

# Troubleshoot With Wireless Debug Analyzer

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## Introduction

This document describes one of the most popular tools for wireless debug analysis hosted on cisco.com - Wireless Debug Analyzer. [Wireless Debug Analyzer](#) parses debug log files for AireOS and Cat9800 Wireless LAN Controllers. It makes it easier to troubleshoot issues with wireless client association, authentication, roaming, and connectivity issues.

## Background Information

This tool aims to provide logical analysis based on log sequence to match against known issues. For AireOS the tool can also parse through the output of "debug client <mac1> <mac2> ..." as well as some portions of "debug aaa/webauth/mdns". For Catalyst 9800 WLC, the tool can parse through always-on traces and radio-active trace logs generated from WLC. For 9800 RA traces, there is an advanced insights dashboard that is newly added.

**9800 Advanced Debug Insights** is a new insight dashboard to analyze RA traces quickly. It provides a quick summary of client roam stats, onboard time, delete reasons, and the number of client sessions per WLAN(Success & Failures). It also provides a high-level table view of all client connection attempts with a start, the end time stamp for each session, delete reason, Auth method, and AP name, and further detailed view can also be seen with all the transactions between clients, AP, WLC in a sequence diagram.

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

Approximately 35% of SRs (Volume) is to troubleshoot client issues (drops, disconnects, roam failures). To analyze them manually is time and bandwidth-consuming. Manual analysis is prone to errors. The dashboard gives a holistic & detailed view.

## Access

The standalone tool can be accessed here: <https://cway.cisco.com/wireless-debug-analyzer/>

### **Steps :**

1. Upload the debug file
2. Hit the Parse button (Table View)

3. Click "Show Advanced Debug Insights" (Only for C9800 RA Traces)

## Dashboards

The tool provides Various dashboard views to help with the analysis.

The screenshot shows the 'Wireless Debug Analyzer' interface. At the top, there is a title and a description of the tool's purpose. Below this, there is a file upload area with a file named 'sample2.log.txt' (757.9 KB) and a callout bubble pointing to it that says 'Upload debug log file'. Below the upload area, there is a checkbox for 'Group by client MAC' which is checked, and a green 'Parse' button. A callout bubble points to the 'Parse' button with the text 'Advanced Insights for C9800 RA traces only'. Below the 'Parse' button, there is a 'Show Advanced Debug Insights' button with a starburst icon and a callout bubble pointing to it that says 'Debug Summary'. Below this button, there is a text prompt 'Select a client MAC Address and connection to see logs.' and a dropdown menu showing '7c21.0dc7.7cf0'. Below the dropdown, there are several checkboxes: 'Show Time' (checked), 'Show Task' (checked), 'Show Translated' (checked), 'Show Original' (unchecked), 'Show Prior First Connection' (unchecked), and 'Show All' (checked). At the bottom, there is a table with three columns: 'Time', 'Task', and 'Translated'. The table contains five rows of log entries, with the first row highlighted in green. A callout bubble points to the 'Translated' column with the text 'Debug Summary'.

Wireless Debug Analyzer

This tool parses debug log files for AireOS (WLC 5500/2500/8500/7500/WISM1-2/VWLC) and Cat9800 Wireless LAN Controllers. It makes it easier to troubleshoot issues with wireless client association, authentication, and roaming.

This tool aims to provide logical analysis based on log sequence matching against existing issues. For AireOS the tool can also parse through output of "debug client <mac1> <mac2> ..." as well as some other debug output. The tool can parse through always-on traces and radio-active trace logs generated from WLC.

sample2.log.txt  
757.9 KB

Group by client MAC

Parse

Show Advanced Debug Insights

Select a client MAC Address and connection to see logs.

7c21.0dc7.7cf0

Show Time  Show Task  Show Translated  Show Original  Show Prior First Connection  Show All

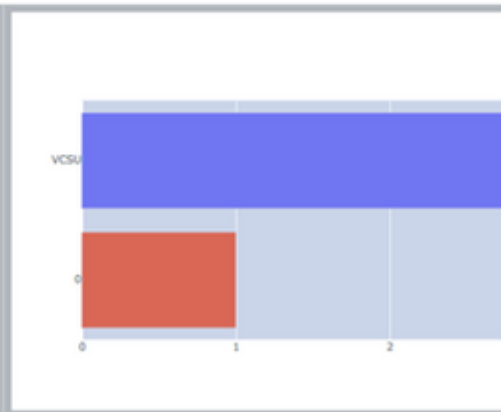
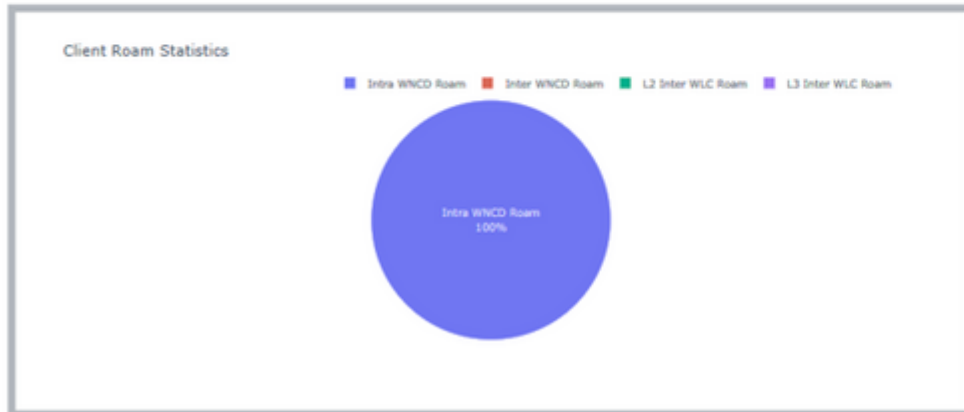
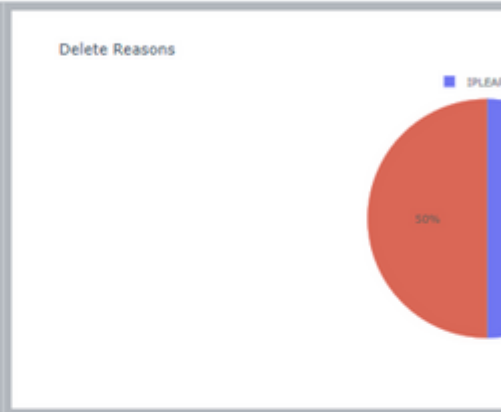
Time	Task	Translated
Connection attempt #1		
2020/03/06 16:31:29.328	client-orch-sm	Client roamed to a new AP/BSSID: BSSID 4c71.0db5.ef42, old BSSID 4c71.0db5.ef4d, WLAN SH_VOIP, Slot 0 AP 4c71.0db5.ef40, BES_HEALTH
2020/03/06 16:31:29.328	dot11	Client moved to MAB authentication state
2020/03/06 16:31:29.329	radius	Sending Accounting Request to AAA server: 10.10.2.109 with port 1813, request id: 0/141
2020/03/06 16:31:29.329	radius	Authentication/Accounting user: 7C-21-0D-C7-7C-F0
2020/03/06 16:31:29.329	client-orch-sm	Client successfully authenticated using MAB

### 1. Dashboard View

9800 WLC Advanced Debug Insights

Client MAC Address	Success Sessions	Failed Sessions	Start Time	End Time
a483.e766.9fee	4	2		May 19, 2022 08:4

DASHBOARD



CLIENT SESSION DETAILS

2. Client Session Details (Just Scroll to the bottom of the page)

### CLIENT SESSION DETAILS

Client MAC: A483.E766.9fee

Session	State	Auth Method	AP	WLAN	Mobility Role	IP Address	Onboarding Time	Start/Run Time	Dele
0	IPLEARN	DOT1X	unknown	0	Local-None	fe80::401:1a8e:c4d2:ae40	0 ms	/	IPLE
1	RUN	DOT1X	687d.b4e3.0720	VCSU	Local-None	fe80::401:1a8e:c4d2:ae40	3359 ms	07:14:14:192 / 07:14:17:551	
2	RUN	DOT1X	McF-327-9120	VCSU	Local-None		88 ms	08:29:04:947 / 08:29:05:035	
3	MOBILITY	DOT1X	687d.b4e3.0800	VCSU	Local-None		0 ms	08:31:50:373 /	ROA
4	RUN	DOT1X	687d.b4e3.0720	VCSU	Local-None	134.129.5.244	3636 ms	08:43:00:053 / 08:43:03:689	
5	RUN	DOT1X	McF-327-9120	VCSU	Local-None	2001:4930:3500:22:60f5:df48:ca9d:9708	109 ms	08:43:09:284 / 08:43:09:393	

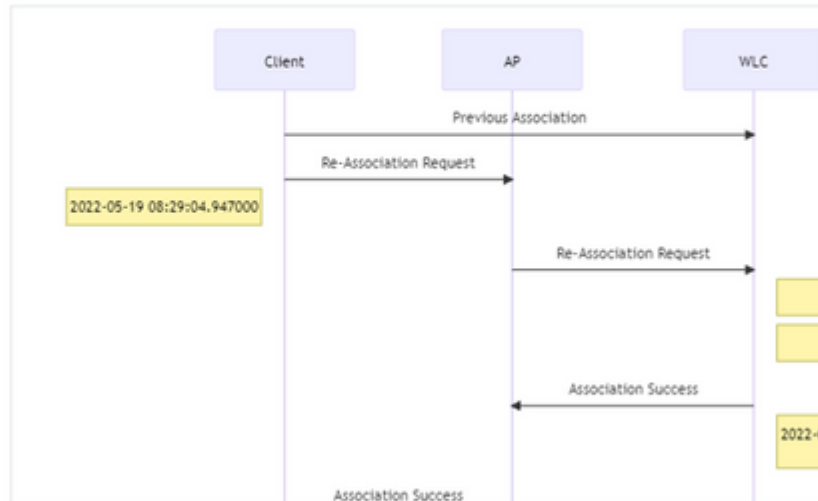
### 3. Client Session Detailed - Sequence Diagram

Advanced Debug Insights

Client MAC: a483.e766.9fee Session ID: 2

WLAN	VCSU
Previous BSSID	687d.b4e3.072f
New BSSID	687d.b4e3.0720
AP Name	McF-327-9120
Disconnect Reason	
Authentication Type	DOT1X
VLAN	0
IP Address	
IP Learn Method	IPv6 NDP
Onboarding Time	88 ms

← → Transaction seen in the log file  
< -> Transaction not seen in log file (Doesn't mean this is expected or needed always)



### Access Tool from C9800 Web Interface

One could collect RA Trace from C9800 WLC "troubleshoot" section and feed it to the Debug Analyzer:

- Menu Items
- Dashboard
- Configuration
- Monitoring
- Reporting
- Tools
- Help

Troubleshooting > Radioactive Trace

Need help

Conditional Debug Global State: **Stopped**

[+ Add](#) [x Delete](#) [v Start](#) [■ Stop](#)

[Wireless Debug Analyzer](#)

	MAC/IP Address	Trace file	
<input type="checkbox"/>	1c1b.b523.085c	debugTrace_1c1b.b523.085c.txt	<a href="#">Generate</a>

1 10 items per page 1 - 1 of 1 items