

# Cloudpath Enrollment System Integration with Ruckus WLAN Controllers Configuration Guide, 5.5

Supporting Cloudpath Software Release 5.5

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# Configuring the Ruckus Wireless Controllers

This document describes how to configure the Ruckus ZoneDirector, SmartZone, and Unleashed controllers to integrate with the Cloudpath system, and includes the following steps:

- Set up Cloudpath as an AAA Authentication Server
- Create AAA Accounting Server (Optional)
- Create Hotspot Services
- Set Up the Walled Garden
- Create the Onboarding SSID
- Create the Secure SSID

## NOTE

The screen shots and corresponding instructions in this manual are based on the following Ruckus Controller versions:

- ZoneDirector 10.1.1
- Virtual SmartZone 3.6.0 (High Scale)
- Unleashed 200.6

If you are using different versions of any controller, please consult your controller documentation because you may encounter some differences in the user interface.

## Setting up Cloudpath as an AAA Authentication Server

Create an AAA authentication server for the Cloudpath onboard RADIUS server. The following images show this configuration on the Ruckus ZoneDirector, SmartZone, and Unleashed controllers.

On ZoneDirector, go to **Services & Profiles > AAA Servers**. On SmartZone, go to **Services & Profiles > Authentication**. On Unleashed, go to **Admin & Services > Services > AAA Servers > Authentication Servers**.

FIGURE 1 Create AAA Authentication Server on ZoneDirector

**Create New**

Name	<input type="text" value="R-AOnboard"/>
Type	<input type="radio"/> Active Directory <input type="radio"/> LDAP <input checked="" type="radio"/> RADIUS <input type="radio"/> RADIUS Accounting <input type="radio"/> TACACS+
Encryption	<input type="checkbox"/> TLS
Auth Method	<input checked="" type="radio"/> PAP <input type="radio"/> CHAP
Backup RADIUS	<input type="checkbox"/> Enable Backup RADIUS support
IP Address*	<input type="text" value="192.168.5.73"/>
Port*	<input type="text" value="1812"/>
Shared Secret*	<input type="text" value="*****"/>
Confirm Secret*	<input type="text" value="*****"/>
Retry Policy	
Request Timeout*	<input type="text" value="3"/> seconds
Max Number of Retries*	<input type="text" value="2"/> times

FIGURE 2 Create AAA Authentication Server on SmartZone

**Create AAA Server**

**General Options**

Name: Lab AAA Auth

Description:

Type:  RADIUS  Active Directory  LDAP

Backup RADIUS:  Enable Secondary Server

**Primary Server**

IP Address: 72.18.151.56

Port: 1812

Shared Secret: .....

Confirm Secret: .....

**User Role Mapping**

OK Cancel

FIGURE 3 Create AAA Authentication Server on Unleashed

**Create New**

Name

Type  Active Directory  RADIUS  RADIUS Accounting

Encryption  TLS

Auth Method  PAP  CHAP

Backup RADIUS  Enable Backup RADIUS support

IP Address\*

Port\*

Shared Secret\*

Confirm Secret\*

Retry Policy

Request Timeout\*  seconds

Max Number of Retries\*  times

Enter the following values for the **Authentication** Server:

1. Name
2. Type = RADIUS
3. Auth Method (not applicable for SmartZone) = PAP
4. IP address = The IP address of the Cloudpath ES.
5. Port = 1812
6. Shared Secret = This must match the shared secret for the Cloudpath ES onboard RADIUS server. (**Configuration > RADIUS Server**).
7. Leave the default values for the remaining fields.

## Creating AAA Accounting Server (Optional)

Use the same process to create the AAA Accounting Server.

### NOTE

To navigate to the correct screen on Ruckus SmartZone, go to **Services & Profiles > Accounting**.

Enter the following values for the **Accounting** Server:

1. Name
2. Type = RADIUS ACCOUNTING.
3. IP address = The IP address of the Cloudpath ES.

4. Port = 1813

**NOTE**

The Authentication server uses port 1812. The Accounting server uses port 1813.

5. Shared Secret = This must match the shared secret for the Cloudpath ES onboard RADIUS server. (**Configuration > RADIUS Server**)
6. Leave the default values for the remaining fields.

## Running Authentication Test

You can test the connection between the controller and the Cloudpath ES RADIUS server.

Follow the instructions for the applicable controller. For the possible results, see [Possible Results from Authentication Test](#).

## ZoneDirector

At the bottom of the AAA server page, there is a section called "Test Authentication/Accounting Servers Settings." The Test Against field should be Local Database, as shown below. Enter a test User Name and Password, then click the **Test** button.

**FIGURE 4** Authentication Test on ZoneDirector

**Test Authentication/Accounting Servers Settings**

You may test your authentication server settings by providing a user name and password here. Groups to which the user belongs will be returned and you can use them to configure the role.

**Test Against** Local Database ▾

**Username**

**Password**

## SmartZone

When you save a configuration for an AAA Authentication server in SmartZone, you can click the **Test AAA** tab at the top of the screen, select the server from the drop-down list, enter your credentials, then click the **Test** button.



FIGURE 5 Authentication Test on SmartZone

Test AAA Servers

\* Name: Jeff AAA Auth vSZ

\* Protocol:  PAP  CHAP

\* User Name: bob

\* Password: .....  
 Show password

Test Cancel

## Unleashed

Enter the test credentials on the Test Authentication Servers Settings tab, then click the **Test** button.

FIGURE 6 Authentication Test on Unleashed

Authentication Servers Test Authentication Servers Settings

You may test your authentication server settings by providing a user name and password here. Groups to which the user belongs will be returned and you can use them to configure the role.

Test Against Anna43Unleashed

User Name

Password Show Password

Test

## Possible Results from Authentication Test

If you run the authentication test, you receive one of these responses:

- Failed! Connection timed out
- Failed! Invalid username and password

## Creating Hotspot Services

- Authentication Failed

The only one of these responses that means that connectivity was established is:

Failed! Invalid username or password

# Creating Hotspot Services

You can configure the Hotspot Service on the ZoneDirector, SmartZone, or Unleashed controllers.

1. Navigate to: For ZoneDirector, go to **Services & Profiles > Hotspot Services**. For SmartZone, go to **Services & Profiles > Hotspots & Portals > Hotspot WISPr**. For Unleashed, go to **Admin & Services > Services > Hotspot Services**, then use both the **General** tab and the **Authentication** tab, as instructed later in this section.

2. Name the Hotspot Service.

**FIGURE 7** Create Hotspot Service on ZoneDirector

### Create New

Name	Lab Hotspot Services
<b>Redirection</b>	
WISPr Smart Client Support	<input checked="" type="radio"/> None <input type="radio"/> Enabled <input type="radio"/> Only WISPr Smart Client allowed
Login Page*	Redirect unauthenticated user to <input type="text" value="https://training.cloudpath.net/e"/> for authentication.
Start Page	After user is authenticated, <input checked="" type="radio"/> redirect to the URL that the user intends to visit. <input type="radio"/> redirect to the following URL: <input type="text"/>
<b>User Session</b>	
Session Timeout	<input type="checkbox"/> Terminate user session after <input type="text" value="1440"/> minutes
Grace Period	<input type="checkbox"/> Allow users to reconnect without re-authentication for <input type="text" value="30"/> minutes
<b>Authentication/Accounting Servers</b>	
Authentication Server	Jeff AAA Auth <input checked="" type="checkbox"/> Enable MAC authentication bypass(no redirection). <input checked="" type="radio"/> Use device MAC address as authentication password. <input type="radio"/> Use <input type="text"/> as authentication password. MAC Address Format <input type="text" value="AA:BB:CC:DD:EE:FF"/>
Accounting Server	Jeff AAA acct <input type="text" value="5"/> Send Interim-Update every <input type="text" value="5"/> minutes
<b>Wireless Client Isolation</b>	
<input type="checkbox"/> Isolate wireless client traffic from other clients on the same AP. <input type="checkbox"/> Isolate wireless client traffic from all hosts on the same VLAN/subnet. <input type="text" value="No WhiteList"/> <small>(Requires whitelist for gateway and other allowed hosts.)</small>	
<input type="checkbox"/> Location Information <input type="checkbox"/> Walled Garden <input type="checkbox"/> Restricted Subnet Access <input type="checkbox"/> Advanced Options	
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	

FIGURE 8 Create Hotspot WISPr on SmartZone

**Create Hotspot Portal**

**General Options**

Portal Name: Lab Hotspot Services  
Portal Description:

**Redirection**

Smart Client Support:  None  Enable  Only Smart Client Allowed

Logon URL:  Internal  External

Redirect unauthenticated user to the URL for authentication: https://training.cloudpath.net/enroll/TrainingTest/Produc

Redirected MAC Format: AA:BB:CC:DD:EE:FF

Start Page: After user is authenticated,  
 Redirect to the URL that user intends to visit.  Redirect to the following URL:

HTTPS Redirect:  If enabled, the AP will try to redirect HTTPS requests to the hotspot portal

**User Session**

Session Timeout: 1440 Minutes (2-14400)  
Grace Period: 60 Minutes (1-14399)

**Location Information**

Location ID: (example: isocc=us,cc=1,ac=408,network=ACMEWISP\_NewarkAirport)  
Location Name: (example: ACMEWISP,Gate\_14\_Terminal\_C\_of\_Newark\_Airport)

**Walled Garden**

OK Cancel

FIGURE 9 Create Hotspot Service on Unleashed - General Tab

## Create New ✕

General

Authentication

WalledGarden

Policy

**Name**

**Redirection**

**WISPr Smart Client Support**  None  Enabled  Only WISPr Smart Client allowed

**Login Page** Redirect unauthenticated user to  for authentication.

**Start Page** After user is authenticated,

redirect to the URL that the user intends to visit.

redirect to the following URL:

**User Session**

**Session Timeout** (Requires whitelist for gateway and other allowed hosts.)

Terminate user session after  minutes

**Grace Period**  Allow users to reconnect without re-authentication for  minutes

**Intrusion Prevention**  Temporarily block Hotspot clients with repeated authentication attempts.

OK

Cancel

**FIGURE 10** Create Hotspot Service on Unleashed - Authentication Tab

3. Point the unauthenticated user to the **Cloudpath Enrollment Portal URL**, which can be found on the **Cloudpath Admin UI Configuration > Workflows** page, in the **Workflows** table.
4. Check **Redirect to the URL that the user intends to visit**.
5. Select the **Cloudpath RADIUS Authentication Server**. Applicable only for ZoneDirector and Unleashed (**Authentication** tab) in this screen.
6. Select **Enable MAC authentication bypass (no redirection)**. Applicable only for ZoneDirector and Unleashed (**Authentication** tab) in this screen. Selecting this field allows users with registered MAC addresses to be transparently authorized without having to log in.
7. For MAC Address Format (which appears when you select **Enable MAC authentication bypass (no redirection)** in the preceding step, it is recommended that you select the following option from the drop-down list: AA:BB:CC:DD:EE:FF
8. Select the **Cloudpath RADIUS Accounting Server**. Applicable only for ZoneDirector and Unleashed (**Authentication** tab).
9. Leave the defaults for the remaining settings. Click **OK**.

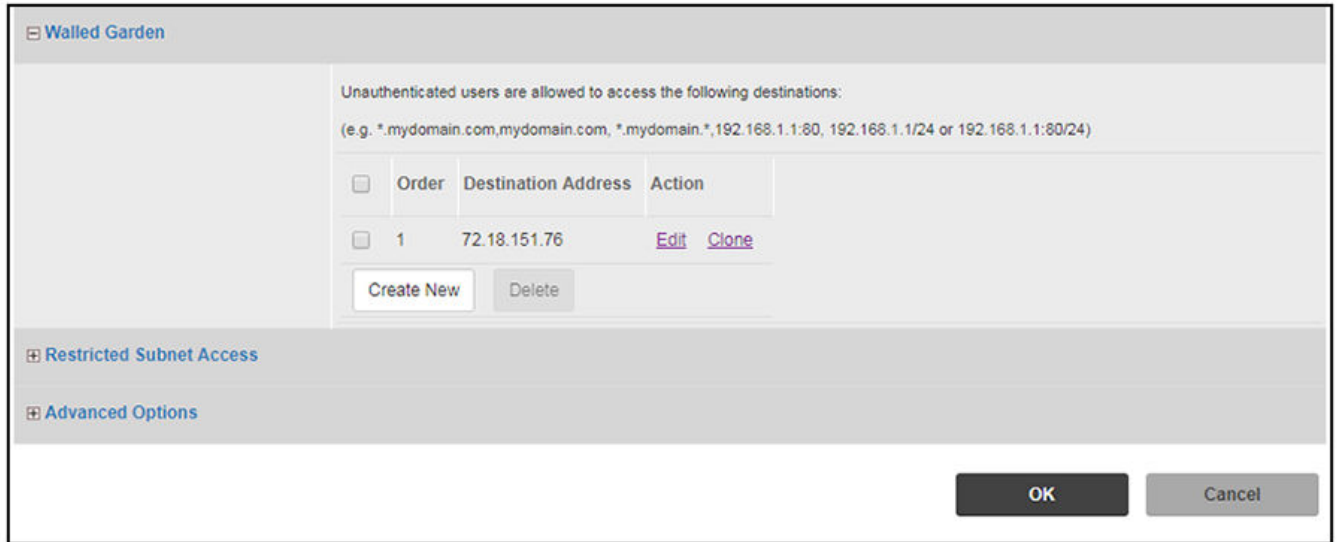
# Setting Up the Walled Garden

Perform the following steps to add a walled garden configuration to your existing Hotspot Services configuration:

1. Navigate to: For ZoneDirector, go to **Services & Profiles > Hotspot Services**. For SmartZone, go to **Services & Profiles > Hotspots & Portals > Hotspot WISPr**. For Unleashed, go to **Admin & Services > Services > Hotspot Services**.

- For ZoneDirector and SmartZone, use the **edit** function on the existing Hotspot Services configuration, then scroll to the **Walled Garden** section and expand this section. For Unleashed, click the **WalledGarden** on the existing Hotspot Services configuration.

**FIGURE 11** Walled Garden Configuration for ZoneDirector



**FIGURE 12** Walled Garden Configuration for SmartZone

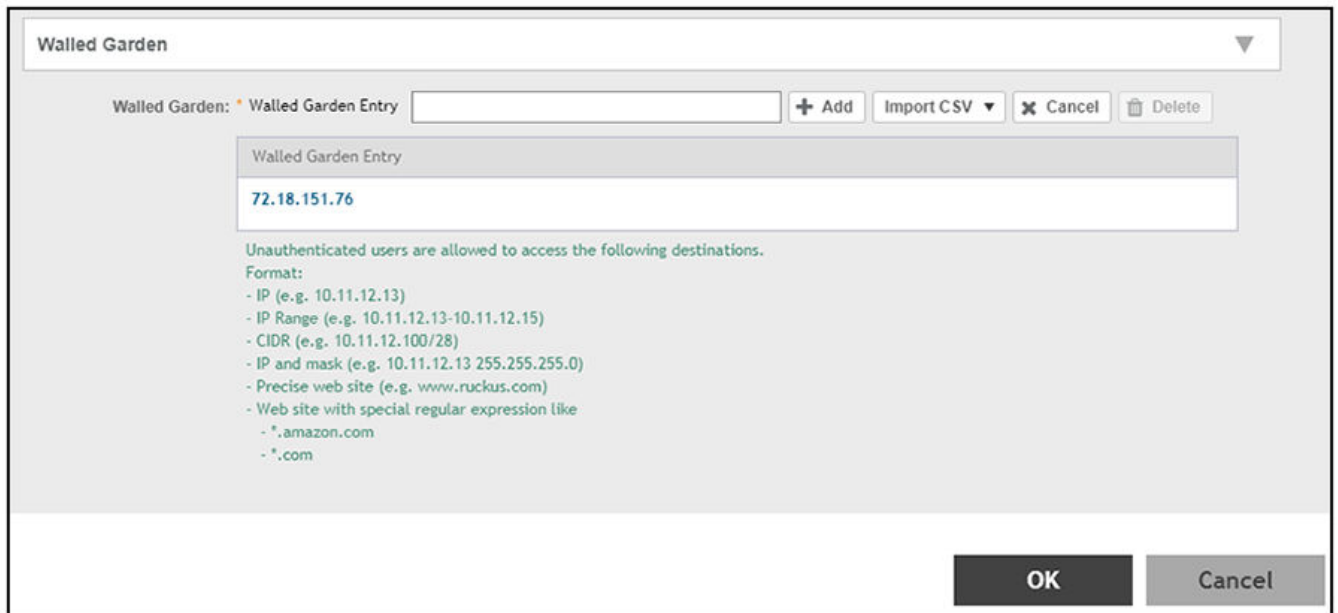




FIGURE 13 Walled Garden Configuration for Unleashed

**Edit** ✕

General Authentication **WalledGarden** Policy

Unauthenticated users are allowed to access the following destinations:  
(e.g. \*.mydomain.com,mydomain.com, \*.mydomain.\*,192.168.1.1:80, 192.168.1.1/24 or 192.168.1.1:80/24)

<input type="checkbox"/>	Order	Destination Address	Action
<input type="checkbox"/>	1	192.168.5.42	Save Cancel

[Create New](#) ⊞ Advanced Options Delete

**OK** Cancel

3. Include the DNS or IP address of the Cloudpath system, then click **OK**.
4. Optionally, there are some domains that you can add to the walled garden on all controllers to:
  - Prevent the Apple CNA mini-browser from appearing on Apple devices.
  - Avoid being blocked or slowed when attempting to download the Cloudpath wizard.

**NOTE**

There will still be about a 15-to-20-second delay when the full application is 33 percent complete (about 40 MB) in its download.

The recommended destinations to add for the walled garden are:

```

*.ggpht.com
*.play.googleapis.com
*.googleapis.com
*.play.google.com
android.clients.google.com
*.gvt1.com
connectivitycheck.android.com
connectivitycheck.google.com
*.gstatic.com
*.clients3.google.com
*.thawte.com

```

**NOTE**

The \*.thawte.com destination is the OCSP URL of the SSL certificate of the Cloudpath server. This URL can be found by clicking the *lock* icon in your web browser and viewing the details of your certificate.

5. If you are still experiencing issues, you can try adding the following destinations to the walled garden:

```
*.clients.google.com  
*.l.google.com  
*.googleusercontent.com  
*.appengine.google.com  
*.cloud.google.com  
*.android.com  
*.cloudfront.net  
*.akamaihd.net  
172.217.0.0/16  
216.58.0.0/16
```

## Creating the Onboarding SSID

To configure the onboarding SSID, navigate to: For ZoneDirector and SmartZone, go to the Wireless LANS section of the controller UI; for Unleashed, go to **Wifi Networks** to create the WLAN.

1. Name the SSID.

2. Type=Hotspot Service (WISPr).

FIGURE 14 Onboarding SSID Configuration on ZoneDirector

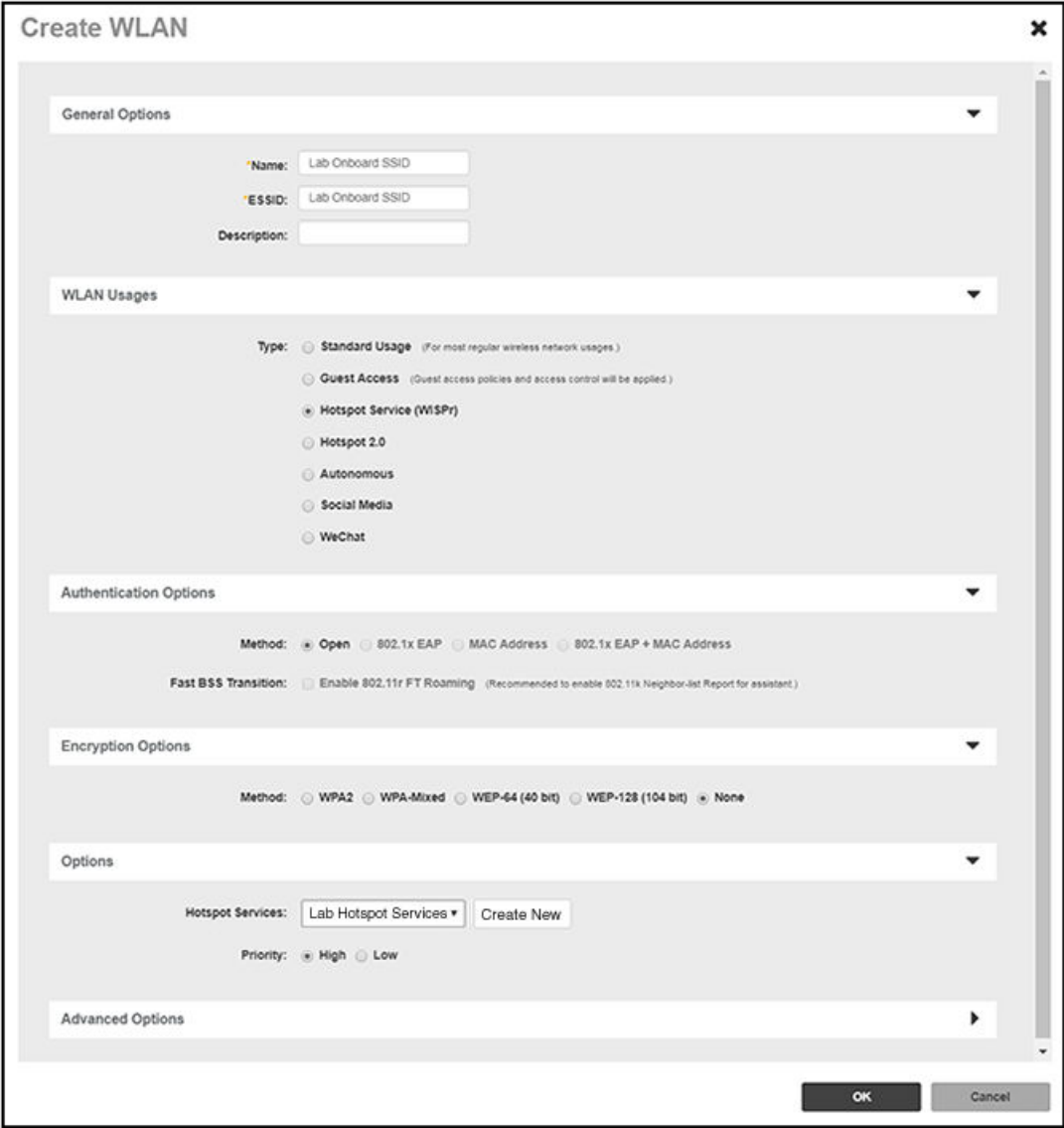


FIGURE 15 Onboarding SSID Configuration on SmartZone

The screenshot displays the 'Create WLAN Configuration' dialog box, which is organized into several sections:

- General Options:** Includes fields for Name (Lab Onboard SSID), SSID (Lab Onboard SSID), Description, Zone (Default), and WLAN Group (default). A 'Create' button is next to the WLAN Group field.
- Authentication Options:** Features radio buttons for Authentication Type (Hotspot (HSP) is selected), Method (MAC Address is selected), and MAC Address Format (AA:BB:CC:DD:EE:FF).
- Encryption Options:** Includes a Method dropdown menu with options like WPA2, WPA-Mixed, WEP-64, WEP-128, and None.
- Data Plane Options:** Contains an 'Access Network' checkbox for tunneling WLAN traffic through Ruckus GRE.
- Hotspot Portal:** Includes a Hotspot (HSP) Portal dropdown (Lab Hotspot Services), a Bypass CNA checkbox (checked), and Authentication/Accounting Service settings.
- Options:** Contains checkboxes for Asst Delay Time, Wireless Client Isolation (checked), and an Isolation Whitelist dropdown (Gateway Only).
- RADIUS Options:** A section with a right-pointing arrow.
- Advanced Options:** A section with a right-pointing arrow.

At the bottom right of the dialog, there are 'OK' and 'Cancel' buttons.

**FIGURE 16** Onboarding SSID Configuration for Unleashed

**Create WLAN** ✕

\* **Name:**

**Usage Type:**

- Standard for most regular wireless network usage
- Guest Access guest access policies and access control will be applied
- Hotspot Service known as WISPr
- Social Media authenticate through social media network
- WeChat

**Hotspot Services:**

Show Advanced Options ▶

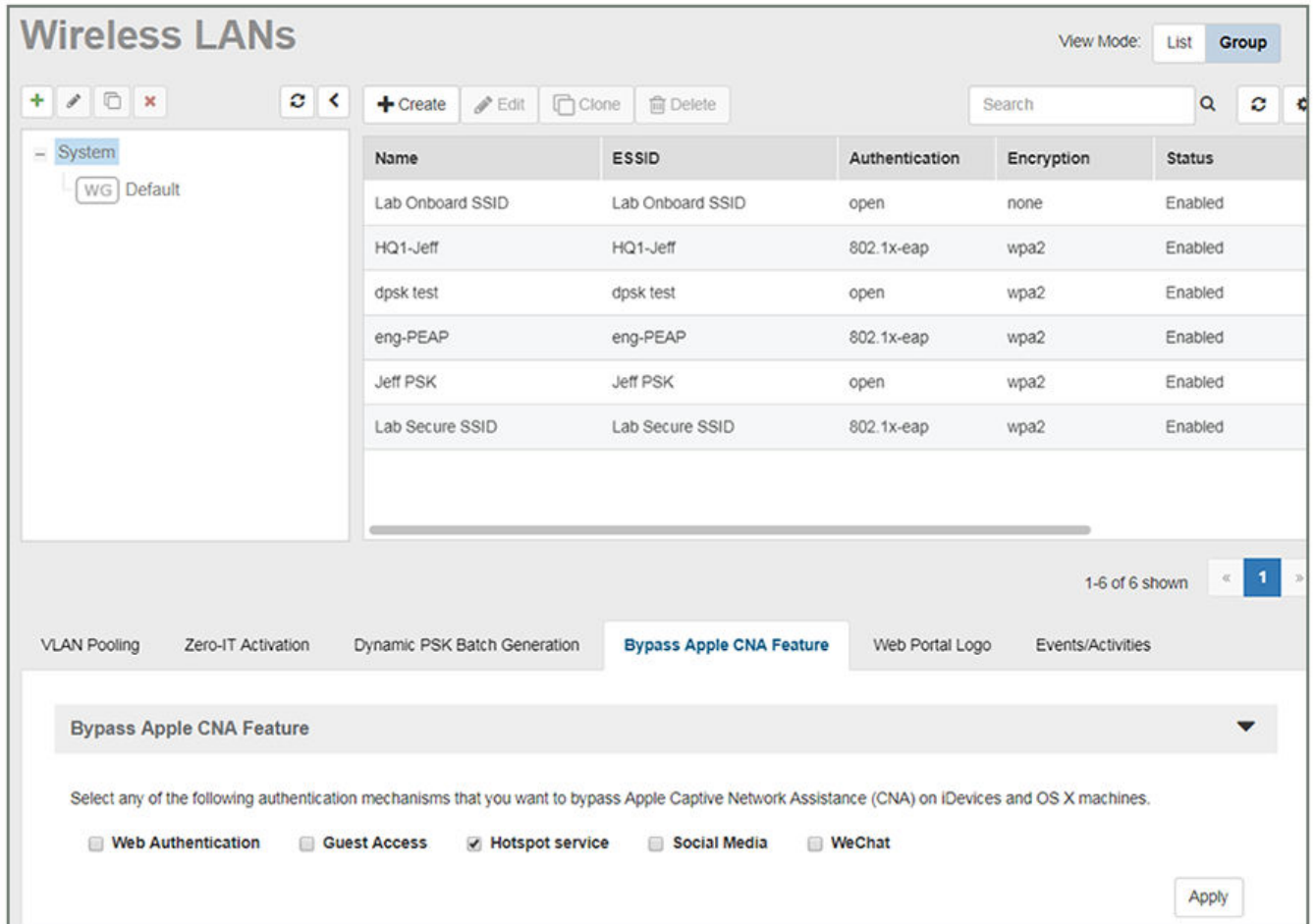
3. Authentication Options Method=Open for ZoneDirector, MAC Address for SmartZone. (Not applicable for Unleashed.)
4. The checkbox next to MAC Authentication (SmartZone only) called "Use user defined text as authentication password (default is device MAC address):" can be left unchecked.
5. The MAC Address Format (SmartZone only) recommended selection is: AA:BB:CC:DD:EE:FF. This is the default for most RADIUS servers.
6. Encryption Options Method=None (ZoneDirector and SmartZone).
7. Select the Hotspot Service from the drop-down list that you should already have created in a previous step procedure.
8. Enable the **Bypass CNA** feature as follows, depending on the controller:
  - For SmartZone: Check the box to enable "Bypass CNA," as shown in [Figure 15](#).
  - For ZoneDirector, after you finish configuring the onboarding SSID, refer to [Figure 17](#) on page 22.
  - For Unleashed, after you finish configuring the onboarding SSID, refer to [Figure 19](#) on page 23.
9. Select the Cloudpath RADIUS Authentication Server (SmartZone only).
10. Select the Cloudpath RADIUS Accounting Server (SmartZone only).
11. Leave the defaults for the remaining settings and click **OK** (or **Apply**).

## Enabling Bypass CNA on ZoneDirector

It is recommended to enable the "Bypass Apple CNA Feature," which you can do globally for wireless LANs in ZoneDirector.

1. In the Wireless LANs main screen, click on **Bypass Apple CNA Feature**, as shown in the following figure:

**FIGURE 17** Enabling the Bypass Apple CNA Feature Globally on ZoneDirector



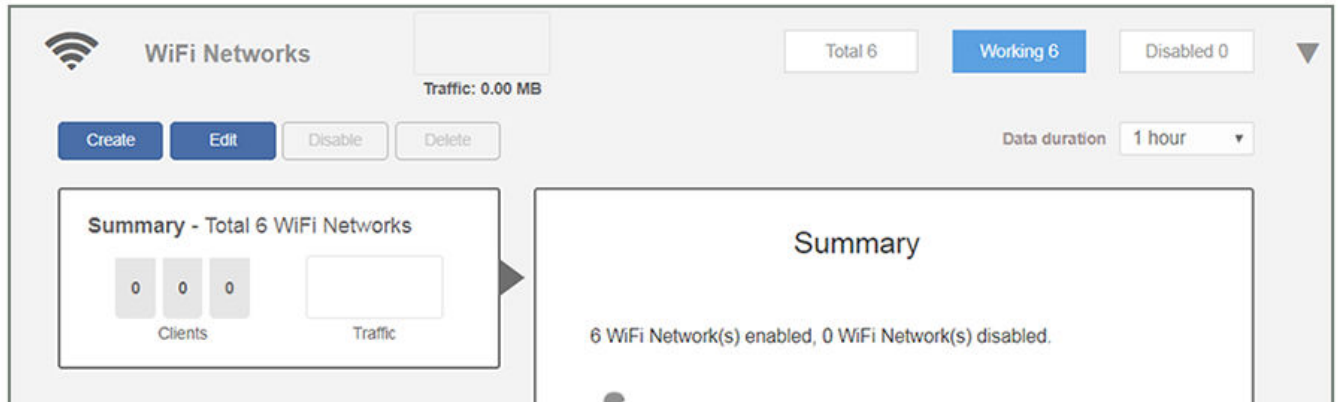
2. In the "Bypass Apple CNA Feature" area of the screen, check the "Hotspot service" box.
3. Click **Apply** to enable the "Bypass Apple CNA Feature" globally on all Wireless LANs that are configured as type "Hotspot Service (WISPr)."

## Enabling Bypass CNA on Unleashed

It is recommended to enable the "Bypass Apple CNA Feature," which you can do globally for wireless LANs in Unleashed.

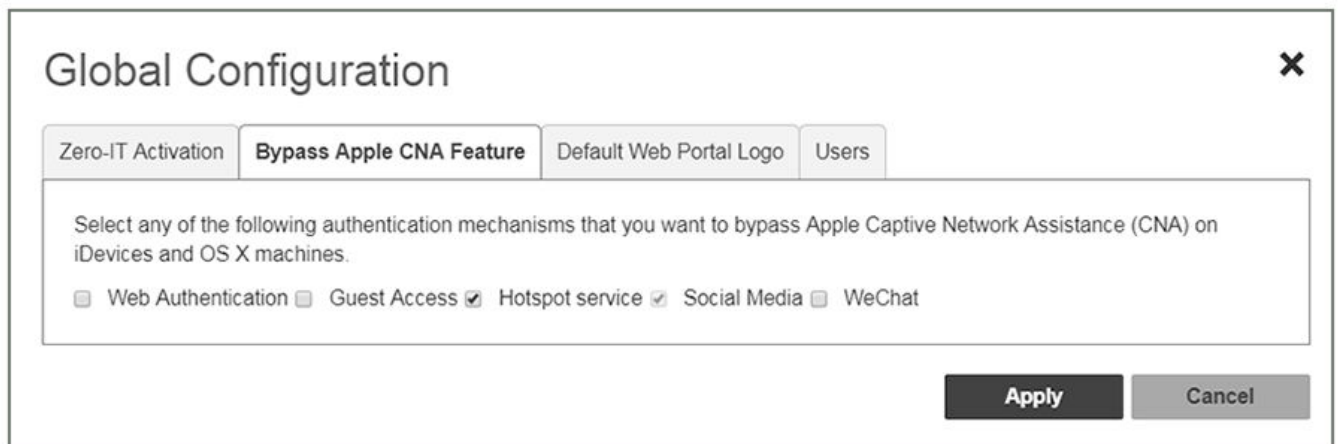
1. In the WiFi Networks main screen (see figure below), click **Edit**.

**FIGURE 18** Clicking the Edit Button Brings you to Global Configuration



2. In the Global Configuration screen that pops up, click **Bypass Apple CNA Feature**.

**FIGURE 19** Enabling the Bypass Apple CNA Feature Globally on Unleashed



3. In the "Bypass Apple CNA Feature" area of the screen, check the "Hotspot service" box.
4. Click **Apply** to enable the "Bypass Apple CNA Feature" globally on all Wireless LANs that are configured as type "Hotspot Service (WISPr)."

## Creating the Secure SSID

To configure the onboarding SSID, navigate to: For ZoneDirector and SmartZone, go to the Wireless LANS section of the controller UI; for Unleashed, go to **Wifi Networks** to create the WLAN.

1. Name the SSID.
2. Type=Standard Usage.
3. Authentication Option Method=802.1x EAP.
4. Encryption Option Method=WPA2 (not applicable for Unleashed once the 802.1x EAP authentication option method is selected).
5. Encryption Option Algorithm=AES (not applicable for Unleashed once the 802.1x EAP authentication option method is selected).
6. Select the Cloudpath RADIUS authentication server.
7. Select the Cloudpath RADIUS accounting server (required only if you are using Cloudpath onboard RADIUS Accounting and Connection Tracking). **Note:** For ZoneDirector, you need to expand the Advanced Options section of the screen to locate the drop-down selection for the accounting server.



- Leave the defaults for the remaining settings and click **OK**.

**FIGURE 20** Configure Secure SSID on the ZoneDirector controller

**Create WLAN**

**General Options**

Name: Lab Secure SSID  
 ESSID: Lab Secure SSID  
 Description:

**WLAN Usages**

Type:  Standard Usage (for most regular wireless network usages.)  
 Guest Access (Guest access policies and access control will be applied.)  
 Hotspot Service (WISPr)  
 Hotspot 2.0  
 Autonomous  
 Social Media  
 WeChat

**Authentication Options**

Method:  Open  802.1x EAP  MAC Address  802.1x EAP + MAC Address  
 Fast BSS Transition:  Disabled  Enable 802.11r FT Roaming (Recommended to enable 802.11r Neighbour-List Report for assistant.)

**Encryption Options**

Method:  WPA2  WPA-Mixed  WEP-64 (40 bit)  WEP-128 (104 bit)  None  
 Algorithm:  AES  Auto (TKIP+AES)  
 802.11w MFP:  Disabled  Optional  Required

**Options**

Authentication Server: Jeff AAA Auth Create New  
 Wireless Client Isolation:  Isolate wireless client traffic from other clients on the same AP.  
 Isolate wireless client traffic from all hosts on the same VLAN/subnet.  
 No WhiteList Create New  
 (Requires whitelist for gateway and other allowed hosts.)  
 Zero-IT Activation™:  Enable Zero-IT Activation  
 (WLAN users are provided with wireless configuration installer after they log in.)  
 Priority:  High  Low

**Advanced Options**

OK Cancel

FIGURE 21 Select RADIUS Accounting Server on ZoneDirector

Advanced Options

Accounting Server: Jeff AAA acct Create New Send Interim-Update every 10 minutes

Access Control: L2/MAC No ACLs Create New

L3/4/IP address No ACLs Create New

Device Policy None Create New Precedence Policy Default Create New

Enable Role based Access Control Policy

Application Recognition & Control:  Enable

Call Admission Control:  Enforce CAC on this WLAN when CAC is enabled on the radio

Rate Limiting: Per Station Uplink Disabled Per Station Downlink Disabled

SSID Rate Limiting: UpLink  Enable 0 mbps (0.1~200)

DownLink  Enable 0 mbps (0.1~200)

Per STA rate limiting will not work if SSID rate limiting is enabled.

OK Cancel

FIGURE 22 Configure Secure SSID on the SmartZone controller

### Create WLAN Configuration

**General Options**

Name:

SSID:

Description:

Zone:

WLAN Group:  + Create

**Authentication Options**

Authentication Type:  Standard usage (for most regular wireless networks)  Hotspot (WISPr)  Guest Access  Web Authentication

Hotspot 2.0 Access  Hotspot 2.0 Onboarding  YipeChat

Method:  Open  802.1X EAP  MAC Address  802.1X & MAC

**Encryption Options**

Method:  WPA2  WPA Mixed  WEP-44 (40 bits)  WEP-128 (104 bits)  None

Algorithm:  AES  AUTO

802.11r Fast Roaming:  Enable 802.11r Fast BSS Transition

802.11w WPA:  Disabled  Capable  Required

**Data Plane Options**

Access Network:  Tunnel WLAN traffic through Ruckus GRE

**Authentication & Accounting Service**

Authentication Service:  Use the controller as proxy

+ Create

Accounting Service:  Use the controller as proxy

+ Create Send Interim update every  Minutes (0-1440)

**Options**

Asst Delay Time:  Enable

Wireless Client Isolation:  Disable  Enable (isolate wireless client traffic from all hosts on the same VLAN/subnet)

Isolation Whitelist:  + Create

(The whitelist requires entries for the subnet gateway and other allowed hosts.)  
(The whitelist can only contain wired destinations, wireless clients are not supported on the whitelist.)

Priority:  High  Low

**RADIUS Options**

**Advanced Options**

OK
Cancel

FIGURE 23 Configure Secure SSID on the Unleashed controller

**Create WLAN** [X]

\* **Name:**

**Usage Type:**  **Standard** for most regular wireless network usage  
 **Guest Access** guest access policies and access control will be applied  
 **Hotspot Service** known as WISPr  
 **Social Media** authenticate through social media network  
 **WeChat**

**Authentication Method:**  Open  **802.1X EAP**  MAC Address

**Authentication Server:**

**Accounting Server:**

Send Interim-Update every  minutes

Show Advanced Options ►

The SSIDs are now configured on the wireless LAN controller. When the user connects to the onboarding (open) SSID they are redirected to the Cloudpath web page. When the user successfully completes the enrollment process, they are migrated to the secure SSID.



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