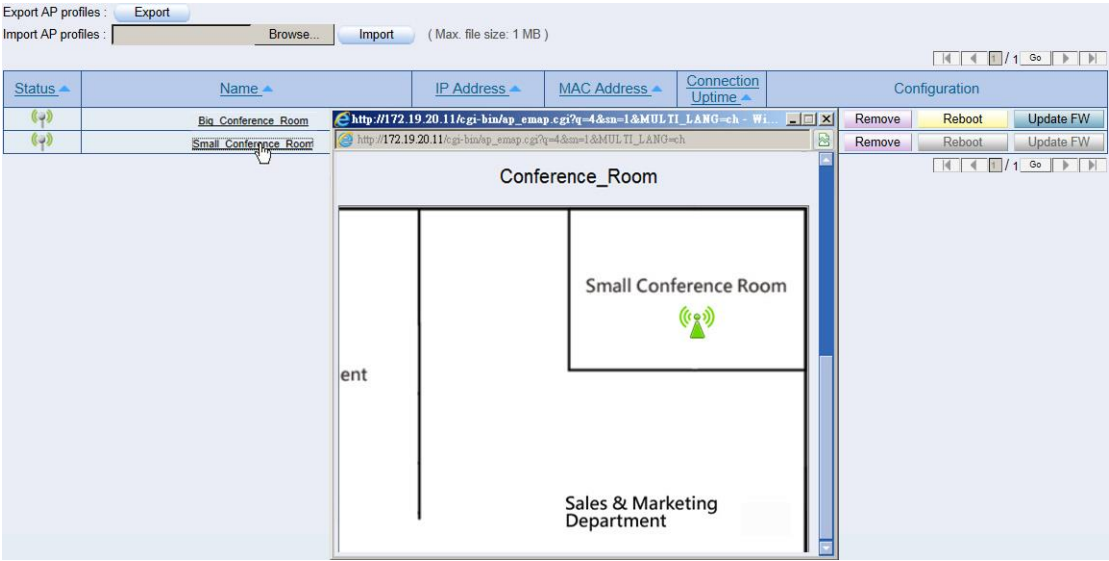


Figure 3-10 The Location of the Second AP

3.2 Placing Nusoft APs on the Google Maps

Preparations

Use Nusoft APs to build a wireless LAN.

Step 1. On the menu panel, click **AP Controller > Configuration > SSID Settings** and then configure as below: (Figure 3-11)

Default SSID Settings

SSID 1: Nusoft_Guest	SSID 2: NuSoft_Employee
SSID 3: ----- None -----	SSID 4: ----- None -----
SSID 5: ----- None -----	SSID 6: ----- None -----
SSID 7: ----- None -----	SSID 8: ----- None -----

OK

SSID	Authentication	Configuration
Nusoft_Guest	Open System	Modify
NuSoft_Employee	WPA / WPA2 Personal	Modify

New Entry

Figure 3-11 SSIDs Successfully Created

Step 2. Click **AP Controller > Configuration > AP Profile** and then configure as below:

- To modify the name of an AP, click the corresponding **Modify** button. (Figure 3-12, 3-13, 3-14)

Modify AP Profile

IP Address : 192.168.1.10
MAC Address : 00:11:A3:1C:0B:85
Name : AP_Headquarter (Max. 32 characters)
Latitude : 0.000000 (Optional)
Longitude : 0.000000 (Optional)

2.4G :
SSID 1 : Nusoft_Guest
☒ Multiple SSIDs
SSID 2 : NuSoft_Employee
SSID 3 : None
SSID 4 : None
SSID 5 : None
SSID 6 : None
SSID 7 : None
SSID 8 : None
[Advanced Settings](#)

OK Cancel

Figure 3-12 The First AP Specified with a Name that Indicates Its Location

Modify AP Profile

IP Address : 211.22.22.22
MAC Address : 00:11:A3:1C:0B:88
Name : AP_Branch (Max. 32 characters)
Latitude : 0.000000 (Optional)
Longitude : 0.000000 (Optional)

2.4G :
SSID 1 : Nusoft_Guest
☒ Multiple SSIDs
SSID 2 : NuSoft_Employee
SSID 3 : None
SSID 4 : None
SSID 5 : None
SSID 6 : None
SSID 7 : None
SSID 8 : None
[Advanced Settings](#)

OK Cancel

Figure 3-13 The Second AP Specified with a Name that Indicates Its Location

Export AP profiles : [Export](#)

Import AP profiles : [瀏覽...](#) 未選擇檔案。 [Import](#) (Max. file size: 1 MB)



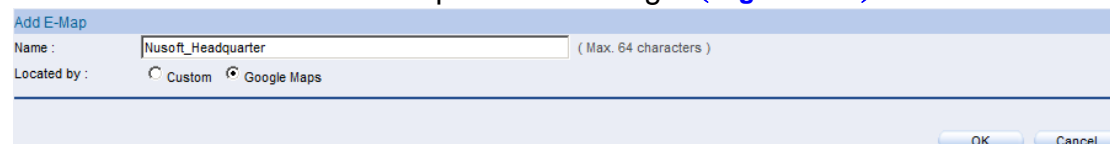
Status	Name	IP Address	MAC Address	Connection Uptime	Configuration			
	AP_Headquarter	192.168.1.10	00:11:A3:1C:0B:85	0:03:43	Modify	Remove	Reboot	Update FW
	AP_Branch	211.22.22.22	00:11:A3:1C:0B:88	0:04:29	Modify	Remove	Reboot	Update FW

Figure 3-14 The Location of Each AP Successfully Changed

Step 3. Click **AP Controller > Configuration > E-Map** and then configure as below:

- Click **New Entry**. ([Figure 3-15](#))
- Enter a map name.
- Select “Google Maps” for the location method.
- Click **OK**. ([Figure 3-16](#))
- Select a Nusoft AP and then configure the **AP Location Settings** as below: ([Figure 3-17](#))
 - ◆ Select “Postal address” for **Type**.
 - ◆ Specify the postal address where the AP is installed.
 - ◆ Click **OK**. ([Figure 3-18](#))
- Click **OK** again.
- Click **New Entry** again. ([Figure 3-19](#))
- Enter a map name.
- Select “Google Maps” for the location method.
- Click **OK**. ([Figure 3-20](#))
- Select another Nusoft AP and then configure the **AP Location Settings** as below: ([Figure 3-21](#))
 - ◆ Select “Postal address” for **Type**.
 - ◆ Specify the postal address where the AP is installed.
 - ◆ Click **OK**. ([Figure 3-22](#))
- Click **OK** to complete the settings. ([Figure 3-23](#))



Add E-Map

Name : Nusoft_Headquarter (Max. 64 characters)

Located by : ☐ Custom ☒ Google Maps

OK Cancel

Figure 3-15 Loading the Google Maps



Figure 3-16 Selecting an AP to be Placed on the Google Maps

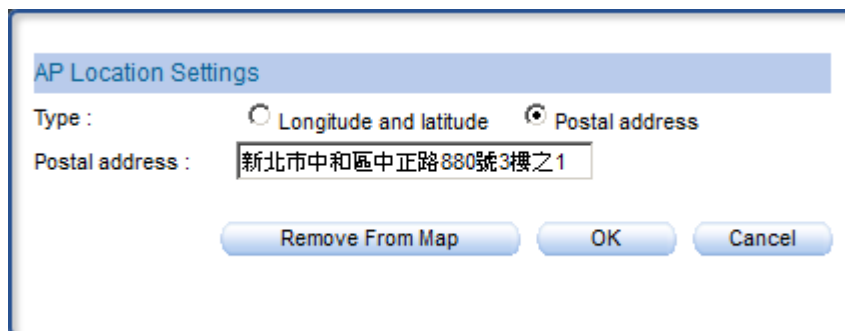


Figure 3-17 Specifying the Location of the Selected AP



Figure 3-18 An Nusoft AP Placed on the Google Maps

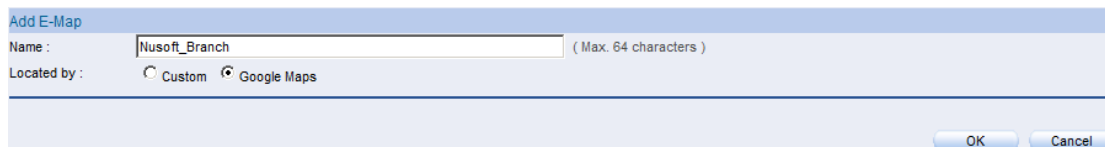


Figure 3-19 Loading the Google Maps



Figure 3-20 Selecting Another AP to be Placed on the Google Maps

AP Location Settings

Type : ☐ Longitude and latitude ☒ Postal address

Postal address :

Figure 3-21 Specifying the Location of the Selected AP



Figure 3-22 Another Nusoft AP Placed on the Google Maps

Name	Type	Configuration	
Nusoft_Headquarter	Google Maps	<input type="button" value="Modify"/>	<input type="button" value="Remove"/>
Nusoft_Branch	Google Maps	<input type="button" value="Modify"/>	<input type="button" value="Remove"/>

Figure 3-23 An E-Map Succussfully Created

Step 4. To view the location of an AP, click on the name of the AP under **AP Controller > Configuration > AP Profile**; to view the configuration profile of an AP, click the corresponding **Modify** button. (Figure 3-24, 3-25, 3-26, 3-27)

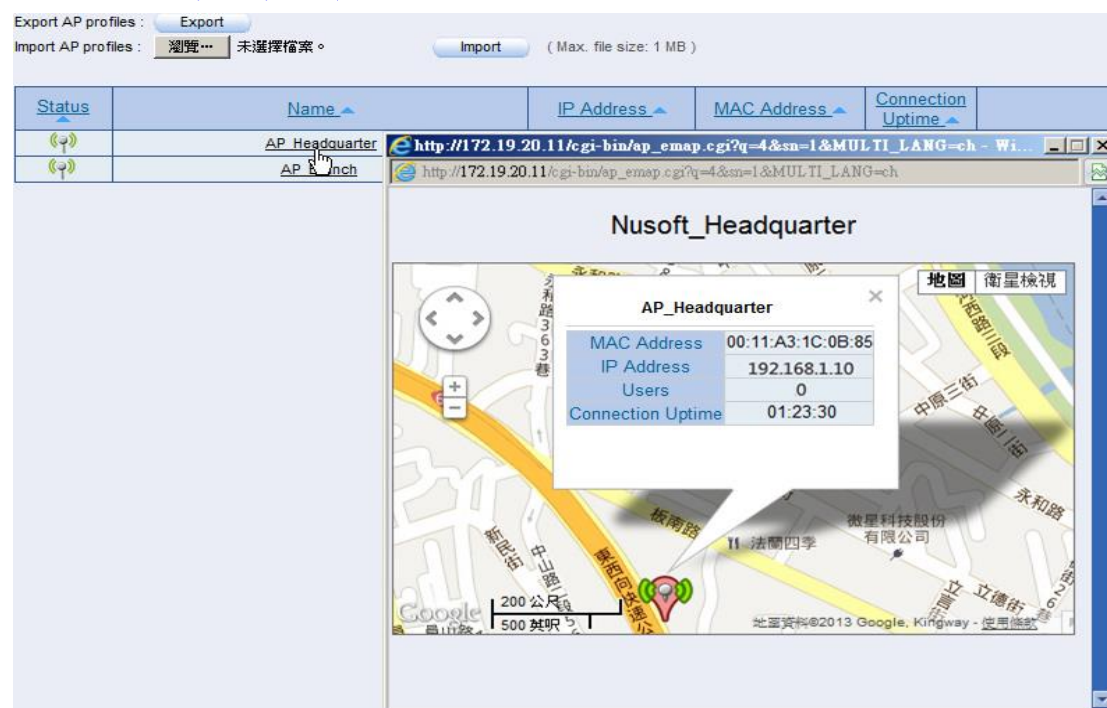


Figure 3-24 The Location of the First AP

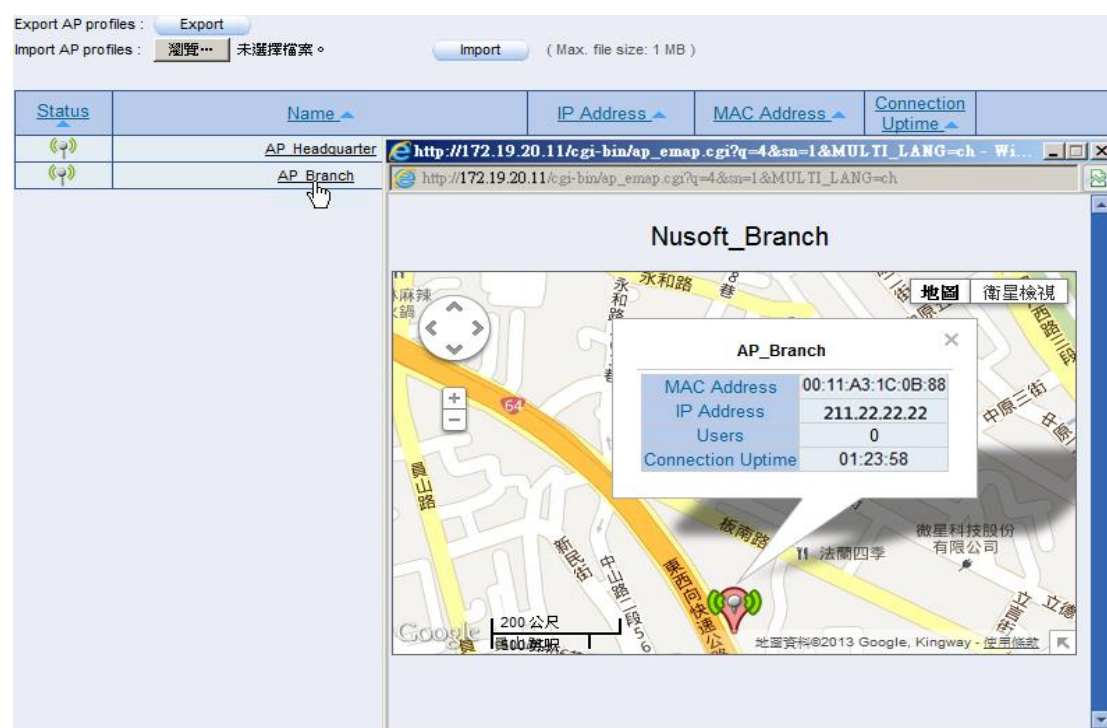


Figure 3-25 The Location of the Second AP

Modify AP Profile	
IP Address :	192.168.1.10
MAC Address :	00:11:A3:1C:0B:85
Name :	AP_Headquarter (Max. 32 characters)
Latitude :	25.006685 (Optional)
Longitude :	121.483955 (Optional)
PoE Passthrough :	Disabled
<hr/>	
2.4G :	
SSID 1 :	Nusoft_Guest
<input checked="" type="checkbox"/> Multiple SSIDs	
SSID 2 :	Nusoft_Employee
SSID 3 :	----- None -----
SSID 4 :	----- None -----
SSID 5 :	----- None -----
SSID 6 :	----- None -----
SSID 7 :	----- None -----
SSID 8 :	----- None -----
<input checked="" type="checkbox"/> Advanced Settings	
<div>OK</div> <div>Cancel</div>	

Figure 3-26 The Configuration Profile of the First AP

Modify AP Profile	
IP Address :	211.22.22.22
MAC Address :	00:11:A3:1C:0B:88
Name :	AP_Branch (Max. 32 characters)
Latitude :	25.060398 (Optional)
Longitude :	121.647072 (Optional)
PoE Passthrough :	Disabled
<hr/>	
2.4G :	
SSID 1 :	Nusoft_Guest
<input checked="" type="checkbox"/> Multiple SSIDs	
SSID 2 :	Nusoft_Employee
SSID 3 :	----- None -----
SSID 4 :	----- None -----
SSID 5 :	----- None -----
SSID 6 :	----- None -----
SSID 7 :	----- None -----
SSID 8 :	----- None -----
<input checked="" type="checkbox"/> Advanced Settings	
<div>OK</div> <div>Cancel</div>	

Figure 3-27 The Configuration Profile of the Second AP

Scenario 4. Wi-Fi Billing

4.1 Wi-Fi Billing Applications

No.	Application	Page
4.1.1	Billing Wi-Fi Service Using an SSID – Emailed Package Vouchers	38
4.1.2	Billing Wi-Fi Service Using an SSID – Printed Package Vouchers	46

4.1.1 Billing Wi-Fi Service Using an SSID – Emailed Package

Vouchers

Network Configuration

Use Nusoft APs to build a wireless LAN.

Assign the SSID“Nusoft_Guest” for guest access.

Assign the SSID“Nusoft_Employee” for employee access.

Step 1. Under **System > Configuration > Settings**, enable and configure **Email Notification Settings**.

Step 2. Click **Wi-Fi Billing > Configuration > Packages** and then configure as below: ([Figure 4-1](#))

- Specify the package name, pricing, and quantity.
- Select the type and length of passcode.
- Type the remarks.
- Select “Recurring” for **Type of Production**.
- Select “Daily” for **Frequency**.
- Enter the valid time and email notification address.
- Click **OK** to complete the settings. ([Figure 4-2](#))
- Click the corresponding **Details** button.
- Select “Printable” and then click **Download** to obtain package vouchers. ([Figure 4-3, 4-4](#))
- Package vouchers will also be sent to the designated recipient on the scheduled time. ([Figure 4-5](#))

Add Package

Package Name :

1Day-WiFi-Pass (Max. 20 characters)

Pricing :

10.00 USD (U.S. Dollar)

Quantity :

10

Passcode Type :

Alphanumerics

Passcode Length :

6

Remarks :
(Max. 1024 characters)

***** Welcome to Nusoft *****

Billing Rules

Package Type : Unlimited

Type of Production :

☐ One-Time
 ☒ Recurring

Frequency :

☒ Daily
 ☐ Weekly
 ☐ Monthly (Passcode is automatically renewed at 24:00 hours daily.)

Valid Time:

1 day(s) 0 hour(s) 0 minute(s)

Email Notification:

reggie@nusoft.com.tw (Max. 80 characters, No notification will be sent if left blank.)

Figure 4-1 Configuring the Wi-Fi Billing Settings

Package Name	Pricing	Quantity	Passcode Length	Package Type	Configuration
1Day-WiFi-Pass	10.00 USD	10	6	Unlimited	<div>Details</div> <div>Remove</div>

New Entry

Figure 4-2 Wi-Fi Billing Package Successfully Created

Back

Package Name : 1Day-WiFi-Pass
Pricing : 10.00 USD
Quantity : 10
Passcode Type : Alphanumerics
Passcode Length : 6

***** Welcome to Nusoft *****

Remarks :

Billing Rules
Package Type : Unlimited
Frequency : Daily
Valid Time : 1 day(s) 0 hour(s) 0 min(s)
Email Notification : reggie@nusoft.com.tw

☒ Printable
☐ CSV
Download

Passcode	Status	Created Time	First Login	Last Login
4b7y4a		2013-11-15 17:57:00	---	---
3b811s		2013-11-15 17:57:00	---	---
847a6n		2013-11-15 17:57:00	---	---
281e15		2013-11-15 17:57:00	---	---
697p33		2013-11-15 17:57:00	---	---
587464		2013-11-15 17:57:00	---	---
3p2b29		2013-11-15 17:57:00	---	---
5f2t8k		2013-11-15 17:57:00	---	---
8p5e5f		2013-11-15 17:57:00	---	---
551w3p		2013-11-15 17:57:00	---	---

Back

Figure 4-3 Viewing the Billing Details & Downloading the Printable Package Vouchers

Passcode :	4b7y4a
Pricing :	10.00 USD
Activated Time :	2013/11/15 00:00:00
Deactivated Time :	2013/11/15 23:59:59
Remarks :	***** Welcome to Nusoft *****

Passcode :	3b811s
Pricing :	10.00 USD
Activated Time :	2013/11/15 00:00:00
Deactivated Time :	2013/11/15 23:59:59
Remarks :	***** Welcome to Nusoft *****

Passcode :	847a6n
Pricing :	10.00 USD
Activated Time :	2013/11/15 00:00:00
Deactivated Time :	2013/11/15 23:59:59
Remarks :	***** Welcome to Nusoft *****

Passcode :	281e15
Pricing :	10.00 USD
Activated Time :	2013/11/15 00:00:00
Deactivated Time :	2013/11/15 23:59:59
Remarks :	***** Welcome to Nusoft *****

Passcode :	697p33
Pricing :	10.00 USD
Activated Time :	2013/11/15 00:00:00
Deactivated Time :	2013/11/15 23:59:59
Remarks :	***** Welcome to Nusoft *****

Passcode :	587464
Pricing :	10.00 USD
Activated Time :	2013/11/15 00:00:00
Deactivated Time :	2013/11/15 23:59:59
Remarks :	***** Welcome to Nusoft *****

Passcode :	3p2b29
Pricing :	10.00 USD
Activated Time :	2013/11/15 00:00:00
Deactivated Time :	2013/11/15 23:59:59
Remarks :	***** Welcome to Nusoft *****

Passcode :	5f2t8k
Pricing :	10.00 USD
Activated Time :	2013/11/15 00:00:00
Deactivated Time :	2013/11/15 23:59:59
Remarks :	***** Welcome to Nusoft *****

Passcode :	8p5e5f
Pricing :	10.00 USD
Activated Time :	2013/11/15 00:00:00
Deactivated Time :	2013/11/15 23:59:59
Remarks :	***** Welcome to Nusoft *****

Passcode :	551w3p
Pricing :	10.00 USD
Activated Time :	2013/11/15 00:00:00
Deactivated Time :	2013/11/15 23:59:59
Remarks :	***** Welcome to Nusoft *****

Figure 4-4 The Printable Wi-Fi Billing Package Vouchers

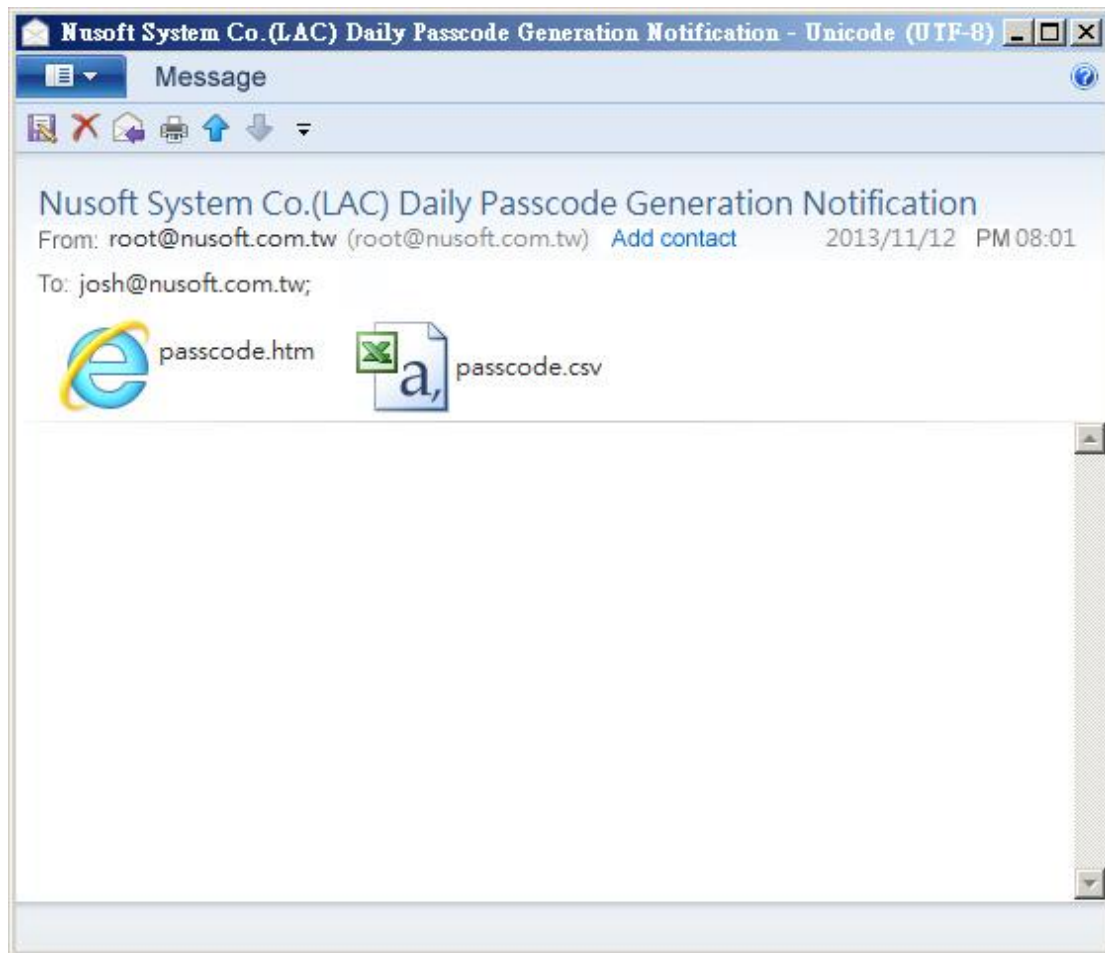


Figure 4-5 Receiving a Wi-Fi Billing Package Vouchers



Note:

1. If the **Type of Production** is set to "Recurring", then:
 - **Monthly:** Passcodes are automatically renewed at 24:00 hours on the 1st day of each month.
 - **Weekly:** Passcodes are automatically renewed at 24:00 hours on Sundays.
 - **Daily:** Passcodes are automatically renewed at 24:00 hours daily.

Step 3. Click **AP Controller > Configuration > SSID Settings** and then configure as below: ([Figure 4-6](#))

- Click the **Modify** button corresponded to the SSID “Nusoft_Guest”.
- Enable the **Wi-Fi Billing**.
- Click **OK** to complete the settings.

Modify SSID Settings

NetWork Name(SSID) : (Max. 32 characters)

SSID Visibility : ☒ Enabled

Client Isolation : ☐ Enabled [Help](#)

Client Limit : ☐ Enabled Max. Clients : (1 - 64)

Captive Portal : ☐ Enabled

Wi-Fi Billing : ☒ Enabled

VLAN ID : ☐ Enabled VLAN ID : (Range : 0 - 4095)

Authentication :

Encryption :

Key Type : Key Size :

Key Index : (1 - 4)

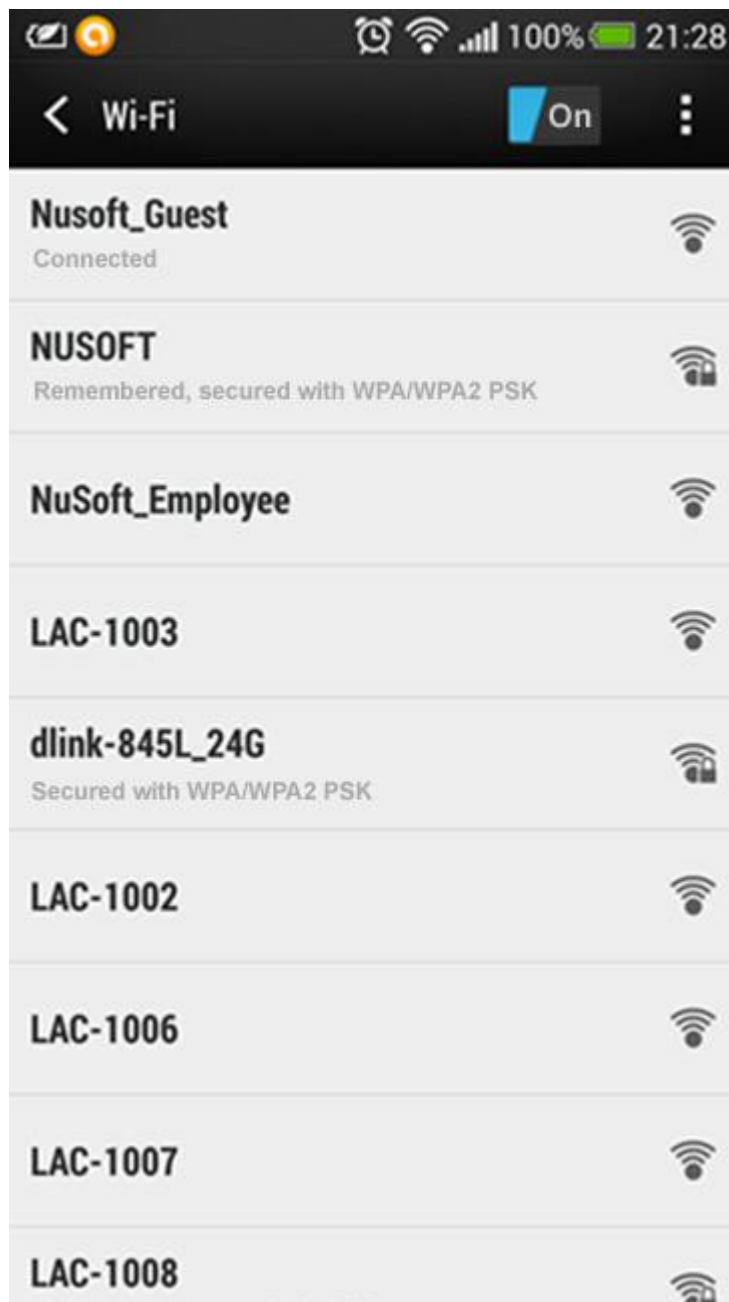
Network Key : (Exact 10 characters) ☐ Show Key

Confirm Key : (Exact 10 characters)

[OK](#) [Cancel](#)

Figure 4-6 Enabling the Wi-Fi Billing

Step 4. When using a mobile device (e.g., smartphone, tablet, etc.), wireless users will be required to provide the passcode to access the Internet.
([Figure 4-7, 4-8](#))



[Figure 4-7 User Connected as a Guest](#)

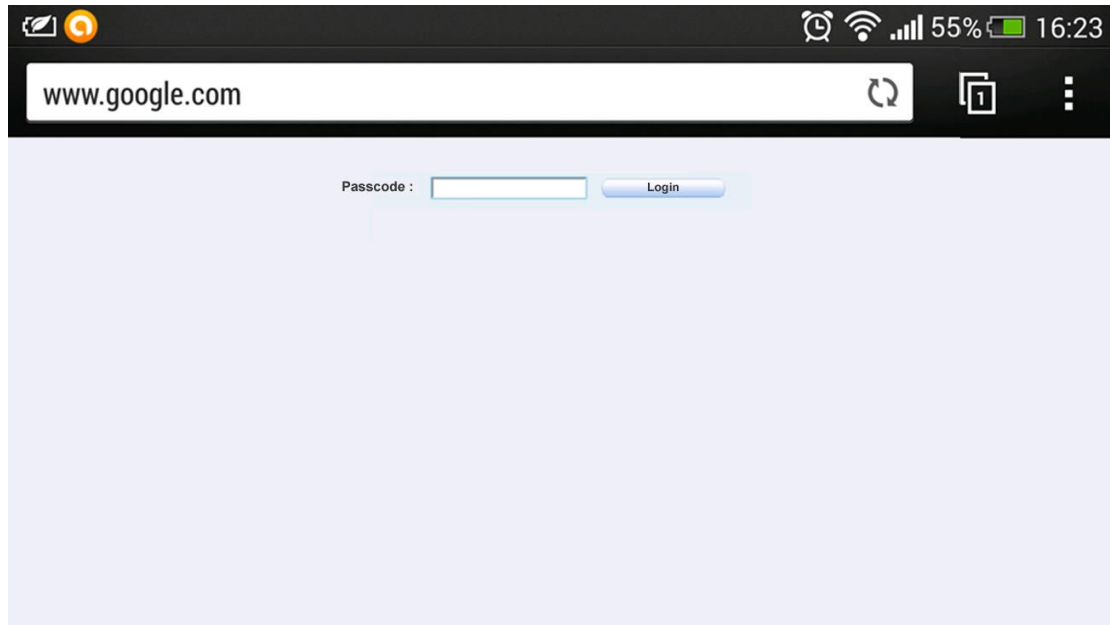


Figure 4-8 User Being Required a Passcode to Access the Internet

4.1.2 Billing Wi-Fi Service Using an SSID – Printed Package

Vouchers

Network Configuration

Use Nusoft APs to build a wireless LAN.

Assign the SSID“Nusoft_Guest” for guest access.

Assign the SSID“Nusoft_Employee” for employee access.

- Step 1. Connect the COM1 Port of the Nusoft Billing Account Generator to the Nusoft Thermal Printer, as well as connect its Ethernet port to the LAN. ([Figure 4-9](#))



Figure 4-9 A Nusoft Billing Account Generator Connected to Your LAN

Step 2. Log in to the management interface of Nusoft Billing Account Generator and then configure its related parameters. (Figure 4-10)

Serial Settings	
Data Baud Rate	9600
Data Bits	8
Data Parity	None
Stop Bits	1
Flow Control	None
Network Settings	
	<input type="checkbox"/> Enable DHCP
Static IP Address	172.19.255.253
Static Subnet Mask	255.255.0.0
Static Default Gateway	172.19.1.254
Server Listening Port	5000
	<input checked="" type="checkbox"/> Enable Reboot
	Apply Reset
	Firmware Upgrade

Figure 4-10 The Management Interface of Nusoft Billing Account Generator

Step 3. Click **Wi-Fi Billing > Configuration > Thermal Printer** and then configure as below:

- Under the **Package List** section: ([Figure 4-11](#))
 - ◆ Click the **Modify** button corresponded to the package.
 - ◆ Enable the **Billing Service**.
 - ◆ Specify the package name and pricing.
 - ◆ Select the type and length of passcode.
 - ◆ Type the receipt header.
 - ◆ Enter the valid time.
 - ◆ Tick the boxes of the items to be printed on the vouchers.
 - ◆ Click **OK** to complete the settings.
- Under the **Thermal Printer** section: ([Figure 4-12](#))
 - ◆ Specify the IP address and command port for connecting to the Nusoft Billing Account Generator.
 - ◆ Tick the boxes of the items to be printed on the vouchers.
 - ◆ Click **OK** to complete the settings. ([Figure 4-13](#))
- The package voucher can be printed by a Nusoft Thermal Printer. ([Figure 4-14](#))

Modify Billing Plan

Billing Service :	<input checked="" type="checkbox"/> Enabled
Package Name :	<input type="text" value="Unlimited-WiFi-Pass"/> (Max. 20 characters)
Pricing :	<input type="text" value="10.00"/> <input type="text" value="CZK (Czech Koruna)"/>
Passcode Type :	<input type="text" value="Alphanumerics"/>
Passcode Length :	<input type="text" value="6"/>
Receipt Header :	<input type="text" value="***** Welcome to Nusoft *****"/> (Max. 1024 characters)
Remarks :	<div style="border: 1px solid #ccc; height: 100px; width: 100%;"></div>

Billing Rules

Package Type :	<input type="text" value="Unlimited"/>
Valid Time :	<input type="text" value="1"/> day(s) <input type="text" value="0"/> hour(s) <input type="text" value="0"/> minute(s)

Package Item Display Settings

Pricing :	<input checked="" type="checkbox"/>
Package Type :	<input checked="" type="checkbox"/>
Created Time :	<input checked="" type="checkbox"/>
Activated Time :	<input checked="" type="checkbox"/>
Deactivated Time :	<input checked="" type="checkbox"/>
Receipt Header :	<input checked="" type="checkbox"/>
Remarks :	<input checked="" type="checkbox"/>

Figure 4-11 Configuring the Wi-Fi Billing Settings

Modify Thermal Printer

IP Address :

172.19.255.253 (ex. 192.168.1.1)

Command Port :

5000 (ex. 65535)

Remarks :

 (Max. 31 characters)

Enable Auto Cutter :

☐

#	Enabled	Package Name	Package Type	Pricing
0	<input checked="" type="checkbox"/>	Unlimited-WiFi-Pass	Unlimited	10.00 CZK
1	<input type="checkbox"/>	Plan 1	Unlimited	10.00 USD
2	<input type="checkbox"/>	Plan 2	Unlimited	10.00 USD
3	<input type="checkbox"/>	Plan 3	Unlimited	10.00 USD
4	<input type="checkbox"/>	Plan 4	Unlimited	10.00 USD
5	<input type="checkbox"/>	Plan 5	Unlimited	10.00 USD
6	<input type="checkbox"/>	Plan 6	Unlimited	10.00 USD
7	<input type="checkbox"/>	Plan 7	Unlimited	10.00 USD
8	<input type="checkbox"/>	Plan 8	Unlimited	10.00 USD
9	<input type="checkbox"/>	Plan 9	Unlimited	10.00 USD

Figure 4-12 Viewing the Packages Generated by Nusoft Billing Account Generator

Voucher Printing Settings

Pricing :

Pricing

 (Max. 30 characters)

Package Type :

Package Type

 (Max. 30 characters)

Quota :

Quota

 (Max. 30 characters)

Created Time :

Created

 (Max. 30 characters)

Activated Time :

Activated

 (Max. 30 characters)

Deactivated Time :

Deactivated

 (Max. 30 characters)

Remarks :

Remarks

 (Max. 30 characters)

Package List

#	Status	Package Name	Package Type	Pricing	Configuration
0	✓	Unlimited-WiFi-Pass	Unlimited	10.00 CZK	<input type="button" value="Details"/> <input type="button" value="Modify"/>
1	✗	Plan 1	Unlimited	10.00 USD	<input type="button" value="Details"/> <input type="button" value="Modify"/>
2	✗	Plan 2	Unlimited	10.00 USD	<input type="button" value="Details"/> <input type="button" value="Modify"/>
3	✗	Plan 3	Unlimited	10.00 USD	<input type="button" value="Details"/> <input type="button" value="Modify"/>
4	✗	Plan 4	Unlimited	10.00 USD	<input type="button" value="Details"/> <input type="button" value="Modify"/>
5	✗	Plan 5	Unlimited	10.00 USD	<input type="button" value="Details"/> <input type="button" value="Modify"/>
6	✗	Plan 6	Unlimited	10.00 USD	<input type="button" value="Details"/> <input type="button" value="Modify"/>
7	✗	Plan 7	Unlimited	10.00 USD	<input type="button" value="Details"/> <input type="button" value="Modify"/>
8	✗	Plan 8	Unlimited	10.00 USD	<input type="button" value="Details"/> <input type="button" value="Modify"/>
9	✗	Plan 9	Unlimited	10.00 USD	<input type="button" value="Details"/> <input type="button" value="Modify"/>

Thermal Printer

Status	IP Address	Command Port	Remarks	Configuration
✓	172.19.255.253	5000		<input type="button" value="Modify"/> <input type="button" value="Remove"/>

Figure 4-13 Wi-Fi Billing Package Successfully Created

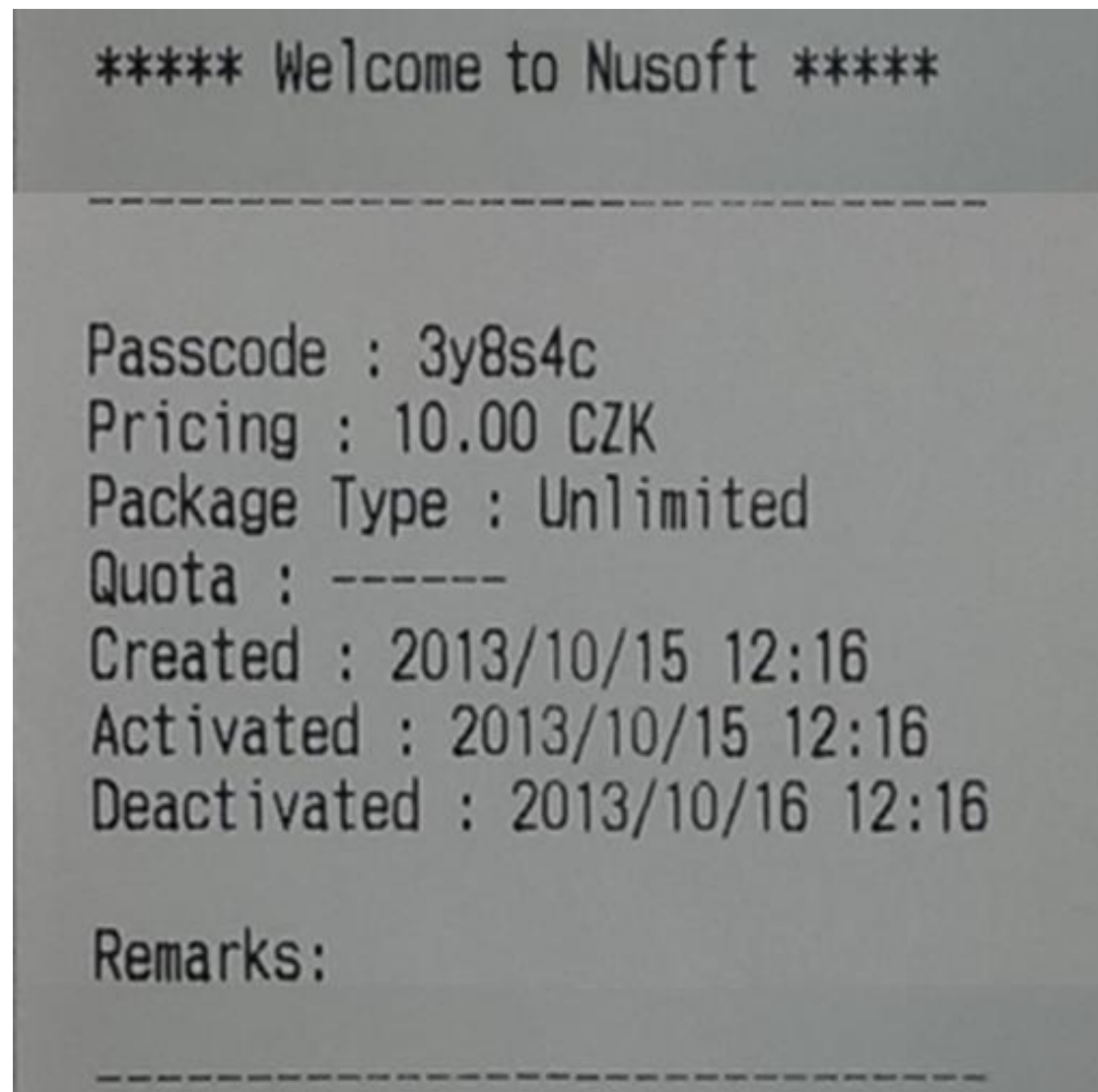


Figure 4-14 The Package Voucher Printed by Nusoft Thermal Printer

Step 4. Click **AP Controller > Configuration > SSID Settings** and then configure as below: ([Figure 4-15](#))

- Click the **Modify** button corresponded to the SSID “Nusoft_Guest”.
- Enable the **Wi-Fi Billing**.
- Click **OK** to complete the settings.

Modify SSID Settings

NetWork Name(SSID) : (Max. 32 characters)

SSID Visibility : ☒ Enabled

Client Isolation : ☐ Enabled [Help](#)

Client Limit : ☐ Enabled Max. Clients : (1 - 64)

Captive Portal : ☐ Enabled

Wi-Fi Billing : ☒ Enabled

VLAN ID : ☐ Enabled VLAN ID : (Range : 0 - 4095)

Authentication :

Encryption :

Key Type : Key Size :

Key Index : (1 - 4)

Network Key : (Exact 10 characters) ☐ Show Key

Confirm Key : (Exact 10 characters)

OK Cancel

Figure 4-15 Enabling the Wi-Fi Billing

Step 5. When using a mobile device (e.g., smartphone, tablet, etc.), wireless users will be required to provide the passcode to access the Internet.
([Figure 4-16, 4-17](#))

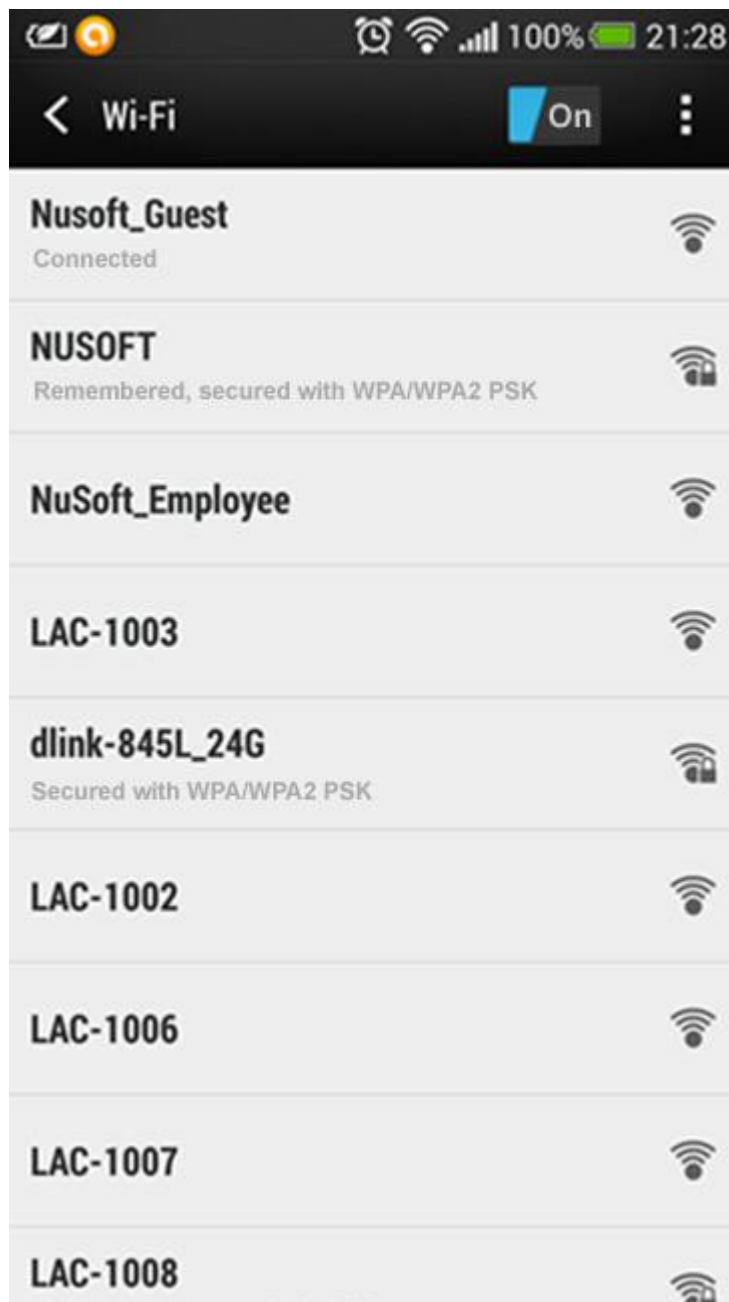


Figure 4-16 User Connected as a Guest

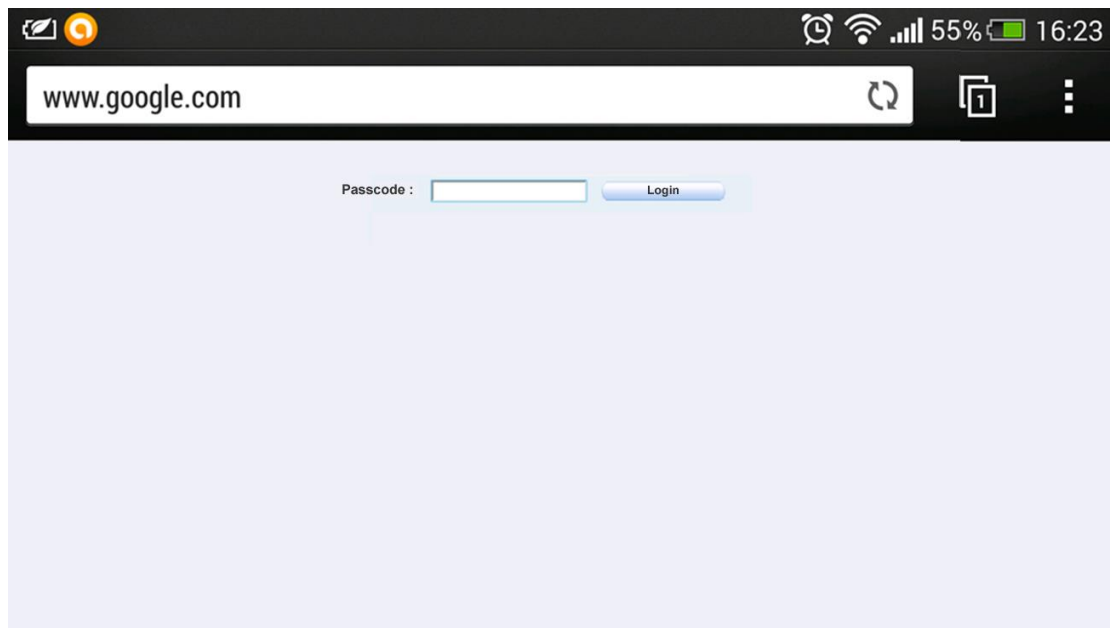


Figure 4-17 User Being Required a Passcode to Access the Internet