



# Quick Start Guide

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## Customers

### INTRODUCTION

This document will guide you through the process of setting up and registering an Access Point (AP) and establishing a WLAN in version 1.2.0 of the Relay2Cloud Wireless Manager. Detailed information on these and other advanced features can be found in Relay2's WLAN System Test Manual, version 1.2.0-20130915.

### BEFORE YOU START

The Relay2 Access Point cannot function as a standalone unit. Before connecting your AP to a network, make sure to check the following:

- ✦ Acquire a Relay2 account from your Service Provider if you have not do so; provide your name, company e-mail address, phone number, and a username in the form of an e-mail address for account creation.
- ✦ The Relay2 Cloud Wireless Manager is accessed through a variety of web browsers, including Internet Explorer 9 and 10, Google Chrome 26 and above, Mozilla Firefox 6 and above, Safari 5 and above and Opera.
- ✦ The Relay2 AP must be connected to a network that can reach the Internet. If your network has a firewall that blocks outbound traffic to the Internet, make sure to configure your firewall to allow at least HTTP and HTTPS ports.
- ✦ The AP's management network interface will automatically obtain an IP address from the DHCP server by default. If your network requires the use of static IP address, refer to section 5 for details on how to configure your Relay2 AP accordingly.

## QUICK SETUP OVERVIEW

### 1. Hook up and install your AP.

Insert power and Ethernet cables.  
Position AP for maximum signal coverage.



### 2. Log into Cloud Wireless Manager.

Log in at [www.relay2.net.cn].  
Check for AP registration on “Dashboard” page.



### 3. Add a WLAN.

Navigate to “Configure → WLAN”.  
Click “Add New” and fill in respective fields.










### 4. Test your WLAN connection.

Connect to your WLAN SSID with a WiFi device.  
Check for connection events.

## 1. Hook up and install your AP

### 1.1. Check Your AP Packaging List

Packaging List			
No.	Picture	Component Name	Qty.
1		R2-CAP-NP-900N	1
2		Wall Mounting Plate	1
3		Power Adapter	1
4		Power Cord(US Type)	1
5		Screw set for Wall Mounting Plate	4 sets
6		Customer Quick Start Guide	1
7		Desk-Mount Rubber Pad	4

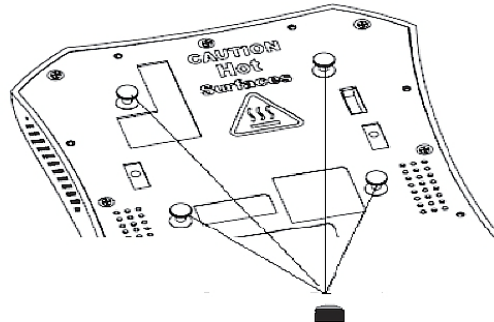
#### Hardware Specification

Weight	0.98KG
Physical Dimensions	270mm * 220mm * 40mm (not including deskmount feet or wall mounting plate)
Mounting	Desktop or wall mount (including wall mounting kit with adjustable angel)
Power	1. PoE+ (802.3af compatible) 2. 48VDC power adaptor
Power Consumption	Maximum 16W
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)
Operating Humidity	-20°C ~ 80°C (-4°F to 176°F)
Storage Temperature	15% ~95% noncondensing
Network Interface	1. one RJ45 GE port (802.3af standard PoE ) 2. one USB 2.0 port
Antenna	Internal hexagonal directional antennas Gain: 3 dBi @ 2.4 GHz, 5 dBi @ 5 GHz
Display	2 line 16 characters LCD Status and alarm information display
LED Indicators	1 Alarm and message indicator 1 power indicator 1 Ethernet connectivity indicator
Regulatory	FCC(US), CE(Europe), 3C/TA(China), UL, RoHS.
Certifications	WiFi Alliance

## 1.2. Installing Your Access Point

- a. When installing on a flat surface, attach the rubber pads to the back of the AP as shown below.

Desk Mount Rubber Pad (for desktop installation)

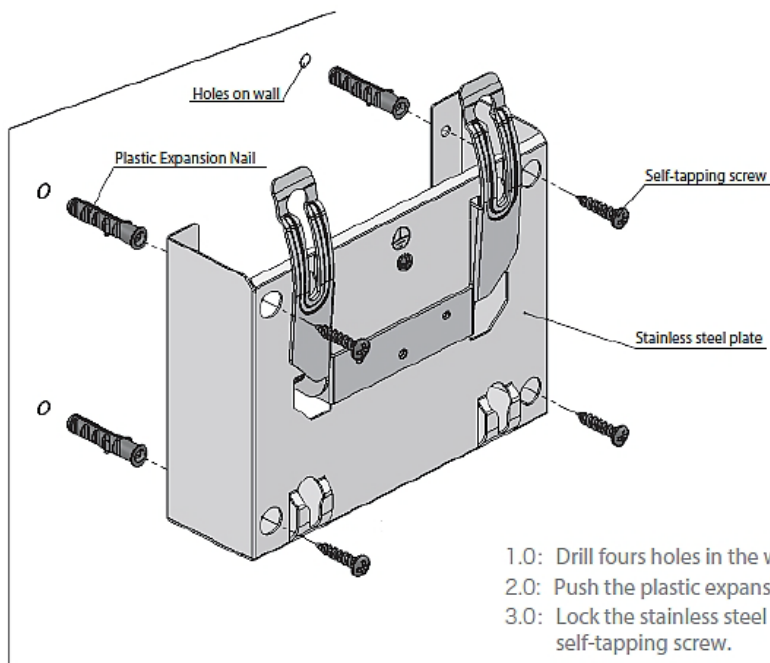


Stick the 8th component (Rubber Pad) onto Desk-Mount Feet

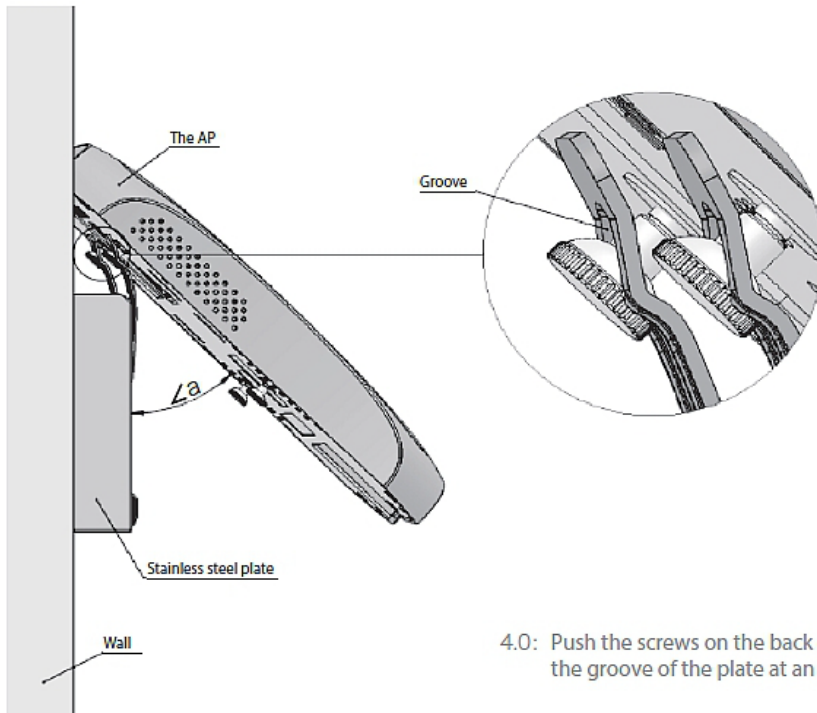
- b. If mounting the AP on a wall, follow the instructions in the diagrams below.

### Wall Mounting Plate

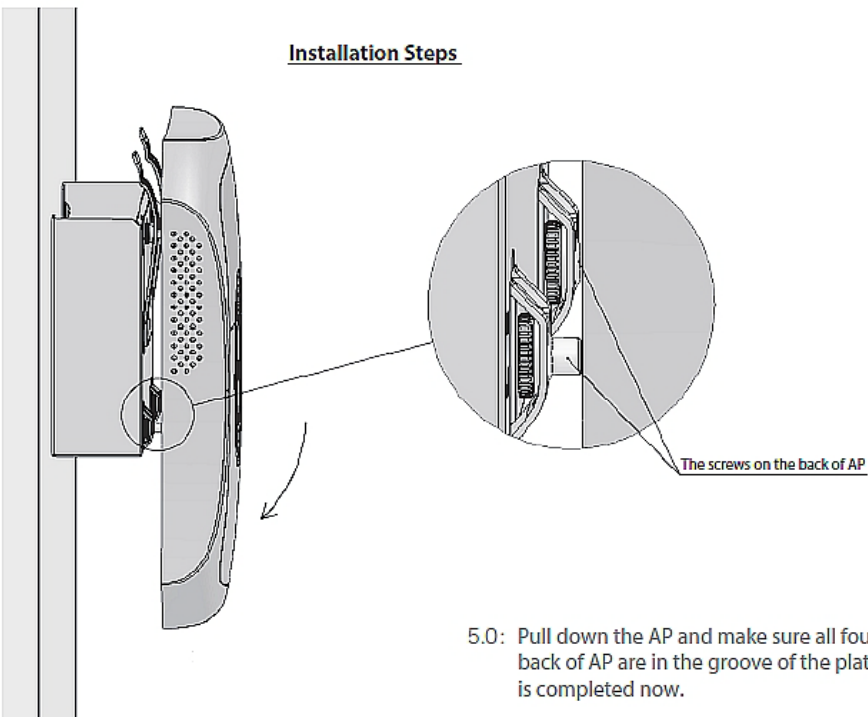
#### Installation Steps



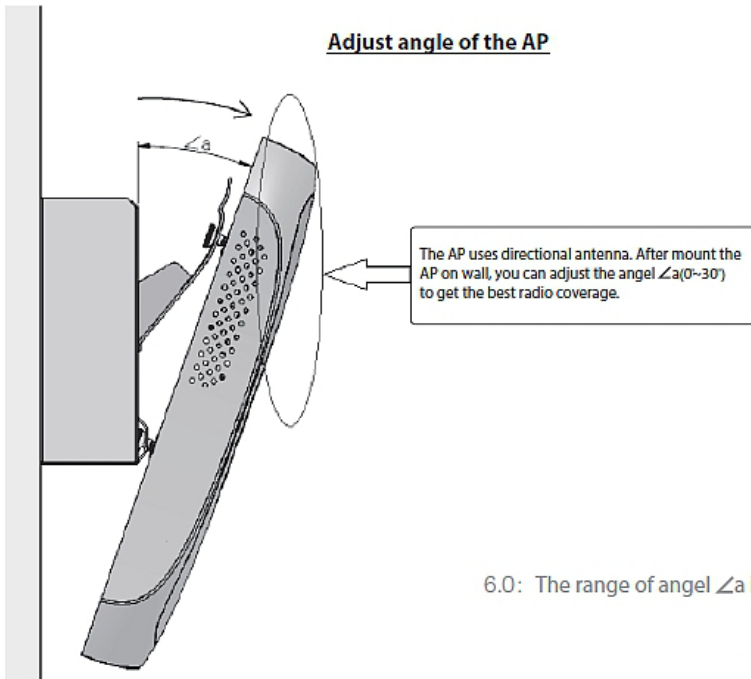
- 1.0: Drill four holes in the wall.
- 2.0: Push the plastic expansion nails into holes.
- 3.0: Lock the stainless steel plate with four self-tapping screws.



4.0: Push the screws on the back of AP into the groove of the plate at an angle  $\angle a$ .

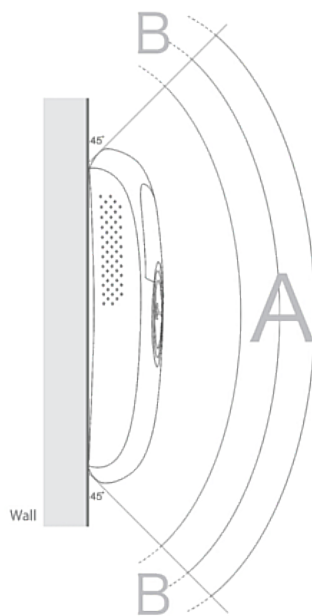


5.0: Pull down the AP and make sure all four screws on the back of AP are in the groove of the plate. Wall mounting is completed now.



### 1.3. Setting Up Your Access Point

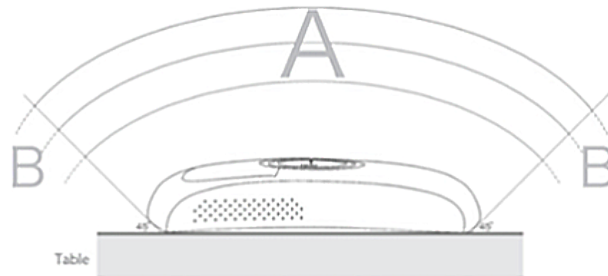
- a. The Relay2 AP can be placed on a desk or mounted on a wall. If mounted, the AP can be tilted to provide maximum signal coverage. Use this diagram to position the AP so that it provides the most signal coverage for your purposes.
- b. Avoid placing objects on top of the AP.
- c. Avoid installing the AP near magnetic and/or metal objects.
- d. If you are installing the Relay2 AP outdoors, make sure to place a water-resistant shield over it.
- e. For more information relating to the setup of the Relay2 AP, see section 2 of this document.



#### Signal Coverage Area

**Installation reference:**

- A: Strong signal coverage area.  
B: Weak signal coverage area.



## 1.4. Your Access Point Hardware Features

- a. Power can be supplied either through a 48VDC adaptor, or an IEEE 802.3at PoE+ (PoE plus) Switch port that can supply up to 25W power over Ethernet cable inserted into the RJ45 port (**B7**). We recommend using the PoE+ for better management.
- b. If you do not have a PoE+ Switch, you can use the power adaptor that comes with the AP. The AP's power cable can be inserted into the DC port (**B6**).
- c. The Ethernet cable is better to use CAT5 or CAT6 class cable, which can be inserted into the RJ45 port (**B7**).

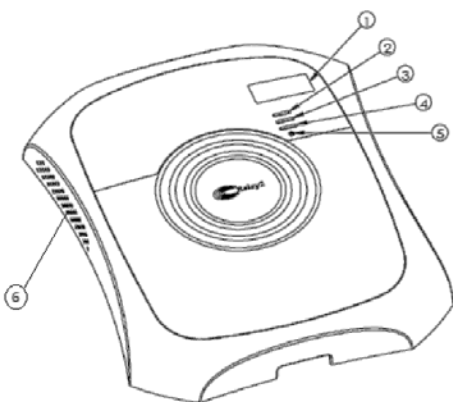


Figure A. Panel of WLAN Access Point

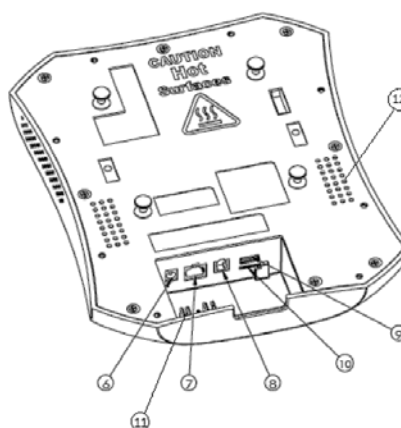
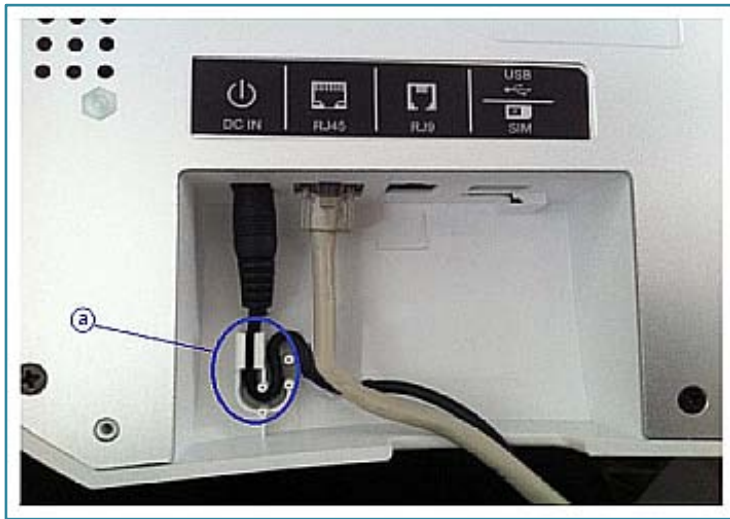


Figure B. WLAN Access Point Interfaces

<b>1</b>	<b>LCD Display</b>	<b>6</b>	<b>DC in/48-VDC</b>
<b>2</b>	<b>Status LED</b>	<b>7</b>	<b>RJ45 Port</b>
<b>3</b>	<b>Radio LED</b>	<b>8</b>	<b>RJ9 Port (RS9 to RS232)</b>
<b>4</b>	<b>Ethernet LED</b>	<b>9</b>	<b>USB Port</b>
<b>5</b>	<b>Reset Button</b>	<b>10</b>	<b>Micro SIM Card port</b>
<b>6</b>	<b>Air Circulation Holes</b>	<b>11</b>	<b>Trunking for Power Cord</b>
		<b>12</b>	<b>Air Circulation Holes</b>

- d. The Relay2 AP also features a serial port (**B8**), a USB port (**B9**), and an optional SIM card port (**B10**).
- e. Once the AP is receiving power, it will initiate an LCD/LED startup sequence.
- f. In the LED startup sequence, all three LED lights—Status (**A2**), Radio (**A3**), and Ethernet (**A4**)—should blink green and then turn solid green.
- g. The AP's power and Ethernet cables can be trunked into the grooves beneath their respective ports, as shown below:





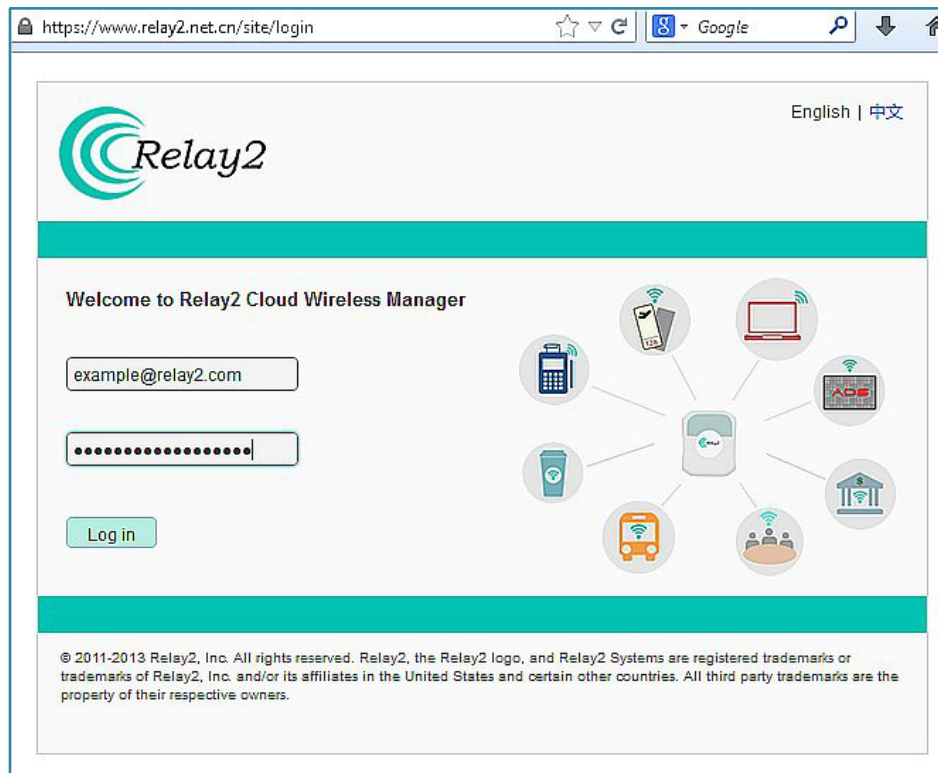
## 2. AP Boot UP

Relay2 AP first time boot up will take about 5 – 10 minutes depending on the software version number installed on the AP that you receive. Longer time will be needed if AP detects there is new software version and download the new software image to update the AP. You can view the LCD screen provided in the AP to tell the current AP status:

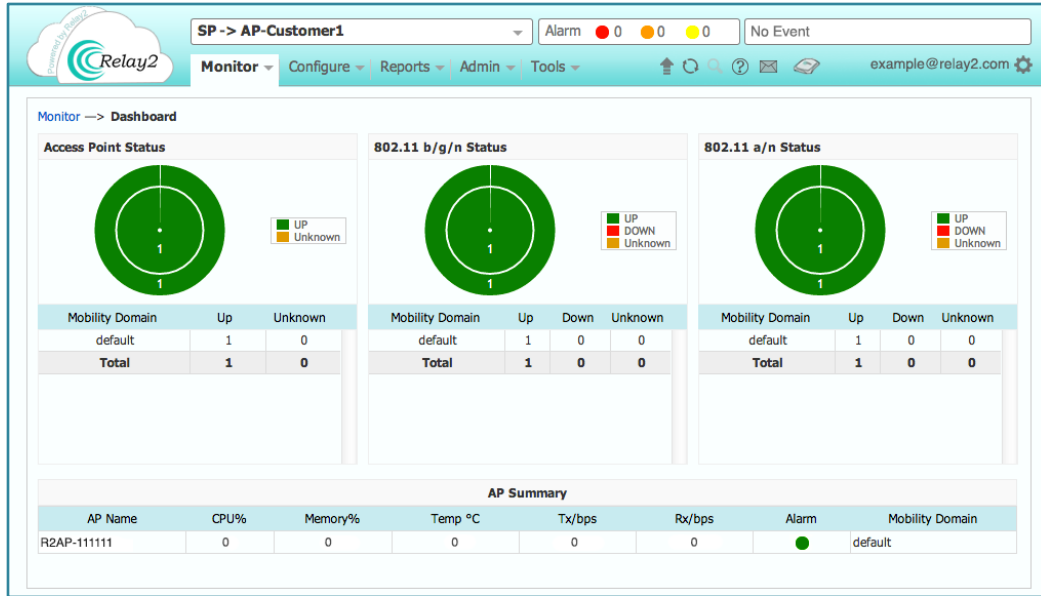
1. Welcome to R2OS
2. Bootup
3. Registered (found Cloud Controller and registered with Cloud Controller)
4. Connect – Connecting to Cloud Controller
5. Download – Found new AP SW image and is downloading and will reboot after image update
6. Radio 1&2 UP – The state that AP has successfully connected to Cloud Controller

## 3. Logging in

- a. Log in with your provided Super-User account at [www.relay2.net.cn].



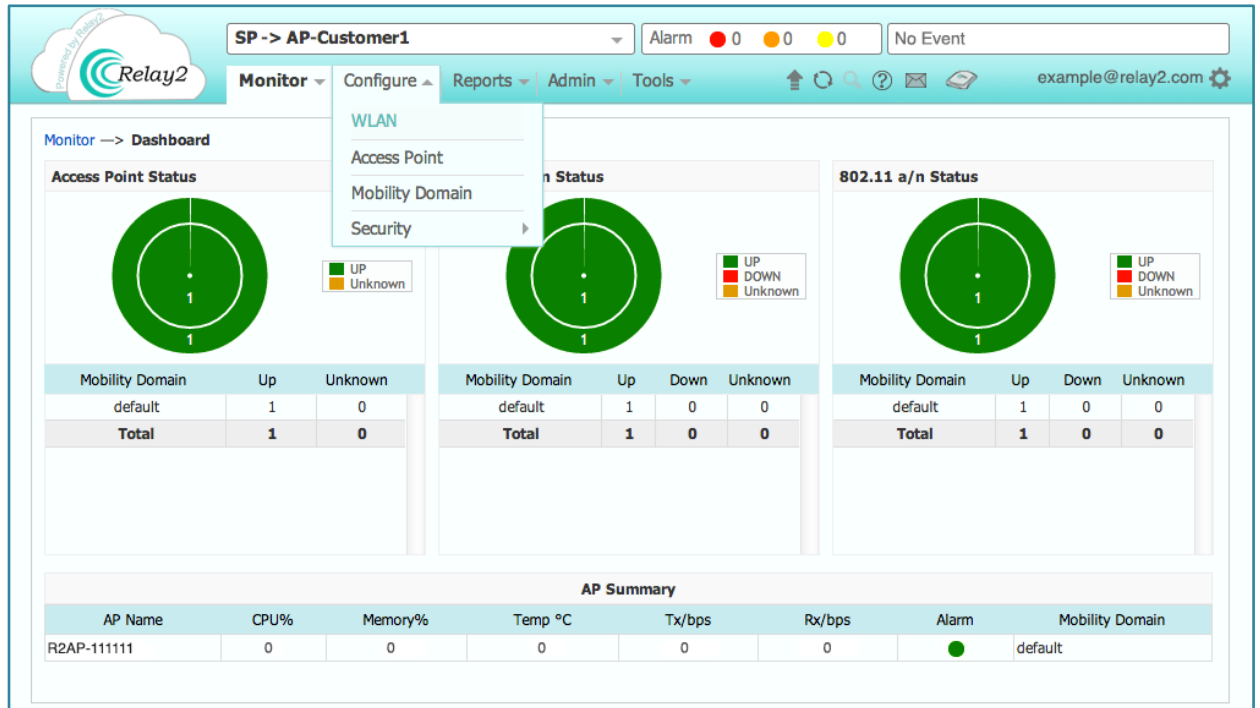
- b. Upon logging in, you will be directed to the “Monitor -> Dashboard” page.



If all three rings are not already green, wait 1-2 minutes for their appearance.

#### 4. ADDING A WLAN

- a. Navigate to “Configure —> WLAN,” then click on “Add New”.



SP -> AP-Customer1 Alarm 0 0 0 No Event

Monitor Configure Reports Admin Tools example@relay2.com

Configure -> WLAN

Check: All - None - Invert Add New Delete Selected Enable Selected Disable Selected

<input type="checkbox"/>	Profile Name	SSID	Admin Status	Security Policy	Mobility Domain	VLAN Domain	VLAN ID
Total 0 < Prev Next Page 0 Go							

b. Add a WLAN profile name, SSID, and modify settings as desired; then click “Apply”.

SP -> AP-Customer1 Alarm 0 0 0 No Event

Monitor Configure Reports Admin Tools example@relay2.com

Configure -> WLAN -> Add New Apply Cancel Show More

Profile Name Example WLAN Mobility Domain default, no VLAN Edit

SSID HAL Name Length:1-31 New Client Connection

Enabled  Client to Client Blocking

Broadcast SSID  DTIM 802.11a/n Period 1

Radio Policy All 802.11a/n Data Rate (Mbps) Automatic Edit

WLAN Type WLAN Edit DTIM 802.11b/g/n Period 1

L2 Security Type [Open] Edit 802.11b/g/n Data Rate (Mbps) Automatic Edit

ACL Policy None

MAC Filter Profile None

Client Black List

c. Your WLAN has been created.

SP -> AP-Customer1 Alarm 0 0 0 No Event

Monitor Configure Reports Admin Tools example@relay2.com

Configure -> WLAN

Check: All - None - Invert Add New Delete Selected Enable Selected Disable Selected




Profile Name	SSID	Admin Status	Security Policy	Mobility Domain	VLAN Domain	VLAN ID
ExampleWLAN	HAL	✓	[Open]	default		0

Total 1 Prev 1 Next Page 1 Go

## 5. TESTING YOUR WLAN CONNECTION

- Test your WLAN configuration by connecting an electronic device with WiFi capabilities to your WLAN SSID. You may also wish to launch a web browser and see if you can connect to the Internet.



- Navigate to “Monitor -> Client Station” to check for these connection events in descending order: *Association* , *Authentication* , and *Connection* . If all three appear, your device has successfully connected to the AP.

SP -> AP-Customer1 Alarm 0 0 0 No Event example@relay2.com

Monitor -> Dashboard

Access Point Status

802.11 b/g/n Status

802.11 a/n Status

Mobility Domain	Up	Down	Unknown
default	1	0	0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>

SP -> AP-Customer1 Alarm 0 0 0 No Event example@relay2.com

Monitor -> Client Station Show: All Timeframe: Latest

Station MAC	Station IP	WLAN Profile	SSID	via BSSID	Radio Type	AP MAC	Status	Timestamp	Vendor
00:22:43:15:88:24	192.168.2.87	relay2	relay2	B4:82:C5:50:00:33	b/g/n 20Mhz	B4:82:C5:50:00:00:33	↔	2013-07-30 19:08:36,366	
00:22:43:15:88:24		relay2	relay2	B4:82:C5:50:00:33	b/g/n 20Mhz	B4:82:C5:50:00:00:33	↔	2013-07-30 19:08:18,408	
00:22:43:15:88:24		relay2	relay2	B4:82:C5:50:00:33	b/g/n 20Mhz	B4:82:C5:50:00:00:33	↔	2013-07-30 19:08:18,380	

## 6. ESTABLISHING A STATIC IP ADDRESS

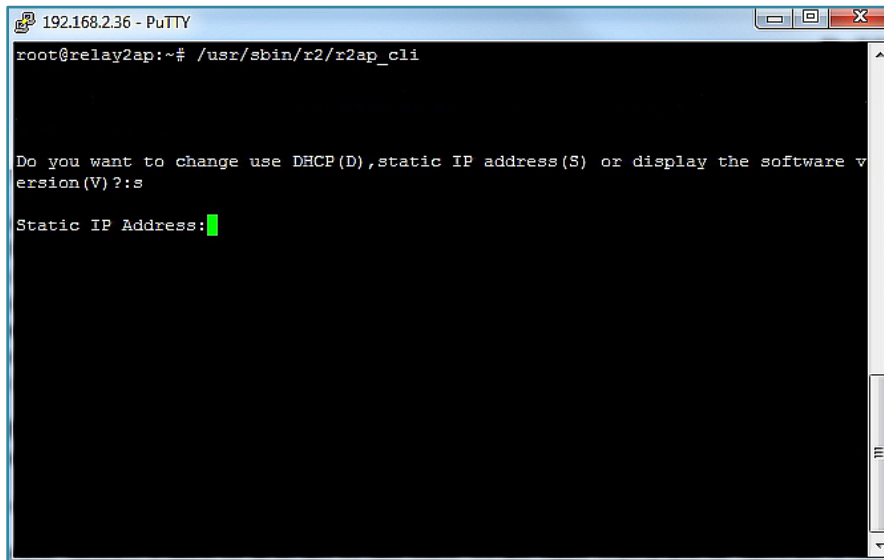
- Enable AP Console adapter access by connecting a USB-to-Serial converter to the RJ9 ports (see **B8** in section 3) of the AP and your desktop or laptop.

```

192.168.2.36 - PuTTY
root@relay2ap:~# /usr/sbin/z2/z2ap_cli

Do you want to change use DHCP(D),static IP address(S) or display the software version(V)?:
  
```

- b. Launch a program that can communicate with serial ports (for example, PuTTY).
- c. Access the Relay2 AP's serial port.
- d. Hit [s] to switch to a static IP address.



```
192.168.2.36 - PuTTY
root@relay2ap:~# /usr/sbin/r2/r2ap_cli

Do you want to change use DHCP(D),static IP address(S) or display the software v
ersion(V)? :s

Static IP Address: █
```

- e. Add a new static IP address, NetMask, Default Gateway and DNS, hitting [ENTER] after each entry.
- f. Hit [y] when complete. Your AP will restart and connect to the static IP address.

## FCC Caution.

### § 15.19 Labelling requirements.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### § 15.21 Information to user.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### § 15.105 Information to the user.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio

frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.