



The bridge to possible

TAC Tools Explained Series

Wireless TAC Tools

Javier Contreras Albesa, Principal Engineer , IBNG

Shankar Ramanathan, Sr. Technical Leader, CX

Feb 11th, 2021

News & Upcoming events



Ask Me Anything following the event

Now through Friday
February 19th, 2021

With
Javier Contreras & Shankar
Ramanathan

<http://bit.ly/ama-wireless-tools>



Javier Contreras
Principal Engineer



Shankar Ramanathan
Sr. Technical Leader
CCIE #40548

Have a look to other Support Talks events

Collaboration Solutions Analyzer

Watch the recording: <https://bit.ly/csa-tool>

Say Hi! to TAC Connect Bot

Watch the recording:
<http://cs.co/TACconnectBot>

CLI Analyzer

Watch the recording:
<https://bit.ly/CLI-tool>

My Devices

Watch the recording:
<http://cs.co/MyDevices-st>

A
Support Talks
Series

New TAC Tools Explained!

A set of series that will walk you through the different Cisco support tools and their features.

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Events and much more

<http://bit.ly/EventTopContributors>



A screenshot of the Cisco Community website's "Events Top Contributors" page. The page features a search bar at the top, navigation tabs for "Technology & Support", "For Partners", "Customer Connection", "Events", and "Members & Recognition". Below the navigation, there is a section titled "Events Top Contributors" with a description of the program and a list of contributors for the year 2014. Two contributors are shown: Julio Carvajal and Ryota Takao, each with a profile picture and name. A small video thumbnail is also visible on the right side of the contributor list.

Cisco Designated VIPs

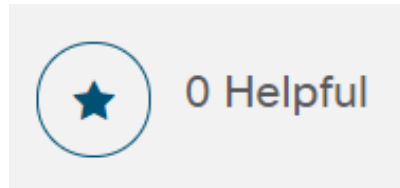


The Cisco Designated VIP program recognizes the top external individual contributors in Cisco's online communities, including the Cisco Support Community (CSC), Cisco Learning Network (CLN) and the Cisco Developers Network (CDN). Cisco Designated VIPs are recognized by their peers for their expertise and tireless contributions, and their abundant participation is vital to community success. With this program, Cisco formally recognizes the positive, valuable influence our top individual members exert on the communities overall. [FAQs](#)

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Javier Contreras Albesa
Principal Engineer



Shankar Ramanathan
Sr Technical Leader

Thank You For
Joining Us Today!



Download Today's Presentation

<http://bit.ly/st-feb11-slides>

Submit Your Questions Now!

Use the **Q&A** panel to submit your questions and the panel of experts will respond.

They will be answered eventually



Please take a moment to complete the survey at the end of the event



Wireless Config Analyzer Express (WCAE)

Access HERE:

<https://cway.cisco.com/wireless-config-analyzer/>



What is the Wireless Config
Analyzer Express?

Wireless Config Analyzer Express

- Evolution from WLCCA
- Main Objective: Quick config analysis and RF state
- Checks in : General, RF, Mobility, Security, AP, Flex
- Only one WLC per set supported. No multi-WLC comparison
- Support for AireOS or 9800/EWC
- Cloud: Focus on **Summaries** not Details
- Mini-Desktop: XLS with full report

Wireless Config Analyzer Express

- RF data summary
- RF Health
- Message summarization (msglog)
- AP model summary, and their operating mode
- TAC: same results are attached internally to TAC case every time you send a “sh run or show tech wireless”

Where?

- <https://cway.cisco.com/tools/WirelessAnalyzer/>
- <https://developer.cisco.com/docs/wireless-troubleshooting-tools/>
- Alias: ciscocom-apps-wlcconfiganalyzer@cisco.com

Wireless Config Analyzer Express

Wireless Config Analyzer Express BETA Contributors

Input Parameters ▼

Run

Wireless Analyzer Results

- **WLC Messages**
- AP Messages Summary
- RF Stats WLC Summary
- RF Stats AP Groups Summary
- RF Stats Flex Groups Summary
- RF Health WLC Summary
- RF Health AP Groups Summary
- RF Health Flex Groups Summary
- AP Models Summary
- AP Modes Summary
- Best Practices Score
- Show All
- Hide All

Total Unique Messages:

Error:	28
Warning:	62
Info:	37
Parsing Errors:	0
Processing Errors:	5

WLC Results: wlc.customer.net

30001	General: Controller with not recommended code version:8.3.130.8 Action: Controller is running deferred or not recommended code and should be upgraded. Refer http://www.cisco.com/c/en/us/support/docs/wireless/wireless-lan-controller-software/200046-TAC-Recommended-AireOS.html
30008	General: Controller with high temperature: +67 C Action: Interface created without any port assignment, incomplete config. Use config interface port command to correct this problem
30028	General: Max AP count reached on controller Action: WLC is running at its maximum capacity. No more APs will be able to join
30056	General: HA is active, but no vlan set on Manager interface Action: HA is only supported on tagged management interfaces. This is also recommended for WGB or IPv6 features, you should configure vlan on management interface. Command: config interface vlan management

Wireless Config Analyzer Express

- I got 5000 Aps... How do I find which ones have problems?
- How to find config errors?
- If my current code correct?
- How is my implementation of best practices?
- Where are my RF problems?

The screenshot displays the 'Wireless Config Analyzer Express' interface. At the top, it says 'Wireless Config Analyzer Express BETA' and 'Contributors'. Below that is an 'Input Parameters' section. The main content area is titled 'Wireless Analyzer Results' and features a 'Total Unique Messages' summary table with the following data:



Message Type	Count
Error	28
Warning	62
Info	37
Parsing Errors	0
Processing Errors	5

Below the summary table, there is a list of 'WLC Results' for 'wlc.customer.net'. The results are categorized by severity and include the following details:

- 30001** (Error): General: Controller with not recommended code version:8.3.130.8
Action: Controller is running deferred or not recommended code and should be upgraded. Refer <http://www.cisco.com/c/en/us/support/docs/wireless/wireless-lan-controller-software/200046-TAC-Recommended-AireOS.html>
- 30008** (Warning): General: Controller with high temperature: +67 C
Action: interface created without any port assignment, incomplete config. Use config interface port command to correct this problem
- 30028** (Warning): General: Max AP count reached on controller
Action: WLC is running at its maximum capacity. No more APs will be able to join
- 30056** (Error): General: HA is active, but no vlan set on Manager interface
Action: HA is only supported on tagged management interfaces. This is also recommended for WGB or IPv6 features, you should configure vlan on management interface. Command: config interface vlan management

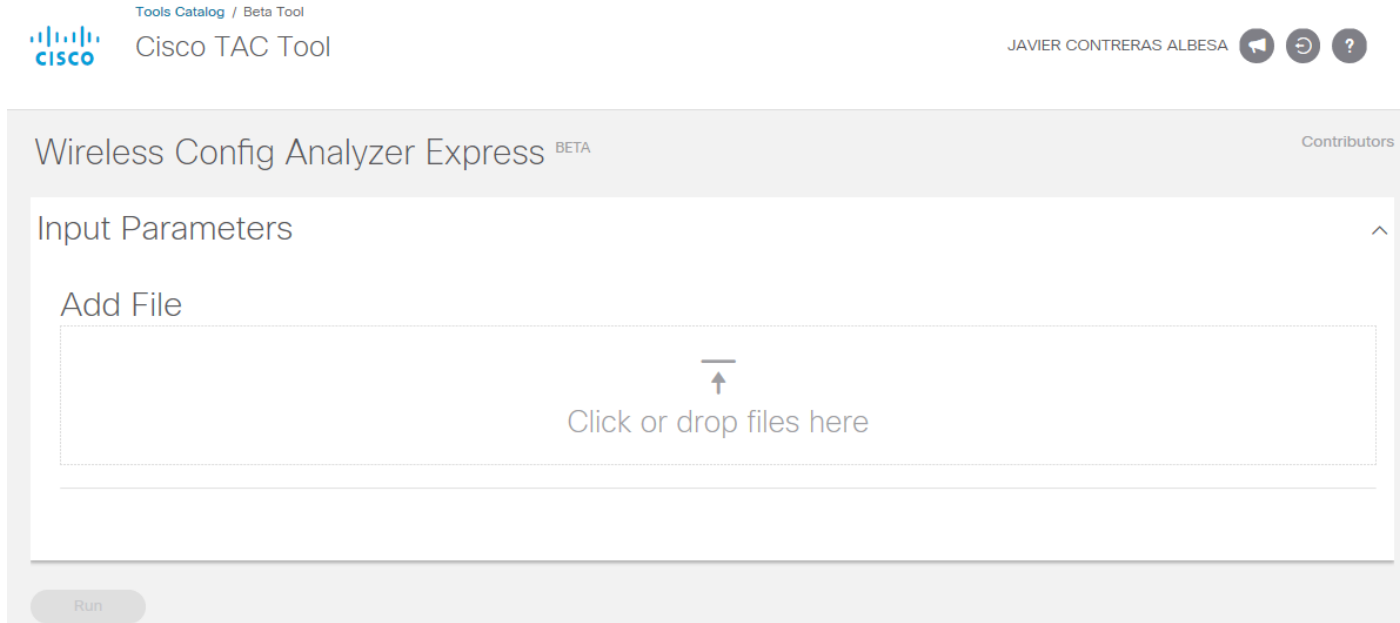
Using it

How to use

- Tool supports:
 - “sh run-config” 
 - “sh tech wireless” 
- Best way to capture it (AireOS):
 - ssh with config paging disabled
 - Use: *transfer upload datatype run-config (max 32MB)*
- TIP: you can upload the file zipped!

How to use

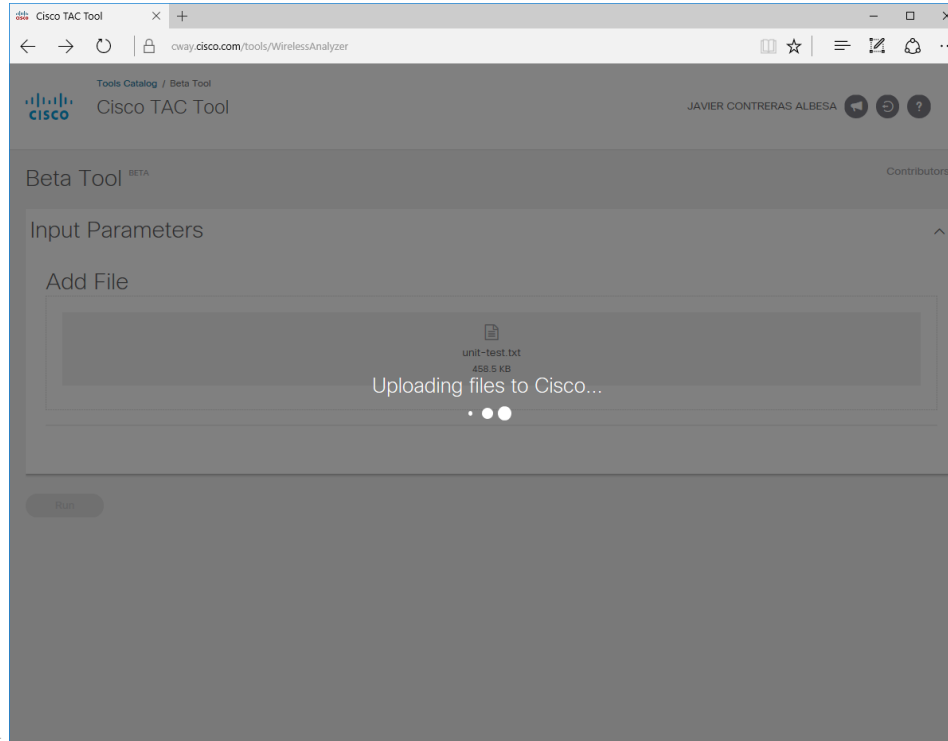
- Go to : <https://cway.cisco.com/tools/WirelessAnalyzer/>



The screenshot shows the Cisco TAC Tool interface. At the top left is the Cisco logo and the text "Tools Catalog / Beta Tool" and "Cisco TAC Tool". At the top right is the user name "JAVIER CONTRERAS ALBESA" and three icons: a speech bubble, a refresh icon, and a help icon. The main content area is titled "Wireless Config Analyzer Express BETA" and "Contributors". Below the title is a section labeled "Input Parameters" with an upward arrow icon. Underneath is a large dashed box labeled "Add File" containing a central icon of a horizontal line above an upward arrow, with the text "Click or drop files here" below it. At the bottom left of the interface is a "Run" button.

How to use

- Upload file, analysis will start



How to use

- Done!

The screenshot displays the 'Wireless Config Analyzer Express' interface. At the top, it says 'Wireless Config Analyzer Express BETA' and 'Contributors'. Below this is a search bar labeled 'Input Parameters'. A 'Run' button is visible. The main section is titled 'Wireless Analyzer Results' and contains a list of expandable categories: WLC Messages, AP Messages Summary, RF Stats WLC Summary, RF Stats AP Groups Summary, RF Stats Flex Groups Summary, RF Health WLC Summary, RF Health AP Groups Summary, RF Health Flex Groups Summary, AP Models Summary, AP Modes Summary, Best Practices Score, Show All, and Hide All. To the right of this list is a 'Total Unique Messages' table:

Total Unique Messages:	
Error	28
Warning	62
Info	37
Parsing Errors	0
Processing Errors	5

Below the categories is a section titled 'WLC Results: wlc.customer.net' containing a list of messages:

Message ID	General	Action
30001	General: Controller with not recommended code version:8.3.130.8	Action:Controller is running deferred or not recommended code and should be upgraded. Refer http://www.cisco.com/c/en/us/support/docs/wireless/wireless-lan-controller-software/200046-TAC-Recommended-AireOS.html
30008	General: Controller with high temperature: +67 C	Action:interface created without any port assignment, incomplete config. Use config interface port command to correct this problem
30028	General: Max AP count reached on controller	Action:WLC is running at its maximum capacity. No more APs will be able to join
30056	General: HA is active, but no vlan set on Manager interface	Action:HA is only supported on tagged management interfaces. This is also recommended for WGB or IPv6 features, you should configure vlan on management interface. Command: config interface vlan management

Polling Question 1

How many checks do you think WCAE can do?

- A. 50
- B. 150
- C. More than 200

Checking Results

Interface

Wireless Config Analyzer Express BETA Contributors

Input Parameters ▼

Run

Wireless Analyzer Results

- **WLC Messages**
- AP Messages Summary
- RF Stats WLC Summary
- RF Stats AP Groups Summary
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- RF Health AP Groups Summary
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Total Unique Messages:	
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WLC Results: wlc.customer.net

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Menu

Message Counts


Open summary

Initial View

Wireless Config Analyzer Express BETA Contributors

Input Parameters

Add File


show0run-config-wc-fra-1.log
21.6 MB

Wireless Analyzer Results

- ▶ WLC Messages
 - AP Messages Summary
 - RF Stats WLC Summary
 - RF Stats AP Groups Summary
 - RF Stats Flex Groups Summary
 - RF Health WLC Summary
 - RF Health AP Groups Summary
 - RF Health Flex Groups Summary
 - AP Models Summary
 - AP Modes Summary
 - Best Practices Score
 - Show All
 - Hide All

Total Unique Messages:

Error:	3
Warning:	9
Info:	23
Parsing Errors:	0
Processing Errors:	0

Click to go to option

Scroll here

WLC Messages

Run

WLC Results: wc-fra-1

30129	General: HTTPS intersection for Webauth may have severe performance impact due to scalability problems, only use on small deployments Action:
30076	General: Controller without time source, please configure a valid NTP server Action: No time source detected for this controller. It could be incomplete configuration, check that NTP servers are configured. Command: config time ntp server
120009	Security: No CPU ACL detected, it is recommended it, to restrict management access to the controller Action:
120013	Security: Minimum management password length should be 8 or higher Action:
120014	Security: The following Management Password policy ies not enabled: Position Check,Case Digit Check Action:
120016	Security: High encryption for HTTPS management is not enabled. Some older web browsers may not support these stronger cryptos Action:
120022	Security: SSH high encryption is not enabled, it is good security practice to enable it. Some older SSH clients may not support these stronger cryptos Action:
30064	General: EAPoL request timeout larger than 400 ms. EAP key requests may benefit for faster recovery, and better behavior on bad RF, by using higher counts, lower retry timeout. Please validate on your specific client types before enforcing the changes Action: EAPoL request timer found to be higher than 400ms. In most scenarios, 400 would allow faster recovery in case of problems. Some devices may need longer timers, so always check. Use command: config advanced eap eapol-key-timeout, to adjust
30067	General: Minimum Rogue RSSI detection threshold should be set to -80 or higher, unless mandated by your security policies Action: Min RSSI feature allows to filter out unwanted rogues from the network (out of building). It is advisable to use -70 to -80 depending on your physical location and security policies. Command: config rogue detection min-rssi
30081	Enterprise: Aggressive Load Balancing is a recommended best practice for enterprise environments with proper AP density, for local mode APs. Do not use for WLANs with interactive applications (voice/video) Action: Load Balancing could help on load distribution on some scenarios, it must be avoided for networks with interactive traffic like voice or video. Command: config wlan load-balance allow enable ID
	General: Band Select is not in use on any WLAN. It is a recommended feature when there is a good AP density in Enterprise deployments. Do not use for WLANs with interactive applications

Error

Warning

Information

AP Messages

APs Message Summary

60032	<p>RF: AP has high channel count (more than 10) per day on radio slot1. Check RF conditions or RRM configuration .</p> <p>APS: ap-lwb09a20-01</p> <p>Action: Frequent channel changes can cause severe impact in client stability. This could be triggered due to bad RF, RRM issues, or incorrect RRM configuration</p>
60016	<p>RF: CleanAir device with high duty cycle on channel.</p> <p>APS: ap-lwb-1c25-01</p> <p>Action:</p>
60028	<p>RF: AP shows low coverage (all neighbors < -75 dBm) on 2.4GHz band. This could affect roaming and be indication of poor RF design or NDP issues.</p> <p>APS: More than 10 APs affected, use standalone tool for more details</p> <p>Action:</p>
60029	<p>RF: AP shows low coverage (all neighbors < -75 dBm) on 5GHz band. This could affect roaming and be indication of poor RF design or NDP issues.</p> <p>APS: More than 10 APs affected, use standalone tool for more details</p> <p>Action:</p>
20012	<p>Empty primary controller.</p> <p>APS: AP00f2.8b89.6b78</p> <p>Action: Primary controller name is not set, this is not recommended as it can lead to random AP join across controllers (salt and pepper scenario). Recommendation is to have it explicitly configured</p>
60011	<p>RF: AP Cochannel interference above threshold, 2.4 GHz Band.</p> <p>APS: More than 10 APs affected, use standalone tool for more details</p> <p>Action:</p>
20010	<p>Antenna gain set to zero.</p> <p>APS: More than 10 APs affected, use standalone tool for more details</p> <p>Action: Antenna gain may not be valid. If antenna gain was previously configured, then this may indicate an invalid template push from PI. This may lead to wrong TPC power calculation</p>
30050	<p>RX-SOP in use.</p> <p>APS: More than 10 APs affected, use standalone tool for more details</p> <p>Action: This is informational message, no action required, if this was changed intentionally</p>

RF Stats WLC

- Summary per AP Group/Tag or Flex Group/Tag
- Reports if any AP is missing radios

RF Stats AP Groups Level Summary			
DML			
		2.4GHz Band	5GHz Band
Radio states	Total Radios:	65	65
	Total Enabled:	65	65
	Total Disabled:	0	0
	Total Missing Config:	0	0
	Total Client Servicing:	65	65
Radio Types	Legacy:	0	0
	11n:	65	58
	11ac:	0	7
	Unknown:	0	0
Radio RRM State	TPC Auto Power:	64	65
	Manual Power:	1	0
	DCA Auto Channel:	0	0
	Manual Channel:	65	65
	Radios High CoChannel:	60	14
	Radios High Utilization:	3	0
	Isolated Radios:	0	0
	Poor Coverage Radios:	65	64

RF Stats WLC

RF State	Radios High CoChannel	39	28	Quick RF issues
	Radios High Utilization	0	0	
	Isolated Radios	0	0	
	Poor Coverage Radios	0	1	
	High Radios with more than 10 channel changes per day	0	0	
	Radios Interference Profile Failed	1	0	
	Radios Noise Profile Failed	0	0	
	Radios Load Profile Failed	0	0	
DFS	Radios DFS Channel	0	26	DFS use
	Radios Non DFS Channel	42	16	
Client Stats	Radios with Low SNR Clients	5	12	Client levels
	Total High SNR Clients	33	142	
	Total Low SNR Clients	5	16	
	Total High RSSI Clients	36	148	
	Total Low RSSI Clients	2	10	
	Total Associated Clients	40	168	
Clean Air	Total Clean Air Detected Devices	155	0	Interf.

RF Health WLC/AP Groups/Flex Groups

General Evaluation

Total Radios per Level

		RF Health WLC Level Summary						
		2.4GHz Band			5GHz Band			
Stats	Total Radios:				542	580		
	Health Assesment:				Low	High		
	Lowest Metric Average:				53	80		
		2.4GHz Band			5GHz Band			
		Low	Medium	High	Low	Medium	High	
AP Radio Count per RF Health Metrics	Co-Channel Neighbor Utilization:	25	80	437	0	0	580	
	Co-Channel Overlapping:	53	80	409	0	3	577	
	Side Channel Overlapping:	0	0	542	0	0	580	
	Noise Same Channel:	0	1	541	0	0	580	
	Noise Side Channel:	1	4	537	0	0	580	
	Interference Same Channel:	0	2	540	0	0	580	
	Interference Side Channel:	0	0	542	0	0	580	
	Low SNR Clients:	4	10	528	23	63	494	
	Radio Utilization:	131	114	297	25	11	544	
	Cleanair Interferers:	0	0	542	0	0	580	

Individual Metrics

RF Health WLC/AP Groups/Flex Groups

- Co-Channel Neighbor Utilization
 - Summary of Nearby Aps on channel, activity vs distance
- Co-Channel Overlapping
 - Summary of Nearby Aps on channel, tx power vs distance
- Side Channel Overlapping
 - Summary AP on sides of current channel (channel distance for 2.4 GHz, 5GHz bonding options)
- Noise Same Channel
 - Noise level of current channel. -80 dBm is 0, 50 is 100%
- Noise Side Channel:
 - Noise levels of sides of adjacent channels

RF Health WLC/AP Groups/Flex Groups

- Interference Same Channel
 - Interference (wifi) on same channel. -90 dBm is 0, -50 is 100%
- Interference Side Channel
 - Interference (wifi) on adjacent channels, including 5GHz bonding options
- Low SNR Clients
 - For Aps with >5 clients. Percentage of clients < 25 SNR
- Radio Utilization
 - 60% utilization is 0% health
- Cleanair Interferers:
 - Relation of interferers for their RSSI vs Duty cycle

Mini-Desktop Version

WCAE Mini Desktop

- Same engine as the cloud version, same checks
- **A lot more details**, specially on the RF analysis side
- Per AP detailed information
- Several new reports included
- Supports Mac OS or Windows

Table of contents

Generated:2019-09-19 14:16

WCAE Version:0.3.9

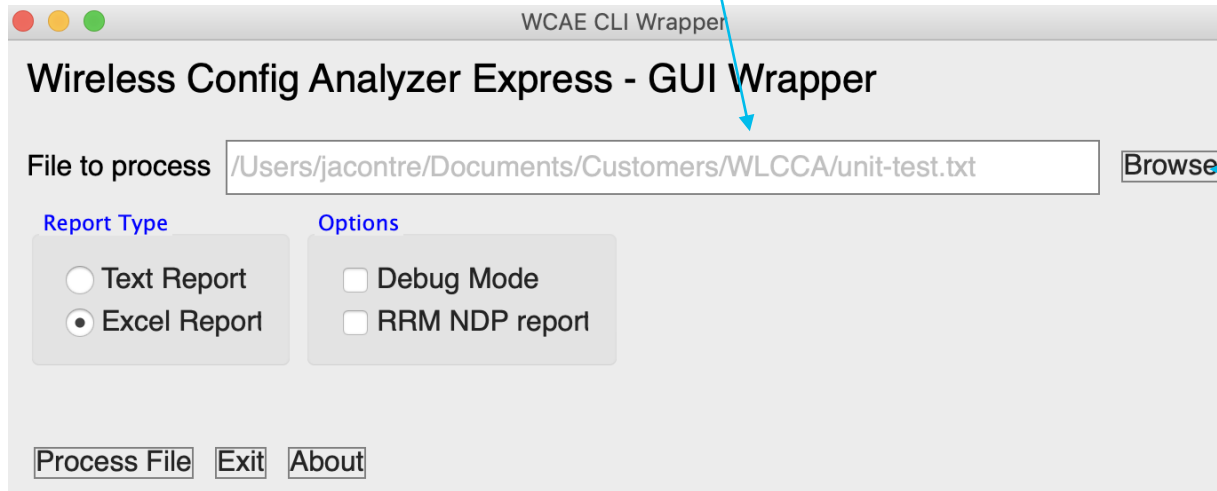
Total Message Counts	
Errors:	1
Warnings:	1
Informational:	10
Program Execution	
Parsing Errors:	3
Processing Errors:	0

Controller: wlc1

[Data Summary](#)
[Checks Results](#)
[Log Summary](#)
[Tag/Policy Usage](#)

Interface

2 - Selected file



1 - Click to select file

3 - Click to process the file

Results

- Excel or text results file on same location as source
- WLC and AP check results
- Syslog summarization
- For 9800, Tag and Profile usage summarization
- RF Stats per band, Flex group, AP group/Tag
- RF Health per band
- Channel stats
- AP configuration summary
- **Per AP** RF health and stats
- Neighbor reports
- Flexconnect AP config verification

Wireless Troubleshooting Tools – 9800 Config Analysis

	A	B	C	D	E	F	G	H	I	J	
1	Tags/Policy usage for WLC:csg-bgl18-00a-ewlc2										
2											
3	Combination: 1										
4	Policy Tag:	PT_Banga_BGL18_7thFl_6cfbc		Site Tag:	BGL18-1st-floor-Site-tag		RF Tag:	BGL18-RF-5GHz			
5	No WLAN Profiles			Join Pr.:	BGL18-1st-floor		RF Profile 2.4GHz:	Global Config			
6							RF Profile 5GHz:	BGL18-RF-5GHz			
7	AP List:	csg-bgl18-12a-cap37 csg-bgl18-12a-cap35 csg-bgl18-12a-cap39 csg-bgl18-12a-cap34 csg-bgl18-12a-cap42 csg-bgl18-12a-cap36 csg-bgl18-12a-cap43 csg-bgl18-12a-cap41									
8											
9	Combination: 2										
10	Policy Tag:	PT_Banga_BGL18_7thFl_6cfbc		Site Tag:	BGL18-5th-floor-Site-tag		RF Tag:	BGL18-RF-5GHz			
11	No WLAN Profiles			Join Pr.:	BGL18-5th-floor		RF Profile 2.4GHz:	Global Config			
12							RF Profile 5GHz:	BGL18-RF-5GHz			
13	AP List:	csg-bgl18-51a-cap07 csg-bgl18-51a-cap16 csg-bgl18-51a-cap06 csg-bgl18-51a-cap18 csg-bgl18-51a-cap13 csg-bgl18-51a-cap22 csg-bgl18-51a-cap03 csg-bgl18-51a-cap04									
14											
15	Combination: 3										
16	Policy Tag:	PT_Banga_BGL18_7thFl_6cfbc		Site Tag:	BGL18-2nd-floor-Site-tag		RF Tag:	BGL18-RF-5GHz			
17	No WLAN Profiles			Join Pr.:	BGL18-2nd-floor		RF Profile 2.4GHz:	Global Config			
18							RF Profile 5GHz:	BGL18-RF-5GHz			
19	AP List:	csg-bgl18-22a-cap36 csg-bgl18-22a-cap28 csg-bgl18-21a-cap09 csg-bgl18-21a-cap06 csg-bgl18-22a-cap31 csg-bgl18-21a-cap11 csg-bgl18-22a-cap30 csg-bgl18-22a-cap29									
20											
21	Combination: 4										
22	Policy Tag:	default-policy-tag		Site Tag:	default-site-tag		RF Tag:	default-rf-tag			
23				Join Pr.:	default-ap-profile		RF Profile 2.4GHz:	Global Config			
24	Wlan:	flex-alpha					RF Profile 5GHz:	Global Config			
25	Policy:	default-policy-profile									
26											
27	AP List:	csg-testing									
28											

<https://developer.cisco.com/docs/wireless-troubleshooting-tools/#/wireless-troubleshooting-tools/wireless-troubleshooting-tools>

Demo: WCAE



Wireless Config Converter



Access HERE:

<https://cway.cisco.com/tools/WirelessConfigConverter>

Polling Question 2

You can directly upload a converted config from an AireOS 5520 WLC to a Cat 9800 WLC using Wireless Config Converter?

- A. True
- B. False

TAC Tool: Wireless Config Converter

Goal of this tool is to provide easy config migration between various wireless platforms. One tool can perform following operations:

- AireOS(2500/3500/5500/7500/8500/WIS M2) to Cat 9800 Wireless LAN Controller conversion
- AireOS to IOS-XE (Converged Access) conversion
- IOS-XE (Converged Access) to AireOS conversion
- AireOS to AireOS(5520/8540/3504) conversion
- AireOS(5520/8540/3504) to AireOS conversion

Inputs Required

- From AireOS:
 - *show run-config startup-commands*
 - **NOTE: Do not confuse with “show run-config”**
- From IOS-XE(converged access)
 - *show running-config*

Release Notes: <https://community.cisco.com/t5/wireless/wlc-config-converter-aires-ios-xe/td-p/2895495>

C9800 Configuration Migration Tool

- Import AireOS configuration to verify if there are any feature gap
- Migration tool managed by TAC: <https://cway.cisco.com/wlc-config-converter/>

Cisco TAC Tool - WLC Config Converter

Welcome to our new interface

WLC Config Converter

Migrating wireless controllers to or from across any of these platforms: 2500/5500/7500/8500/WISM2/3650/3850/4500 S8E/5760/Catalyst 9800 controllers?

Please upload the following:
AireOS: "show run-config commands" output or TFTP config backup
Converged Access: "show running-config" output

Details

TFTP config backup or 'show run-config commands' output from AireOS WLC.

AIR-CT3504-K9.cfg
22.5 KB

Platform Conversion Type
AirOS-->Catalyst 9800

Run

Choose the AireOS to C9800 converter and hit run

Drop the AireOS config file:

- Upload it from directly from GUI:

Cisco WLC Config Converter

Commands

Upload file from Controller

File Type: Configuration

Configuration File Encryption:

Transfer Mode: TFTP

Server Details

IP Address (ip4/ip6): 1.1.1.1

File Path: /config/running

File Name: aireos-config.cfg

or

- use the "show run-config startup-config" output and put it in a .txt file

C9800 Configuration Migration Tool

- Analyze tool output


Converted Config

Translated Config

Unsupported Config

Not Applicable Config

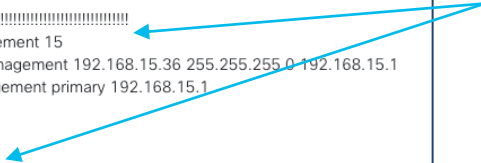
Unmap Config

 Cisco TAC Tool - WLC Config Converter

Converted Config Lines

Translated Config

```
! Enabled globally
aaa new-model
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
! Interface Configuration
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
! config interface vlan management 15
! config interface address management 192.168.15.36 255.255.255.0 192.168.15.1
! config interface dhcp management primary 192.168.15.1
vlan 15
name "management"
no shutdown
interface vlan 15
description "management"
ip address 192.168.15.36 255.255.255.0
ip helper-address 192.168.15.1
mdns-sd gateway
service-policy aireos-default-mdns-profile
exit
no shutdown
```



Tool provides following config:

- Translated (translated in IOS-XE)
- Unmapped (supported but not translated)
- Unsupported (not supported in C9800)
- Not Applicable (deprecated)

- AireOS CLIs and the correspondent translated IOS-XE commands

- Always recommended to analyze the translated config before pasting it

Understanding AireOS to 9800 Translation

from which platform to which platform the conversion should be

AireOS-->Catalyst 9800

Run

Converted Config Lines

- + Translated Config
- + Unsupported Config
- + Not Applicable Config
- + Unmapped Config

Translated Config: AireOS configuration that has been successfully translated to Catalyst 9800 configuration.

Unsupported Config: AireOS configuration that is currently not supported on the Cisco Catalyst 9800 controllers.

Not Applicable Config: AireOS Configuration that is either deprecated, obsolete or irrelevant in the current context of the Cisco Catalyst 9800 controller.

Unmapped Config: Configuration that has not been translated because of configuration tool limitations. This category is expected to go away once the tool has been enhanced to cover translation of all AireOS configurations.

TAC Tool Tips: AireOS to 9800 Migration

- Upload the AireOS TFTP backup config Wireless Config Converter <https://cway.cisco.com/wlc-config-converter/>
 - **Recommended:** The cloud tool has more fixes than the inbuilt tool inside 9800 WebUI
- **Save the translated file as a <filename>.cfg file**
 - The tool currently allows downloading the translated file as a .csv report which can in turn be saved as .cfg file.
- The recommended method to apply the config is via **9800 CLI**
 - Upload the translated .cfg file to 9800 bootflash:
 - Execute: ***"copy bootflash:<file> running-config"*** for config to be migrated to running-config
 - This allows the all lines to be executed at one go preventing missed config issues while pasting in terminal
 - Also accommodates config line misalignment issues avoiding errors which would normally occur during copy-paste scenario.



Non-9800 Migrations Tips

- AireOS(Legacy) to AireOS (New) Platform Migrations
 - Always will require user review and intervention
 - Encrypt and port config cannot be mapped
- AireOS to IOS-XE(converged access) and vice versa:
 - Only WLAN config migration is supported.



Demo: Wireless Config Converter



Wireless Debug Analyzer



Access HERE:

<https://cway.cisco.com/wireless-debug-analyzer>

TAC Tool: Wireless Debug Analyzer

WHAT?

Wireless Debug Analyzer Tool is designed to simplify parsing through debug client/aaa/mdns/web-auth etc logs from Aire-OS WLC for troubleshooting everyday wireless issues.

WHY?

Standard Wireless debugs produce tons of lines of information which takes a TAC engineer a long time to collect, analyze and eventually determine cause.

HOW?

The Wireless Debug Analyzer quickly discovers cause and time of occurrence by eliminating unrelated data by log sequence matching against existing issues.


AND?

Coming soon.. Cat 9800 support .Q3FY21

Sample Output

Input: debug client <mac1> <mac2>

Example



```
wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 0.0.0.0 AUTHCHECK (2): Conn...
wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 Encryption policy in...
wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 Not Using WPM Compl...
wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 Sending 13w Flag 0
wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 0.0.0.0 8021X_REO0
apVapId 5 f1ee-acl-name:
wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 apFmsAssoStateInc
wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 apFmsWepPskStateInc
wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 apFmsAddUser2 (apf_policy...
ec:c8:82:a4:5b:c8 from Idle to Associated

wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 apFmsAddUser2:session timeout for
apFmsTimeout '0' and sessionTimerRunning flag is 0
wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 Stopping deletion of Mobile stati...
wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 Func:

wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 Sendin...
on apVapId 5
wapMsConnTask_1: Oct 15 15:48:13.750: 3c:a9:f4:01:21:04 Sendin...
Slot 0
wapMsConnTask_1: Oct 15 15:48:13.751: 3c:a9:f4:01:21:04 apFProcessAssocReq (apf_80211.c:94...
AP ec:c8:82:a4:5b:c8 from Associated to Associated

+wapApTask: Oct 15 15:48:13.755: 3c:a9:f4:01:21:04 Sent 1x initiate message to multi thro...
+dot1x_NW_MsgTask_4: Oct 15 15:48:13.755: 3c:a9:f4:01:21:04 reauth_sm state transition 0 -
1x_reauth_sm.c:147
+dot1x_NW_MsgTask_4: Oct 15 15:48:13.755: 3c:a9:f4:01:21:04 Creating a PKC PMKID Cache entry 0
+dot1x_NW_MsgTask_4: Oct 15 15:48:13.755: 3c:a9:f4:01:21:04 Resetting MSCB PMK Cache Entry 0
+dot1x_NW_MsgTask_4: Oct 15 15:48:13.755: 3c:a9:f4:01:21:04 Setting active key cache index 0
+dot1x_NW_MsgTask_4: Oct 15 15:48:13.755: 3c:a9:f4:01:21:04 Setting active key cache index 0
+dot1x_NW_MsgTask_4: Oct 15 15:48:13.755: 3c:a9:f4:01:21:04 Adding BSSID ec:c8:82:a4:5b:c8
3c:a9:f4:01:21:04
```

Log file

Time	Task	Translated
Oct 15 15:48:13.747	*apFmsConnTask_1	Client made new Association to AP/BSSID BSSID ec:c8:82:a4:5b:c8 AP VlanAP_1042
Oct 15 15:48:13.748	*apFmsConnTask_1	The WLC/AP has found from client association request information Element that claims PMKID Caching support
Oct 15 15:48:13.750	*apFmsConnTask_1	Client is entering the 802.1x or PSK Authentication state
Oct 15 15:48:13.750	*apFmsConnTask_1	Client has successfully cleared AP association phase
Oct 15 15:48:13.750	*apFmsConnTask_1	Client is entering PSK Dot1x or WEP authentication phase
Oct 15 15:48:13.747	*apFmsConnTask_1	Client made new Association to AP/BSSID BSSID ec:c8:82:a4:5b:c8 AP VlanAP_1042
Oct 15 15:48:13.748	*apFmsConnTask_1	The WLC/AP has found from client association request information Element that claims PMKID Caching support
Oct 15 15:48:13.750	*apFmsConnTask_1	Client is entering the 802.1x or PSK Authentication state
Oct 15 15:48:13.750	*apFmsConnTask_1	Client has successfully cleared AP association phase
Oct 15 15:48:13.750	*apFmsConnTask_1	Client is entering PSK Dot1x or WEP authentication phase
Oct 15 15:48:14.037	*dot1x_NW_MsgTask_4	4-Way PTK Handshake, Client did not respond with M2
Oct 15 15:48:14.037	*dot1xMsgTask	4-Way PTK Handshake, Retransmitting M1 retry #1
Oct 15 15:48:14.436	*osapBsnTimer	4-Way PTK Handshake, Client did not respond with M2
Oct 15 15:48:14.436	*dot1xMsgTask	4-Way PTK Handshake, Retransmitting M1 retry #2
Oct 15 15:48:14.836	*osapBsnTimer	4-Way PTK Handshake, Client did not respond with M2
Oct 15 15:48:14.837	*dot1xMsgTask	Client has been deauthenticated

Output of Log file

Demo: WDA

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Please take a moment to complete the
survey



Thanks For Joining today!



The bridge to possible