

ACCESS NETWORKS

Unleashed Configuration - Additional Requested Feature Guide Firmware Version: 200.12

Additional Requested Feature Guide

When creating, modifying, or configuring an WLAN, there are specific details than can be used to facilitate the right experience for the project requirements. In this presentation, we will explore additional requested features for wireless LAN settings that can be used to tailor a Wi-Fi deployment.

Agenda

- Chapter 1 Getting Started
- Chapter 2 How to Create a Single Band SSID
- Chapter 3 How to Create a VLAN Specific SSID
- Chapter 4 How to Hide an SSID
- Chapter 5 How to enable Wi-Fi Calling
- Chapter 6 Dedicating an AP as a WLAN Controller Only
- Chapter 7 How to Add a Secondary Preferred Master

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- Connecting to the Unleashed Network
- Security Warning
- Unleashed Login Page
- Unleashed Dashboard

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Connecting to the Unleashed Network

Using the Wi-Fi configuration settings on your client device (such as a laptop or mobile device), select and associate to an Unleashed WLAN, and launch a web browser.

Now connect to any non-client isolating Unleashed WLAN.

In your browser's URL bar, enter the following address and press Enter: unleashed.ruckuswireless.com

	Connected, secured	
	Properties	
		(
(h.	Smith Guest Secured	
17.	Ethan's Bedroom speaker.o Open	
la.	Family Room speaker.o Open	

sconnect

Smith Wireless



Office Display.u Open



hange settings, such as making a connection metered

G.	\$	(clin)
Wi-Fi	Airplane mode	Mobile hotspot

Security Warning

Depending on your browser, you may be presented with a security warning stating "This connection is not trusted" (Firefox) or "Your Connection is Not Private" (Chrome) or "There is a problem with this website's security certificate" (Internet Explorer). This is normal, as the Unleashed AP does not have an SSL certificate that is recognized by your browser.

Accept the exception as needed per browser and proceed.



Your connection is not private

Attackers might be trying to steal your information from 10.10.8.200 (for example, passwords, messages, or credit cards). Learn more

NET::ERR_CERT_AUTHORITY_INVALID

Help improve security on the web for everyone by sending URLs of some pages you visit, limited system information, and some page content to Google. Privacy policy

Hide advanced

This server could not prove that it is 10.10.8.200; its security certificate is not trusted by your computer's operating system. This may be caused by a misconfiguration or an attacker intercepting your connection.

Proceed to 10.10.8.200 (unsafe)





This is the login page for the Unleashed Network.

Enter the "Username", "Password", and click "Unleash" to login.









assword

got passwor

Unleash

Southand Unleashed Dashboard

After successful login, you will be presented with the Unleashed Dashboard, which displays an overview of your Ruckus Unleashed Network.

At any point during the setup process, you can access the complete Unleashed help page by clicking on "Help" in the upper right corner of the Unleashed web interface. ACCESS NETWORKS UNLEASHED Internet 0 WiFi Networks Traffic: 35.19 MB Clients Access Points Switches Admin & Services **O**

ACCESS NETWORKS | ADDITIONAL REQUESTED FEATURE GUIDE

System Name: Smith_Residence		Up 1	Time: 20h 44m	admin	Help Log Out	
			Connected		►	
	Total	1	Working 1	Disabled 0	►	
	Total	2	Connected 2	Disconnected 0	►	
	Total	3	Working 3	Disconnected 0	►	
	Total	0	Working 0	Disconnected 0	►	
					►	

- What is a Single Band SSID
- Wi-Fi Networks Dashboard
- Create a New WLAN

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% What is a Single Band SSID

With today's technology most Wi-Fi devices are capable of using the 802.11 standards associated with both the 2.4GHz and 5GHz frequency bands.

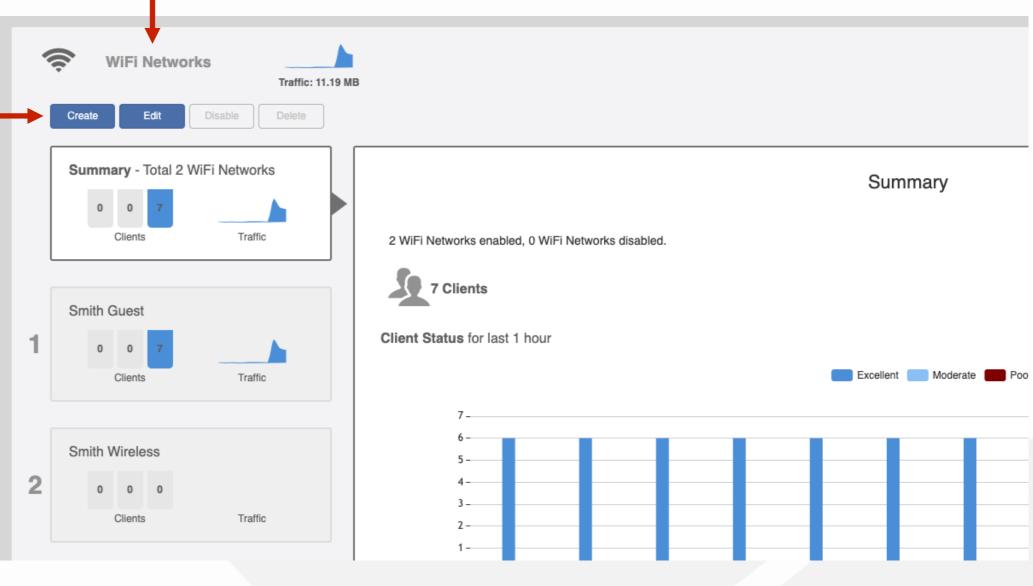
However, some devices cannot use both bands, others perform better on one frequency over the other, and sometimes it is necessary to use only one frequency to avoid interference.

To ensure optimal performance, it is sometimes necessary to restrict a WLAN to operate on only a single frequency band. This can be done by creating a new WLAN or editing an existing WLAN so that it operates on only a single frequency band.

Wi-Fi Networks Dashboard

To create a new WLAN that will operate on only a single frequency band, first click anywhere on "WIFI Networks".

Click on the "Create" button to generate a new WLAN.



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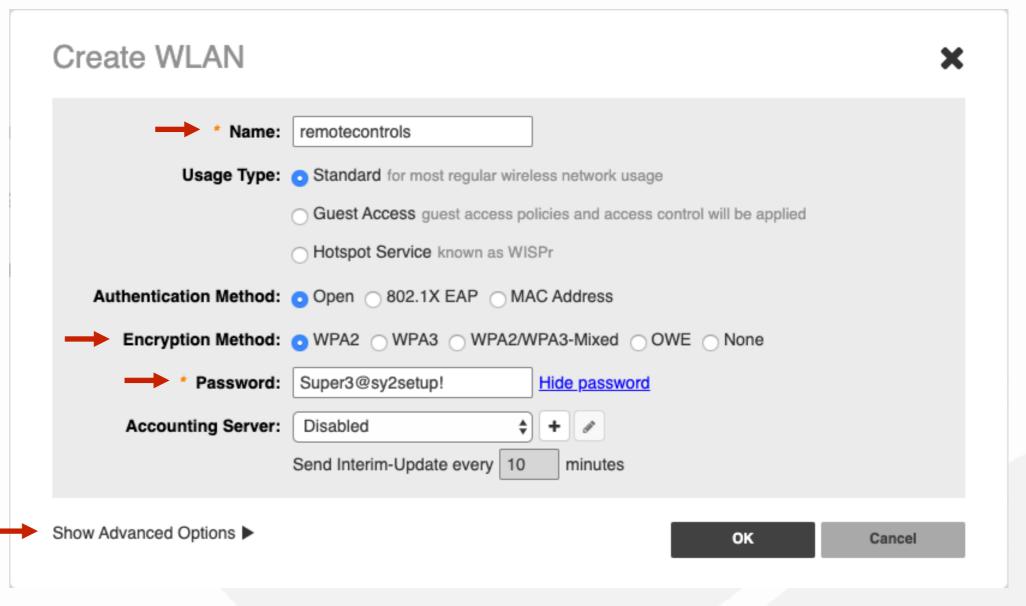
%° Create a New WLAN

In the new dialog box, enter the SSID (broadcasted name) of the WLAN under "Name".

Select the encryption method.

Enter the passcode for the new WLAN.

Click on "Show Advanced Options".



Create a New WLAN

Click on the "Radio Control" tab.

Scroll down to the "Enable WLAN on :" area.

From the drop-down selection window, click on the appropriate band from the listing.

Then click "OK" to continue.

le Advanced Optio	ns 🔻			Ļ		
ero-IT & DPSK	WLAN Pri	ority	Access Contro	Radio Control	Others	
	ss Media agement:	Recom	mended to enab	Enable 802.11r F le 802.11k Neighbor-li	st Report fo	r assistant.
			ound Scanning	agement : 🗌 Enable : 🗹 Enable	OUZ.TIKIN	eighbor-list Report
		(All radi	ios will perform l	ackground scanning)		
		Load B	alancing : 🗌 E	nable		
		(Applies	s to this WLAN o	only.it may not be activ	e on other \	WLANs)
		Band B	Balancing : 🗌 E	inable		
		Applies	to this WLAN o	nly. Band Balancing m	ight be ena	bled on other WLANs
		802.11	d :			
		🗸 Sup	port for 802.11	d (only applies to rac	tos configu	ired to operate in 2.4 GHz band)
		Enable	WLAN on :	All Radios 🗸		
6	Wi-Fi 6:	🛃 Ena	ble 🛛 💈	All Radios 2.4 GHz only 5 GHz only		

- What is a VLAN Specific SSID
- LAN Requirements for VLAN Specific SSIDs
- Selecting a WLAN to Modify
- Adding VLAN tagging to a WLAN

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What is a VLAN Specific SSID

VLANs have become a commonly used method of segmenting and controlling Local Area Network (LAN) traffic.

In order for a device to connect wirelessly to a specific VLAN you will need to configure a separate SSID for each VLAN and then use something called tagging (802.1Q) to notify the LAN that wireless data from this SSID is associated with a specific VLAN.

Prior to configuring your WLAN, it is important to ensure all LAN requirements have been met.

• LAN Requirements for VLAN Specific SSIDs

Ethernet switch ports for all managed access points (AP) must be configured as Trunk Ports.

Ethernet switch ports for each managed AP must have 802.1Q tagging enabled and belong to VLANs matching the VLAN IDs associated with each WLAN.

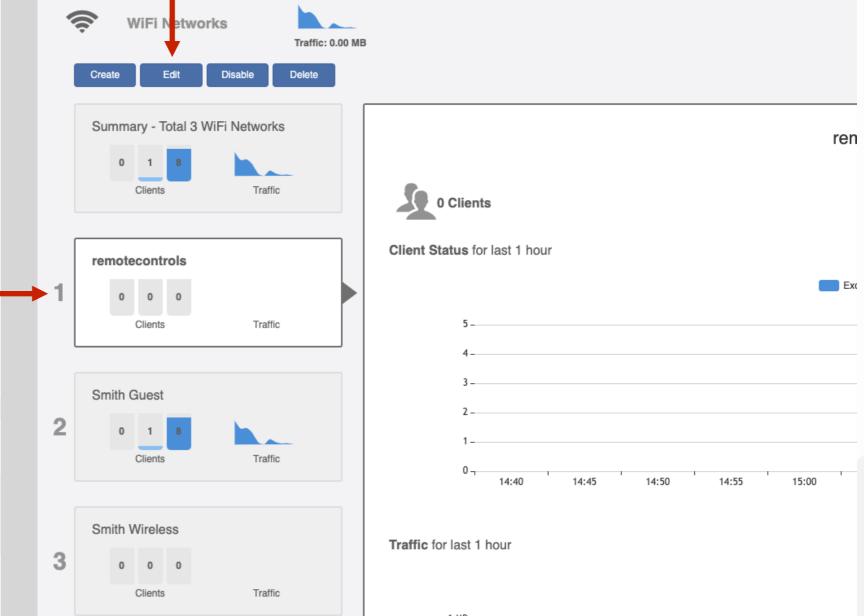
Valid VLAN IDs are between 2 and 4094.

Selecting a WLAN to Modify

It is crucial the WLAN does not have "Client Isolation" enabled. Review this step before modifying the VLAN ID associated with the selected WLAN.

To begin, select the WLAN you would like to modify.

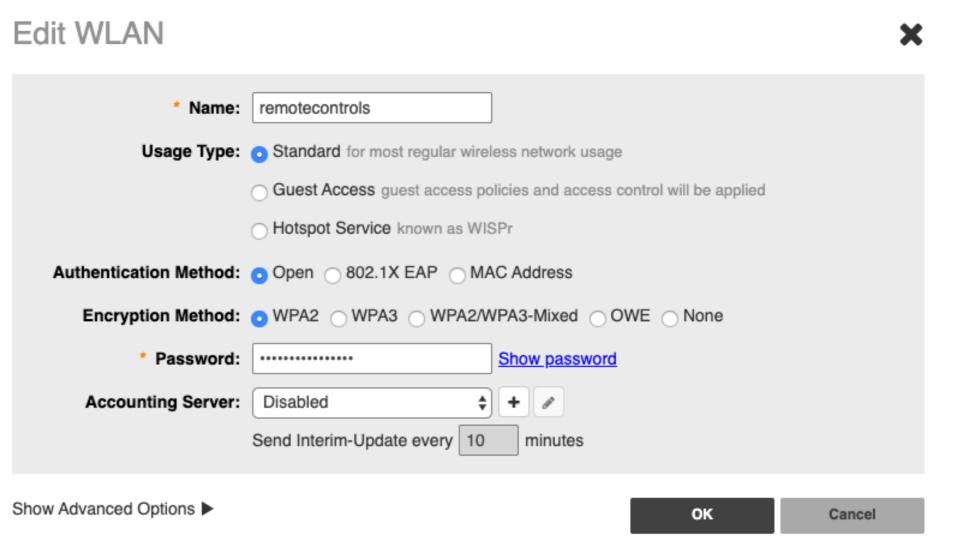
Then select the "Edit" to continue.



Adding VLAN tagging to a WLAN

This will open the "Edit WLAN" window for the WLAN.

Click on "Show Advanced Options".



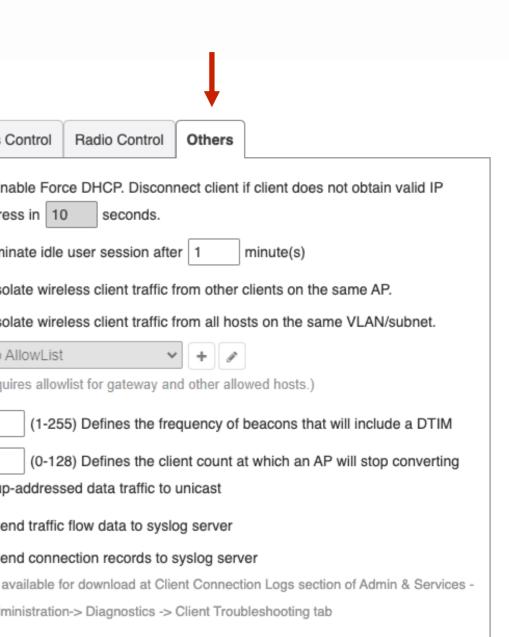
Adding VLAN tagging to a WLAN

Click on the tab labeled "Others".

Review "Wireless Client Isolation". Ensure the box is not selected. If the box is enabled, then de-select the box.

Select "Ok" to save this setting.

Hide Advanced Opt	ions V	
Zero-IT & DPSK	WLAN Priority	Access 0
	Force DH0	CP:
	Inactivity Timeo	ut: Termi
Wirel	ess Client Isolatio	on: 🗆 Iso
		Iso
		No A
		(Requ
	DTIM Interv	/al: 1
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Cli	ent Traffic Loggi	ng: 🗆 Sei
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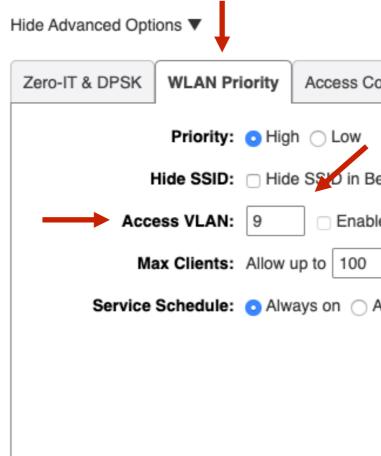
Adding VLAN tagging to a WLAN

Next, click "WLAN Priority" tab to add your VLAN ID.

Find the "Access VLAN" area.

Enter the VLAN ID for the VLAN you would like the client devices on this WLAN to be a part of.

Then click "OK" to continue.



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leacon	Broadcasting (Clo	sed Syster
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ole Dyna	mic VLAN	
clien	ts per AP radio	
Always	off O Specific	
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- What is a Hidden SSID
- Selecting a WLAN to Modify
- Setting a WLAN as "Hidden"

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What is a Hidden SSID

SSID or Service Set Identifier is the broadcasted name of a WLAN. By broadcasting the SSID, different devices can see the available wireless networks nearby.

However, there are times when hiding an SSID can be beneficial.

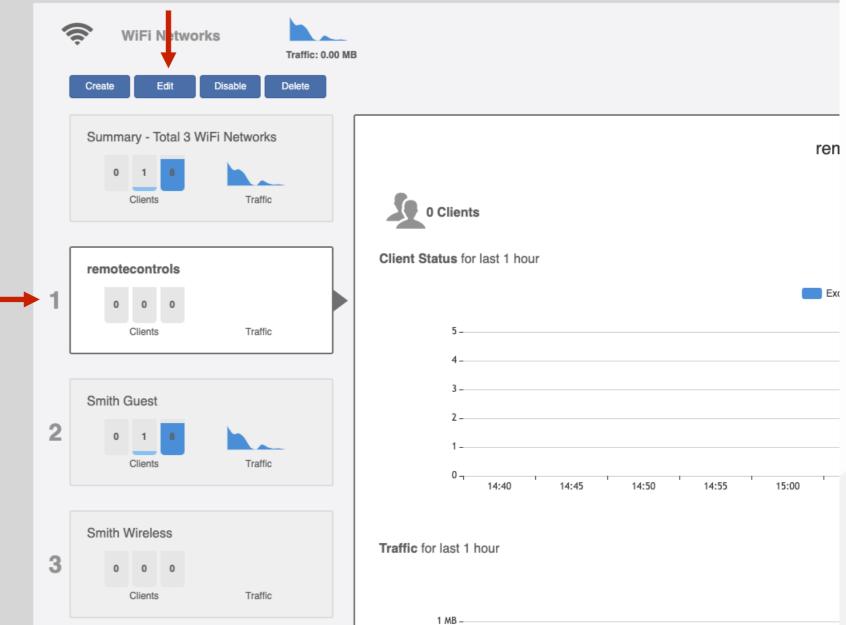
When you hide an SSID, the access points will disable the broadcast of the characters for WLAN name. Yet, devices that have previously authenticated to this invisible SSID will still be able to connect.

This example will demonstrate a use case for hiding an SSID.

Selecting a WLAN to Modify

To begin, select the WLAN you would like to modify.

Then select the "Edit" to continue.

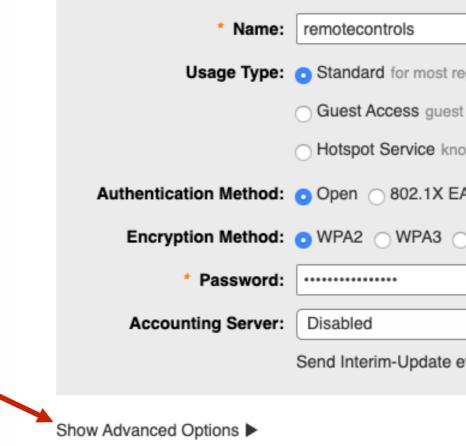


Setting a WLAN as "Hidden"

This will open the "Edit WLAN" window for the WLAN.

Click on "Show Advanced Options".

Edit WLAN



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egular wireless network usage	
t access policies and access control will be applied	
own as WISPr	
AP OMAC Address	
WPA2/WPA3-Mixed OWE None	
Show password	
+ <i>P</i>	
every 10 minutes	
ок	Cancel

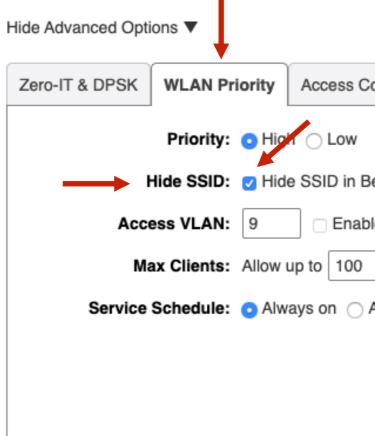
Setting a WLAN as "Hidden"

Click on the tab labeled "WLAN Priority".

Find the "Hide SSID".

Enable this feature by clicking on the box labeled "Hide SSID in Beacon Broadcasting (Closed System)".

Then click "OK" to complete this step.



ontrol	Radio Control	Others		
Beacon I	Broadcasting (Clo	sed Syste	m)	
le Dyna	mic VLAN			
clier	its per AP radio			
Always	off O Specific			
	-	→	ок	Cancel

- What is Wi-Fi Calling
- Fully Qualified Domain Names
- Enabling Wi-Fi Calling
- Adding Wi-Fi Calling Profiles

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When enabled, the Wi-Fi calling feature within the Unleashed wireless controller, allows an access point to recognize when a cellular phone is using the Wi-Fi network to communicate with a cellular carrier's server and prioritize that traffic thereby optimizing the experience over the Wi-Fi network.

The access point compares Wi-Fi traffic destination addresses to a list of FQDNs (Fully Qualified Domain Names) and when matched, ensures that this Wi-Fi calling traffic has the highest priority or QOS (Quality of Service).

More information about Wi-Fi calling can be found here https://my.accessnetworks.com/kb/unleashed-wi-fi-calling-configuration-guide/

Son Fully Qualified Domain Names

This following chart provides a list of the most commonly used FQDN addresses for the 4 major cellular carriers.

This information is used when creating Wi-Fi calling profiles.

*Note - If the carrier you need is not listed, contact the carrier directly to request the FQDN information.

Carrier	
AT&T	
Sprint	
T-Mobile	ss.epdg.epc.geo
Verizon	

FQDN Profile

cnc.epdg.att.erricson.net epdg.epc.att.net sentitlement2.mobile.att.net vvm.mobile.att.net

primgw.vowifi2.spcsdns.net

eo.mnc260.mcc310.pub.3gppnetwork.org

233.sub-141-207-229.myvzw.com

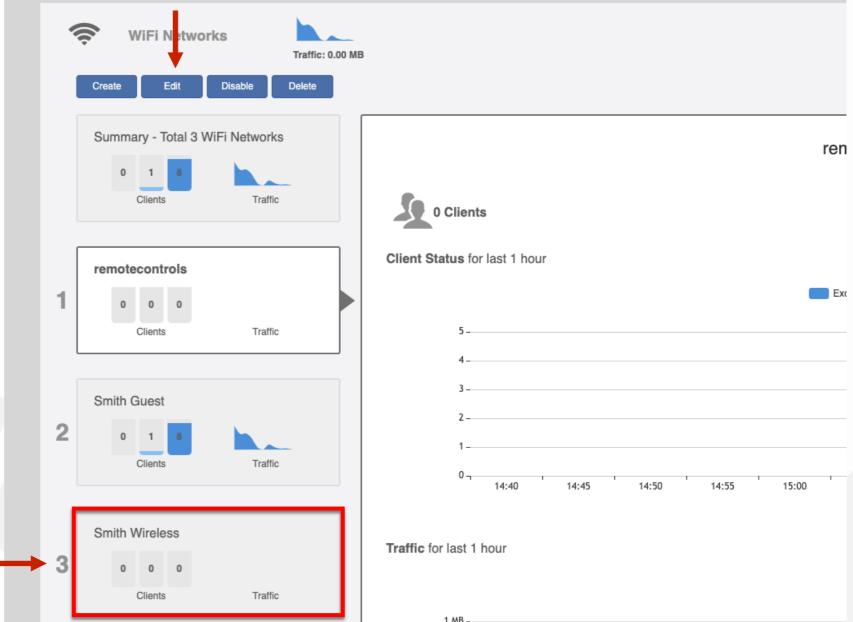
wo.vzwwo.com

Verified Carrier FQDN Addresses

See Enabling Wi-Fi Calling

To begin, select the WLAN to enable the Wi-Fi calling feature.

Then select the "Edit" to continue.



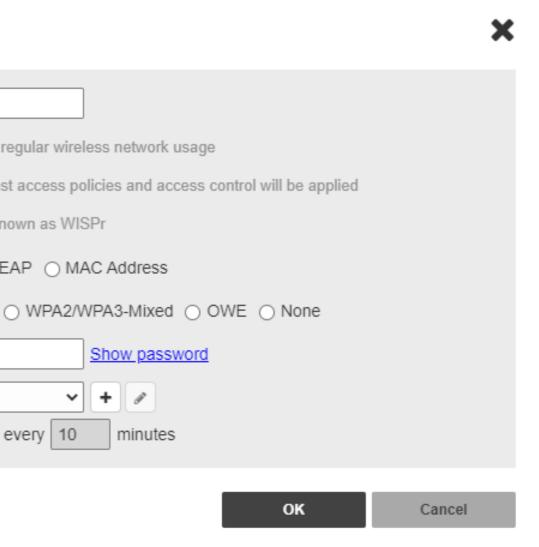
Se Enabling Wi-Fi Calling

This will open the "Edit WLAN" window for the WLAN.

Click on "Show Advanced Options".

Edit WLAN

* Name:	Smith Wireless
Usage Type:	Standard for most reg
	⊖ Guest Access guest a
	O Hotspot Service know
Authentication Method:	⊙ Open ○ 802.1X EA
Encryption Method:	● WPA2 ○ WPA3 ○
* Password:	•••••
Accounting Server:	Disabled
	Send Interim-Update ev
Show Advanced Options <	



Search Enabling Wi-Fi Calling

Click on the tab labeled "Access Control". Click on the "Enable" box for "Wi-Fi Calling". Hide Advanced Options Zero-IT & DPSK WLAN Priority Acces Call Admission Control: CAll Enforce CA Rate Limit: Per STA rate Per Station L Per Station D Enable Per Enable Per Access Control: Layer2 MAC Layer3/4 ACI Device Policy Application Visibility:
Enable Apply Policy URL Filtering:
Enable URL Filtering Wi-Fi Calling:
— Enable

Ļ						
s Control	Radio (Control	Others			
AC when C	AC is ena	bled on t	the radio			
limiting will	not work i	if SSID r	ate limiting	is enabled.		
Jplink		Disable	ed 🗸]		
ownlink		Disable	ed 🗸]		
r SSID Up	link	0		mbps (0.1~200.0)		
r SSID Do	wnlink	0		mbps (0.1~200.0)		
ACL :	No ACL	~	+			
.: [No ACL	~	+			
y:	No ACL	~	+			
Group: No_Policy 🗸 +						
Profile :			v +	P		
-						

Adding Wi-Fi Calling Profiles

Now that "Wi-Fi Calling:" is enabled, it's time to add the FQDN profiles. Use the chart to enter the information of the servers from the 4 major carriers.

Click on the "Edit" button to continue.

Hide Advanced Options V					
Zero-IT & DPSK WLAN Pr	iority Access Control	Radio 0	Control	Others	
Call Admission Control:	Enforce CAC when CA	AC is enal	bled on t	he radio	
Rate Limit:	Per STA rate limiting will r	not work i	f SSID ra	ate limiting	is enabled.
	Per Station Uplink		Disabled v]
	Per Station Downlink		Disable	ed 🗸]
	🗌 Enable Per SSID Upli	ink	0		mbps (0.1~200.0)
	Enable Per SSID Dov	vnlink	0		mbps (0.1~200.0)
Access Control:	Layer2 MAC ACL :	NO ACL	~	+	
	Layer3/4 ACL :	No ACL	~	+	
	Device Policy :	NO ACL	~	+	
Application Visibility:	Enable				
	Apply Policy Group :	No_Pol	icy	• + Ø	
URL Filtering:	Enable				
	URL Filtering Profile :			~ +	P
Wi-Fi Calling:	Enable				
\rightarrow	🔊 Edit				
	Name				
	No data available.				

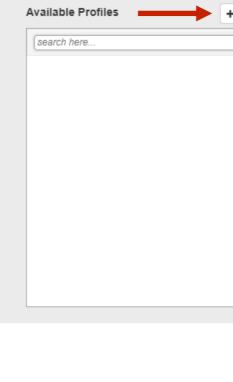
Cance

Adding Wi-Fi Calling Profiles

The "Select Wi-Fi Calling Profiles" window will open.

If the carrier you are enabling Wi-Fi calling for is not currently listed, click on the "+" button to create a new Wi-Fi calling profile.

Select Wi-Fi Calling Profiles



٩	search here	Q

Cancel

X

Adding Wi-Fi Calling Profiles

Fill in the "Name" of the profile.

Fill in the "Description" of the profile.

Now ensure that "Voice" is the option selected from the "QoS Priority" drop down selection box.

Enter in the first profile domain name by clicking on "Create New".

Click on "Save" after each profile domain name you enter.

Create New General * Name AT&T * QoS Priority Voice Evolved Packet Data Gateway (ePDG Order Domain Name 1 * Cnc.epdg.att. Create New Delete

			•
T			
Т			
ce	< →		
DG)			•
e	IP Address	Action	
att.erricson.r		Save Cancel	
		ок	Cancel

х

Adding Wi-Fi Calling Profiles

Fill in the "Name" of the profile.

Fill in the "Description" of the profile.

Now ensure that "Voice" is the option selected from the "QoS Priority" drop down selection box.

Enter in the first profile domain name by clicking on "Create New".

Click on "Save" after each profile domain name you enter.

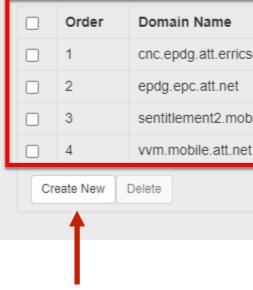
Now click on "OK" to continue.

*Note – You can add multiple profile domains for each profile.

Create New

General	
* Name	AT&T
Description	AT&T
* QoS Priority	Voice

Evolved Packet Data Gateway (ePDG)



X



	IP Address	Action
cson.net		Edit Clone Move Down
		Edit Clone Move Up Move Down
bile.att.net		Edit Clone Move Up Move Down
et		Edit Clone Move Up

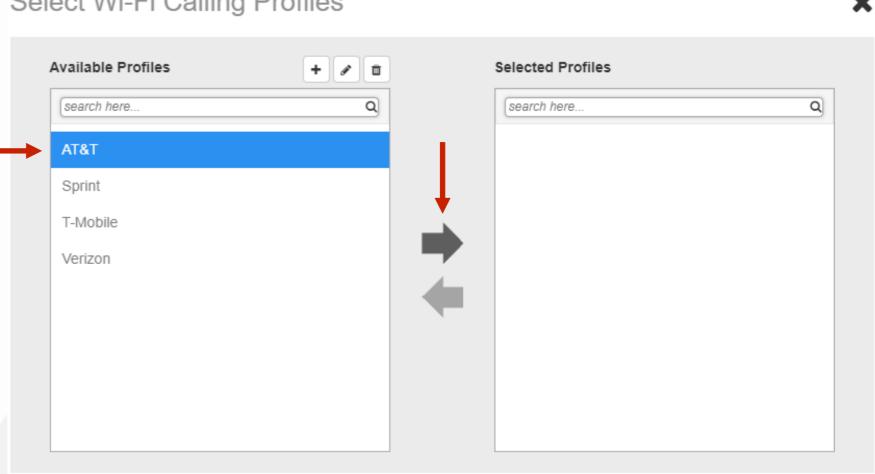
Adding Wi-Fi Calling Profiles

After entering in all the Wi-Fi calling profiles needed for the project, it's time to "Select Wi-Fi Calling Profiles".

Select the first profile from the "Available Profiles" list.

Click on the "right arrow" button to transfer the profile to the "Selected Profiles" list.

Select Wi-Fi Calling Profiles



*Note – When moving multiple profiles, hold down the "Ctrl" button and select each of the profile you wish to move.

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Cancel

Adding Wi-Fi Calling Profiles

Ensure the correct profiles are in the "Selected Profiles" window.

Now click on the "OK" button to complete the process.

*Note – If a profile was selected in error, the profile can be moved back to "Available Profiles". Highlight the profile in the "Selected Profiles" window, and then click on the "Left Arrow" button to move the profile back to "Available Profiles" window.

Select Wi-Fi Calling Profiles

Available Profiles

search here



+ / 1		Selected Profiles	
Q		search here	Q
		AT&T	
		Sprint	
	-	T-Mobile	
		Verizon	
	-		

Chapter 6 - Dedicating an AP as a WLAN Controller Only

- Why Disable the WLAN Service on the Master AP
- Master AP Focused On Controller Functions

Chapter 6 - Dedicating an AP as a WLAN Controller Only

% Why Disable the WLAN Service on the Master AP

In its base configuration, the Unleashed Master AP performs the duties of both a software based wireless controller and an access point.

This new feature allows you to disable the radios in the Unleashed Master AP allowing it to dedicate all resources to managing the wireless network.

*Note – Ensure that the AP defined as the Unleashed Master AP with No WLAN is not included in the calculation of APs required for proper RF coverage.

Chapter 6 - Dedicating an AP as a WLAN Controller Only

Master AP Focused On Controller Functions Click anywhere on "Admin & Services" Admin & Services to reveal the sub menus. Now select "System Info". 🛄 System System Info Nam System Info System Versig IP Settings Under "Preferred Master", click the Unleashed System Time "Disable WLAN service on Master AP" Country Code option box to enable this feature. Preferred Master Upon applying this change, the Primary Pre Roles become a Member AP, the selected Second Users there may be a brief network disruption who Click on "Apply" to continue. Primary Preferred Maste Mesh Secondary Preferred Maste Disable WLAN service on Master A Services **Note:** This feature will only take effect when the Unleashed Network contains Administration ► Switch Approval at least three or more connected APs Approv to provide Wi-Fi service.

		▼
e*	Smith_Residence	
n	200.11.10.5.195	
D	un1020720042651632646292817 Generate Copy	
	Apply	
lar er er		
al	Apply Automatically approve all join requests from switches.	

Chapter 7 - How to Add a Secondary Preferred Master

- Why Assign an Access Point as the Secondary Preferred Master
- Adding a Secondary Preferred Master AP

Chapter 7 - How to Add a Secondary Preferred Master

* Why Assign an Access Point as the Secondary Preferred Master

Building upon the technique of establishing a Preferred Master AP, described in our Initial Setup Guide, a new feature allows a Secondary Preferred Master to be defined.

Since any **non-mesh** AP can become the Master AP if the Preferred Master goes offline, defining a Secondary Preferred Master will ensure optimal performance by defining which AP will assume the Master role if the primary Preferred Master AP is offline.

Once the Preferred Master AP returns to an online state, on the Unleashed network, it will once again resume the role as the primary Preferred Master AP.

Chapter 7 - How to Add a Secondary Preferred Master

Adding a Secondary Preferred Master AP

Click anywhere on "Admin & Services" to reveal the sub menus.

Now select "System Info".

Under "Secondary Preferred Master", click on the drop-down arrow to reveal which AP you would like to make the "Secondary Preferred Master".

Click on "Apply" to continue.

y Preteri	red Master AP	
Admin & Services		
<u>□</u> System ▼	System Info	
System Info IP Settings	Name* Smith_Residence System Version 200.12.10.5.234	
System Time	Unleashed ID un1020720042651646406355795 Generate Copy Apply	
Country Code Roles	Preferred Master Upon applying this change, the Primary Preferred Master AP will become the Master AP and the previous Master AP will be rebooted to become a Member AP, the selected Secondary Preferred Master will become Master Primary Preferred Master is down. Please note there may be a brief network disruption when changing Master AP. Primary Preferred Master [Master Closet[R510 - 60:d0].	
Users Mesh		
	Disable WLAN service on Master AP 🔽 If the Unleashed Network contains 3 or more connected APs, the Master AP will not provide WiFi service	
Administration	Switch Approval Approval Approval Approval Automatically approve all join requests from switches.	
	Email Server	
	From Email Address SMTP Server Name	
	SMTP Server Port SMTP Authentication Username	
	SMTP Authentication Password	

Advanced WLAN Settings Firmware Version: 200.12

- Access Networks Technical Services engineers are available to assist you in the troubleshooting process.
- If you have any questions about the steps to follow on setting up your Advanced WLAN Settings or need information on a topic not detailed in the Unleashed Configuration Guides, please contact the Access Networks Technical Services department for assistance.
- For telephone, visit snp1.com/techsupport
- Email: support-case@accessnetworks.com
- Existing Access Networks partner can visit <u>https://my.accessnetworks.com/partners/</u> and either open a case or start a chat session by selecting the "Support" tab.

THANK YOU

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