



Tech Club webinář

Ze života IT správce

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17.9.2024

Network is critical!



Seznamte se s Alexem,
profesionálním IT správcem, který
čelí problémům s Wi-Fi. Frustrovaný
špatným připojením hledá Alex
řešení. Přidejte se k nám na cestě za
vyřešením Alexových síťových
problémů...



Image generated by AI



Agenda

1. Možnosti využití Catalyst Centeru
2. Možnosti využití Meraki
3. Možnosti využití Thousand Eyes
4. Možnosti využití Spaces

V případě jakýchkoliv otázek se neváhejte ozvat a napsat nám je do chatu meetingu.

Cisco Networking Cloud

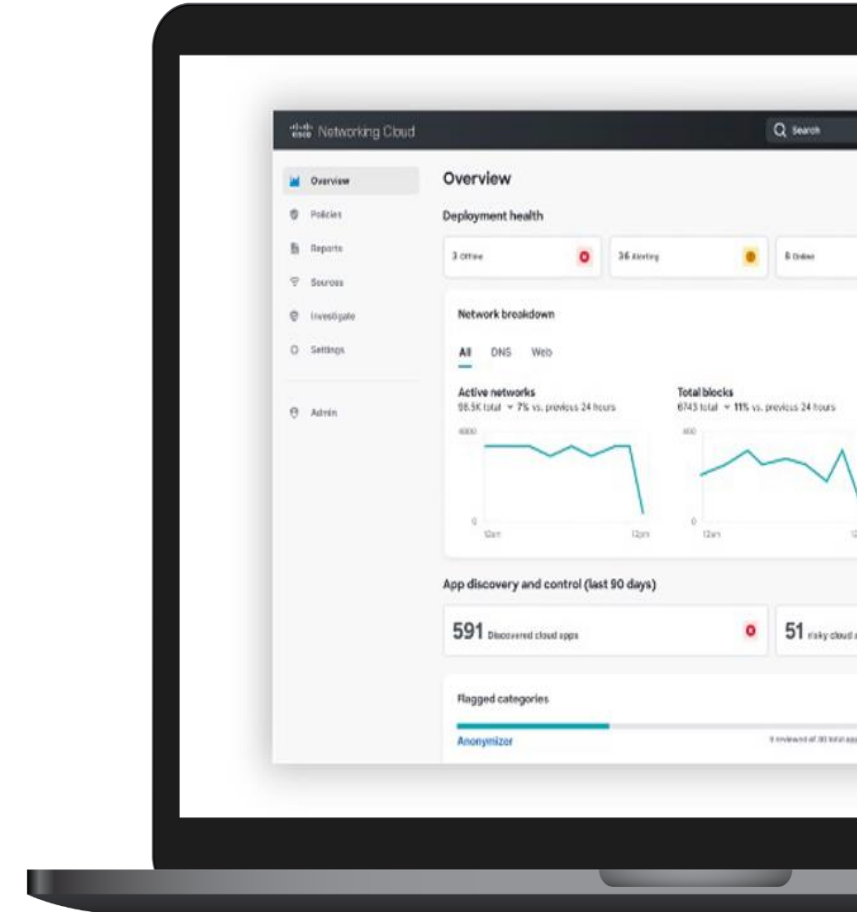
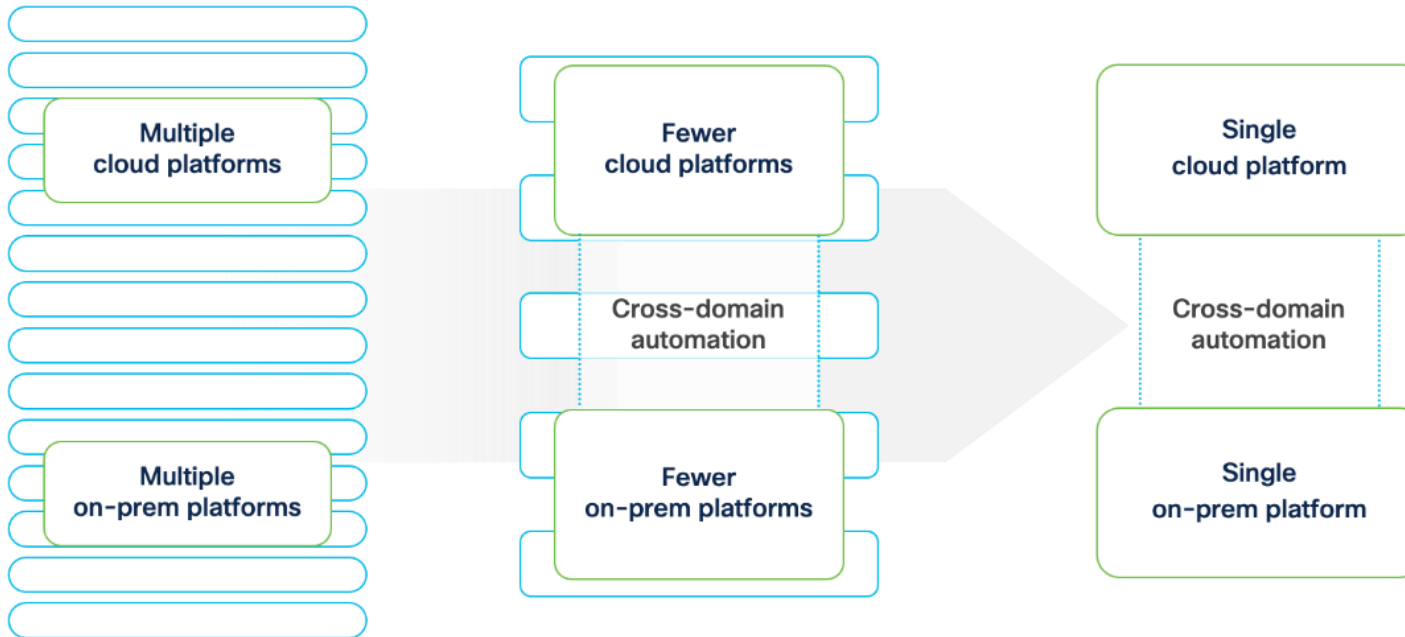
Integrating on-prem and cloud operating models

Unified Experiences

RELY ON

Your Platform Architecture

Consumption Model Considerations



Greater simplicity, everywhere, at every scale

Cisco Platform Strategy

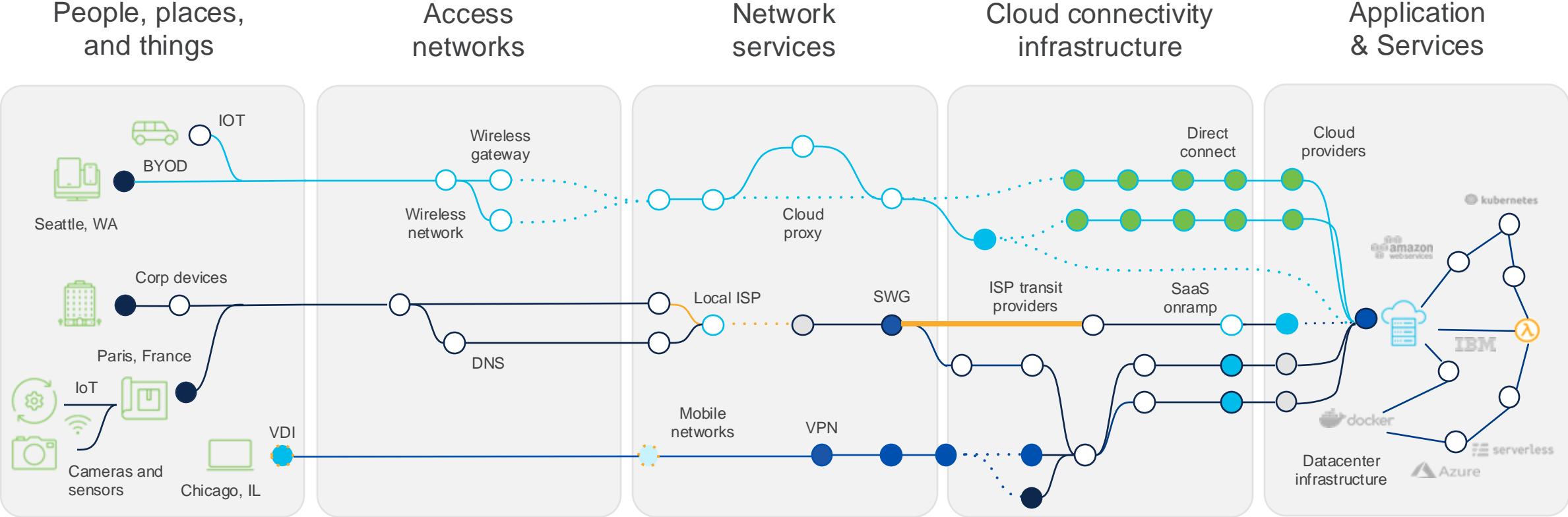
Data Powered Insights/ AIOps

Open API and Integrations

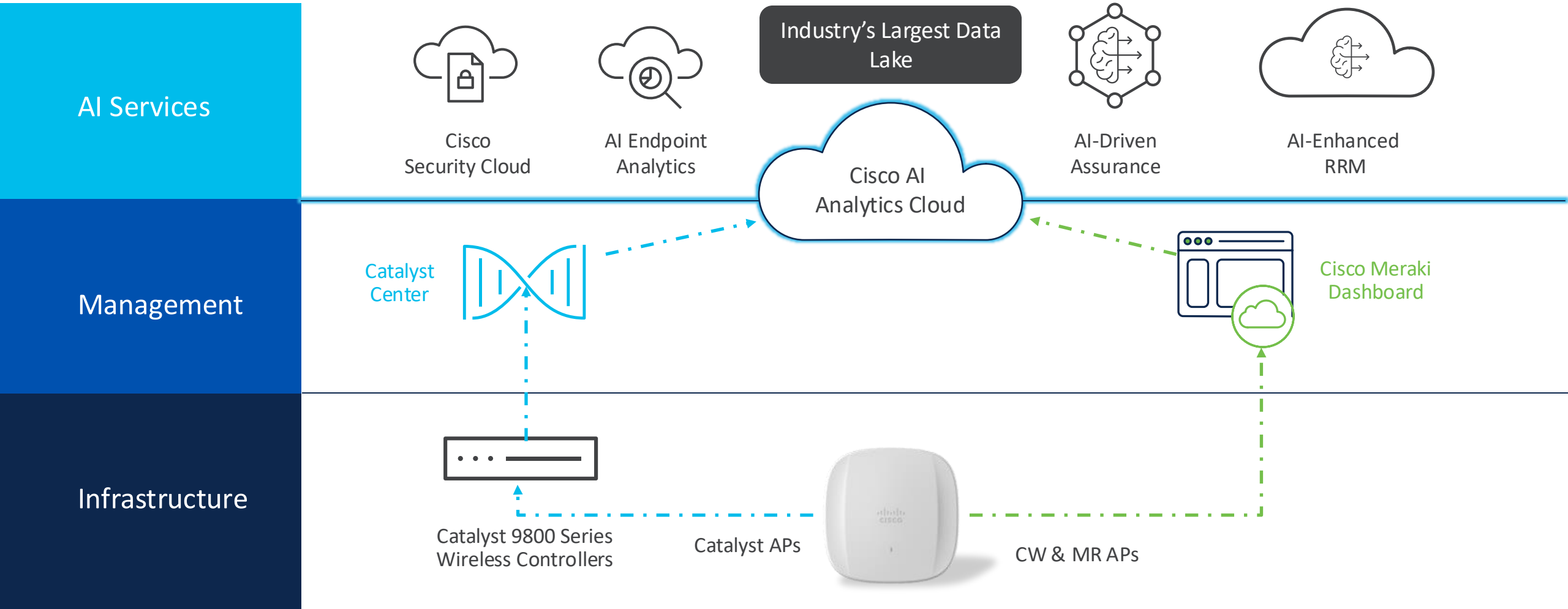
Platform Scale and Continuous Innovation



Networks are More Complex Than You Think



Unifying AI Technology for Cisco Wireless



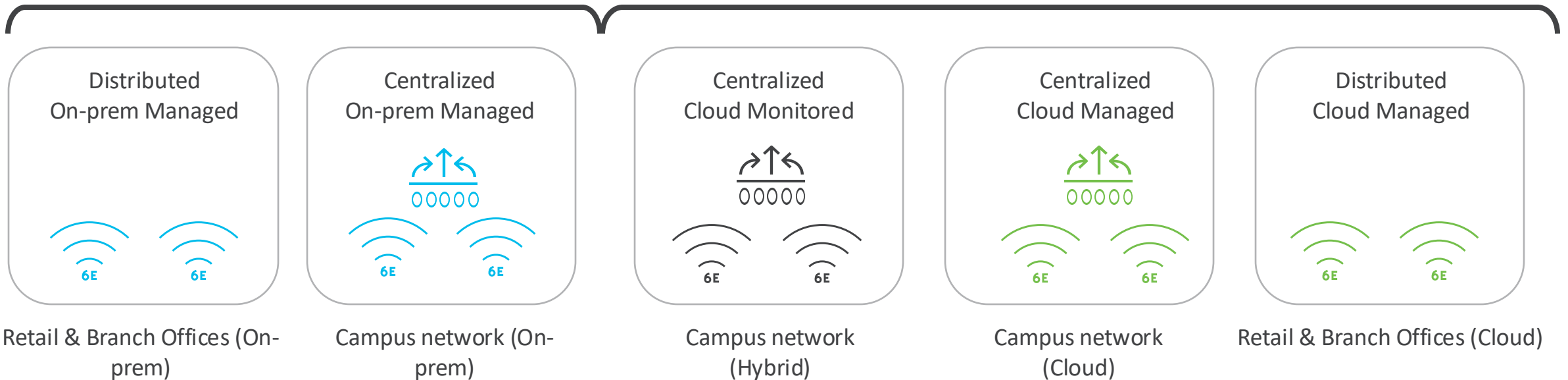
Deployment Options



Catalyst Center



Meraki



Retail & Branch Offices (On-prem)

Campus network (On-prem)

Campus network (Hybrid)

Campus network (Cloud)

Retail & Branch Offices (Cloud)



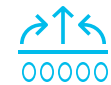
Catalyst AP



Catalyst 28/30/48/91/CW9100



Meraki MR Catalyst 9162/64/66



Catalyst WLC



Catalyst 9800



Meraki MCG*

* Future Product



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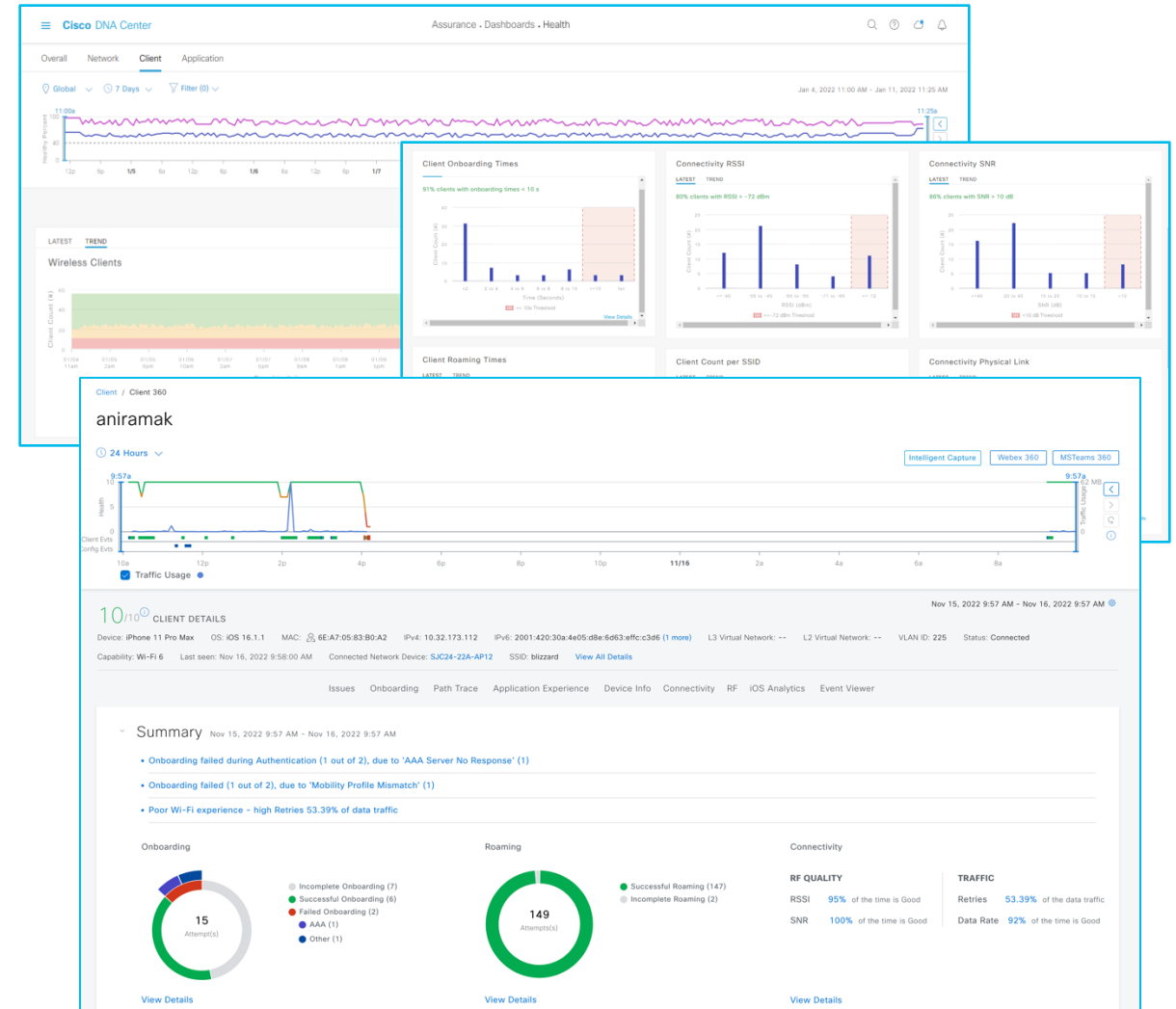
Problém č.1: „Pan ředitel se není schopen připojit k Wi-Fi z jeho soukromého telefonu. Priorita nejvyšší, potřebuje si stáhnout fotky!“



Image generated by AI

Wireless Troubleshooting using Catalyst Center - Client Health Dashboard, Client 360 View

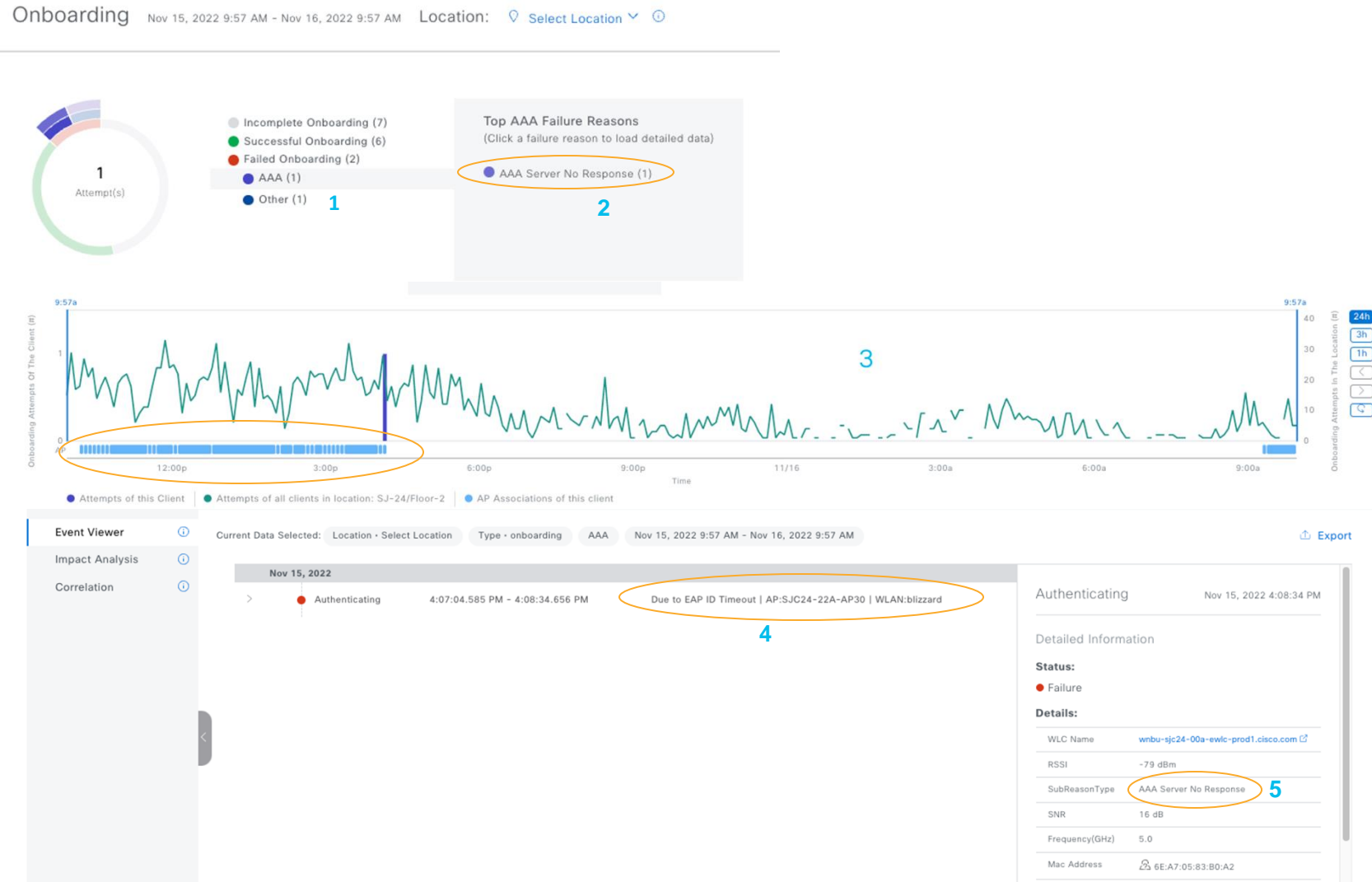
- Easily troubleshoot client issues
- Client 360 displays summary of key issues
- Onboarding, Roaming, Connectivity details including top failure reasons
- Event viewer displays event correlating to issue
- Impact analysis can be used to view Top AP's, floors, SSID's and device types impacted by same issue
- Correlation can be used to select KPI's for client, AP, WLC and switch



Wireless Troubleshooting using Catalyst Center

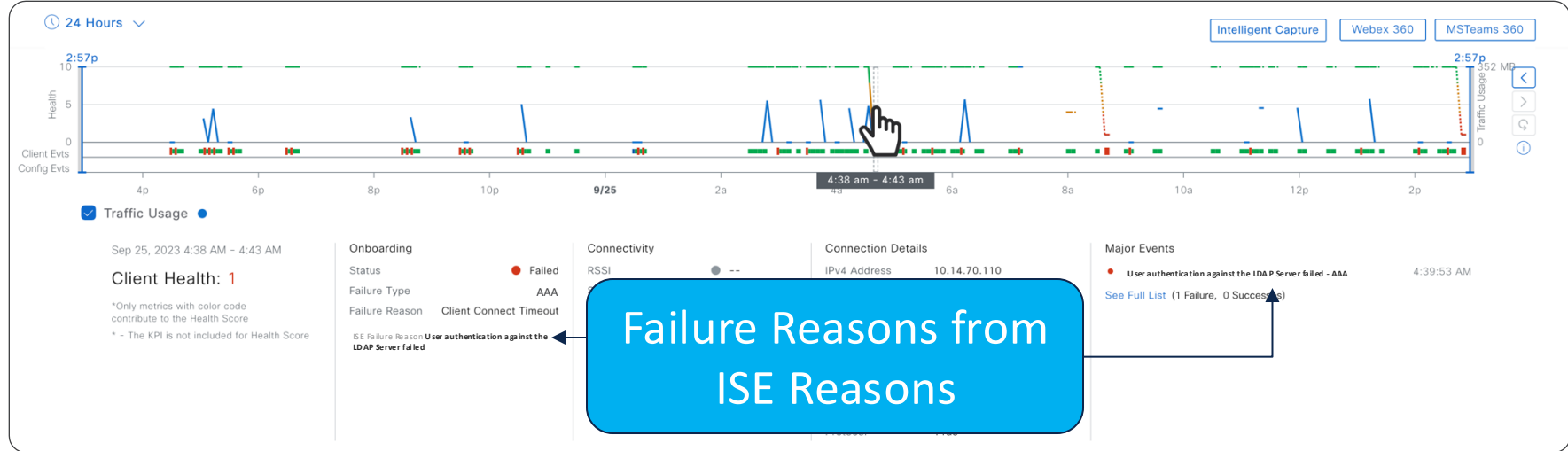
- Client troubleshooting is all about correlation

- View top failure reasons
- Event viewer displays event correlating to issue
- Impact analysis to view devices impacted by the same issue
- Correlation can be used to select KPI's for client, AP, WLC and switch

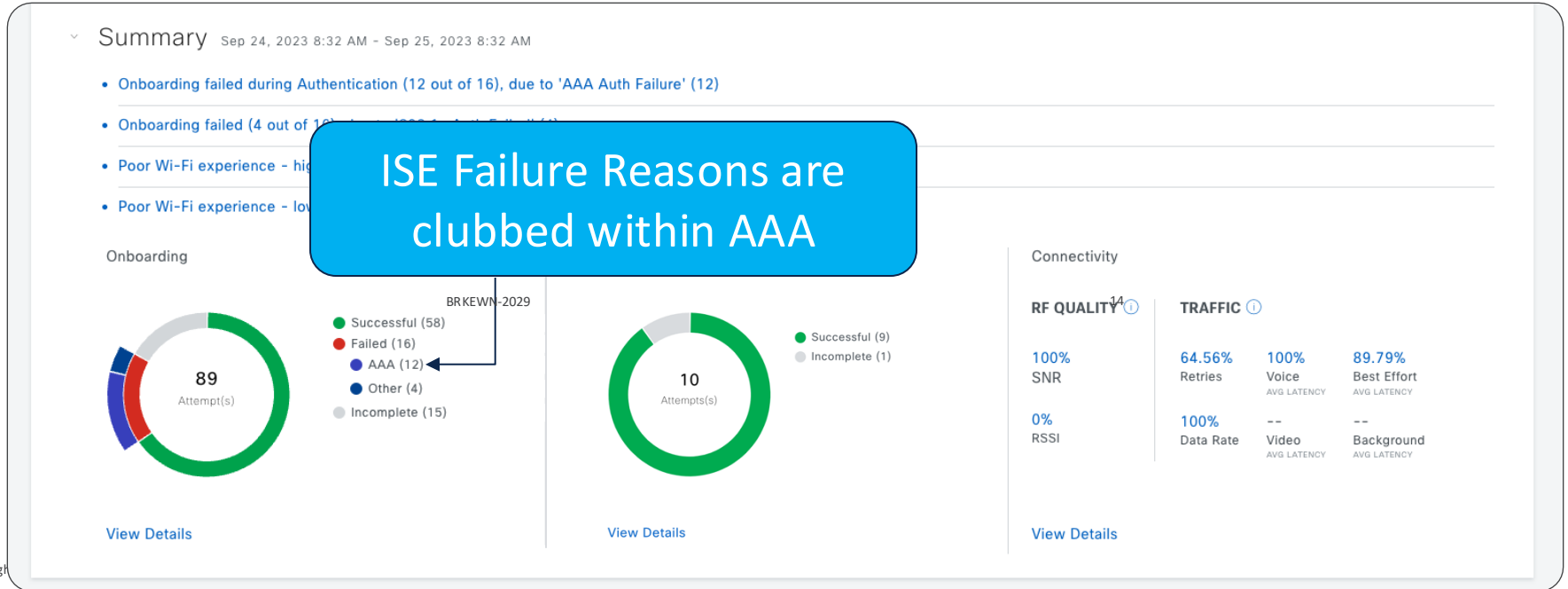


ISE Failures Added to Client 360

Network Timeline

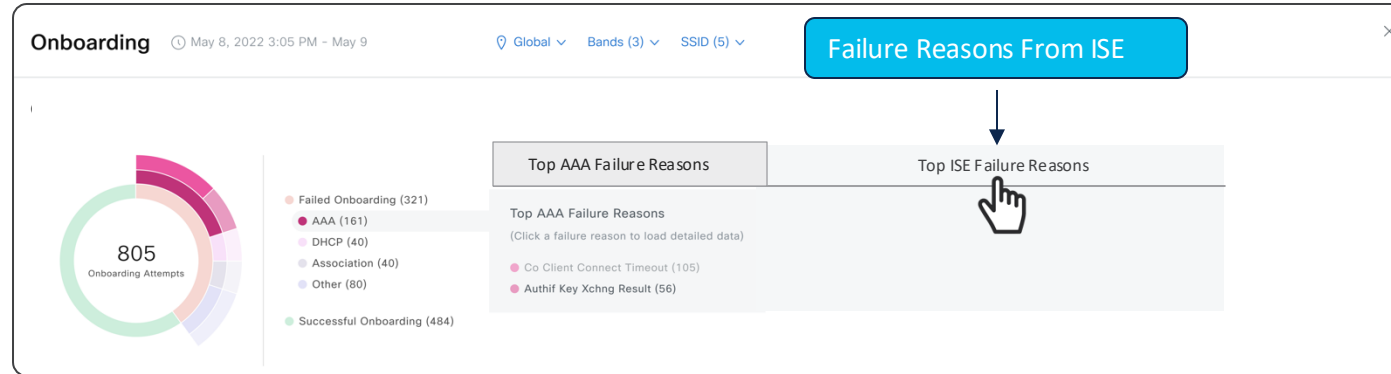


Summary Widget

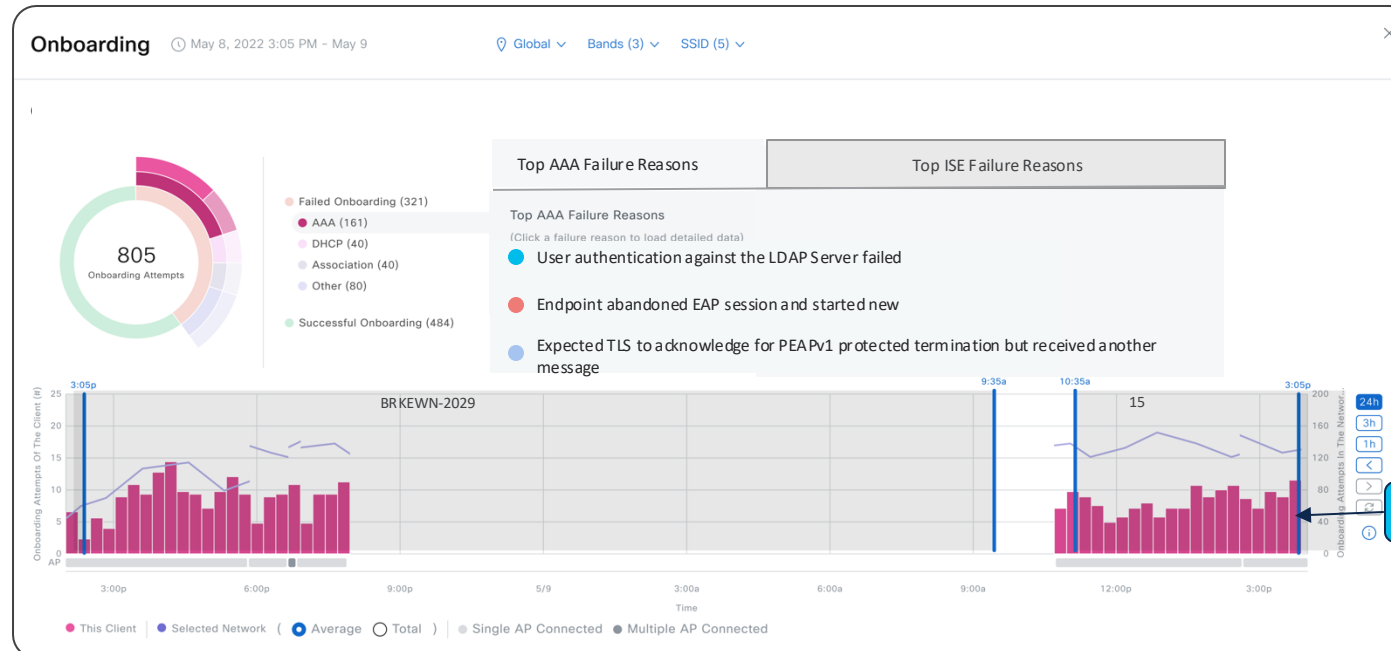


Detailed ISE Failures Summary Widget Integration

AAA Failures
(Sent from WLC)



ISE Failure
(Sent from ISE)



Wireless Troubleshooting using Catalyst Center - Apple, Samsung, Intel Client-side Analytics

- Apple iOS+MacBook Analytics
 - Detailed disassociate reasons
 - Neighboring APs, BSSID, RSSI
 - Enhanced device classification
- Samsung Analytics
 - Detailed disassociate reasons
 - Enhanced device classification
- Intel Analytics
 - Issue reporting, roam and disassociate reasons
 - Neighboring APs, BSSID, RSSI
 - Enhanced device classification



The image displays two screenshots of the Catalyst Center interface. The top screenshot shows the 'Detail Information' page for an Apple device, with tabs for Device Info, Connectivity, RF, iOS Analytics, and User Defined Network. It features a table for 'Neighbor APs (3)' and 'Client Disassociation Details (144)'. The bottom screenshot shows the 'Detail Information' page for an Intel device, with tabs for Device Info, Connectivity, RF, and Intel Connectivity Analytics. It includes a 'Roam Events' section with a timeline, a signal strength diagram showing a device connected to multiple APs, and sections for 'Reported Errors' and 'Temporary Disconnection Reports'.

Wireless Troubleshooting using Catalyst Center

- Intelligent Capture (iCap)

• Client Dashboard

- 14 Day Time Travel
- Anomaly Packet Capture, Data Packet Capture
- Real-Time Client Location
- Client Statistics

• AP Dashboard

- 14 Day Time Travel
- Always-on AP RF Statistics
- On-demand Spectrum Analysis



Wireless Troubleshooting using Catalyst Center

- MRE Workflow – Wireless Client Troubleshooting

- Easily collect client logs from WLC for troubleshooting
- Input client, duration, WLC to setup log collection
- After set duration conclusions will have the data that can be downloaded for analysis

The screenshot displays the 'Wireless Client Data Collection' workflow in Catalyst Center. It is divided into three main sections:

- Wireless Client Data Collection:** Shows the workflow title and a description: 'Wireless client on-demand enable/collect /disable troubleshoot data MRE flow.' The network impact is set to 'Medium', and a 'CX' button is visible.
- Reasoner Inputs:** A form for entering client information. Step 1 is 'Enter client information'. The 'Client MAC address*' field contains 'aa:bb:cc:10:20:30'. The 'Troubleshoot Duration (1-30 minutes)*' field contains '5'. A blue callout box points to these fields with the text 'Input Client MAC and duration'. 'Back' and 'Next' buttons are at the bottom.
- Root Cause Analysis:** Shows the results of the reasoning activity. A 'Conclusions (2)' tab is selected and highlighted with an orange box. Below it, a list of files is provided for download:
 - michamad-katar-3441.5d6f.e6ae-1663884574822.pcap
 - michamad-vewlc1-3441.5d6f.e6ae-1663884574822.log
 - michamad-katar-3441.5d6f.e6ae-1663884574822.txt
 - michamad-vewlc1-3441.5d6f.e6ae-1663884574822.txt
 - michamad-katar-3441.5d6f.e6ae-1663884574822.log
 - Workflow ParametersA blue callout box points to this list with the text 'Logs for download'. A 'Run Again' button is in the top right corner.

Problém č.2: „Ze skladu na druhé straně republiky otevřeli ticket, že prej se jim někdy pomaleji připojují čtečky do sítě a že to i občas při pojiždění mezi regálama vypadne ...”



Image generated by AI

Catalyst Center - AI-Driven Baseline Dashboard

Pinpoint buildings with clients that have onboarding issues

Pain Points

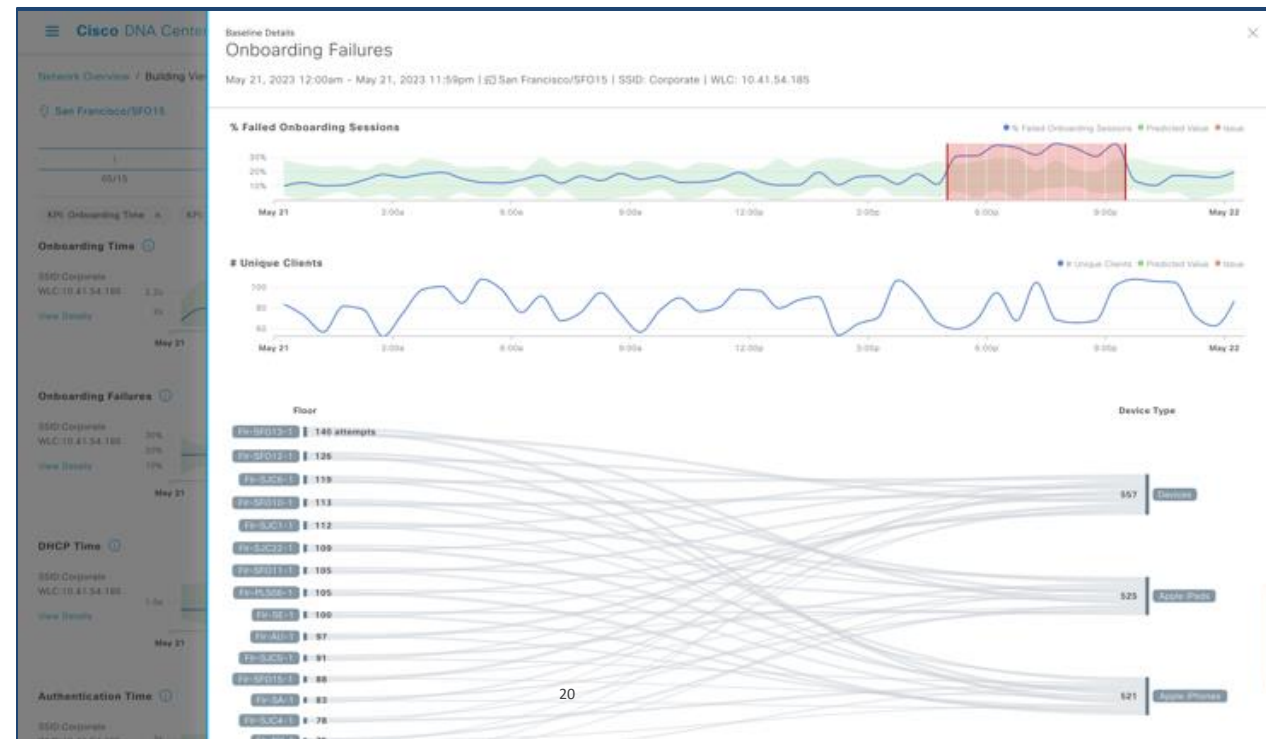
Wireless networks are dynamic and issues triggered with a static min/max threshold may result in false positives.

Feature Capability

Identifying client onboarding KPIs that deviate from the norm, and provides unique view to RCA the issues.

Customer Benefits

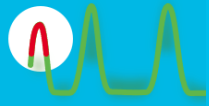
Users receive accurate alerts for significant deviations in onboarding issues and providing a triaging view.



Intuitive View to Pinpoint the Source of Failure

Catalyst Center - Cisco AI Network Analytics

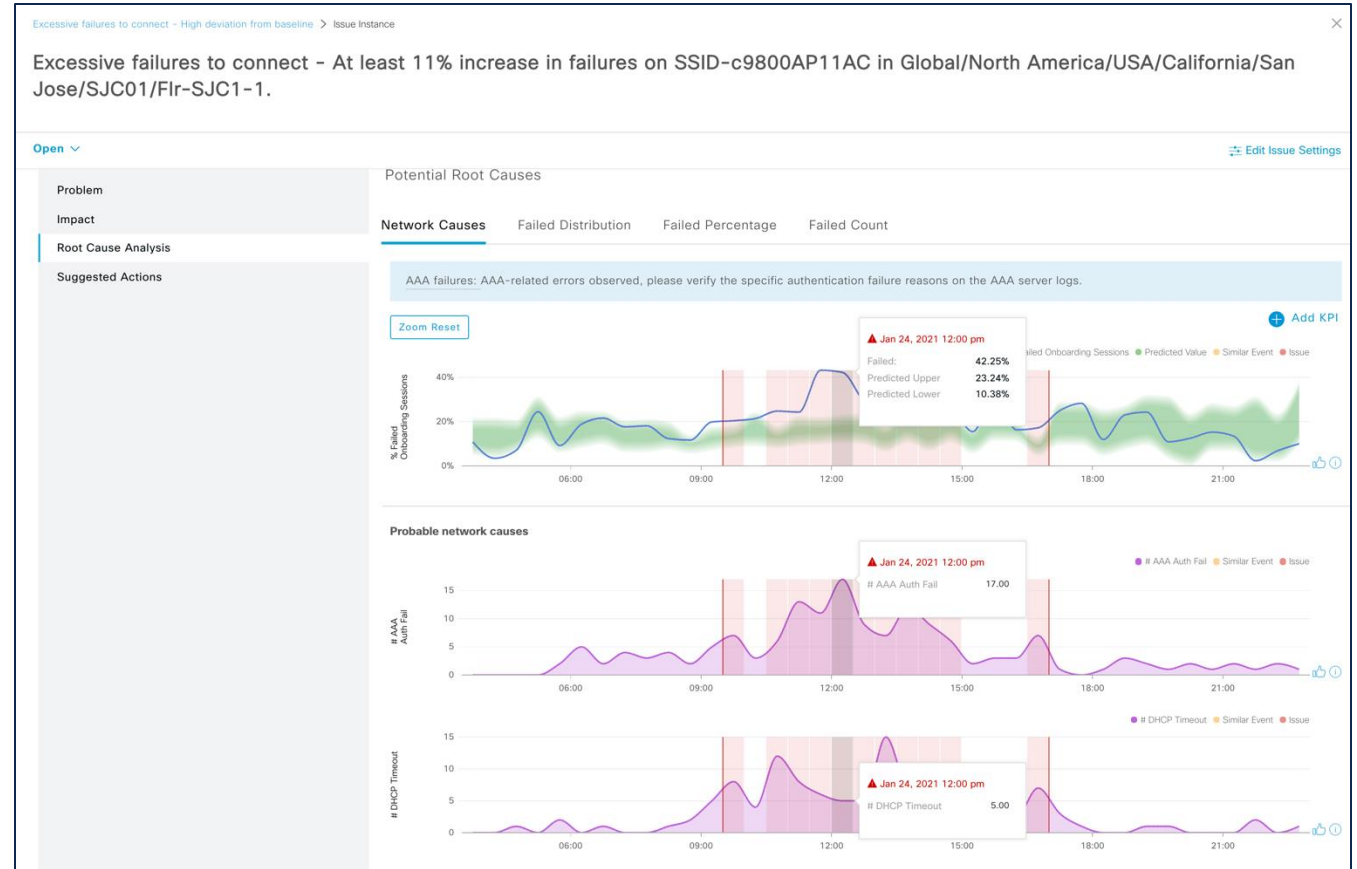
Feature Summary



AI Driven Issues

Discover and Root Cause network risks and anomalies from the AI-generated baselines

13 KPIs: Onboarding & Throughput



Catalyst Center - Cisco AI Network Analytics

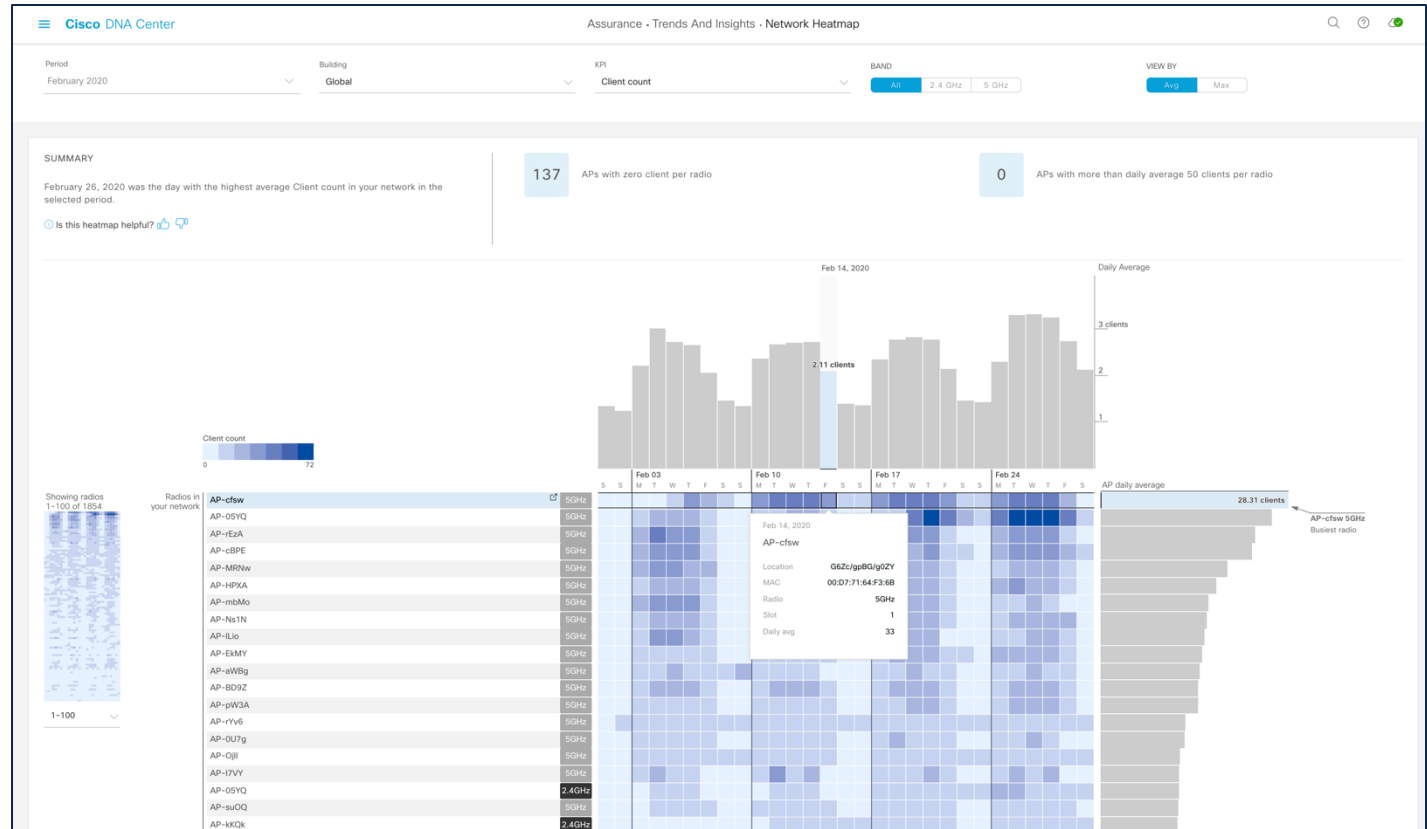
Feature Summary



Network Heatmaps

Optimize AP Performance across the network through visual exploration of performance KPIs

17 KPIs: RF & Application



Catalyst Center - AI-Driven AP Performance Advisories

Identify APs with Potentially Poor Client Experience

APs are analyzed using Machine Learning. Those with poor client experience are grouped into categories:

Over the last 4 weeks
4 32
Inst

Selected period: Wed, September 19th 2021 - Wed, October 27th 2021

High Co-Channel Interference

2.4 GHz

Radios with co-channel interference and channel utilization higher than the reference, possibly indicating a sub-optimal channel plan.

Impacts
9 184
Radios Endpoints

Top 3 APs Affecting Client Experience
[SFO15...20-03](#) [SFO15...24-01](#) [SFO15...24-02](#)

High Client Activity

2.4 GHz

Radios experiencing higher client activity than the reference, possibly indicating the need to review the network capacity in these areas.

Impacts
3 116
Radios Endpoints

Top 3 APs Affecting Client Experience
[AP9124_2](#) [AP9130_1](#) [AP9105_2](#)

High AP Density

2.4 GHz

Radios with transmission power lower than the reference, possibly indicating a mismatch between the RF settings and the actual deployment density.

Impacts
2 54
Radios Endpoints

Top 3 APs Affecting Client Experience
[SCJ01...130_2](#) [SCJ01...130_3](#)

Low AP Density

5 GHz

Radios with transmission power higher than the reference, possibly indicating a lower than optimal deployment density.

Impacts
18 9
Radios Endpoints

Top 3 APs Affecting Client Experience
[AP9124_2](#) [AP9130_1](#) [AP9105_2](#)

Low AP Density

Problém č. 3: „Kluci z IT oddělení mají problém s novými IoT senzory. Nešlo by to nějak nachytat??”



Image generated by AI

Introducing OTA Sniffer with Intelligent Capture

Capture All Packets on AP Supported Bands from 2.3.7!



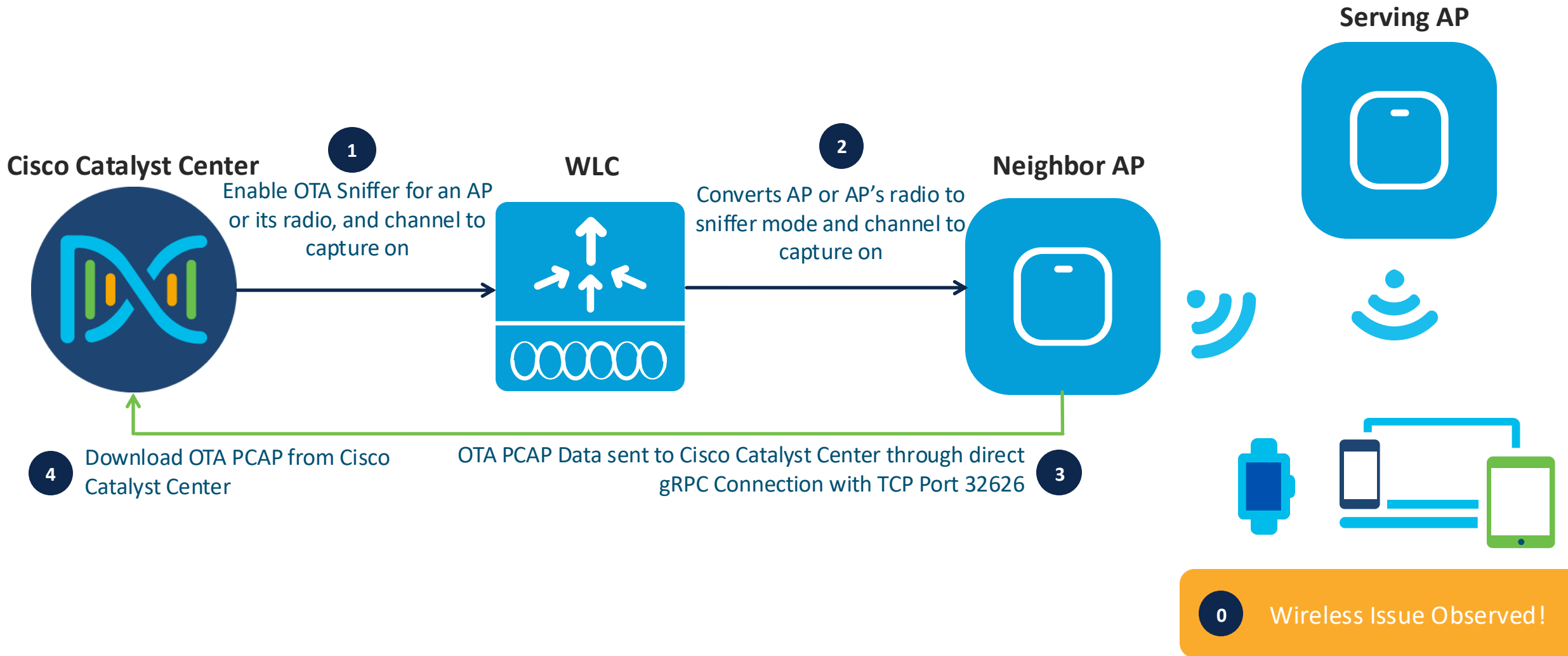
1

Perform OTA channel packet capture from anywhere in your wireless network remotely.

2

Diagnose wireless roaming, non-roaming, and any other issues at the channel level.

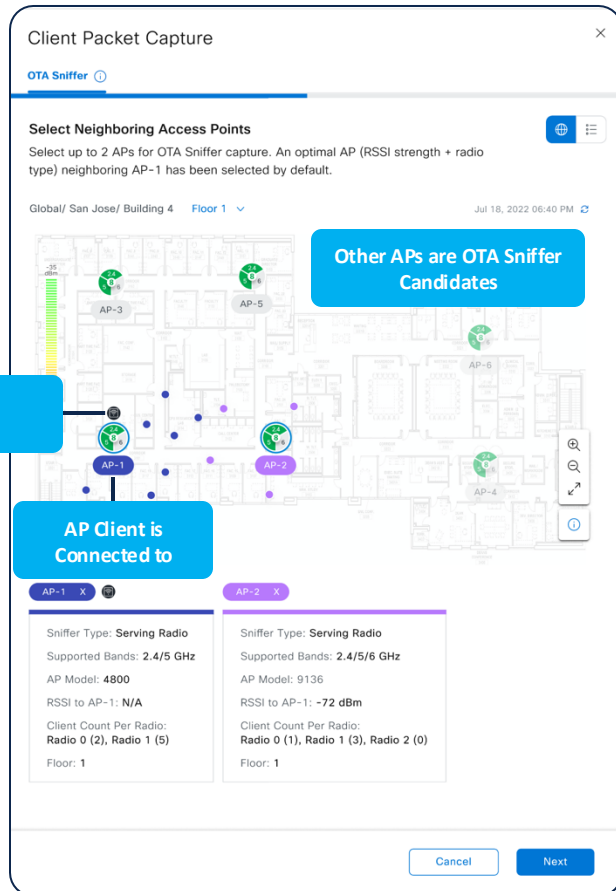
Intelligent Capture OTA Sniffer Topology



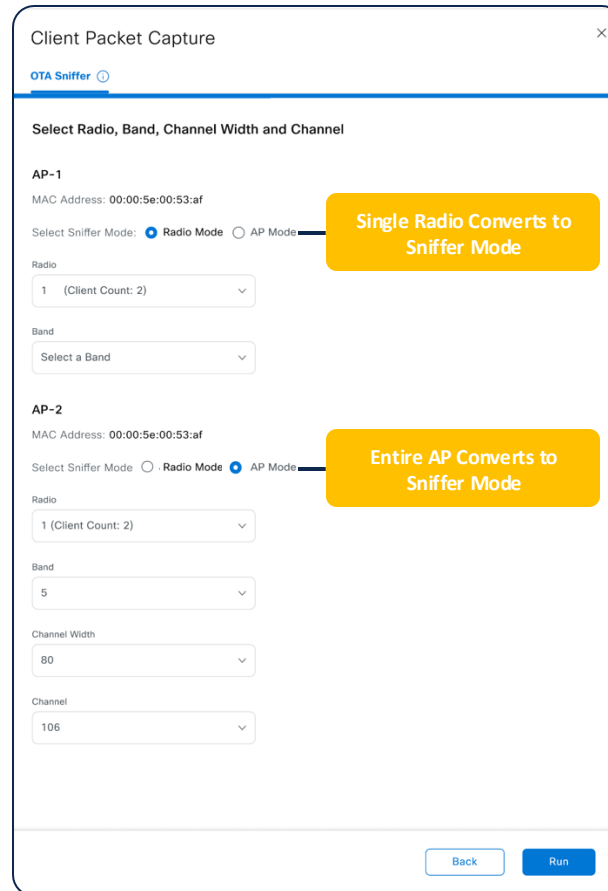
Next Level Serviceability with the OTA Sniffer Capture

Intelligent Capture can now capture ALL packets on a defined band from 2.3.7

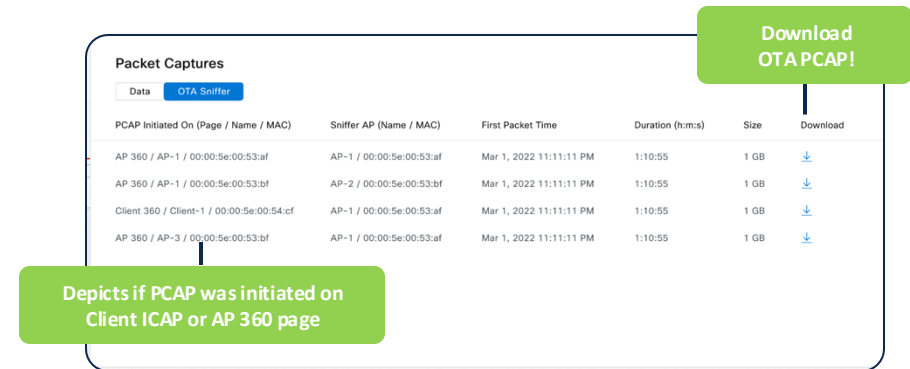
1 Start OTA PCAP on **Client or AP 360** and Select Up to 2 APs



2 Define Radio and Band to Capture and Start it!



3 Download the OTA PCAPs Directly on the Page!



Problém č.4: „Už zase musím přeladovat kanály na APčkách, to konferenční centrum ve vedlejší budově nám byl čert dlužen ...”

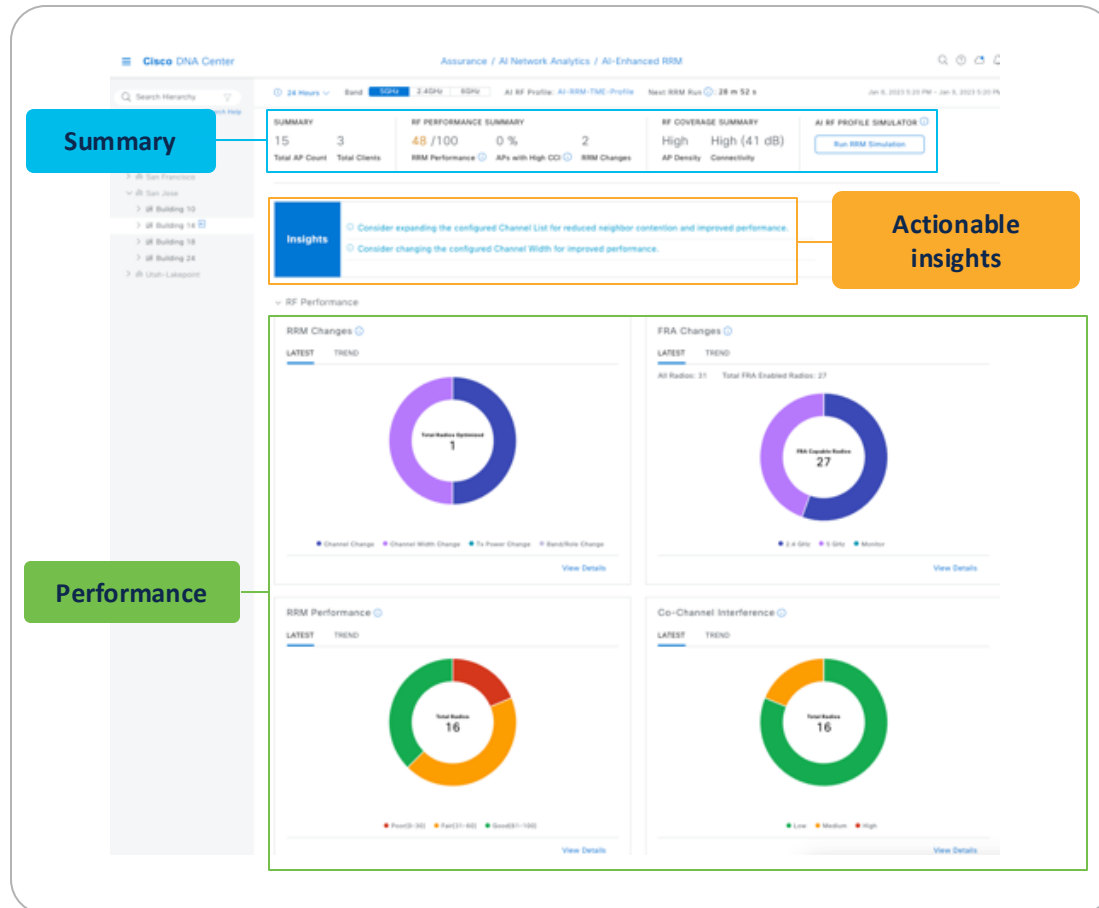


Image generated by AI

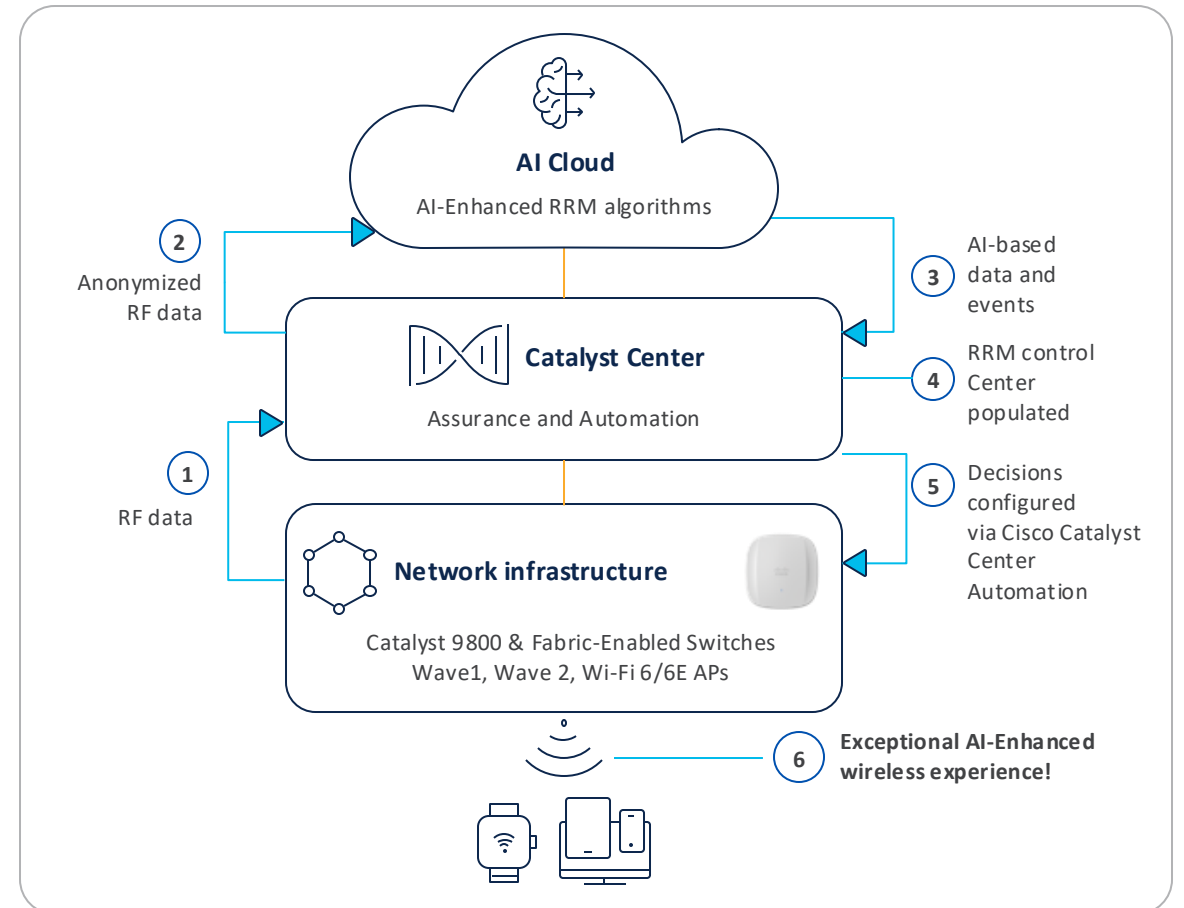
AI-Enhanced RRM is AI that Powers RF Optimization

Provides Users with Better Wi-Fi and Admins with a Better RF Management Experience!

Instantaneous visibility



Proactive optimizations

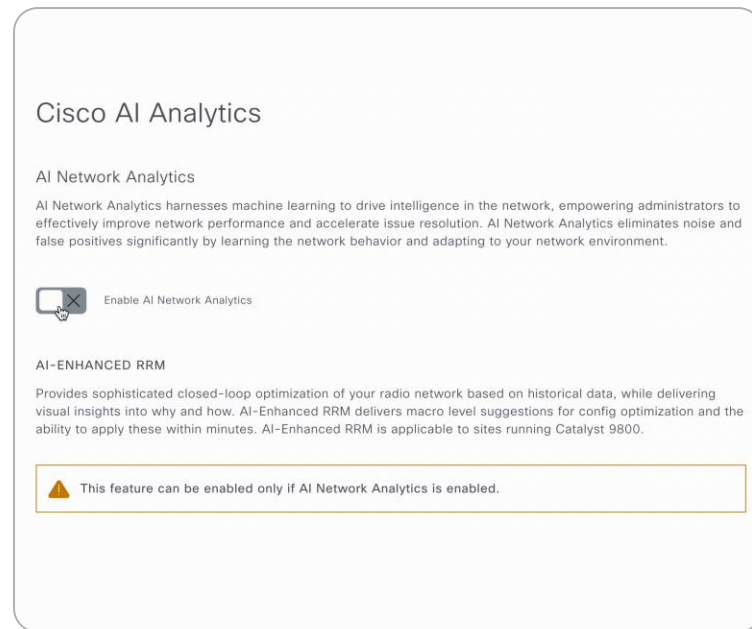


AI-Enhanced RRM is AI that Powers RF Optimization

We've created a new enablement workflow that doesn't require admins to manage their network configurations on Catalyst Center!

1

Enable AI-Enhanced RRM cloud access in Settings



Cisco AI Analytics

AI Network Analytics

AI Network Analytics harnesses machine learning to drive intelligence in the network, empowering administrators to effectively improve network performance and accelerate issue resolution. AI Network Analytics eliminates noise and false positives significantly by learning the network behavior and adapting to your network environment.

Enable AI Network Analytics

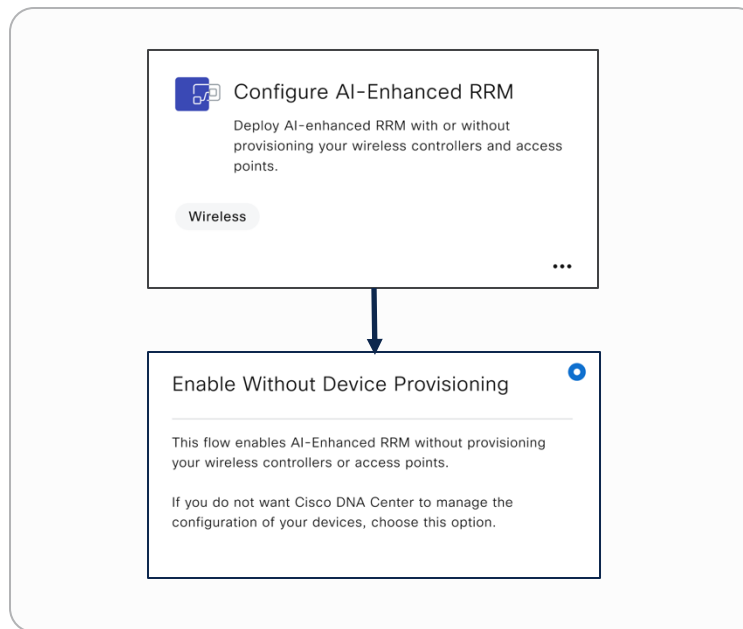
AI-ENHANCED RRM

Provides sophisticated closed-loop optimization of your radio network based on historical data, while delivering visual insights into why and how. AI-Enhanced RRM delivers macro level suggestions for config optimization and the ability to apply these within minutes. AI-Enhanced RRM is applicable to sites running Catalyst 9800.

This feature can be enabled only if AI Network Analytics is enabled.

2

Select the newly designed workflow and deployment option!



Configure AI-Enhanced RRM

Deploy AI-enhanced RRM with or without provisioning your wireless controllers and access points.

Wireless

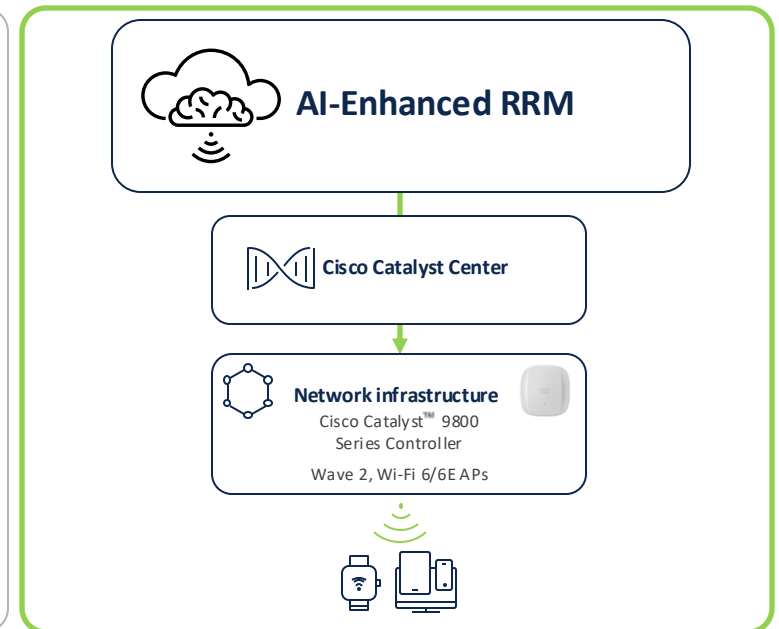
Enable Without Device Provisioning

This flow enables AI-Enhanced RRM without provisioning your wireless controllers or access points.

If you do not want Cisco DNA Center to manage the configuration of your devices, choose this option.

3

AI-Enhanced RRM is enabled without device provisioning!



Software and Hardware Support Matrix

for AI-Enhanced RRM's Workflow for Assurance-Only Deployments

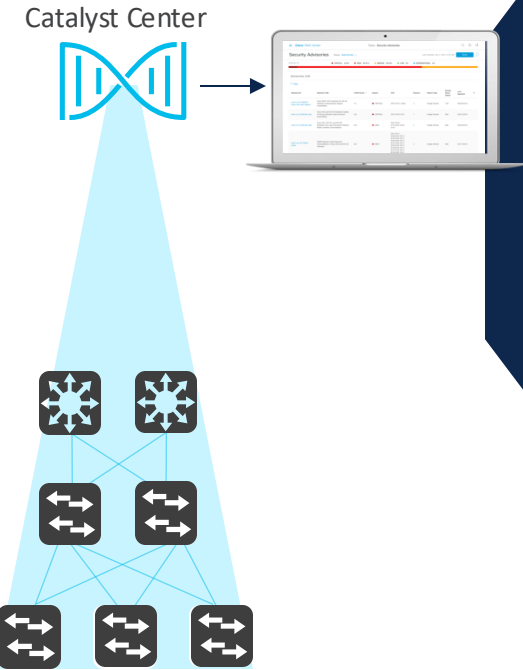
Cisco IOS XE WLC Software	Cisco Catalyst Center Software and Licensing
17.9.3 or newer (17.12.1 recommended)	2.3.7.4 (Patch 2) with DNA Advantage License
Cisco Access Point Hardware	
Wave 1, Wave 2, Catalyst Wi-Fi 6 and 6E Access Points	
Cisco IOS XE WLC Hardware	
C9800-CL	
C9800-L	
C9800-40	
C9800-80	

Problém č. 5: „Hmmm ... Wireless jsem zkontroloval, ten je v pořádku ... že by byl problém s WIRED infra?“



Image generated by AI

Catalyst Center – Network, Device and Client Health

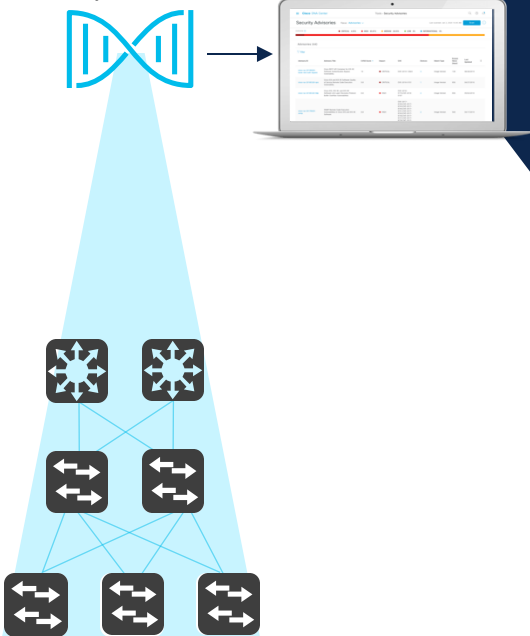


The screenshots show the following interface components:

- Network Devices:** Overall health summary showing 82% Healthy (113 total). Breakdown by device type: Router (12/13), Core (7/8), Distribution Access (8/12), Wireless Controller (7/9), and Access Point (31/38). A line graph shows health trends from 3p to 4p.
- Device 360:** Detailed view of Switch LA1-3850-CSW-1.corp.local. Includes fields for Device Model (WS-C3850-24XU-E), IP Address (10.30.255.100), Software Version (16.6.2), Role (ACCESS), HA Status (Non-redundant), and Uptime (49 days 0:14:39). A 'HEALTH' line graph shows a constant 100% status over time.
- Client Health:** View for client 'oliverp' (Android-a5d4f6cf958dafef). Shows device details (Android-Motorola, MAC: 7C:46:85:20:80:A3) and network connection (AP00EB.D510.3F18). Client Health is 7/7, Status is Passed.
- Physical Neighbor Topology:** A network diagram showing connections between 6 Switches & Hubs, 2 Routers, and LA1-WLC5520-1. A search bar is available to find devices by IP, type, or MAC.

Catalyst Center – Issues, Events

Catalyst Center



The image displays two screenshots of the Cisco DNA Center interface. The left screenshot shows the 'Open Issues' dashboard for San Jose, displaying a bar chart of issues by priority and a list of issue types. The right screenshot shows the 'Events' dashboard, displaying a timeline of events and a table of event records.

Open Issues Dashboard (San Jose):

- Most Impacted Areas: San Jose
- By Issue Priority: 74 P1, 451 Open
- Total Open: 498
- Priority breakdown: P1: 74, P2: 89, P3: 285
- Issue Types:
 - P1: Fabric Devices Connectivity - ISE Server
 - P1: WLC unreachable
 - P1: Fabric Devices Connectivity - Control Border Under
 - P1: Switch unreachable

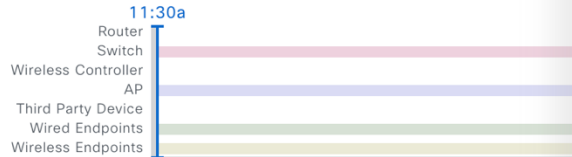
Events Dashboard:

- Events (2741)
- Category Type: Devices (selected), Endpoints, Router: 4, Switch: 2736, Wireless Controller: 1, AP: 0
- Filter Table
- Table with columns: Event Name, Status, Severity, Timestamp, Device Name, Event Type, Device IP
- Records shown: 4

- **Issue Insights** with Guided Remediation Actions (Customizable (trigger, severity, location), Can be generated by AI tools)
- **Events** are syslog/trap/telemetry data sent to Cisco Catalyst Center Viewable in context for device/user 360 or globally, Event Analytics

Issues ▾ **Events** Event Analytics - Preview

📍 Global/Prague/PRG07 ⋮ 24 Hours ▾



Events (20) ⓘ

Category Type

🔍 Filter Table

0 Selected

<input type="checkbox"/>	Event Name	Status
<input type="checkbox"/>	Authentication Started	●
<input type="checkbox"/>	Authorized Success	●
<input type="checkbox"/>	Authorization Success	●
<input type="checkbox"/>	Authentication Started	●
<input checked="" type="checkbox"/>	Authorization Failed	●
<input type="checkbox"/>	Authentication Started	●

Authorization Failed **ERROR**

Nov 28, 2023 12:23:10.725 PM

Identifier: 00-50-56-B7-66-2B
Additional Info: TDL | Connected Device: C9300-E2.enprglab.local | Connected Interface: GigabitEthernet1/0/2
Severity: Error
Event Type: TDL
Message Text: Client Authentication failed (DOT1X)
Mnemonic: FAILED
Facility: AUTHC
Connected Device Name: C9300-E2.enprglab.local
Location: Global/Prague/PRG07
Audit Session Id: 2E65A8C0000000F0BA3F708
Connected Interface: GigabitEthernet1/0/2
Failure Reason: Client not capable of dot1x OR Client has not responded to webauth redirect page

Connected Device Events ⓘ

±15 mins ^ Nov 28, 2023 12:08 PM - 12:38 PM

Switch: C9300-E2.enprglab.local

🔍 Filter Table

- ±15 mins
- ±30 mins
- ±45 mins
- ±1 hr

📄 Export ⚙️

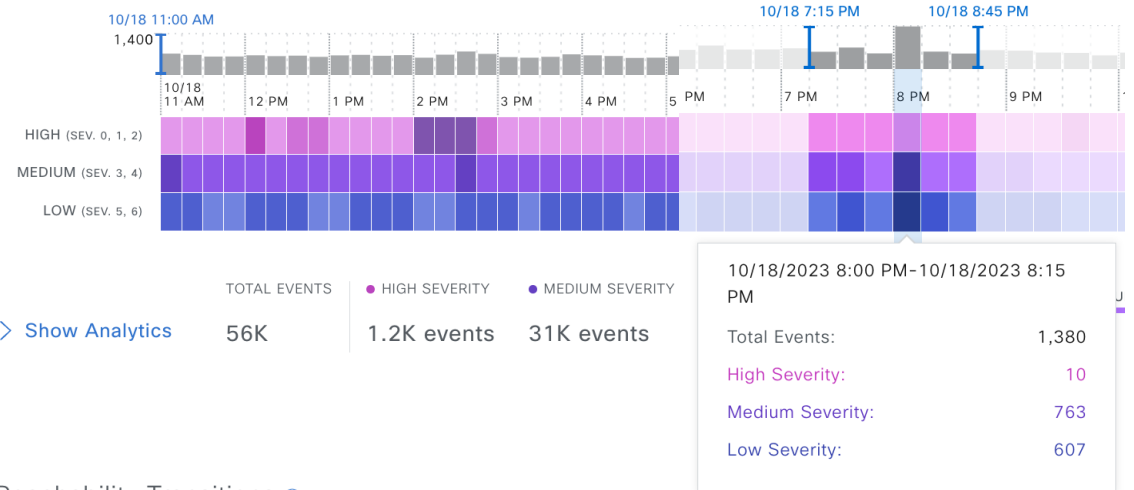
Event Name	Status	Severity	Timestamp	Event Type	Device IP
> RBM:SGACLHIT	●	Info	Nov 28, 2023 12:38:10.349 PM	Syslog	192.168.101.46
> RBM:SGACLHIT	●	Info	Nov 28, 2023 12:38:10.349 PM	Syslog	192.168.101.46

Catalyst Center – Issues, Events

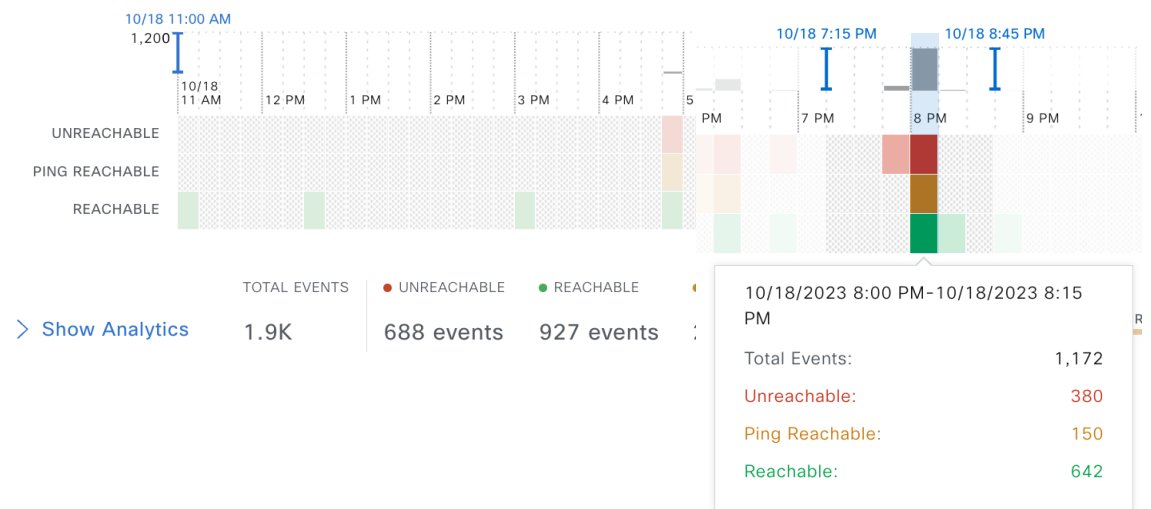
Event Analytics from 2.3.7

- Event Analytics aggregates and processes event data, extracting relevant metrics and generating insightful analytics.
- Intuitively navigate from millions of events to specific sites, devices or events of interest
- Correlate & compare trends & patterns across events & network domains

Syslog Messages ⓘ



Reachability Transitions ⓘ



Catalyst Center – Network Reasoner / Machine Reasoning Engine (MRE)

Catalyst Center

Assurance - Dashboards - Issues

Interface Connecting Network Devices is Down > Issue Instance

Interface "GigabitEthernet1/0/13" is down on network device "SF-D9300-2"

Open Resolved Ignored

Global 24 Hours

Most Impacted Areas USA

By Issue Priority 2 P1 7

12:00p

P1 P2 P3 & P4

17p 7p

Total Open: 71

All P1: 2 P2: 4

Filter

Priority	Issue Type
P1	Interface Connect
P2	Radius server is
P2	Network Device
P2	Network Device
P2	Radius server is
P3	Device time has
P3	Switch experie

Root Cause Analysis

Reasoning Activity Conclusions (1)

- Analyze issue details for interface flaps
- Get platform details
- Finding the link peer device
- Recording media type and error counts
- Checking cable diagnostics
- Checking error disable logs on the interface.
- Finding IP address of connected device.

Activity Details

Analyze issue details for interface flaps Sep 30, 2020 11:35:10 AM

Get platform details Sep 30, 2020 11:35:15 AM

Finding the link peer device Sep 30, 2020 11:35:18 AM

Recording media type and error counts Sep 30, 2020 11:35:19 AM

Checking cable diagnostics on 10.0.100.102 Sep 30, 2020 11:35:37 AM

Get platform details Sep 30, 2020 11:35:38 AM

Checking error disable logs on the interface. Sep 30, 2020 11:35:40 AM

• MRE runs through the troubleshooting steps

Automated Cisco expertise brought to your network through the Network Reasoner to proactively evaluate your network, or to reactively diagnose complex problems. Supported Issues - Interface down, Layer 2 loop, High CPU, Power Supply Failure, Wired Client Authentication Failure due to MAB/802.1x, Client DHCP reachability issue, PoE device flagged faulty

Issues ▾ Events

Most Impacted Areas by Issue

San Jose

437 P1 | 2285 Open

All P1: 490 P2

Total Open: 2571

🔍 Search Table

Priority ▲ Issue Type ▲

P1 Fabric Devices C

P1 WLC unreachab

P1 Fabric Devices C

P1 Switch unreach

P1 Fabric Devices C

P1 Fabric Devices C

P1 TCAM Utilization

P1 Fabric WLC to M

P1 Interface Conne

P1 Layer 2 loop sym

46 Records

Layer 2 loop symptoms / Issue Instance

P1 Host flaps observed in 1 VLAN(s)

Status: ▾ 📄

Issue Profile: global [Edit Issue Settings](#)

Device: [SFO13-D9300-1](#)
 Role: DISTRIBUTION
 Time: Dec 6, 2023 11:47 AM
 Location: Global/North America/USA/California/San Francisco/SFO13
 Potential Root Cause: MAC_FLAPPING

INITIAL ASSESSMENT

1 VLANs in the Potential Loop

3 Ports in the Potential Loop

Problem Details

Root Cause Analysis | [View All Network Reasoner Tools](#)

Last Run By User: Dec 6, 2023 11:47 AM ⓘ

Run Again

Root Cause Analysis *MRE*

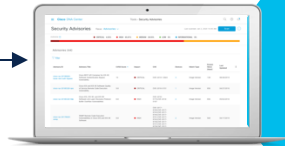
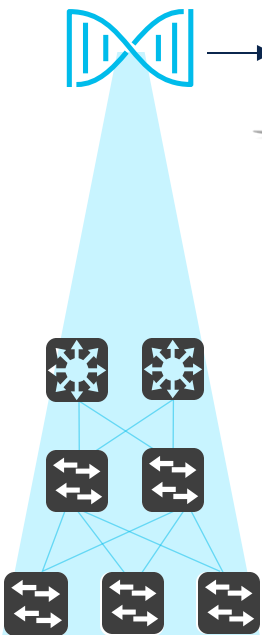
Reasoning Activity Conclusions (1)

📘 Loop detected on VLAN 31.

Index ▲	VLAN	Device Id	Device	Port
0	31	a977ab34-2b6d-442e-880c-ff09c3971ba8	SFO13-D9300-1	GigabitEthernet1/0/13
1	31	057165c6-6e44-4eba-a181-952afa4fca46	SFO13-D9300-2	GigabitEthernet1/0/13
2	31	057165c6-6e44-4eba-a181-952afa4fca46	SFO13-D9300-2	GigabitEthernet1/0/24
3	31	21bd59ac-deaf-4ee8-a078-dae04d1655c0	SFO13-A3850-1	GigabitEthernet1/0/24
4	31	21bd59ac-deaf-4ee8-a078-dae04d1655c0	SFO13-A3850-1	GigabitEthernet1/0/23

Catalyst Center - Security Advisories / Machine Reasoning Engine (MRE)

Catalyst Center



Cisco DNA Center
Home / Cisco Security / Security Advisories

Your feedback helps us, help YOU. Were the scan results useful? 👍 👎

Security Advisories

Focus: Advisories

OVERVIEW 🔍 ● CRITICAL 5

Advisories (573)

Filter

Advisory ID	Advisory Title	CVSS
cisco-sa-20090727-wlc	Multiple Vulnerabilities in Cisco Wireless LAN Controllers	10
cisco-sa-20160113-wlc	Cisco Wireless LAN Controller Unauthorized Access Vulnerability	10
cisco-sa-20190828-iosxe-rest-auth-bypass	Cisco REST API Container for IOS XE Software Authentication Bypass Vulnerability	10
cisco-sa-20180129-asa1	Cisco Adaptive Security Appliance Remote Code Execution and Denial of Service Vulnerability	10
cisco-sa-20070808-IOS-voice	Voice Vulnerabilities in Cisco IOS and Cisco Unified Communications Manager	10

Cisco Security Advisory

Multiple Vulnerabilities in Cisco Wireless LAN Controllers

Critical

Advisory ID: cisco-sa-20090727-wlc

First Published: 2009 July 27 16:00 GMT

Version 1.1: Final

Workarounds: See below

CVSS Score: Base 10.0, Temporal 8.7

CVE-2009-1164

CVE-2009-1165

CVE-2009-1166

CWE-399

CWE-94

[Download CVRF](#)

[Download PDF](#)

[Email](#)

Summary

Multiple vulnerabilities exist in the Cisco Wireless LAN Controller (WLC) platforms. This security advisory outlines the details of the following vulnerabilities:

- Malformed HTTP or HTTPS authentication response denial of service vulnerability
- SSH connections denial of service vulnerability
- Crafted HTTP or HTTPS request denial of service vulnerability
- Crafted HTTP or HTTPS request unauthorized configuration modification vulnerability

Cisco has released software updates that address these vulnerabilities.

This advisory is posted at: <http://tools.cisco.com/security/center/content/CiscoSecurityAdvisory/cisco-sa-20090727-wlc>

The Cisco Product Security Incident Response Team (PSIRT) recommends Cisco Security Advisories and Alerts.

The Security Advisories Tool uses these recommended advisories, scans the inventory within Cisco Catalyst Center and finds the devices with known vulnerabilities.

Some of the presented features available within CX Cloud Service contract

Problém č. 6: „Hele ty pobočky jsou nějaké divné. Nechceš tam zajet a ověřit to?“



Image generated by AI

Let's configure AI-RRM

The screenshot shows the 'Radio settings' page with the 'RRM' tab selected. The 'AI-RRM' section is highlighted with a green border and contains two toggle switches, both set to 'Enable'. The first toggle is for 'AI-RRM' with a description: 'AI-Enhanced RRM uses an AI engine to improve radio optimization using trend-based RRM decisions.' The second toggle is for 'Flexible Radio Assignment' with a description: 'FRA optimizes the 2.4 GHz band by strategically disabling redundant radios to reduce interference.' Below this, the 'AI channel planning' section has an 'Enable' toggle and a notification box stating '0 APs were affected by disruptive RF events in this network.' with a 'Download historical report' link. The 'Busy hour' section has an 'Enable' toggle and a notification box stating 'The estimated busy hour for this network is 14:00 to 13:00'. Underneath, there are two radio button options: 'Auto' (selected) and 'Manual'. The 'Auto' option has a description: 'The optimal busy hour is determined by analyzing client count and network usage data from the last 6 weeks.' At the bottom of the page are 'Save changes' and 'Cancel' buttons.

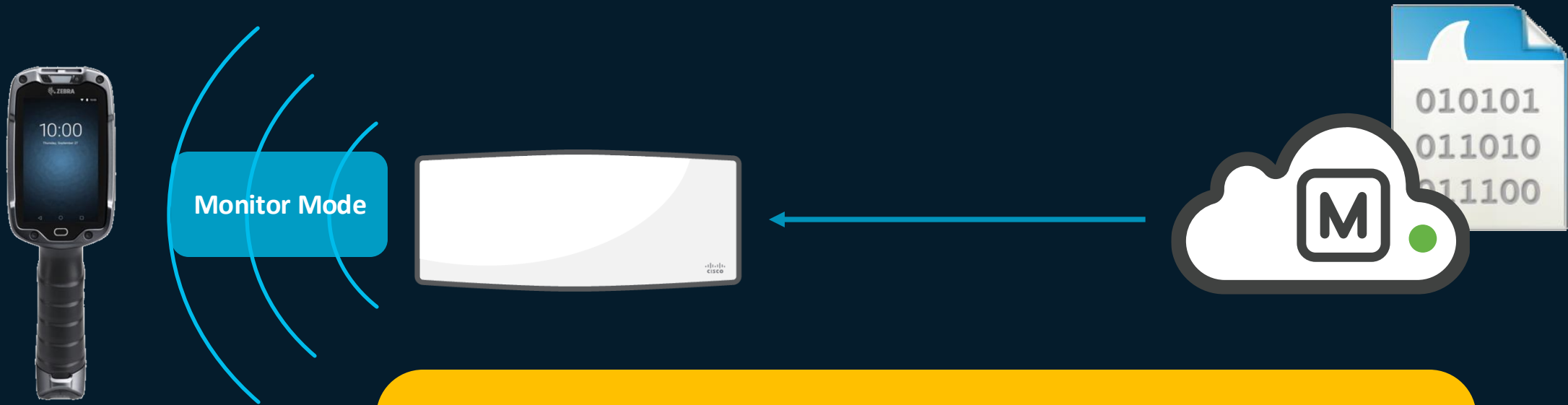
- Wireless > Radio Settings > RRM
- AI-RRM option will upgrade traditional RF management into AI-Enhanced, Trend-based RRM
 - Transmit Power Control
 - Dynamic Channel Assignment
 - Dynamic Bandwidth Allocation
 - Flexible Radio Assignment option became available on AI-RRM
- Busy Hour and AI Channel Planning continue to work with AI-RRM engine

Let's Investigate!

Today, dashboard can be used to manually capture live network traffic to diagnose network connection issues related to client roaming or association failures with APs.



AI Packet Capture



1. Dashboard automatically initiates PCAP with a client association failure

2. PCAP files stored in dashboard to correlate with connection failure

3. Integrated Packet Analyzer for Root Cause Analysis

PCAP + Root Cause Analysis

Correlate automatic packet capture with root cause analysis in the client connection timeline.

May 29
13:09:22

- Client **HD-2-Rack-4-Client-13** had a failed connection to SSID **blizzard** on access point **SFO22-1-AP02** during authentication because the client did not provide credentials.

CHANNEL	BAND	SNR ⓘ	VLAN ID	RADIUS SERVER	MERAKI REASON (CODE 101) ⓘ
161	5 GHz	54 dB	100	173.36.144.158	EAPoL timeout

[Download packet capture](#) [View in packet viewer](#)

RADIUS server not responding

The configured RADIUS server 173.36.144.158 was not responding to valid RADIUS authentication requests on VLAN 100, causing client devices to fail authentication.

Evidence ⓘ

RADIUS Response Rate of 5% for VLAN 100 shows the server was not responding to client authentication requests.

RADIUS RESPONSE RATE ON VLAN 100

5%

Recommendations

- Check that VLAN 100 is tagged on **blizzard** SSID.
- Check that the upstream switch port is configured to pass traffic with VLAN 100.
- Check if the RADIUS server 173.36.144.158 is blocked in the firewall rules for **blizzard** SSID or any ACLs of an upstream device.
- Check the RADIUS server 173.36.144.158 is configured with the correct IP on **blizzard** SSID. Review steps to configure RADIUS in the [deployment guide](#).

Upgrade to MR31.1.1 firmware to simplify operations and improve your network's performance using the latest AI tools!




Operational
Simplicity




Proactive
Management



Network
Optimization



MR 31.1.1
Released May 21, 2024

 [Release notes](#)

MS Device Health

Visibility into switch health metrics

Coming Soon

MS17

CPU and Memory utilization details

SW35 Online

MS355-48X e0:cb:bc:a3:03:48

Summary Ports **Health** L3 routing DHCP Event log Location Tools

System resources

CPU Poor

125 PPS Packets dropped
↑ 12% last day

400 PPS Packets processed
↑ 14% last day

95% Utilization

[Historical >](#)

Processed packets by protocol

Protocols	Dropped	Processed
ARP	15	5
LACP	100	220
Management	0	20
OSPF	0	20
STP	10	10
Others	0	25

Dropped 125
Processed 400

Memory Fair

30.6 MB out of 34 MB

90%

[Historical >](#)

Address: 500 Terry A. Francois Blvd, San Francisco, CA 94158

Device uptime: 35d 17h 2m

Last device boot: Sep 30 16:00:43 (PDT)

Last boot reason: [View in event log](#)

[Documentation](#)

Switch & Environment Temperature

Temperature

System temperature: **102 °F** Good

MT sensor temperature: **89 °F** Good

Regional temperature: **70 °F**

Health designs are subject to change prior to release



Cloud PCAP

Coming Soon

MS17

Streamlined packet captures with a cloud-hosted option

Packet Captures

Switches ▾

New capture Schedules Stored captures

Switch
Closet 2.2.4 ▾

Ports
2-8

Output
Save to cloud ▾

Duration (secs) ⓘ
60

Capture filters

[View example filters](#)

File name
<default file name here>

Comments
We recommend including a description of the reason for your capture, this will help us improve the analysis capabilities of our capture tool.

[Start capture](#) [Schedule capture](#)

Packet Captures

Switches ▾

New capture Schedules Stored captures

6 schedules

<input type="checkbox"/>	Schedule name	Username	Start time (UTC-8)	Frequency	End time (UTC-8)
<input type="checkbox"/>	Schedule 1	tonyc@cisco.com	Oct 20, 2023 08:20	Occurs every Tuesday	Jan 20, 2024 08:20
<input type="checkbox"/>	Schedule 2	tonyc@cisco.com	Oct 12, 2023 08:20	Occurs on day 1 of every month	Nov 24, 2023 08:20
<input type="checkbox"/>	Schedule 3	davidz432@gmail.com	Oct 12, 2023 08:20	Once	—
<input type="checkbox"/>	Schedule 4	lly@gmail.com	Oct 12, 2023 08:20	Occurs on day 1 of every month	Nov 24, 2023 08:20
<input type="checkbox"/>	Schedule 5	davidz432@gmail.com	Oct 12, 2023 08:20	Once	—
<input type="checkbox"/>	Schedule 6	tonyc@cisco.com	Oct 12, 2023 08:20	Occurs on day 1 of every month	Nov 24, 2023 08:20

Scheduled Captures

Packet Captures

Switches ▾

New capture Schedules Stored captures

124 captures

<input type="checkbox"/>	Time (UTC-8)	Name	Switch / Ports	Username	Status	Output type	Sources	Packet size	Packet count
<input type="checkbox"/>	Aug 20, 09:00	Capture name	Closet 1.2 / 1	jj342@cisco.com	✔ Saved to cloud	Streaming tcpdump	Auto capture by Meraki cloud	3.2 MB	1,163
<input type="checkbox"/>	Aug 20, 08:25	Meraki-appliance	Closet 2.2 / 3	Meraki tech support	✔ Saved to cloud	raw pcap	davidz432@gmail.com	4.5 MB	2,312
<input type="checkbox"/>	Aug 20, 08:20	Packets 2	Closet 1.2 / 1	tonyc@cisco.com	❌ Failed	Streaming tcpdump	Auto capture by Meraki cloud	3.2 MB	1,163
<input type="checkbox"/>	Aug 20, 08:19	Packets 1	Closet 2.2 / 3	lizlev@cisco.com	✔ Saved to cloud	raw pcap	davidz432@gmail.com	4.5 MB	2,312

Stored Captures



Cloud Packet Analysis

Coming Soon

MS17

Global Overview

Packet capture For switches

New capture Stored captures

← New capture

Lab - switch-MS130-12X-UL-IF-1

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	10.20.20.24	8.8.8.8	ICMP	102	Echo (ping) request id=0x4ae4, seq=52310/22220, ttl=200 (reply in 2)
2	0.048701	8.8.8.8	10.20.20.24	ICMP	102	Echo (ping) reply id=0x4ae4, seq=52310/22220, ttl=248 (request in 1)
3	0.943119	CiscoMeraki_e2:e2:57	Broadcast	LLC	80	U, func=UI, SNAP, OUI 0x000000 (Cisco Systems, Inc), PID 0x013C
4	0.943479	CiscoMeraki_e2:e2:57	CiscoMeraki_4f:00:02	ARP	80	Who has 10.20.20.254? Tell 10.20.20.24
5	0.944279	CiscoMeraki_4f:00:02	CiscoMeraki_e2:e2:57	ARP	64	10.20.20.254 is at 00:18:0a:4f:00:02
6	1.000088	10.20.20.24	8.8.8.8	ICMP	102	Echo (ping) request id=0x4ae4, seq=52311/22476, ttl=200 (reply in 7)
7	1.049888	8.8.8.8	10.20.20.24	ICMP	102	Echo (ping) reply id=0x4ae4, seq=52311/22476, ttl=248 (request in 6)
8	1.439058	CiscoMeraki_e2:e1:3a	Broadcast	LLC	76	U, func=UI, SNAP, OUI 0x000000 (Cisco Systems, Inc), PID 0x013C
9	1.654781	CiscoMeraki_ff:0f:f5	Spanning-tree-(for-bridges)_00	STP	64	RST, Root = 4096/0/00:18:0a:4f:00:01 Cost = 22000 Port = 0x8016
10	1.702108	CiscoMeraki_1e:01:8c	Broadcast	LLC	64	U, func=UI, SNAP, OUI 0x000000 (Cisco Systems, Inc), PID 0x013C
11	2.000331	10.20.20.24	8.8.8.8	ICMP	102	Echo (ping) request id=0x4ae4, seq=52312/22732, ttl=200 (reply in 12)
12	2.048343	8.8.8.8	10.20.20.24	ICMP	102	Echo (ping) reply id=0x4ae4, seq=52312/22732, ttl=248 (request in 11)
13	3.000267	10.20.20.24	8.8.8.8	ICMP	102	Echo (ping) request id=0x4ae4, seq=52313/22988, ttl=200 (reply in 14)
14	3.043653	8.8.8.8	10.20.20.24	ICMP	102	Echo (ping) reply id=0x4ae4, seq=52313/22988, ttl=248 (request in 13)
15	3.289804	CiscoMeraki_5d:dcd2	Broadcast	LLC	64	U, func=UI, SNAP, OUI 0x000000 (Cisco Systems, Inc), PID 0x013C
16	3.491987	CiscoMeraki_fa:49:e3	Broadcast	LLC	90	U, func=UI, SNAP, OUI 0x000000 (Cisco Systems, Inc), PID 0x013C
17	3.674742	CiscoMeraki_ff:0f:f5	Spanning-tree-(for-bridges)_00	STP	64	RST, Root = 4096/0/00:18:0a:4f:00:01 Cost = 22000 Port = 0x8016
18	4.000464	10.20.20.24	8.8.8.8	ICMP	102	Echo (ping) request id=0x4ae4, seq=52314/23244, ttl=200 (reply in 19)
19	4.048162	8.8.8.8	10.20.20.24	ICMP	102	Echo (ping) reply id=0x4ae4, seq=52314/23244, ttl=248 (request in 18)
20	5.000530	10.20.20.24	8.8.8.8	ICMP	102	Echo (ping) request id=0x4ae4, seq=52315/23500, ttl=200 (reply in 21)
21	5.049599	8.8.8.8	10.20.20.24	ICMP	102	Echo (ping) reply id=0x4ae4, seq=52315/23500, ttl=248 (request in 20)
22	5.694857	CiscoMeraki_ff:0f:f5	Spanning-tree-(for-bridges)_00	STP	64	RST, Root = 4096/0/00:18:0a:4f:00:01 Cost = 22000 Port = 0x8016
23	6.000752	10.20.20.24	8.8.8.8	ICMP	102	Echo (ping) request id=0x4ae4, seq=52316/23756, ttl=200 (reply in 24)
24	6.050019	8.8.8.8	10.20.20.24	ICMP	102	Echo (ping) reply id=0x4ae4, seq=52316/23756, ttl=248 (request in 23)
25	6.078191	CiscoMeraki_e2:e2:58	CDP/VTP/DTP/PAgp/JUDD	UDLD	114	Device ID: BCD09E2E257 Port ID: 1
26	6.374578	CiscoMeraki_ff:0f:f5	CDP/VTP/DTP/PAgp/JUDD	UDLD	98	Device ID: F89E28FF0DF Port ID: 22
27	7.000787	10.20.20.24	8.8.8.8	ICMP	102	Echo (ping) request id=0x4ae4, seq=52317/24012, ttl=200 (reply in 28)
28	7.046101	8.8.8.8	10.20.20.24	ICMP	102	Echo (ping) reply id=0x4ae4, seq=52317/24012, ttl=248 (request in 27)
29	7.314006	CiscoMeraki_ff:0f:f5	Spanning-tree-(for-bridges)_00	STP	64	RST, Root = 4096/0/00:18:0a:4f:00:01 Cost = 22000 Port = 0x8016

Filter Expression... Apply Clear

Frame 12: 102 bytes on wire (816 bits), 102 bytes captured (816 bits) on interface 0

Ethernet II, Src: CiscoMeraki_4f:00:02 (00:18:0a:4f:00:02), Dst: CiscoMeraki_e2:e2:57 (bc:db:09:e2:e2:57)

Destination: CiscoMeraki_e2:e2:57 (bc:db:09:e2:e2:57)

Source: CiscoMeraki_4f:00:02 (00:18:0a:4f:00:02)

Type: 802.1Q Virtual LAN (0x8100)

802.1Q Virtual LAN, PRI: 0, DEI: 0, ID: 20

000 = Priority: Best Effort (default) (0)

..0 = DEI: Ineligible

....0000 0001 0100 = ID: 20

Type: IPv4 (0x0800)

Internet Protocol Version 4, Src: 8.8.8.8, Dst: 10.20.20.24

0100 = Version: 4

....0101 = Header Length: 20 bytes (5)

Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)

Total Length: 84

Identification: 0x0000 (0)

0000 = Flags: 0x0

..0 0000 0000 0000 = Fragment Offset: 0

Time to Live: 248

Protocol: ICMP (1)

Header Checksum: 0x946d [validation disabled]

[Header checksum status: Unverified]

Source Address: 8.8.8.8

Destination Address: 10.20.20.24

[Source GeoIP: US, ASN 15169, GOOGLE]

Internet Control Message Protocol

```
0000 bc db 09 e2 e2 57 00 18 0a 4f 00 02 81 00 00 14 .....W.O.....
0010 08 00 15 00 00 54 00 00 00 08 01 94 6d 08 08 .....E.T.....m.
0020 8b 08 0a 14 14 15 00 00 2b 92 4a e4 cc 58 fe 8a .....*J.X.
0030 ff aa ee 80 01 00 78 2a 56 ff 00 00 00 00 00 00 00 .....x^V.....
0040 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0050 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0060 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
Packets: 120 - Displayed: 120 (100.0%) File Size: 12.7 kB Duration: 29.004s
```

Squint!

Then let's check out a demo



Global Overview

Organization
Eh

Network
Lab

Network-wide

Cellular Gateway

Security & SD-WAN

Switching

Wireless

Cameras

Sensors

Insight

Organization

Adaptive Policy

Packet Capture Analysis

The packet capture analytics tool looks for 4/10 categories of possible issues in your packet capture. Please note that even if it does not show any issues in the results below it is only reporting on Rogue DHCP, ARP, ICMP and DNS issues.

Packet Capture Analysis Summary

Tests summary

Protocols

1 protocol with issues

DHCP

No issues

ARP

1 issue

ICMP

No issues

DNS

No issues

MAC address summary

These MAC addresses appeared in at least one of the failed tests.

00:c0:17:c5:01:61 00:18:0a:4f:00:02

Device summary

These devices appeared in at least one of the failed tests.

DHCP No issues

DHCP Transactions completed No issues

Multiple DHCP servers seen No issues

ARP 1 issue

ARP Requests have responses Issues 1

ICMP No issues

Missing ICMP responses No issues

Constant ICMP client failure No issues

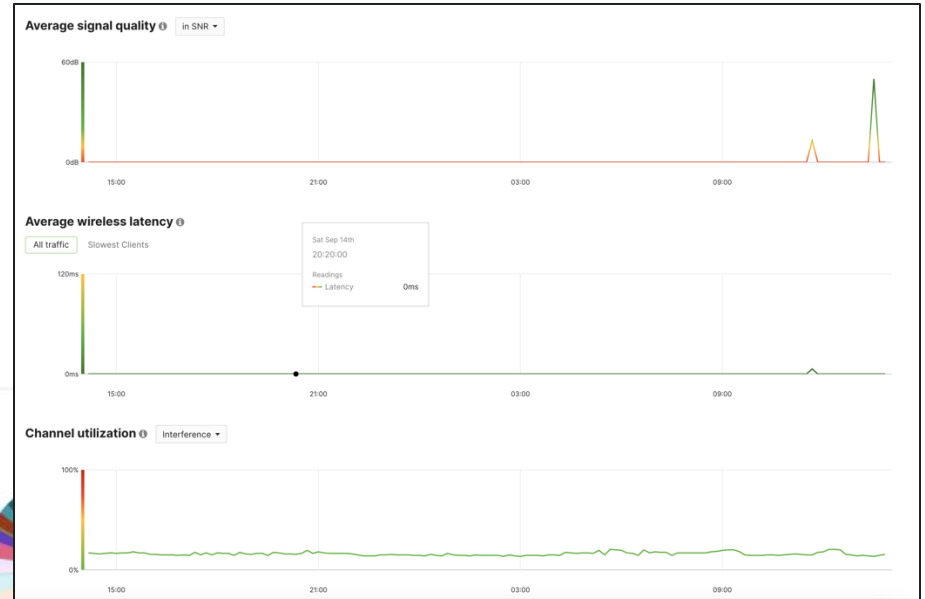
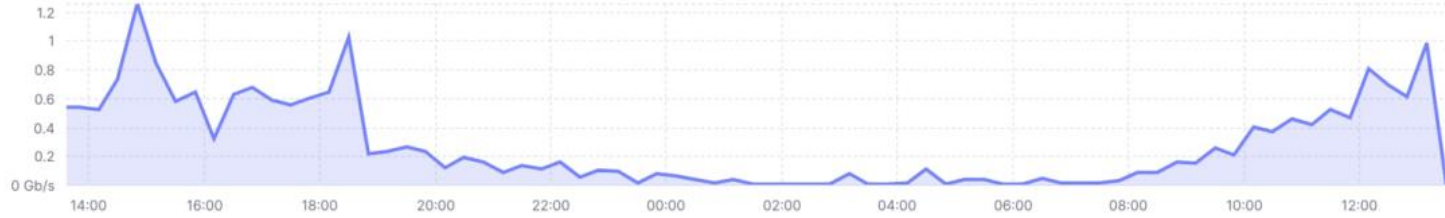
Problém č. 7: „Dostaneme přidáno!
Máme otevřít novou divizi, ale je
potřeba ji držet odděleně.”



Image generated by AI

Network Performance

Usage and clients All clients Last day Applications Usage 2.84 TB (↓439 GB, ↑2.41 TB)



Applications

Application	Group	Usage	Usage %
Encrypted TCP (SSL)	—	17.3 GB	15.6%
Google Services			6%
Sharepoint			8%
Facebook			1%




Top devices

Name	Model	# Clients	Usage	% Usage
SJC23-32A-AP19	C9136	127	262.43 GB	8.57%
SJC23-32A-AP37	CW9166I	72	108.81 GB	3.55%

Health Information

Connection health ⓘ




Failed clients
45 / 1127 ↘ -9%

Expected < 5 s ⓘ

Time to connect
0.39 s ↘ -0.1 s
Expected < 5 s ⓘ

Roaming
0.03 s ↗ 0 s
Expected < 3 s ⓘ

Network service health ⓘ

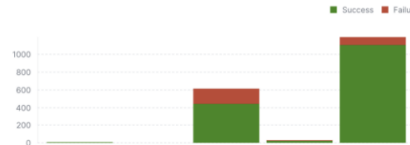


RADIUS success
98% No change

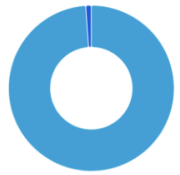
DHCP success
85% ↘ -4%

DHCP Server IP:

DHCP client connection attempts by SSID



DHCP failure reason codes



■ Success ■ Failure

■ No DHCP response 99%
■ DHCP Nack 1%

Organization Summary New

Devices

Switches 3 total

All Online ✔

Access Points 40 total

All Online ✔

Alerts

C9800-L SSO

[See alerts for all networks](#) 106

Networks

Usage and clients over the last week

Q Search Networks | Status | Network Type | Tags | 3 networks

<input type="checkbox"/>	ⓘ	Name	Usage	Clients	Tags	Switches
<input type="checkbox"/>	✔	C9800-40 SSO	787.8 MB	17	CLOUD-MON-DEMO	✔ 1
<input type="checkbox"/>	✔	C9800-80 SSO	12.23 GB	18	CLOUD-MON-DEMO	✔ 1
<input type="checkbox"/>	✔	C9800-L SSO	155.33 GB	17	CLOUD-MON-DEMO	✔ 1

CONNECTIVITY

⚠ AP stopped communicating with WLC 97

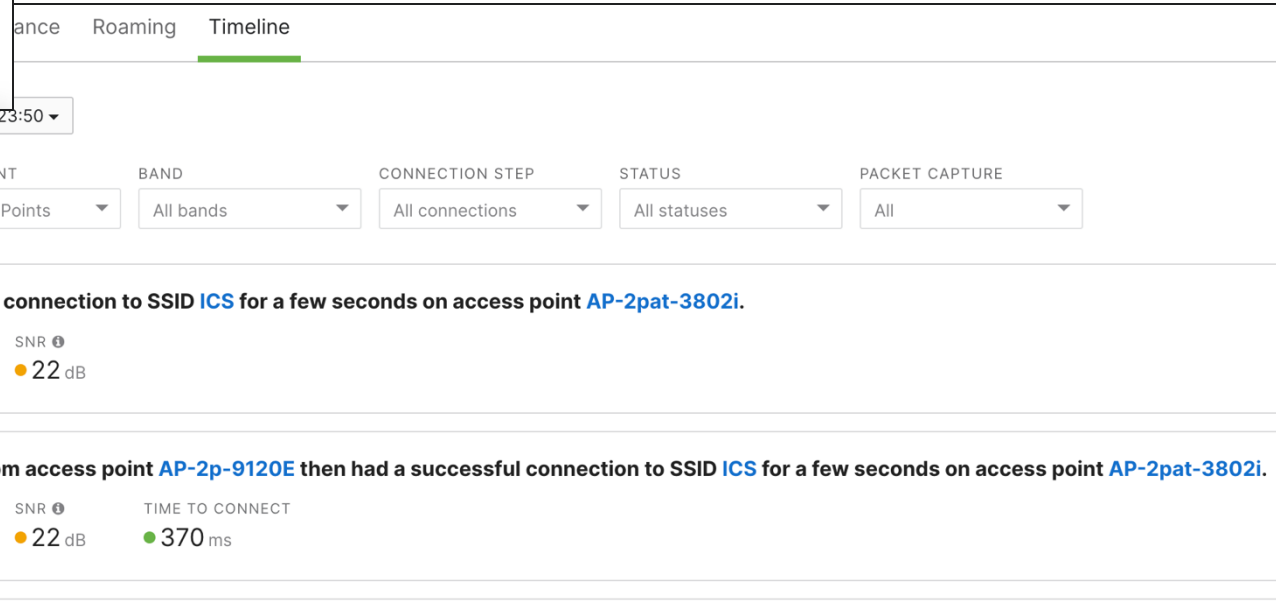
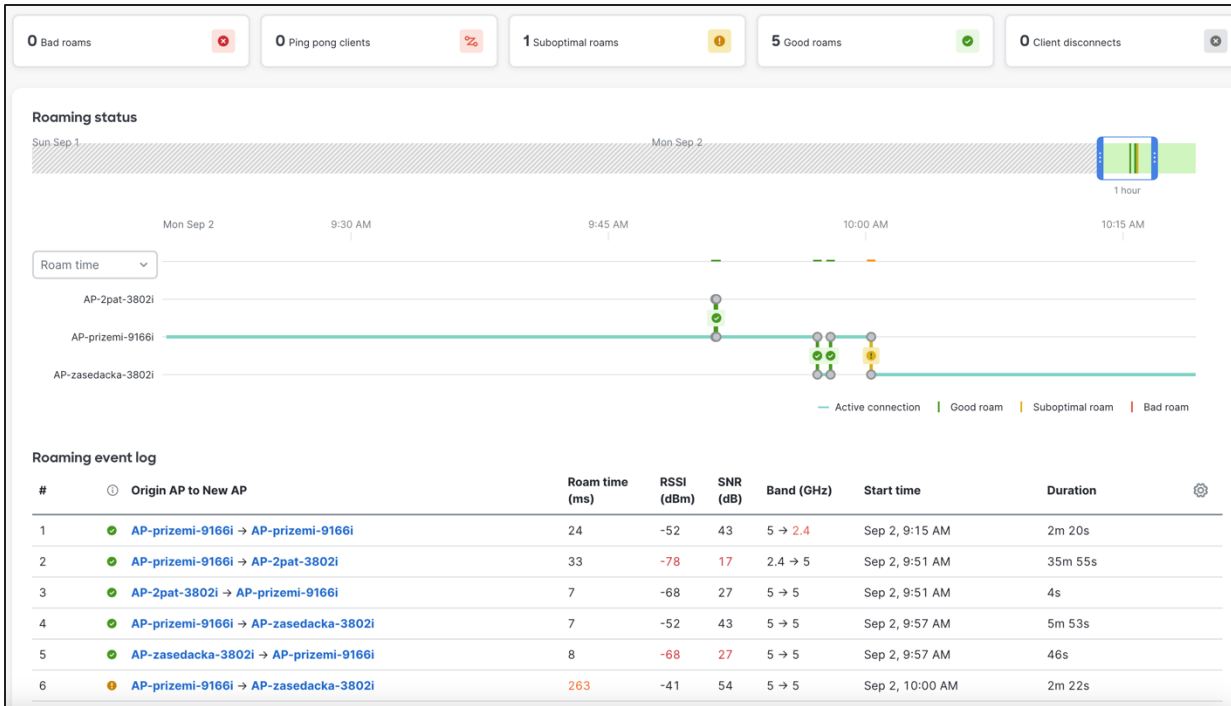
70:f0:96:0a:48:e8
Apr 28, 2024 08:57 PDT

68:49:92:75:c6:80
Apr 28, 2024 08:57 PDT

68:49:92:75:b7:80
Apr 28, 2024 08:57 PDT

[View all](#)

Great News – Roaming Analytics





Wireless models supported at launch

C9800-80
C9800-40
C9800-L





IOS XE 17.12.3 and higher
IOS XE 17.15.1 or later

9800-CL support end of CY24





CW9166
CW9164
CW9163
CW9162

C9136



C9130
C9124
C9120

C9117
C9115
C9105



AP4800
AP3800
AP2800
AP1562

Cisco Wireless Troubleshooting Tools (DevNet)

CISCO DevNet Documentation Learn Technologies Community Events [SIGN UP FREE](#) [LOG IN](#)

Documentation > All > Wireless Troubleshooting Tools

Overview

- Wireless Troubleshooting Tools**
 - Wireless Config Analyzer Express - WCAE
 - WLAN Poller
 - 9800 Guestshell scripts
 - WiFi Hawk
 - Wireless Lan Config Analyzer - WLCCA
 - 9800 Traces to ELK - Github
 - 9800 Telemetry Pipeline - Github
 - Wireless Debug Analyzer
 - WLC Config Converter BETA

WCAE

- Wireless Config Analyzer Express - Engine
- Wireless Config Analyzer

Wireless Troubleshooting Tools

In order to help people in the field, doing Wireless networks troubleshooting and RF analysis, the WNG Escalation, TAC and Development teams have made available several tools to facilitate some of the most common tasks.

New! WCAE GUI (updated July-24)	WiFi Hawk (updated Feb-23)	KPI Dashboard - New Tool! (May-24)
9800 Guestshell scripts	Wireless Debug Analyzer	Wireless Detector (updated May-23)
Cisco Support Assistant Extension (CSAE)	AireOS to Meraki Translation	WLAN Poller (updated June-24)

These are the currently supported platforms



Models

Catalyst
9200/L/CX
9300/L/LM/X
9500

Firmware
IOS-XE 17.3+

Licensing
Advantage
Essentials

Problém č. 8: „Ty videohovory dneska nějak drhnou, ale já mam vše zelené“



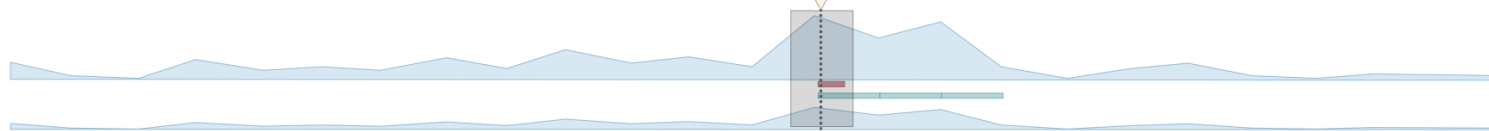
Image generated by AI

Most Correlated Visibility In One View

Time Correlated

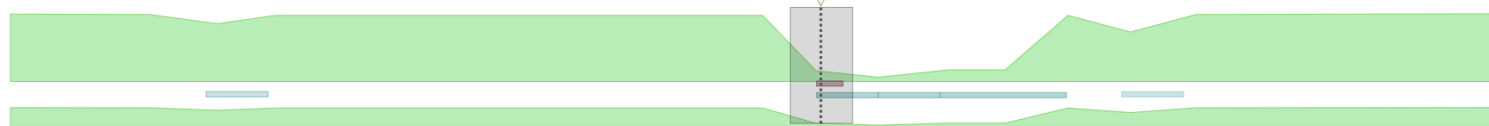
App Experience

- Transaction scripting, page load



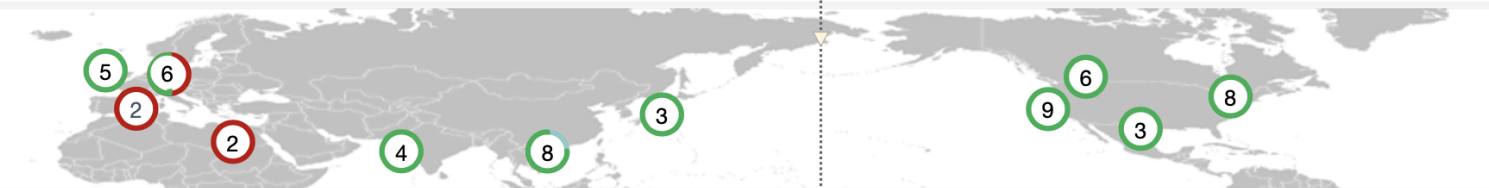
HTTP/DNS/RTP Server

- HTTP Availability, response time, throughput



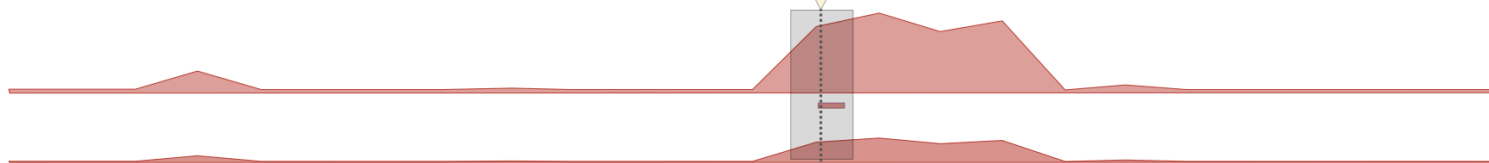
Scope and Domain

- Geo, HTTP phase, errors



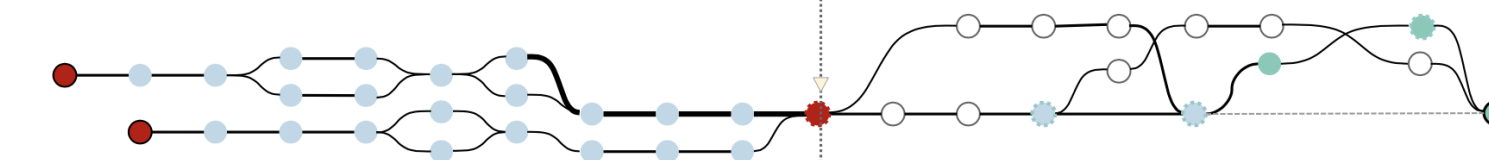
Network Metrics

- Packet loss, latency, jitter



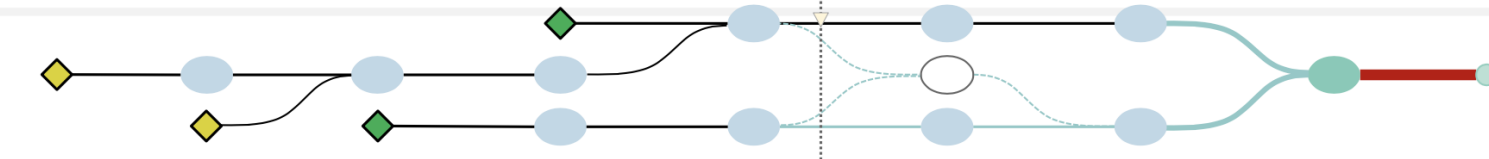
Path Visualization

- Hop-by-hop; multi-point; bidirectional
- Metrics and data per hop
- Integrated Outage Detection



BGP Monitoring

- Reachability, path changes, updates



How ThousandEyes Collects Data



Enterprise Agent

Lightweight agent deployed to customer sites and data center locations.



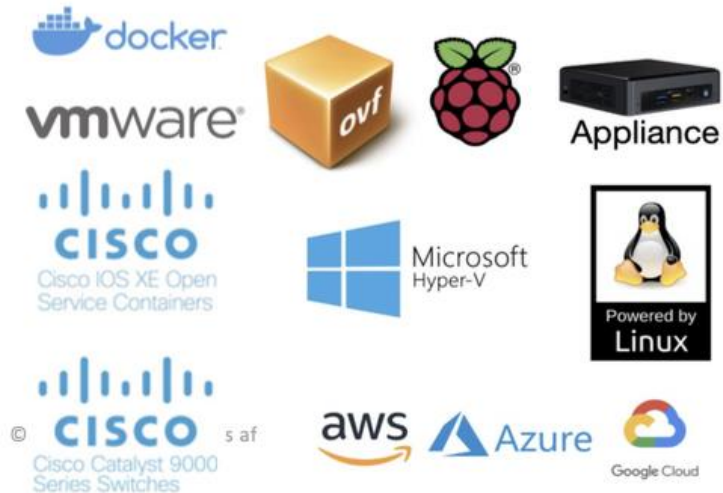
Cloud Agent

No installation required. 376 internet connected vantage points.

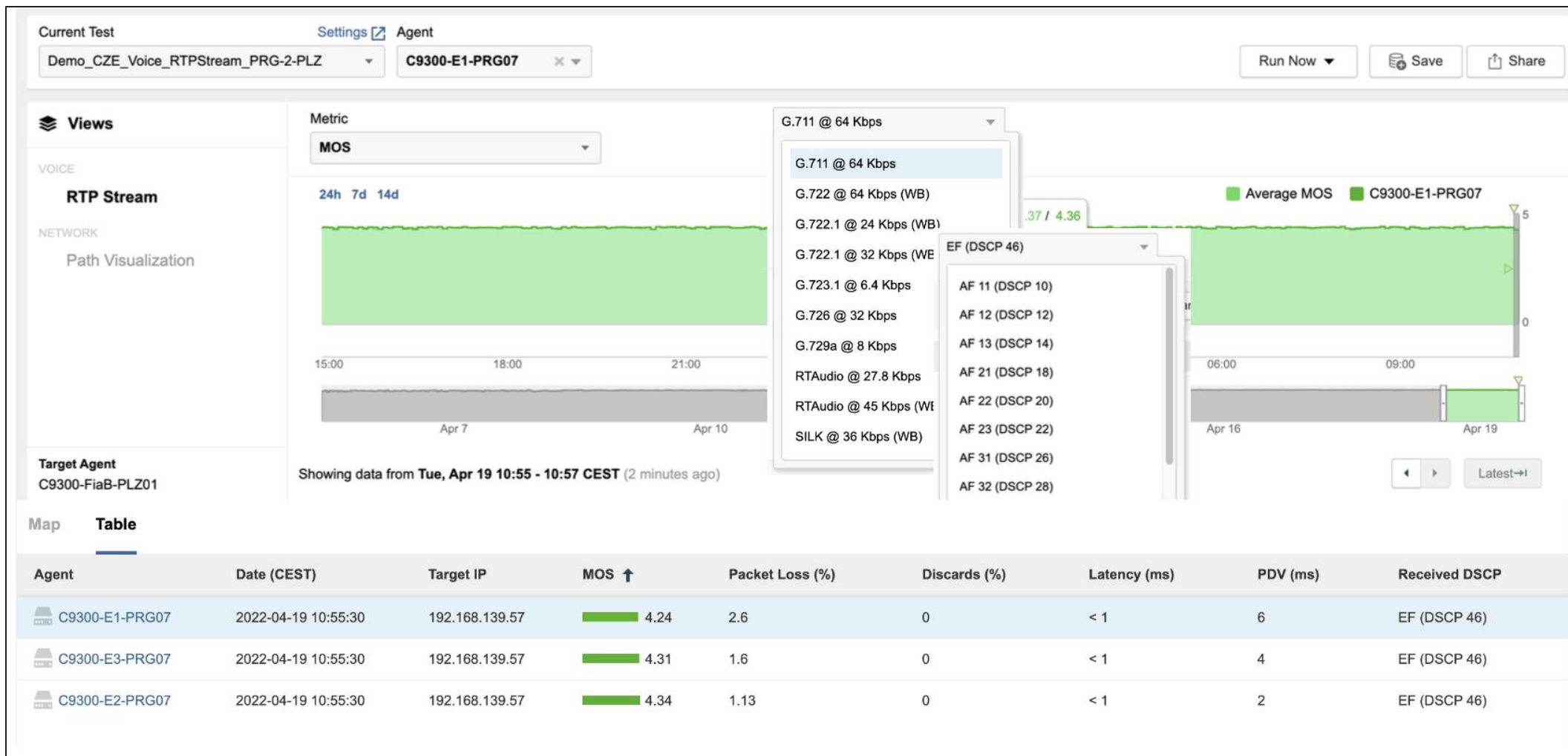


Endpoint Agent

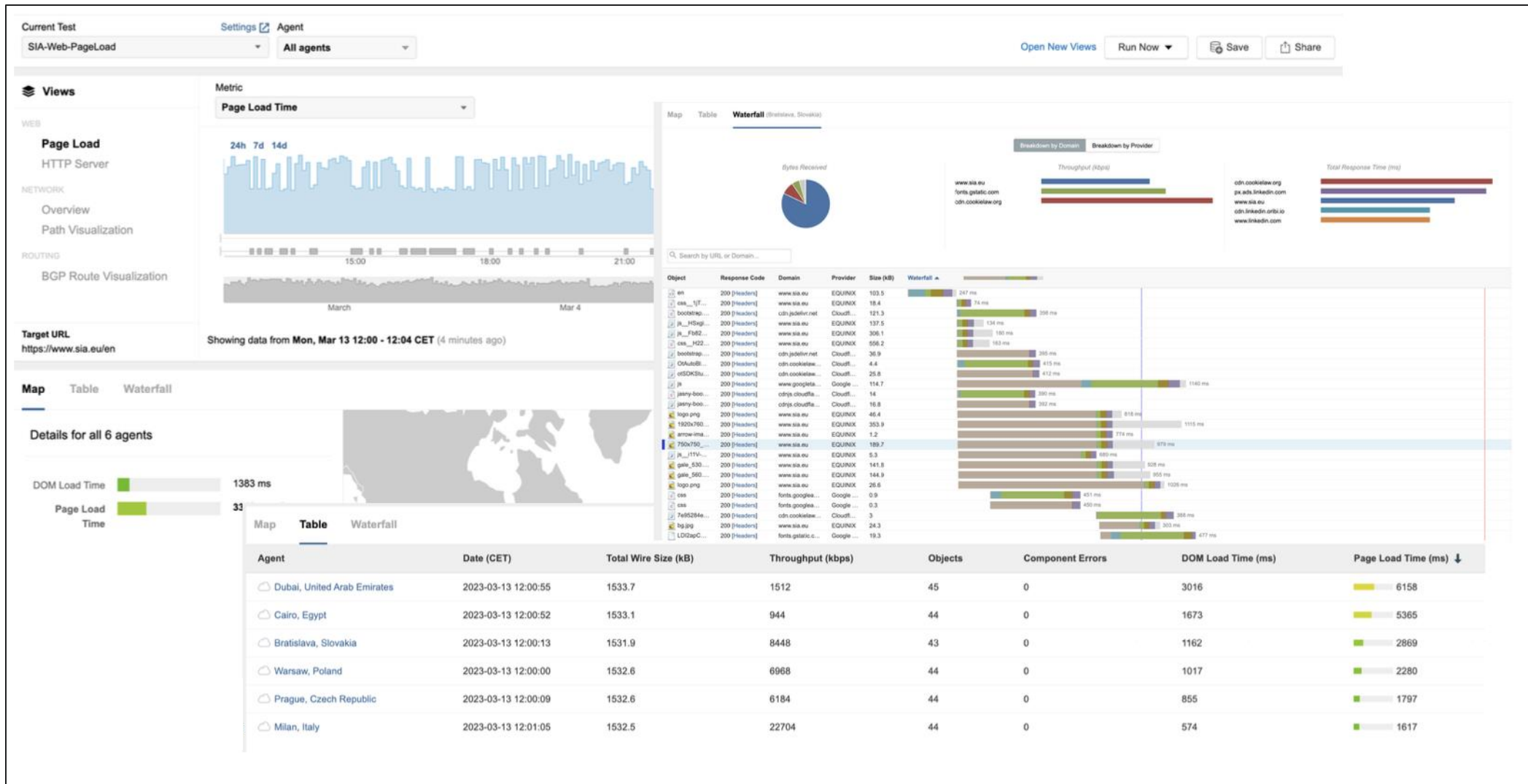
Pushed to end user laptop or desktop for last mile visibility.



Syntetické hlasové volání



Page Load



Test Templates

The screenshot displays the Cisco ThousandEyes Cloud & Enterprise Agents interface. The top navigation bar includes the Cisco logo, the product name, and user information (dosoukup@cisco.com). A left sidebar lists navigation options such as Cloud & Enterprise Agents, Event Detection, Views, Test Settings (highlighted), Agent Settings, BGP Monitors, Endpoint Agents, Devices, Internet Insights, Dashboards, Alerts, Integrations, Sharing, and Account Settings. The main content area is a grid of test templates, each with a service icon, name, and description. The 'GitHub' template is highlighted with a grey border. The footer contains the copyright notice and a privacy link.

Service	Template Description
Webex Meeting	A comprehensive template for monitoring your Webex... Certified Best practice guide
Zoom	Templates related to Zoom services Expand group
ServiceNow	Template for monitoring your ServiceNow instance Trending
Atlassian	Templates related to Atlassian services Expand group
AWS Console	A template for monitoring AWS Console; includes Network,...
Box	A template for monitoring Box; includes Network, DNS, and...
Concur	A simple template for monitoring `concur.com`...
Five9	Templates related to Five9 services Expand group
GitHub	A template for monitoring GitHub; includes Network, DNS,...
Google	Templates related to Google services Expand group
Microsoft	Templates related to Microsoft services Expand group
Okta	Template for monitoring your Okta instance
OpenAI	
Salesforce	
Slack	

Publicly Known Analysis

- <https://www.thousandeyes.com/blog/microsoft-outage-analysis-january-25-2023>
- Crowdstrike:



Integration

ThousandEyes Meraki Assurance Integration

- Per-Application Health with active probing
- Visibility beyond the WAN
- Differentiate internet or application server issue
- Integration with both network & single-client workflows

Assurance Overview Dashboard

Applications 82/100 -2 pts last day

● app.acme.com 1 issue 63/100 +23 pts

12 clients potentially impacted

● Sharepoint 100/100 No change

● Asana 100/100 No change

● Salesforce 100/100 No change

● Box 100/100 No change

< 1 2 >

Microsoft365 12 est. clients impacted

Internet 12 est. impacted clients

Application No impacted clients

Applications

Data (for the past 2 hours)

● app.acme.com 12 clients potentially impacted

● Salesforce.com

● Slack.acme.com

● Asana.com

● Box.com

● aws.acme.com

[See all applications](#)

Single Client Dashboard

Current client connections

Diagram showing network connections: DONVO-M-9RGV (laptop) connected to SF012-5-AP21 (Wi-Fi) with 6 connections. SF012-5-AP21 connected to SF012-WIFI32 (Wi-Fi) with 18 connections. SF012-WIFI32 connected to CORE1 (server rack) with 8 connections. CORE1 connected to SF012-MX1 (server rack) with 16 connections. SF012-MX1 connected to Applications (server rack) with 88 connections. Applications connected to another server rack with 8 connections.

Assurance / Dashboards / Health

Dominik

Catalyst Center

Overall Network Client Network Services **Applications** SD-Access AI Analytics

ThousandEyes Enterprise Agent Tests (4) [Export](#)

Search Table

Test Name	Test Type	Target	Test Interval	Device Name	Last Updated	# of Active Alerts	Test Failures	Packet Loss (%)		Jitter (ms)	
								Latest	Average	Latest	Average
Demo_CZE_ThroughputTCP_PRG-BTS	Network - Agent to Agent	C9300-FiaB-BTS05:49153	5 minutes	C9300-E2.enprglab.local	2 hours ago	0	0%	--	11.42	--	0.43
Demo_CZE_ThroughputTCP_PRG-PLZ	Network - Agent to Agent	C9300-FiaB-PLZ01:49153	5 minutes	C9300-E2.enprglab.local	an hour ago	0	0%	--	11.64	--	0.32
Demo_CZE_Voice_RTPStream_PRG-2-PLZ	Voice - RTP Stream	C9300-FiaB-PLZ01:49152	5 minutes	C9300-E2.enprglab.local	13 hours ago	0	0%	0	0	--	--
4 Record(s) Show Records: 25											

AI Assistant

Conversational Interface Leading the way with Cisco Unified AIOps

Background

Conversational UI is replacing CLI and GUI search

Use Case

Level 1 Network Support Engineer, e.g., Responsible for monitoring and first responder to incidents and reporting (Lacks domain expertise)

AI Driven Conversational Interface

- **Proactive** - Summarize and Highlight the Network Problems upfront
- **Guided**, Suggested Intents listing
- **Network Expert System** – LLM that integrated with Cisco/Meraki Extension using RAG
- **Extensible** – Can Learn a new intent and tasks
- **Multi-domain Ready** – Combine multiple domains
- **Task-Oriented** - Each Intent to accomplish specific tasks
- **Unified AIOps** - Support both Meraki Dashboard and Catalyst Center Customers

Example

show me failed clients

Here's the page you requested. You can navigate to it from:
Wireless > Monitor > Overview

show me the access point with highest channel utilization

CA-CP-AP02, form **Foothill - wireless** network shows the **highest channel utilization, 37.23%** in the 2.4 GHz band. Let me take you to the RF details page of CA-CP-AP02.

let me know failed clients

Here's the page you requested. You can navigate to it from:
Wireless > Monitor > Overview

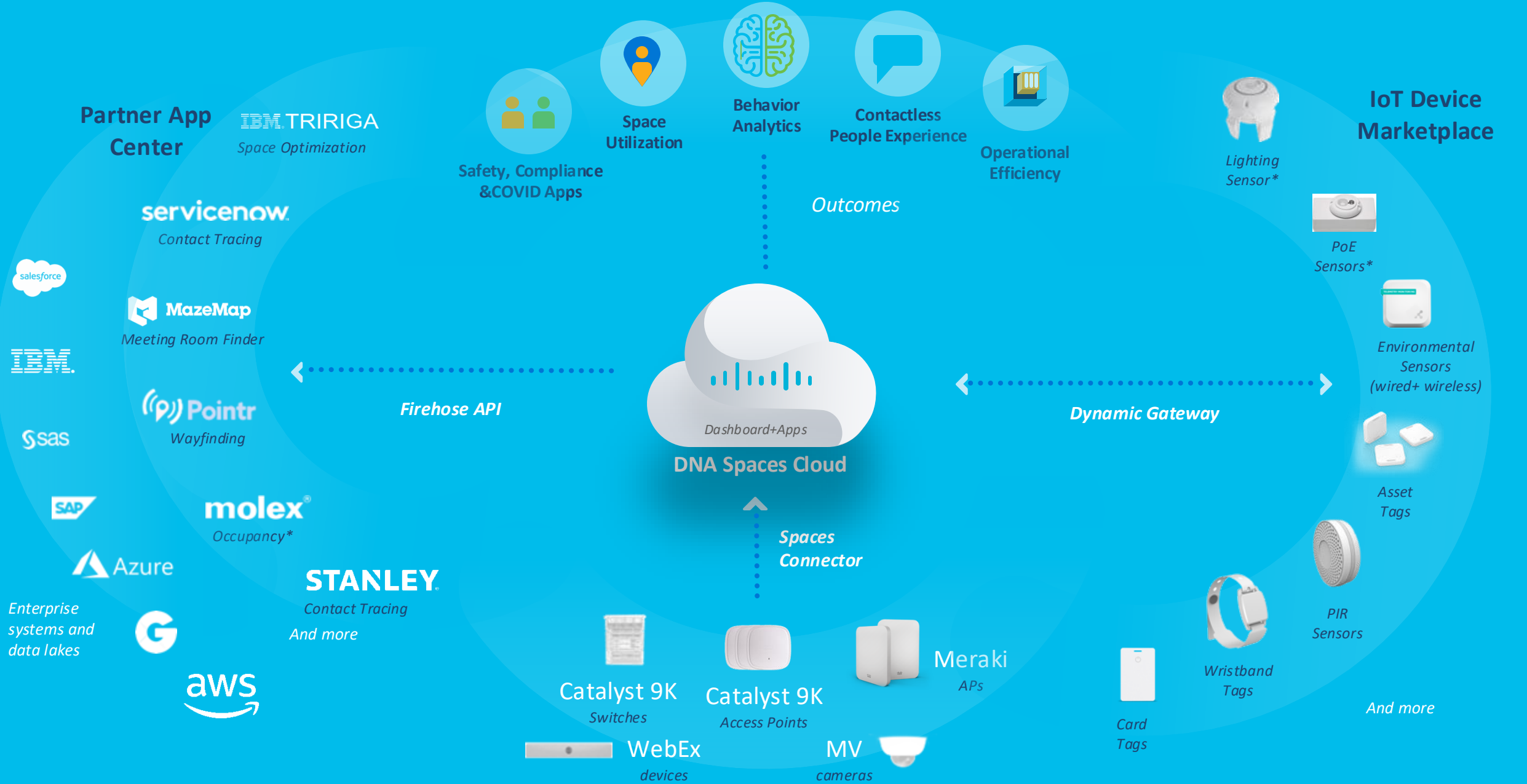
Ask a question

Problém č.X: „Posílají nám zase nějaké peníze na vylepšení kanceláře. Co s tím budeme dělat?„

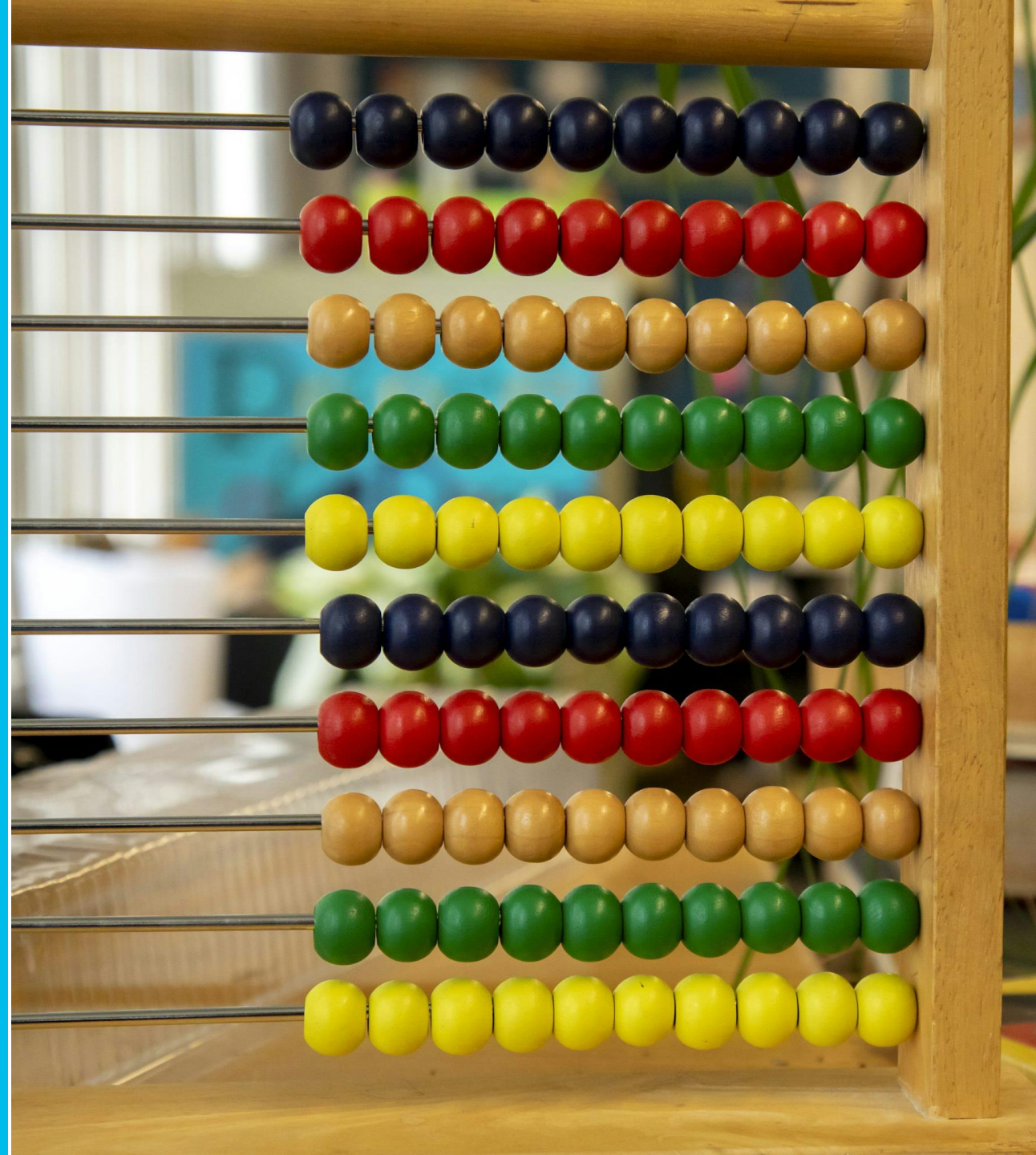


Image generated by AI

Cisco Spaces



Využití kanceláří



Jaké jsou možnosti?



Building
Floor
Zone



Building
Floor
Zone
Room



Building
Floor
Zone
Room



Building
Floor
Zone
Room



Building
Floor
Zone
Room
Desk



Building
Floor
Zone
Room
Desk

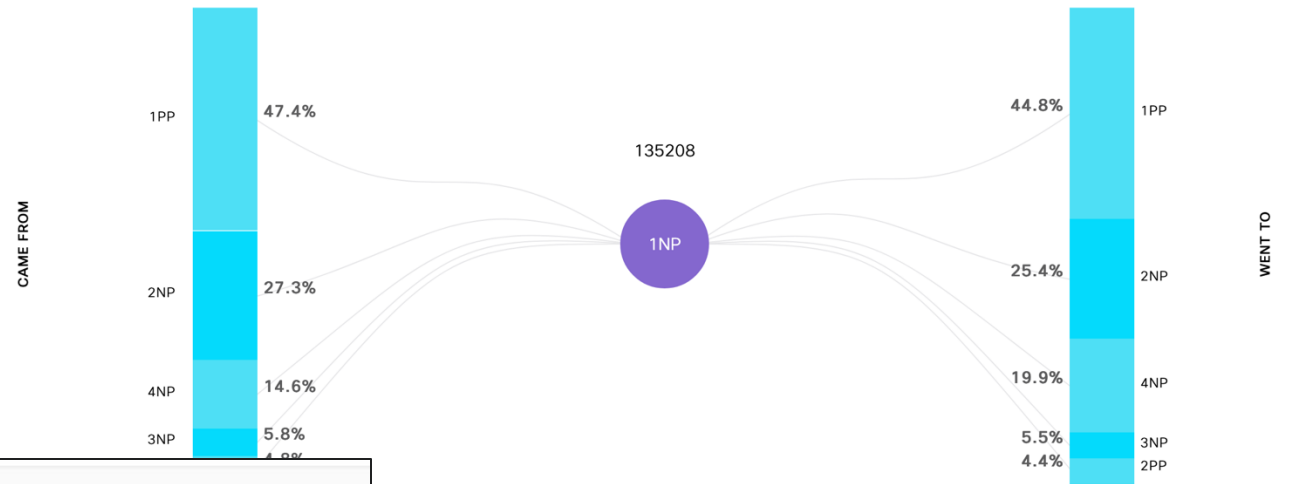


Increasing accuracy – with caveats!

Jak to vypadá?

PATH

17-August-2023 to 15-August-2024 between 12:00 am and 11:59 pm | 1NP



VISITORS

17-August-2023 to 15-August-2024 between 12:00 am and 11:59 pm ...

35,343

Total Visitors

97

Daily Avg Visitors

VISITORS

17-August-2023 to 15-August-2024 between 12:00 am and 11:59 pm ...

35,343

Total Visitors



VISITS

17-August-2023 to 15-August-2024 between 12:00 am and 11:59 pm ...

506,236

Total Visits

1387

Daily Avg Visits

AVG DWELL TIME

17-August-2023 to 15-August-2024 between 12:00 am and 11:59 pm ...

4HOURS

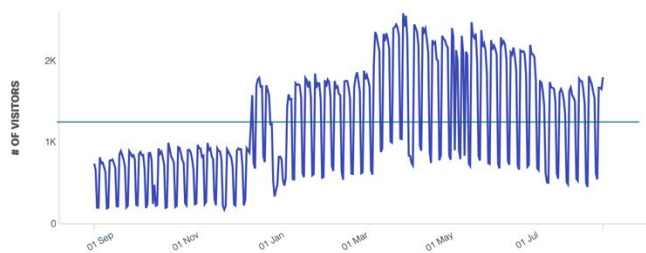
Avg Dwell Time

NA

VISITORS TREND

17-August-2023 to 15-August-2024 between 12:00 am and 11:59 pm | CME | All SSID

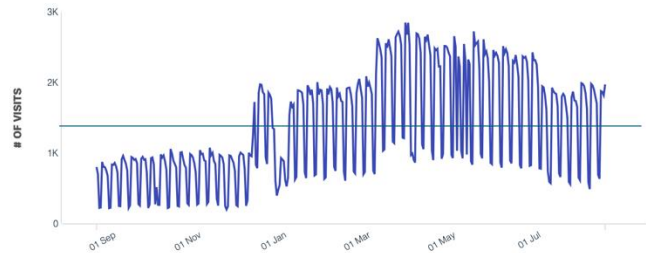
Total 35,343 | Daily Avg 1252



VISITS TREND

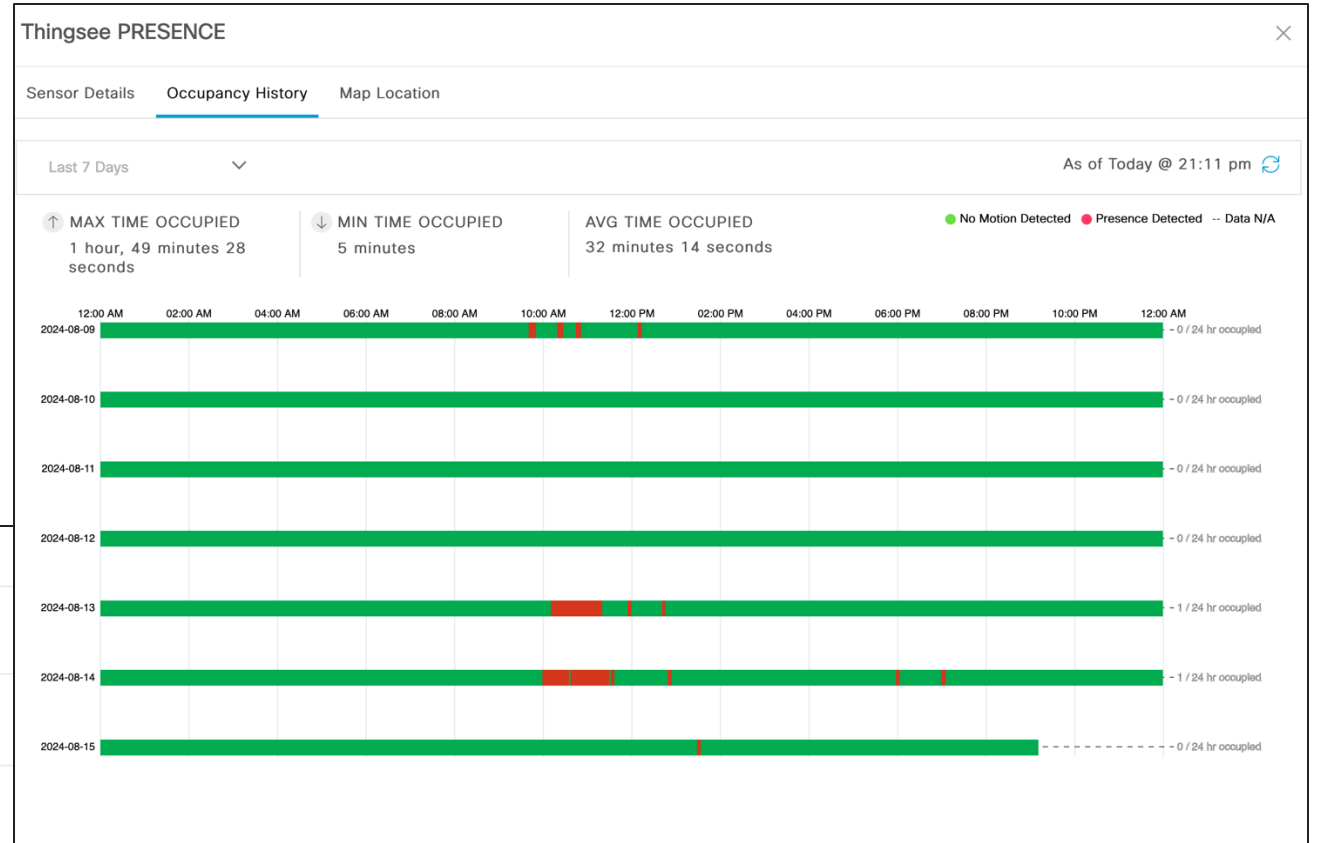
17-August-2023 to 15-August-2024 between 12:00 am and 11:59 pm | CME | All SSID

Total 506,236 | Daily Avg 1387



● Focus Area ● Floor/Zone

Jak to vypadá?



Create Density Rule

RULE NAME: Desity rules

Choose any or all of the options that apply to your rule below

SENSE

When people are seen on camera and count is more than 4 at any floor

The rule will trigger when 1 min density counting of the number of connected devices in specified area.

LOCATIONS - Where do you want the rule to fire?

At any of the following locations

Please select at-least one location

Filter by Metadata
Further filter your location pool by including or excluding locations by metatags

SCHEDULE

Set a date range for the rule
Only apply rule for the selected date range

4th Floor



24 Meeting Rooms on this floor

17 Available 0 Booked 1 Occupied 6 No Data

Find available meeting Rooms

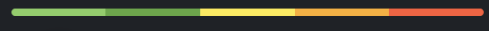
Room Finder

Data Source: Webex

Floor Occupancy: **Very Low**

Cisco Spaces + Meraki Wireless

Indoor Air Quality: **Excellent**



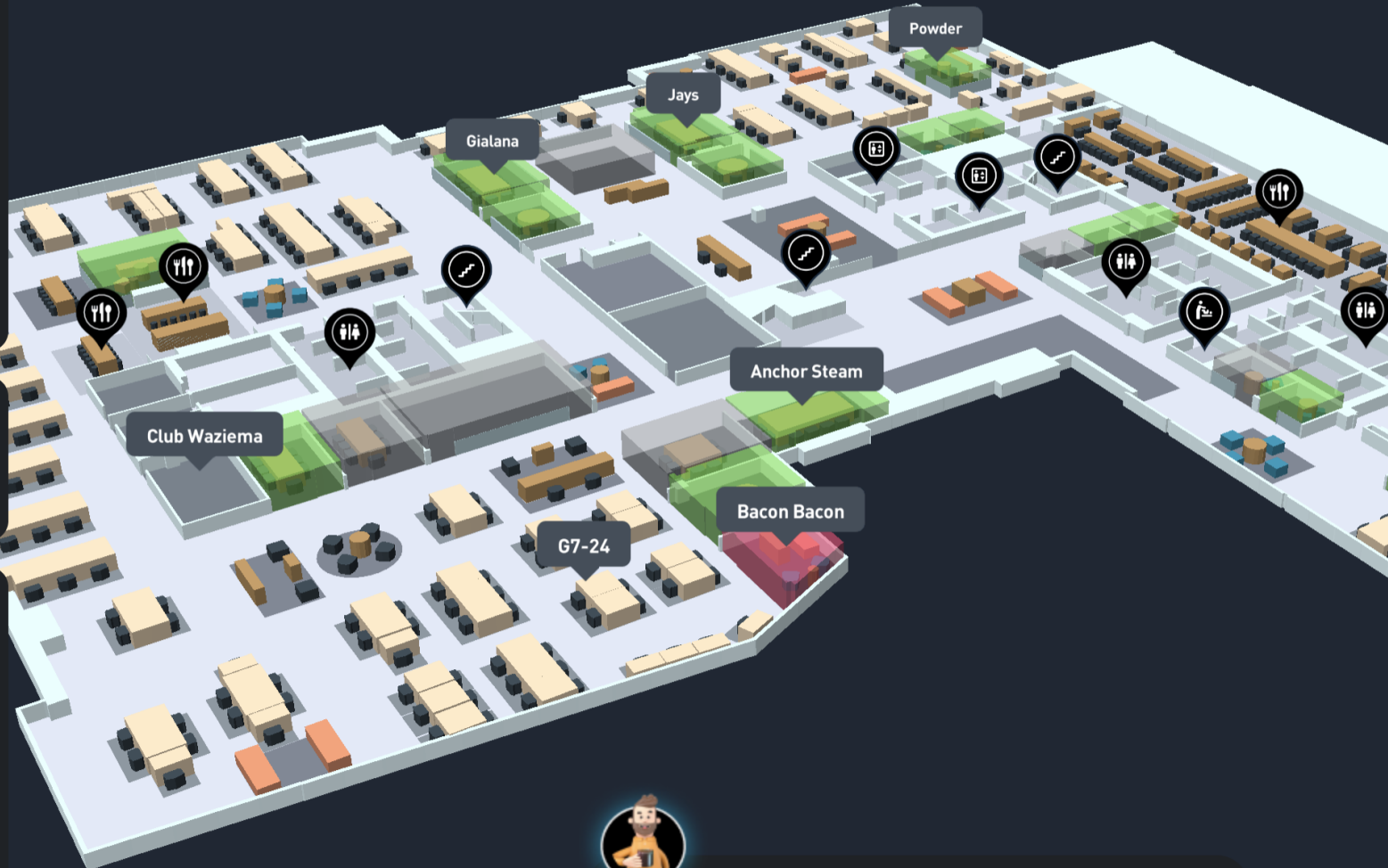
Temperature:

72°F

Humidity:

54%

Data Source: Meraki / Webex



Anchor Steam



Collaboration device in this room

This meeting room is: **Available**

11:55PM

Later today:

12AM

2AM

4AM

6AM

Want to use this room?

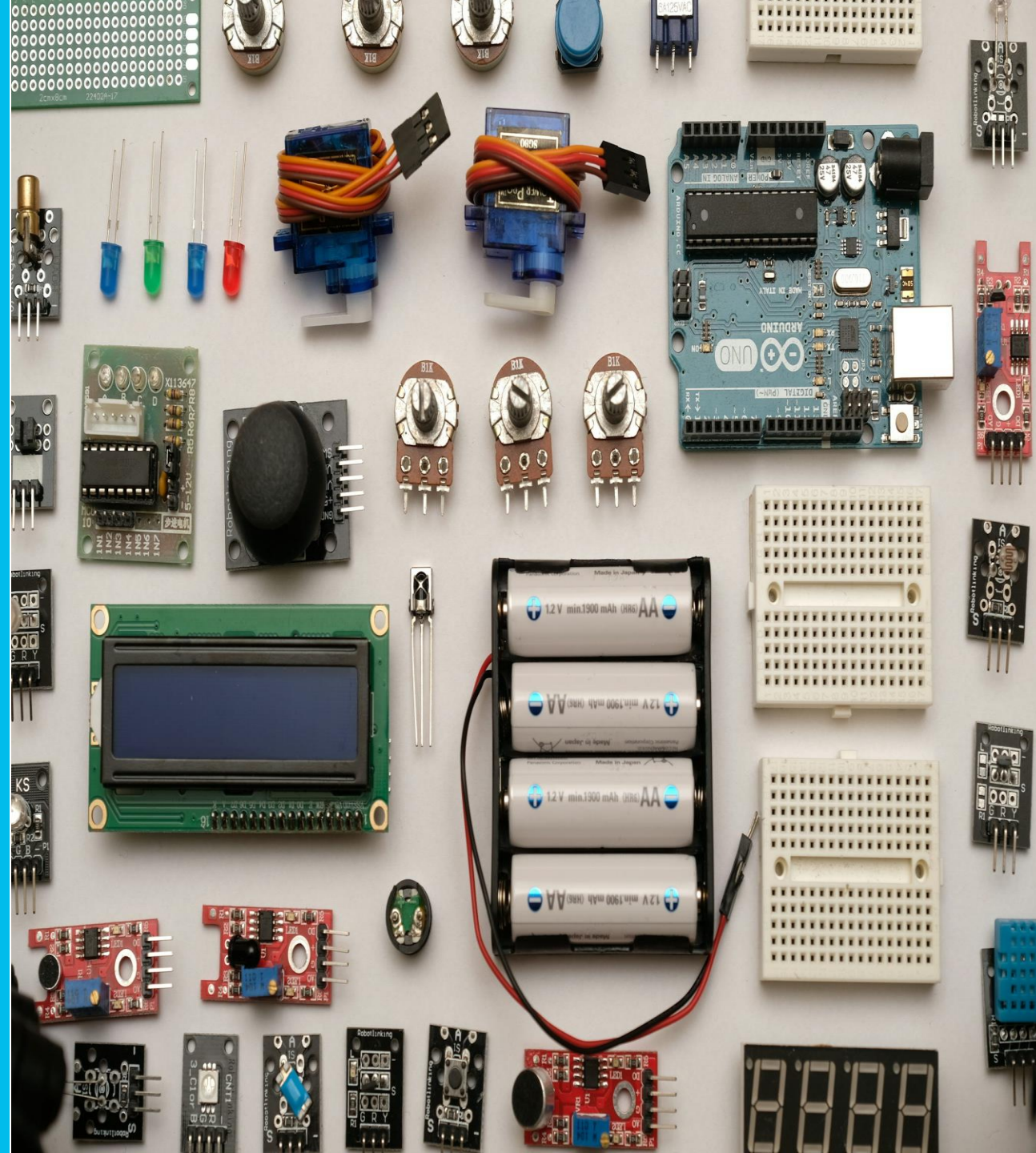
Put it on hold for 3min. while you make your way to it.



Where Am I?

Reset Map

Environmentální měření



Jaké jsou možnosti?

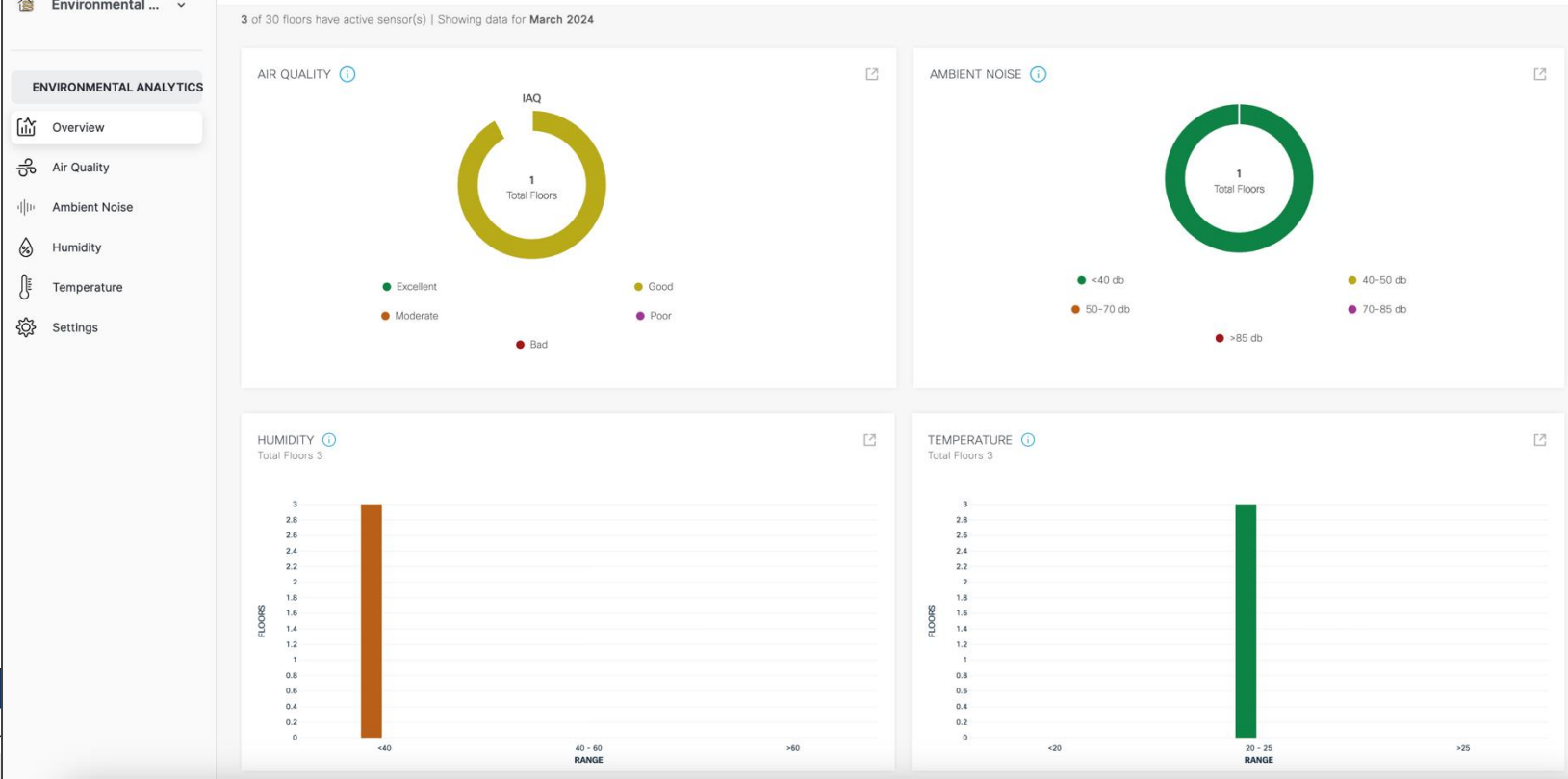


IoT BLE Device Sensor Telemetry

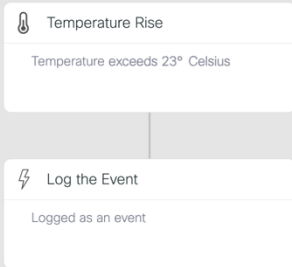
▼ Sensor Information

Battery ⓘ 88 % Updated at: Apr 12th, 2022 08:03:38 PM 2 minutes ago	Temperature ⓘ 25 °C Updated at: Apr 12th, 2022 08:03:38 PM 2 minutes ago	Device Clock ⓘ Apr 12th, 2022 07:33:33 PM 32 minutes ago Updated at: Apr 12th, 2022 08:03:38 PM 2 minutes ago
Movement ⓘ 18+ hrs Updated at: Apr 12th, 2022 08:03:38 PM 2 minutes ago	Double Tap ⓘ 18+ hrs Updated at: Apr 12th, 2022 08:03:38 PM 2 minutes ago	Acceleration ⓘ Coordinates (X, Y, Z) (-4, 3, 63) Sensitivity 16 Updated at: Apr 12th, 2022 08:03:38 PM 2 minutes ago

Jak to vypadá?



Back Edit Rule Add Rule



Search

Rule Conditions Actions

You can choose only one parameter per rule. Create a new rule to enable additional parameters.

Temperature change

- Temperature Rise: Trigger this rule when temperature rises by a specified amount.
- Temperature Drop: Trigger this rule when temperature drops by a specified amount.
- Temperature in Range: Trigger this rule when temperature is within a specified range.
- Temperature Outside Range: Trigger this rule when temperature is outside a specified range.
- Sensor Not Heard: Trigger this rule when sensor is not heard.



Děkujeme za Vaši pozornost

Následující Tech Club webinář:

1.10. Cisco Services – moderní služby pro Vaší moderní IT infrastrukturu

V následujícím Tech Club webináři se zaměříme na oblast Cisco Services a ukážeme Vám, co všechno dokážou služby Cisco přinést pro zefektivnění operativních činností a zjednodušení života pro zákazníka. Začneme rychlým opakováním základů, ale hned poté se dostaneme k představení moderní služby CX Success tracks.

Přednášející: Pavol Michalík a Michal Navorka

Registrovat se můžete na oficiálním webu **Cisco Tech Club webináře**