Catalyst Wireless Cloud Monitoring

community.cisco.com en français

Federico Ziliotto, Technical Solutions Architect
Christophe Bellière, Technical Solutions Architect
Belgique & France

4 avril 2024

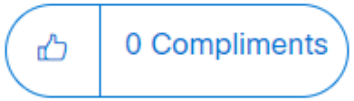
Connectez, Engagez, Collaborez !

Solutions

Acceptez les solutions qui sont correctes et complimentez ceux qui vous ont aidé ! Aidez autres utilisateurs à trouver les réponses correctes dans la fenêtre de recherche.

Compliments

Mettez en évidence les autres membres. Les votes utiles motivent les membres enthousiastes en leur offrant un signe de reconnaissance !



Prix Spotlight Awards

De nouveaux lauréats tous les mois !

Démarquez-vous par vos efforts et votre engagement à améliorer la communauté et à aider les autres membres.

Les Spotlight Awards sont décernés chaque trimestre pour récompenser les membres les plus remarquables.

Rencontrez les gagnants de novembre-janvier 2024

Vous pouvez désormais également proposer un candidat ! Cliquez ici

Nos experts

Federico Ziliotto

Technical Solutions Architect

Diplômé de l'Université de Padoue en Italie avec une spécialisation en Ingénierie des Télécommunications. Il a rejoint Cisco en 2007 en tant qu'ingénieur de support technique au Centre d'Assistance Technique en Belgique. En 2011, il rejoint l'équipe commerciale de Cisco France, où il assume désormais le rôle d'architecte technique.

Federico a près de 14 ans d'expérience dans les solutions Wi-Fi et de contrôle d'accès, deux certifications CCIE en Wireless et en Routing & Switching, et est présentateur à Cisco Live depuis 2012.

Il est également l'un des auteurs de l'examen CCIE Wireless (350-050), Quick Reference et des Guides de Certification CCIE Wireless v3 Study Guide publiés par Cisco Press.

Nos experts

Christophe Bellière

Systems Architect

Diplômé de l'ESIGELEC en Réseaux – Télécommunications. Il a rejoint Cisco en 2008 en tant que Channel System Engineer, puis System Engineer généraliste sur des grands comptes du secteur public.

Fort de son expérience sur ce secteur, en 2018, il rejoint l'équipe Meraki en tant que Technical Solution Architect pour développer l'activité autour des ministères et des grandes agglomérations françaises.

Christophe a plus de 20 ans d'expérience dans les solutions LAN/Wifi et plus récemment dans l'IoT en tant que référent Europe pour les équipes Meraki.

Téléchargez la présentation https://bit.ly/WEBsld-apr24

Join at

slido.com

#1205 501

Passcode: **qznb62**

Agenda

1. Introduction et avantages des architectures Catalyst Wireless et de l'approche Cloud Monitoring
2. Fonctionnement et prérequis techniques de la solution
3. Démo graphique et études approfondies

Meeting our customers where they are

On-prem

Prefer full control and advanced customization.
IaaS model
(Infrastructure as a Service)

Cloud-enabled/hybrid

Need to retain on-prem control, with cloud tools to help monitoring networks

Cloud first

Prefer cloud-enabled simplicity and operations.
SaaS model
(Software as a Service)

Cisco Wireless mission: deliver the needed outcomes to **all customers**

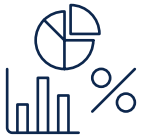
Catalyst Wireless: Unified Experience

IaaS/SaaS

Policy

Radio Resource Management

AIOps & Assurance



APIs

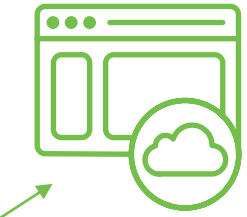
User/Application Experience

Unify the Services

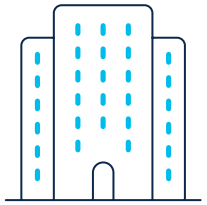
Management
On-prem/Private/Public Cloud

IaaS
(customer managed on-prem/private/public cloud)

SaaS
(public cloud)



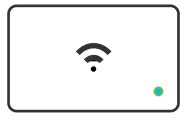
Unify the Management



On-prem

Unified Architectures

Unify the Network



Unified AP Platforms

Catalyst Wireless Access Points: Unified Network

9162

9164

9166D1

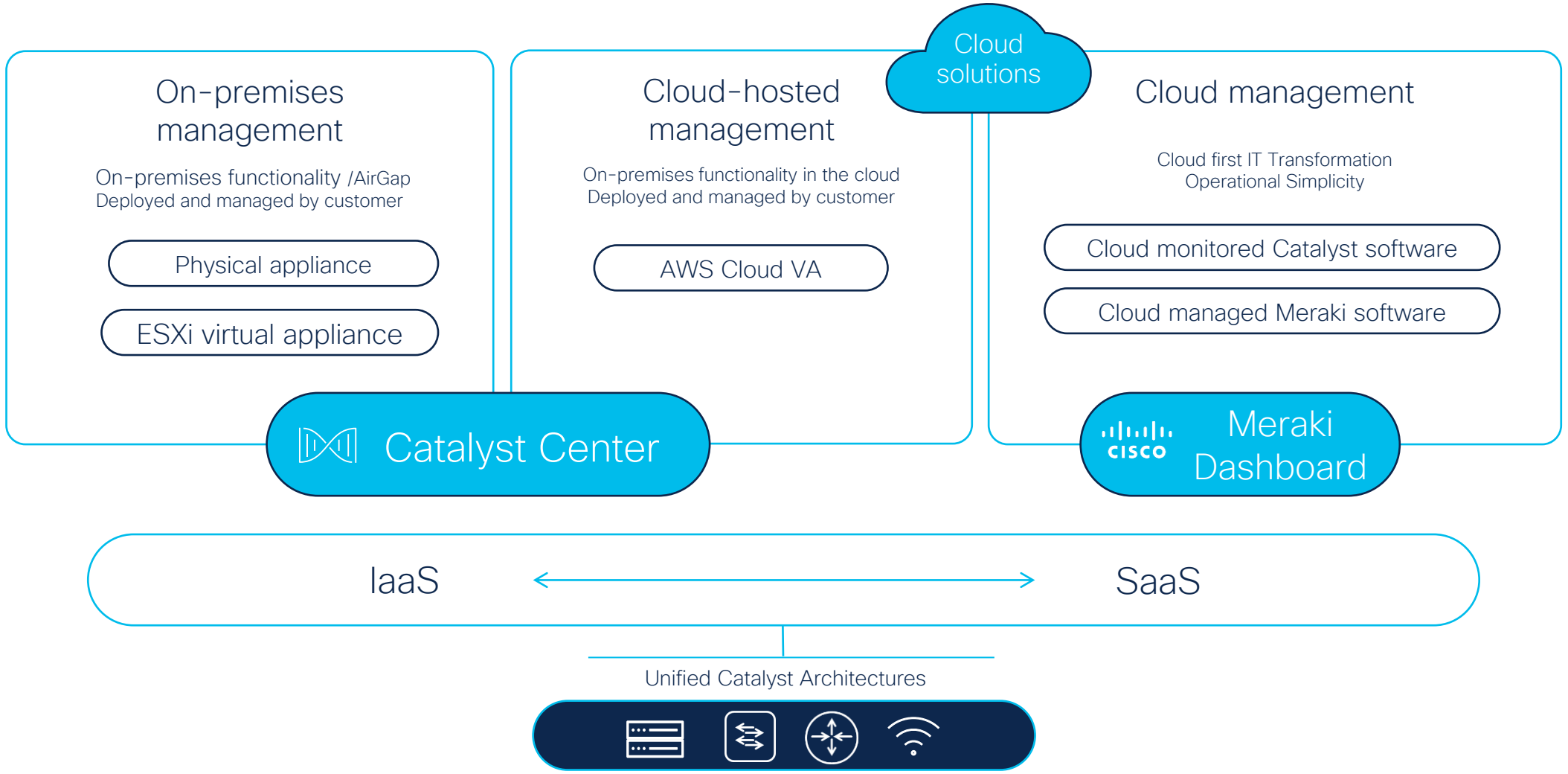
9166I

9163E

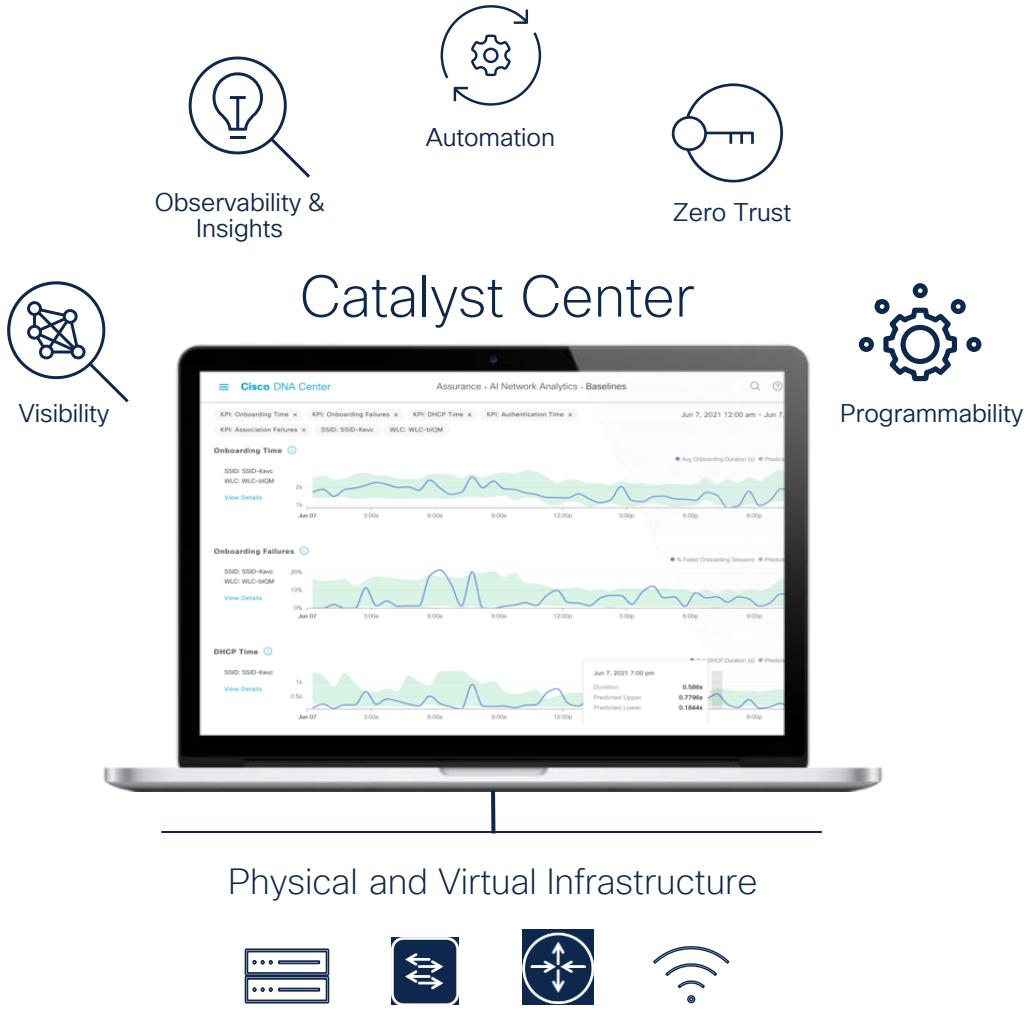
Indoor Wi-Fi 6E Access Points

Outdoor Wi-Fi 6E Access Points

Catalyst Wireless: Unified Management

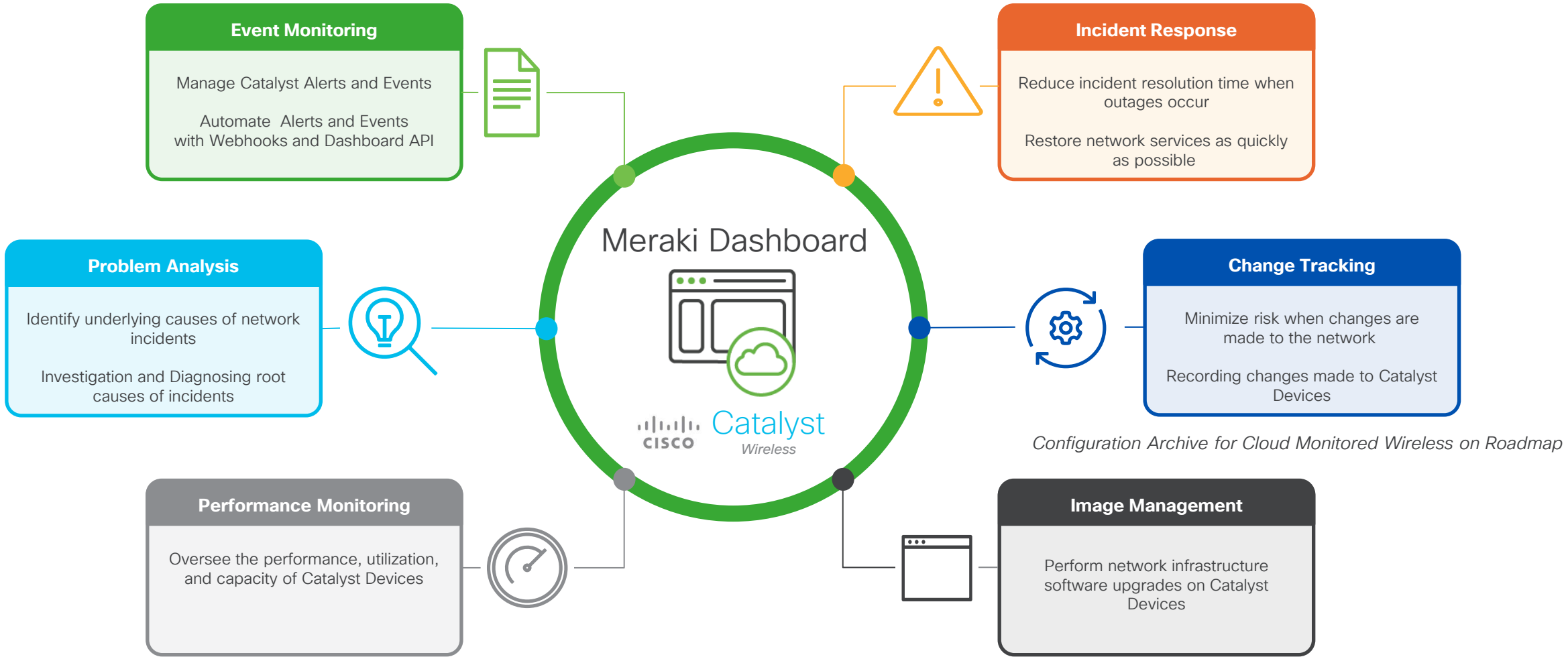


Catalyst Center



NetOps	Simplify building and maintaining complex networks.
AIOps	Predictive analytics for proactive operations.
SecOps	Build and operate a zero-trust network.
DevOps	Untangle the complexities of systems integrations.
Field Tech	Empower your Field Technicians with simpler tools.

Cloud Monitoring for Catalyst Wireless



Cloud Monitoring Guidelines

What is it?

- Enable Meraki Dashboard monitoring of Catalyst Wireless
- Anywhere access to Catalyst device status, client & traffic statistics, topology, alerts, and network troubleshooting
- Single monitoring pane-of-glass for Meraki and Catalyst architectures
- Catalyst Wireless architectures that need a lighter pure cloud monitoring solution

What it is not?

- Cloud Monitoring is not a Catalyst Center replacement
- Catalyst Center and Cloud Monitoring co-existence is not supported for the same 9800
- The Dashboard will not provide 100% management parity with Catalyst Center

Main Goals

- Lighter and easier-to-maintain monitoring platform
- Provide value to Catalyst architectures with existing DNA Subscriptions, which couldn't yet adopt Catalyst Center
- Cloud-based scale for multiple sites/customers

Cloud Monitoring Capabilities at Launch

Early Availability 1st half 2024

- Wireless Controller Operations:
  - Live Client and Access Point Counts
  - Port Health
  - CPU and Memory Health Alerting and Historical Tracking
  - HA-SSO health
- Access Point Operations:
  - Live and Historical Associated Clients and Radio Channel Utilization
  - Live RF Settings including Current Channel and Power Settings
  - Maps & floor plans for Monitored APs
- Wireless Health:
  - Client Traffic Analytics
  - Client Connection and Performance Health

General Availability 2nd half 2024

- Advanced architecture support (e.g., Guest Anchor, N+1)
- Organization Summary Wireless LAN Controllers
- Topology Support for Wireless Controllers
- Application Visibility Feature Enablement from Dashboard

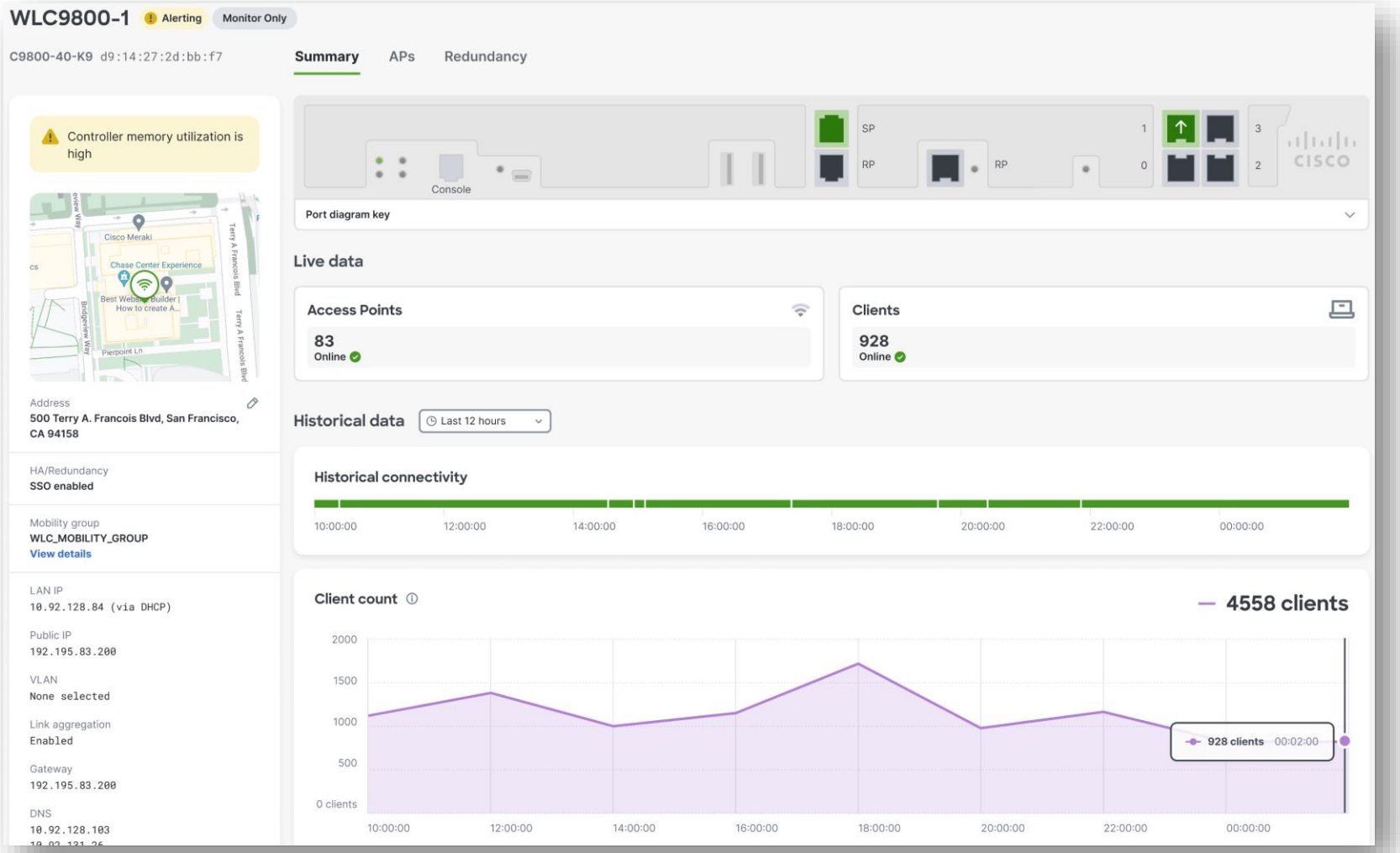
Tentative Roadmap

- C9800-CL Support
- IOS-XE Software Image Upgrades
- Wireless Controller Packet Capture
- Wireless Controller Configuration Archive
- Assurance Event Logging
- Additional Alerting Capabilities for Wireless Controllers and Access Points
- Troubleshooting CLI Terminal
- Wireless Controller Web UI Access with Dashboard
- Access Point Live tools and Packet Capture

New Features May Require IOS-XE Software Upgrade

Prerequisites and Configuration

Supported Catalyst 9800 Controllers



Supported Hardware[1]

C9800-80

C9800-40

C9800-L-C

C9800-L-F

IOS-XE Software[2]

17.12.3 / 17.15.1
or later 17.12.x / 17.15.x / 17.15+

Controller Scale[3]

2,000 Access Points

20,000 Clients

[1] C9800-CL support on the roadmap
[2] 17.9.5 as initial EFT, but not needed anymore
[3] Initial phase, scaling subject to evolve

Supported Access Points

Wi-Fi 6E

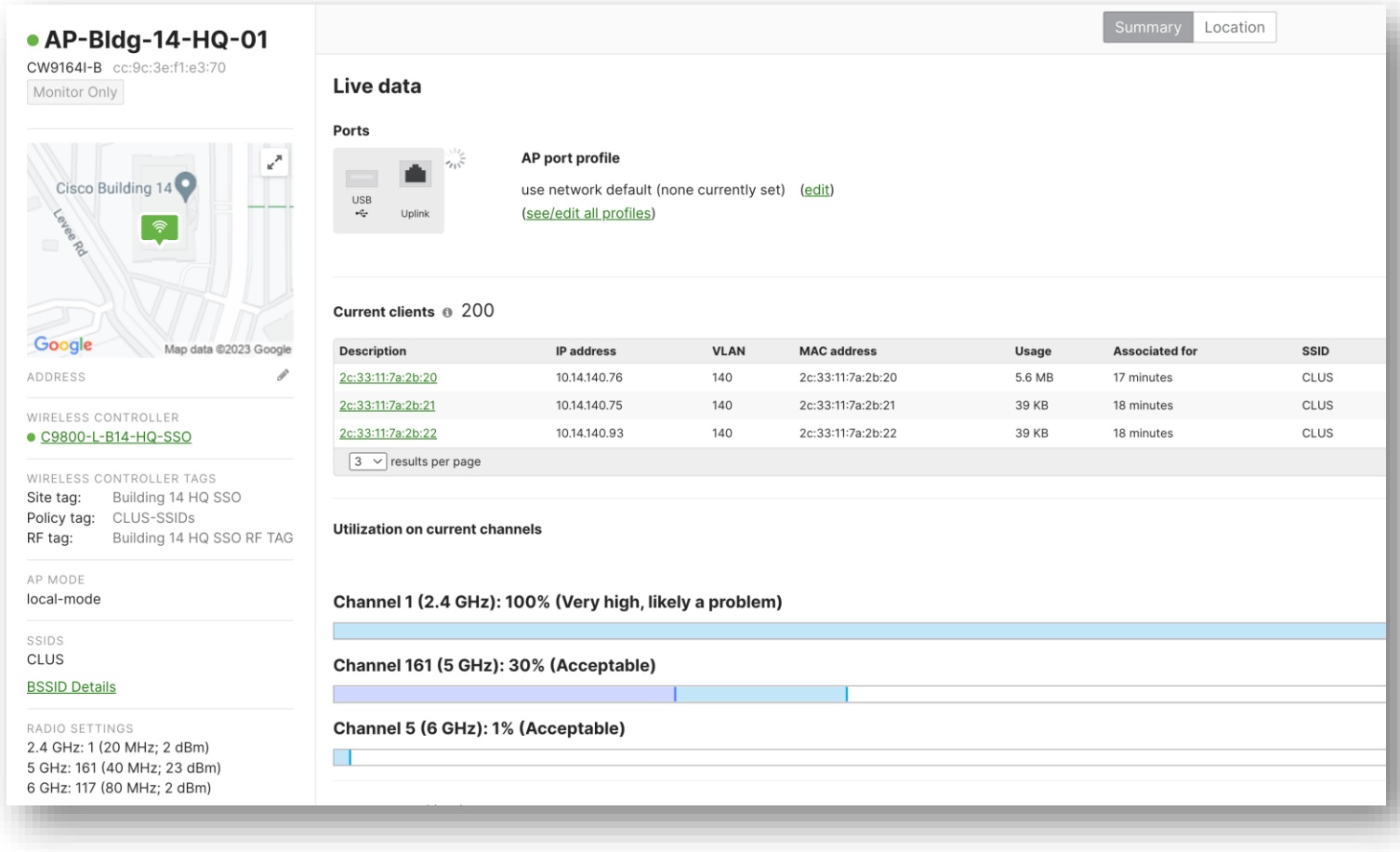
C9136
CW9166I/D1
CW9164
CW9163
CW9162

Wi-Fi 6

C9130
C9124
C9120
C9117
C9115
C9105

Wi-Fi 5

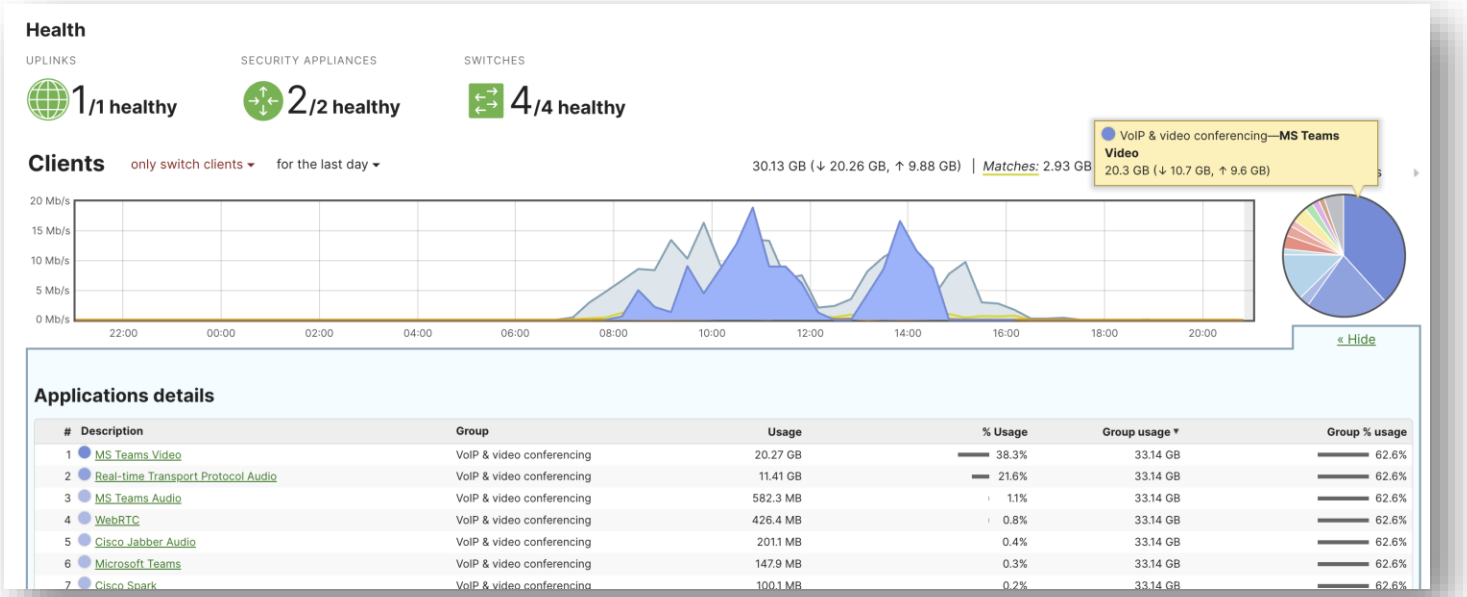
AP4800
AP3800
AP2800



Cloud Monitoring Included with DNA Subscriptions

Offer Additional Value for Cisco DNA subscriptions

DNA Advantage	DNA Essentials
Full monitoring suite for Catalyst Switches, Wireless LAN Controllers and Access Points ***+ Client Traffic Analytics provided by IOS-XE NBAR and NetFlow***	Full monitoring suite for Catalyst Switches, Wireless LAN Controllers and Access Points

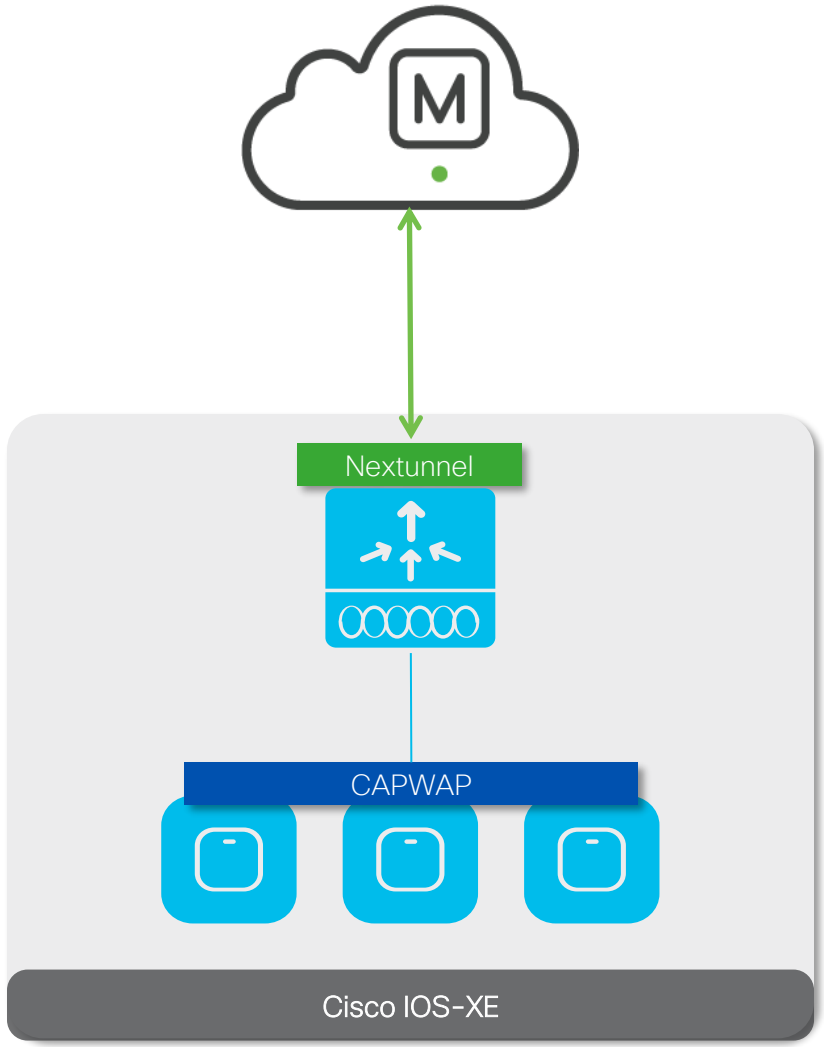


Cloud Monitoring Architecture

Native Meraki Tunnel on Catalyst Wireless Controller

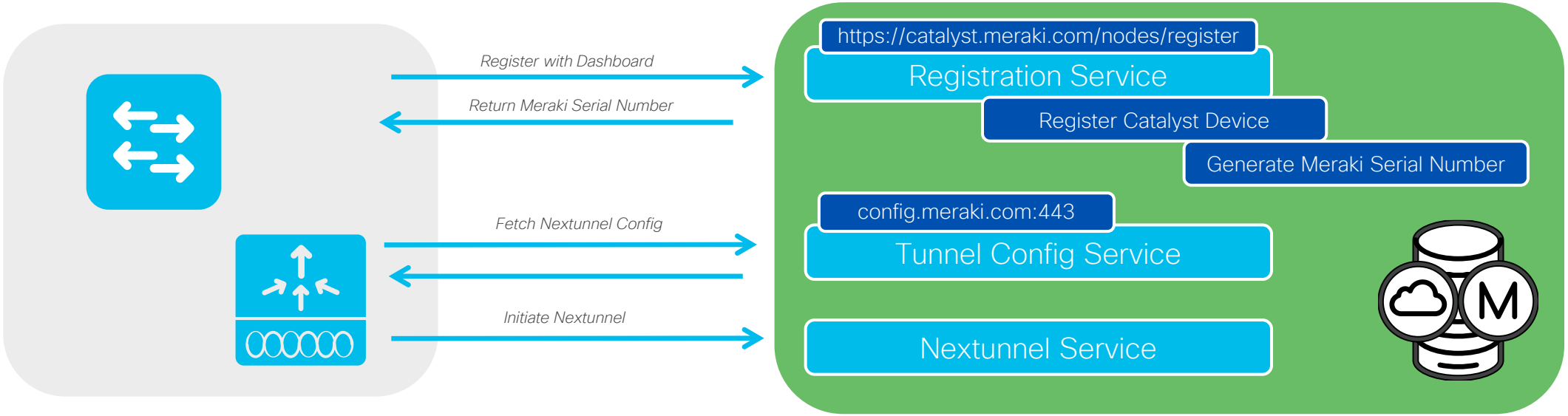
Simplified, on-device onboarding: No onboarding application

Efficient telemetry and live data collection: Increased performance and scale



IOS-XE Native Dashboard Onboarding

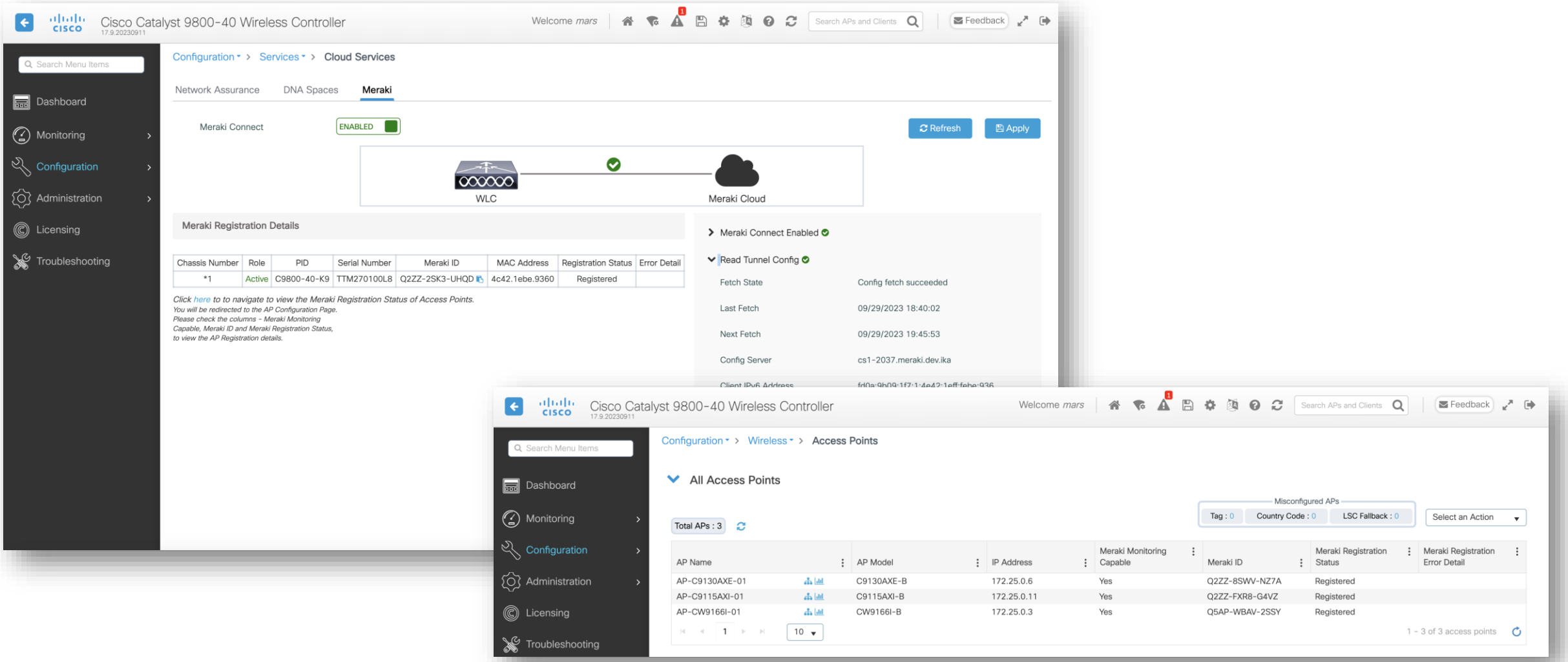
Enable on IOS-XE




```
WLC-9800-40-01(config)#service meraki connect

service meraki connect has been enabled.

**************************************************************************************

WLC-9800-40-01#show meraki
Chassis                  Serial                                          Migration
Num PID                 Number      Meraki ID      Mac Address     Status       Mode
-------------------------------------------------------------------------------------
1   C9800-40-K9         TTM270100MF Q2ZZ-AZDB-77JW 4c42.1ebe.9380 Registered   C9K-C
```

Onboarding Catalyst Wireless to Dashboard

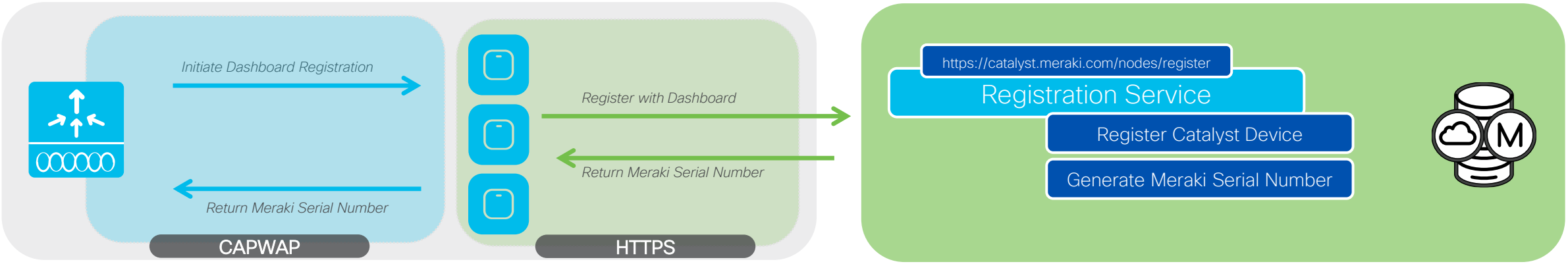
Enable Meraki Connect in the Web UI



Onboarding Catalyst Wireless to Dashboard

Access Point Automatic Registration

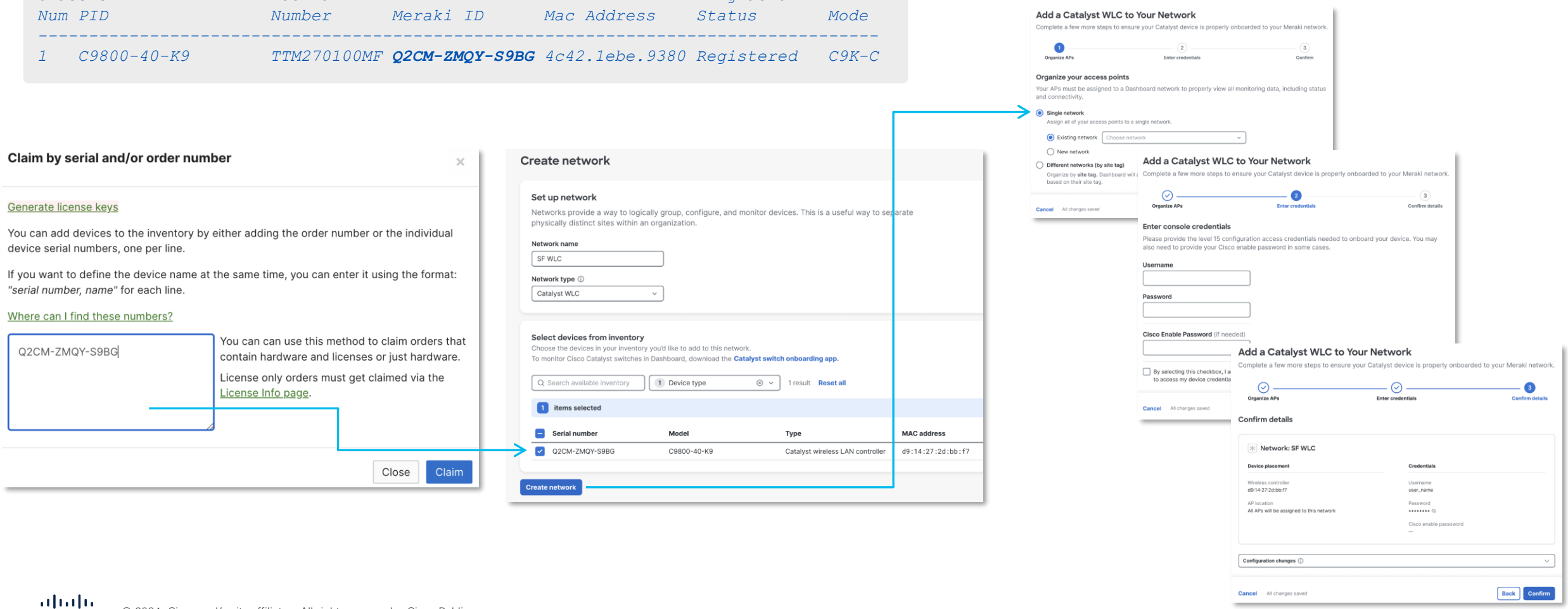
Access Points must be allowed TCP/443 to Dashboard IPs **ONLY** during registration.
Access Points do not communicate directly to Dashboard during normal operations.




```
WLC-9800-40-01#show ap meraki monitoring summary

Meraki Monitoring          : Enabled
Number of Supported APs    : 2

AP Name                          AP Model            Radio MAC      MAC Address    AP Serial Number       Meraki ID        Status
-------------------------------------------------------------------------------------------------------------------------------
AP-C9136I-01                     C9136I-B            1484.7329.9620 c828.e5e2.a148 FJC271223FJ            Q2ZZ-83SR-8HQV   Registered
AP-C9120AXP-01                   C9120AXP-B          2416.1b0d.fca0 10a8.29d5.ddec FJC271123Q9            Q2ZZ-AZBV-UVQR   Registered
```

Dashboard Claim of Catalyst Wireless

```
WLC-9800-40-01#show meraki
Chassis                  Serial                                        Migration
Num  PID                 Number      Meraki ID      Mac Address    Status       Mode
-------------------------------------------------------------------------------------
1    C9800-40-K9         TTM270100MF Q2CM-ZMQY-S9BG 4c42.1ebe.9380 Registered   C9K-C
```



Active poll

0

Join at

slido.com

#1205 501

Passcode:

qznb62

Quelles générations de contrôleurs wireless et bornes Wi-Fi seront supportés en Cloud Monitoring ?

a) Catalyst 9800, Catalyst 9100 et supérieurs

0%

b) AireOS 3504/5520/8540, Aironet x800 et supérieurs

0%

c) Catalyst 9800, Aironet x700 et supérieurs

0%

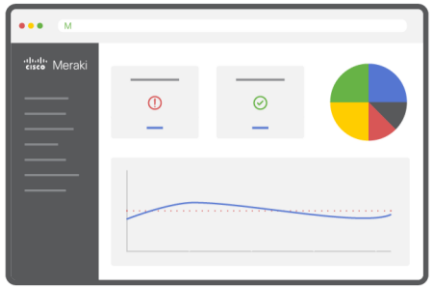
d) Catalyst 9800, Aironet 2800/3800/4800 et supérieurs

0%

e) AireOS 3504/5520/8540, Aironet 2700/3700 et supérieurs

0%

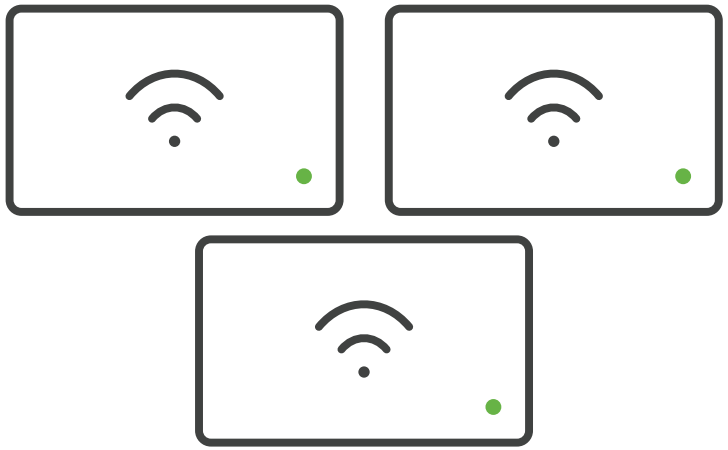
Dashboard “Organization” and “Network”



Dashboard Organization

Dashboard Network

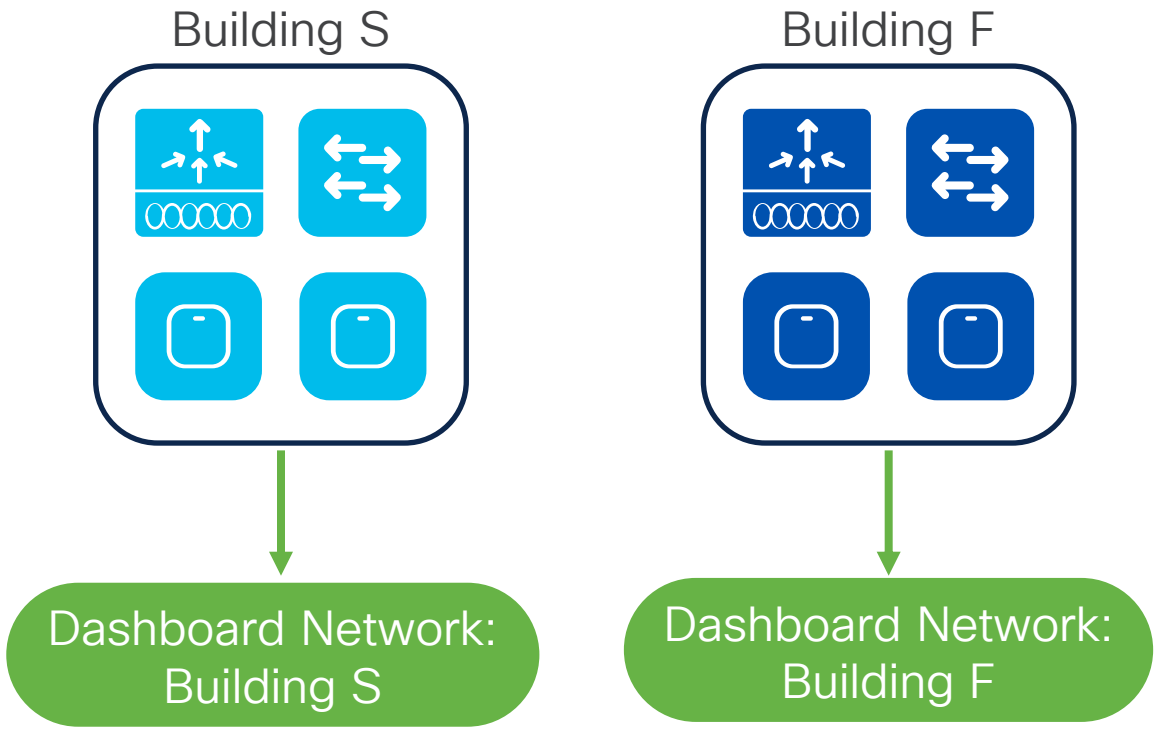
- Maps to logical location (ex. site or building)
- Defines the Broadcast domain (list of WLANs to be broadcasted) with the policies of the respective SSIDs
- Defines the Radio Frequency (RF) properties of the APs per radio



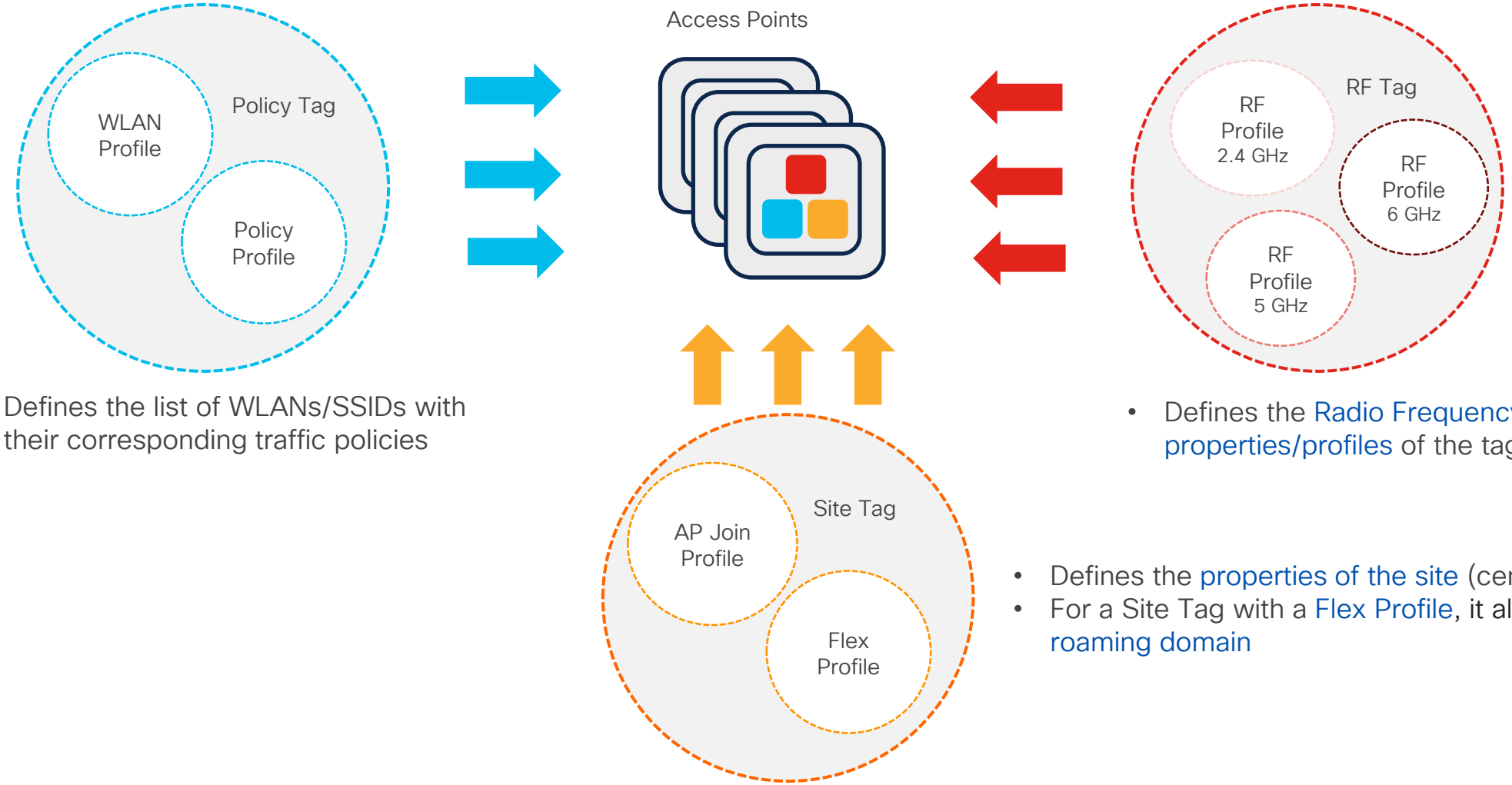
How do we map devices to Dashboard Networks?

Best Practice

- Devices in the same physical LAN topology should be in the same Dashboard Network
  - Ex. All devices in the same building
- Devices in different physical topology should be in different Dashboard Networks
  - Ex. Devices in different buildings
- Reduces management complexity



Catalyst Wireless and Site Tags



- Defines the list of WLANs/SSIDs with their corresponding traffic policies

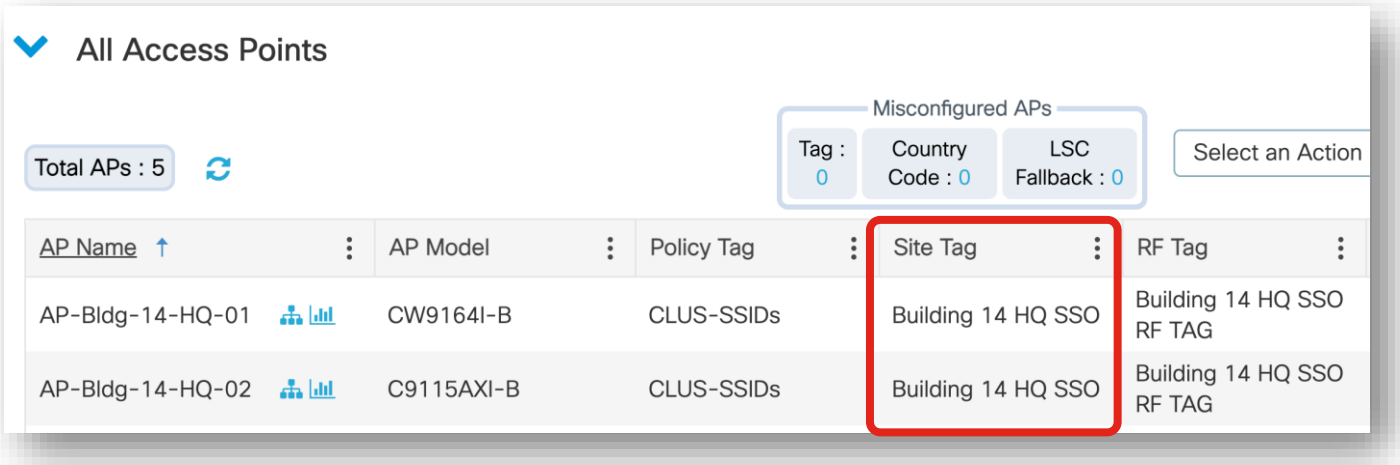
- Defines the Radio Frequency (RF) properties/profiles of the tagged APs

- Defines the properties of the site (central or FlexConnect)
- For a Site Tag with a Flex Profile, it also defines the roaming domain

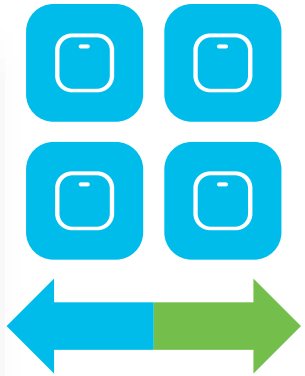
Successfully Configuring Cisco Catalyst 9800 Series Wireless on Your First Shot
https://www.ciscolive.com/on-demand/on-demand-library.html?#/session/1707505531188001pRGK

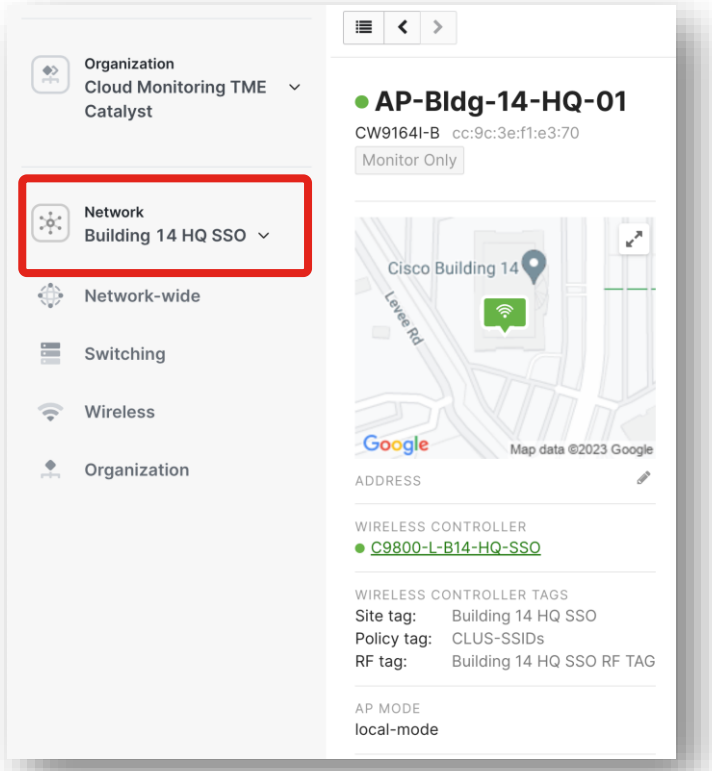
Mapping Site Tags to Dashboard Networks

Recommendation is to map C9800 Site Tags to Dashboard Networks



Site Tag:
Building 14 HQ SSO



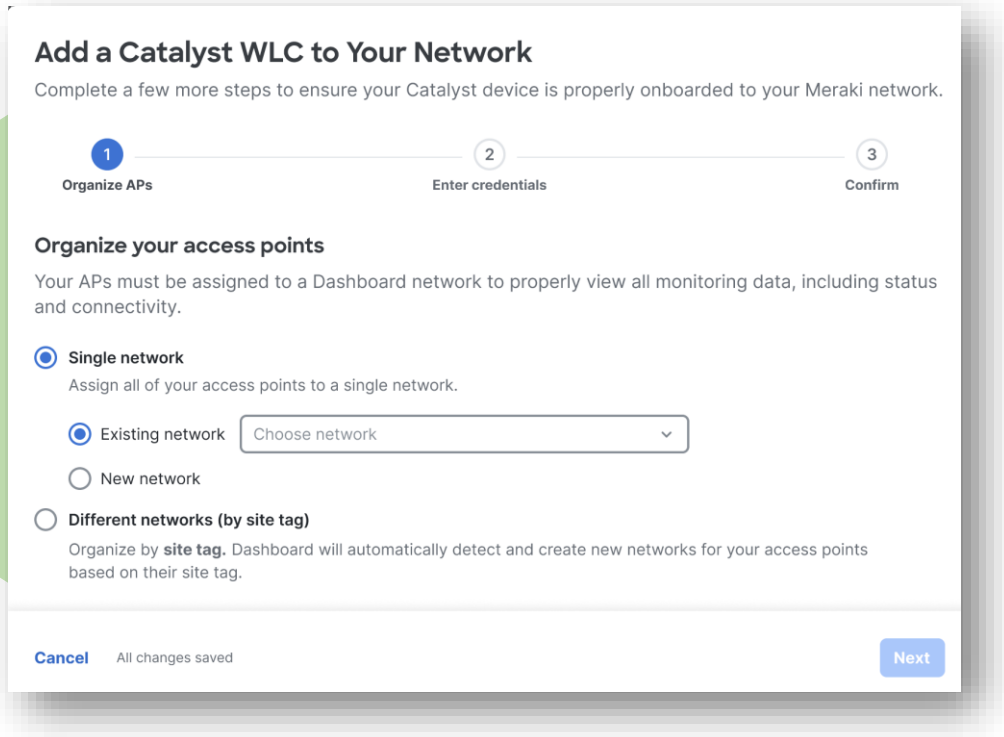


Dashboard Network:
Building 14 HQ SSO

Catalyst Wireless Onboarding Guidelines

Access Points Dashboard Network Assignment

- APs automatically assigned to Network based on option chosen when adding the Controller to a Dashboard Network
- Each monitored Controller has one AP assignment policy
- Policy can be modified to apply ***NEW*** AP Joins and Dashboard Onboard
- Already onboarded Access Points can be moved to new network with Dashboard UI or API
- Assignment Options at Launch:
  - ALL access points in a single network (**All In One Design**)
    - Same Network as the 9800
    - User specified network
  - Access points in multiple networks (**Site-Based Design**)
    - APs assigned by 9800 configured Site-Tag



Dashboard Networks for Catalyst Wireless

Dashboard Network Types

Wireless

Access Points Only
Cannot Mix MR and Monitored Catalyst APs

Wireless LAN Controller

Monitored C9800 Wireless Controllers Only

Combined

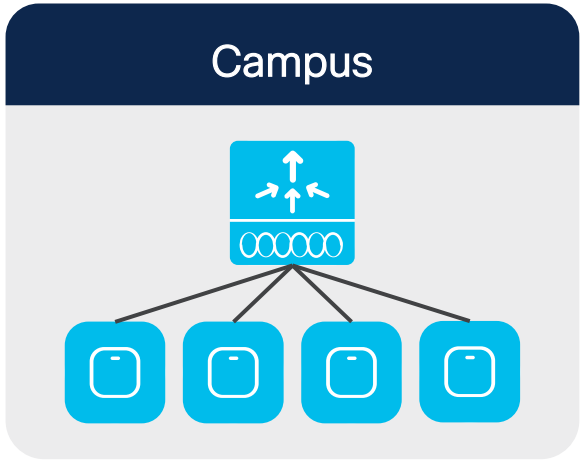
A combination of Dashboard Network Types

Cannot Mix MR and Monitored Catalyst APs in the same Dashboard Network

Wireless Controllers and Monitored Access Points can be in the same or separate Dashboard Networks

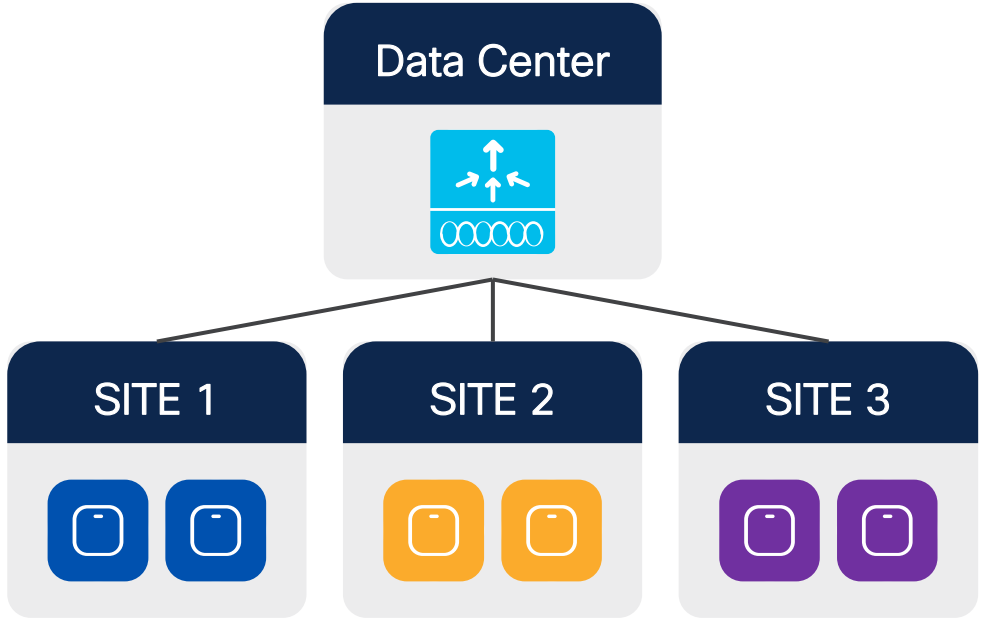
Dashboard Networks Assignment Options

All in One Design



Dashboard Network Assignment:
9800 and all APs in the same Network

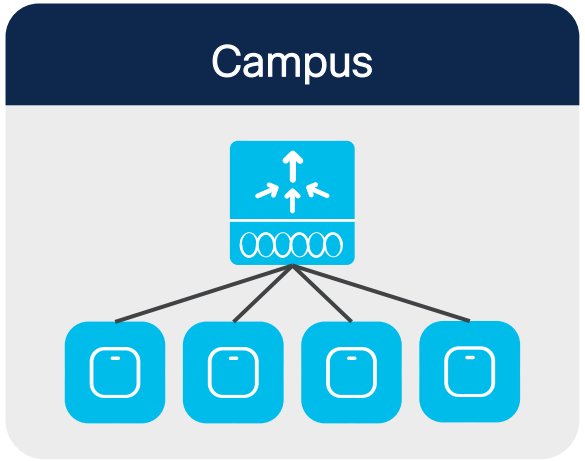
Site-Based Design



Dashboard Networks Assignment:
9800 in its own Network
APs assigned to their Networks by Site Tags

Dashboard Network Assignment: All in One

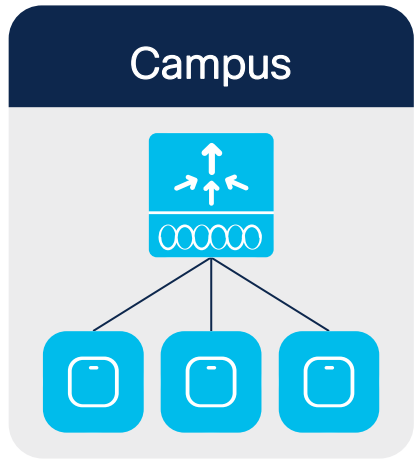
All in One Design



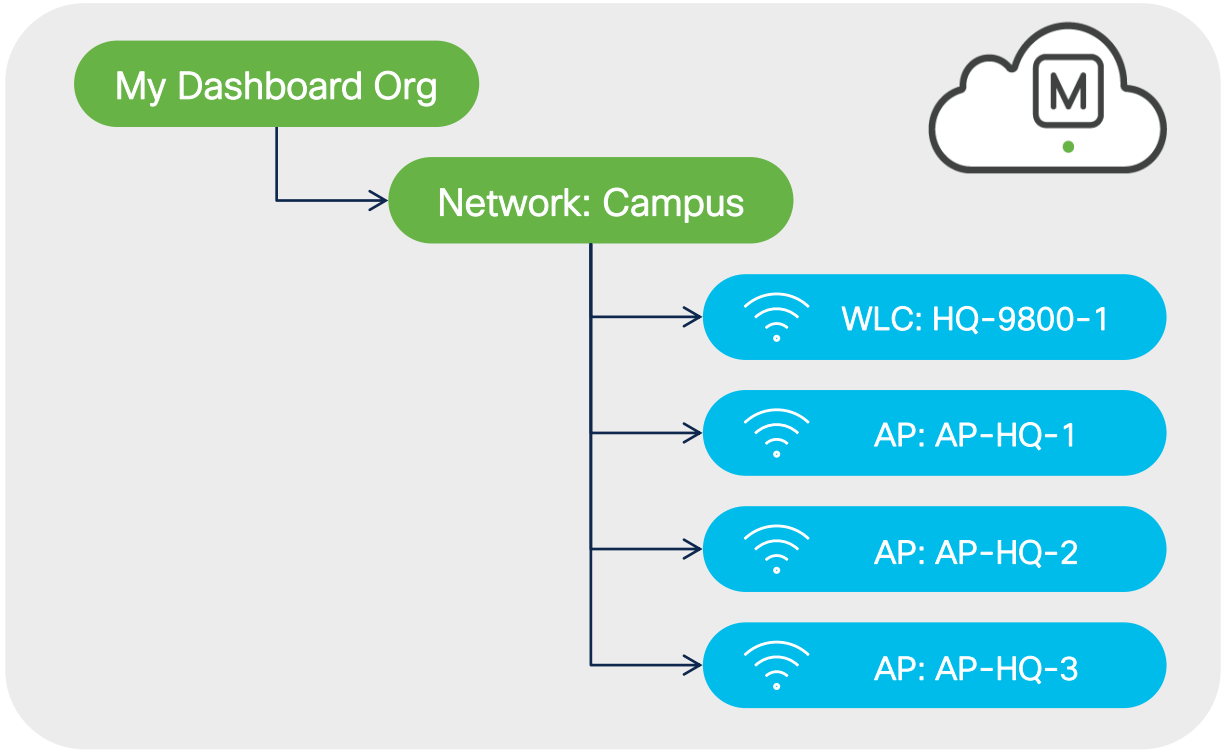
- Recommended for deployments where 9800 and APs are in the same physical LAN topology
  - Ex. Buildings, smaller campus, etc.
- Sites that have a dedicated controller

Dashboard AP Assignment:
9800 and all APs in the same network

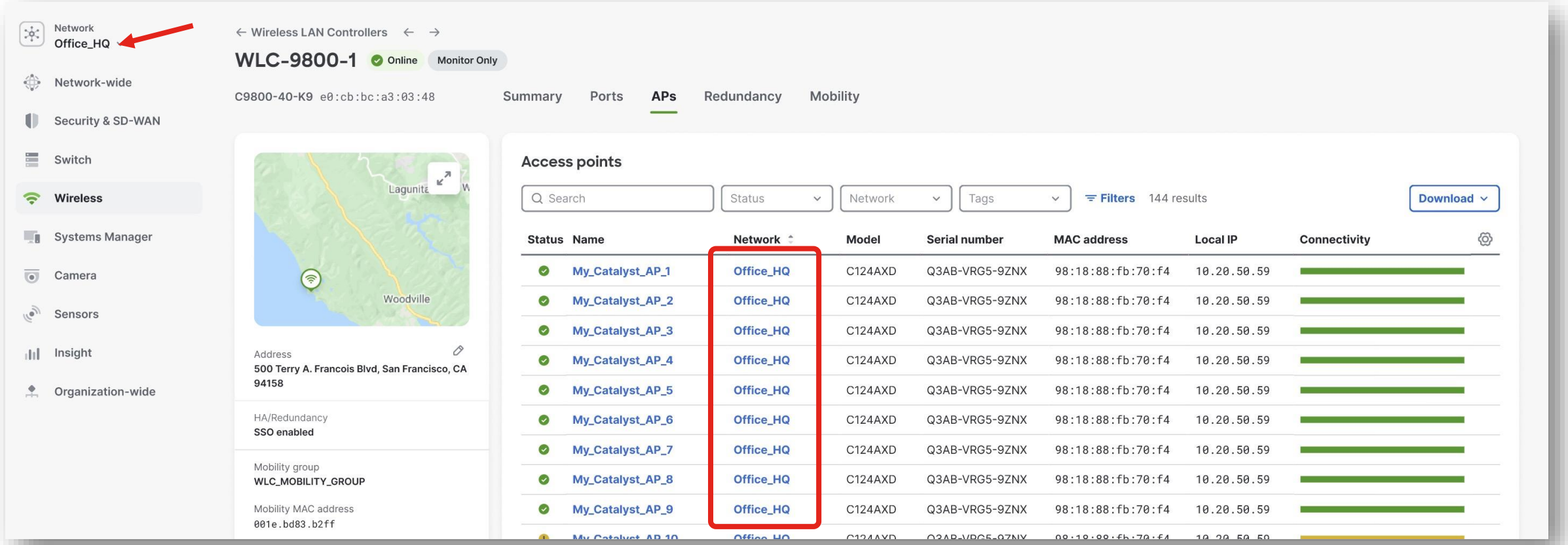
Dashboard Network Assignment: All in One



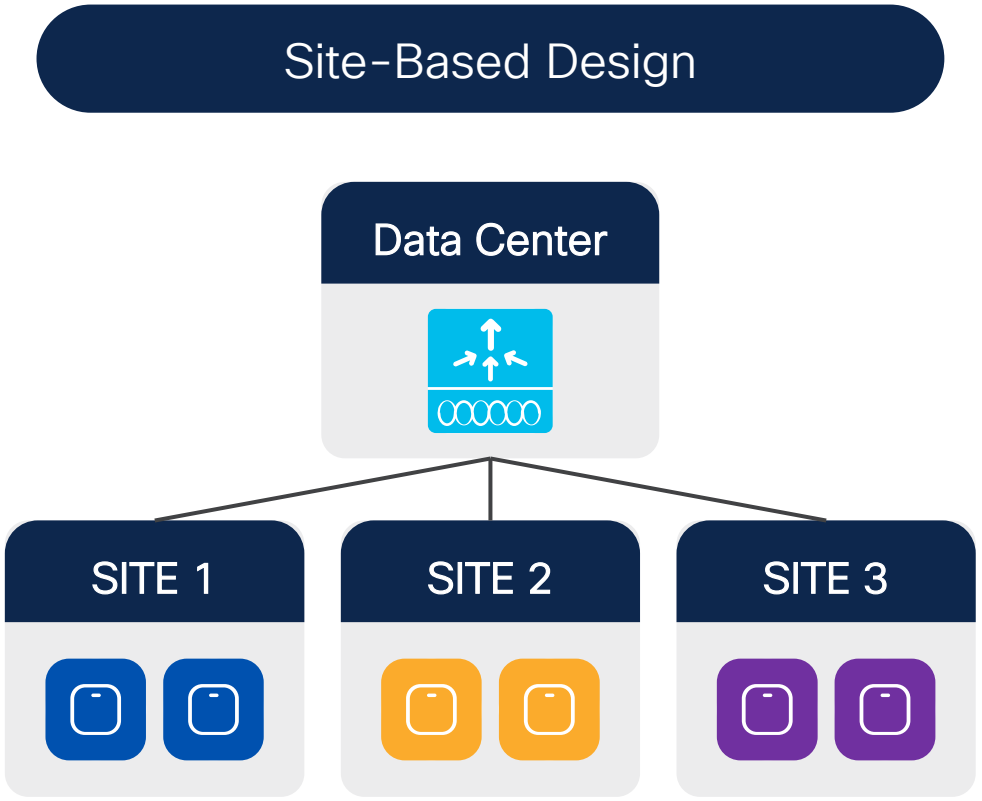
AP Assignment: All access points in the same network



Dashboard Network Assignment: All in One



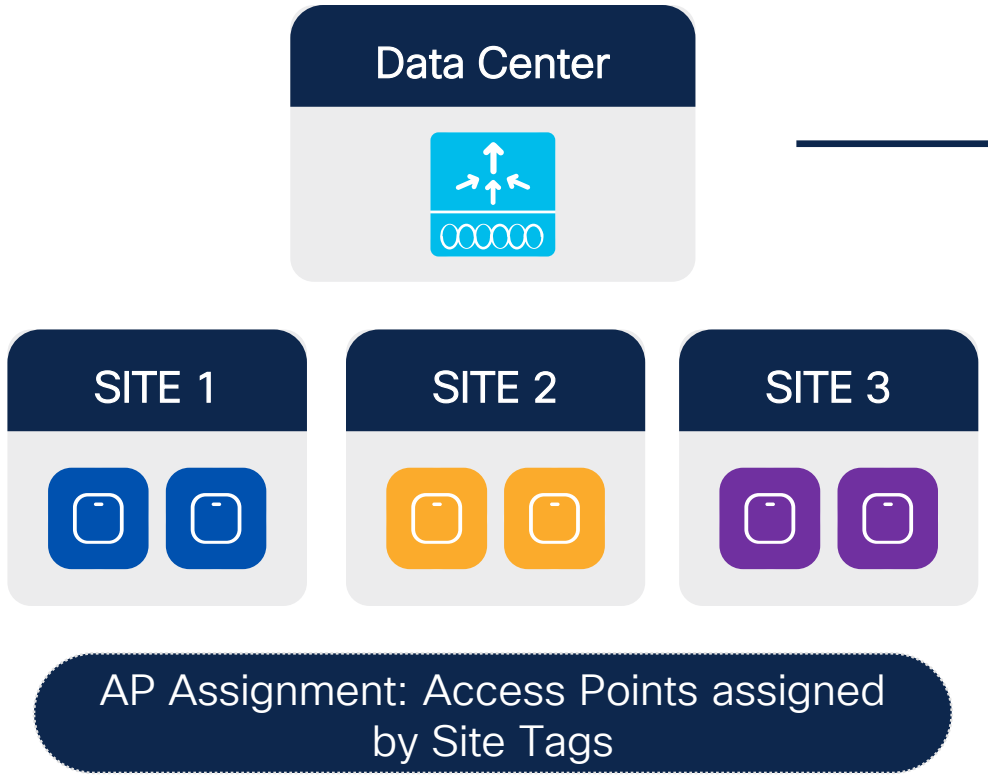
Dashboard Networks Assignment: Site-Based

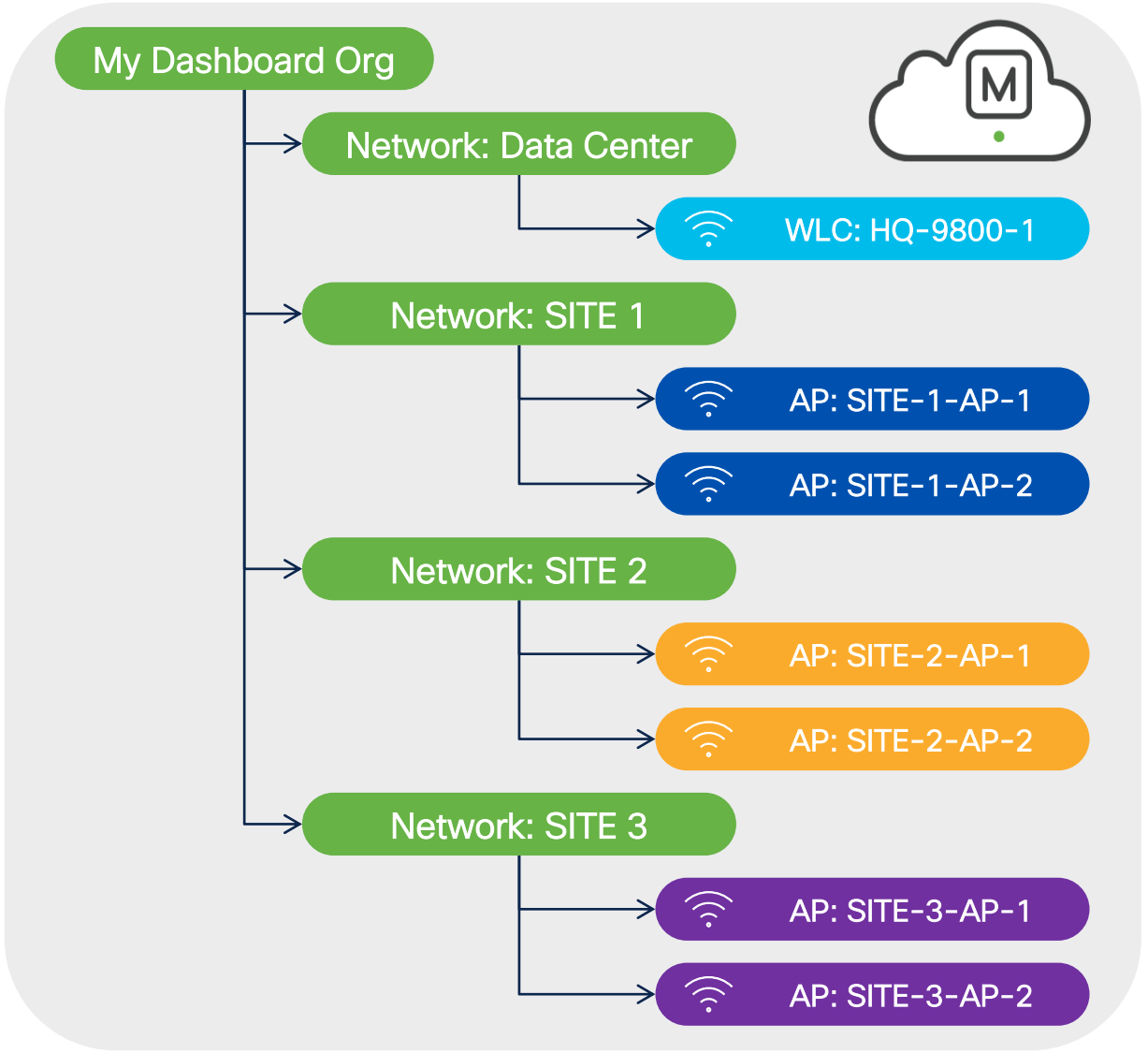


Dashboard Assignment:
9800 in its own network and APs assigned by Site Tag

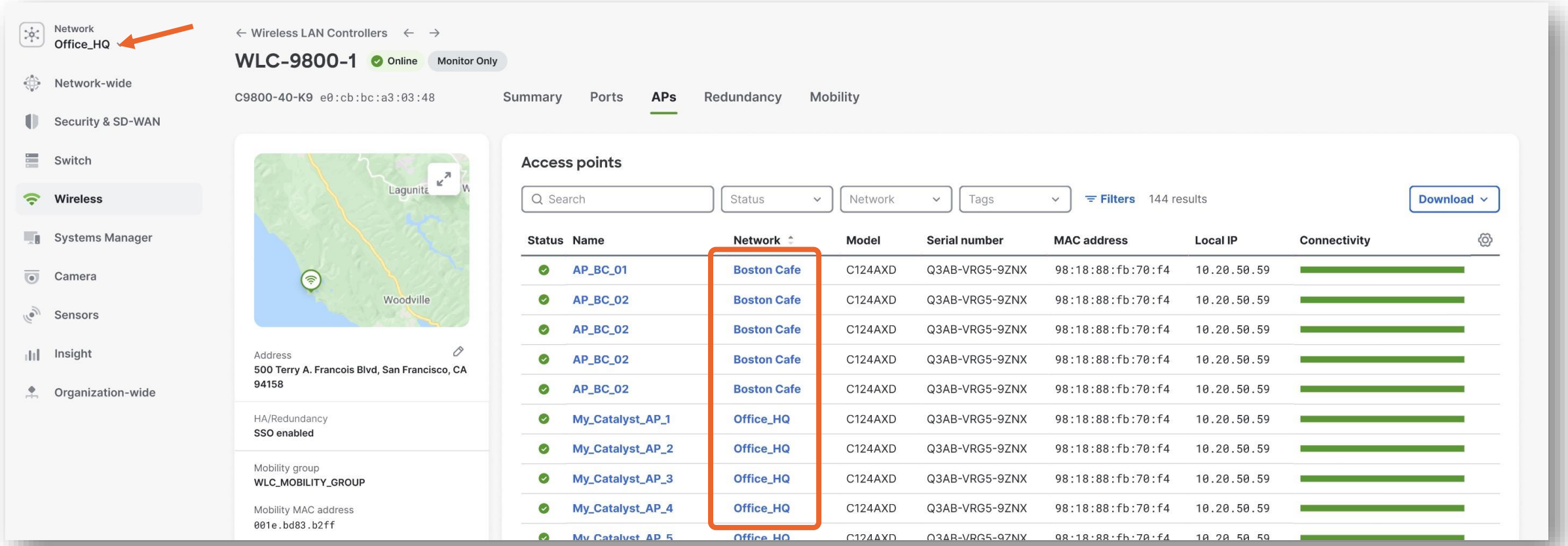
- Recommended for deployments where the 9800 and APs are not in the same physical LAN topology
  - Ex. 9800 is central location and APs are in different sites
- For a Large Campus, 9800 is in central location and the APs in different buildings
  - 9800 is in a dedicated data center
  - Each AP building is its own network

Dashboard Networks Assignment: Site-Based

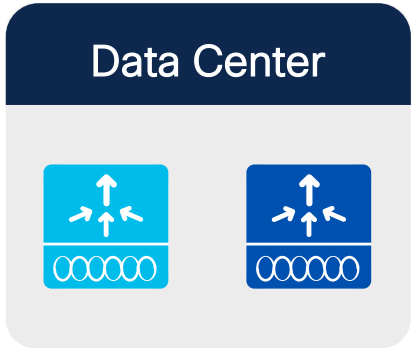


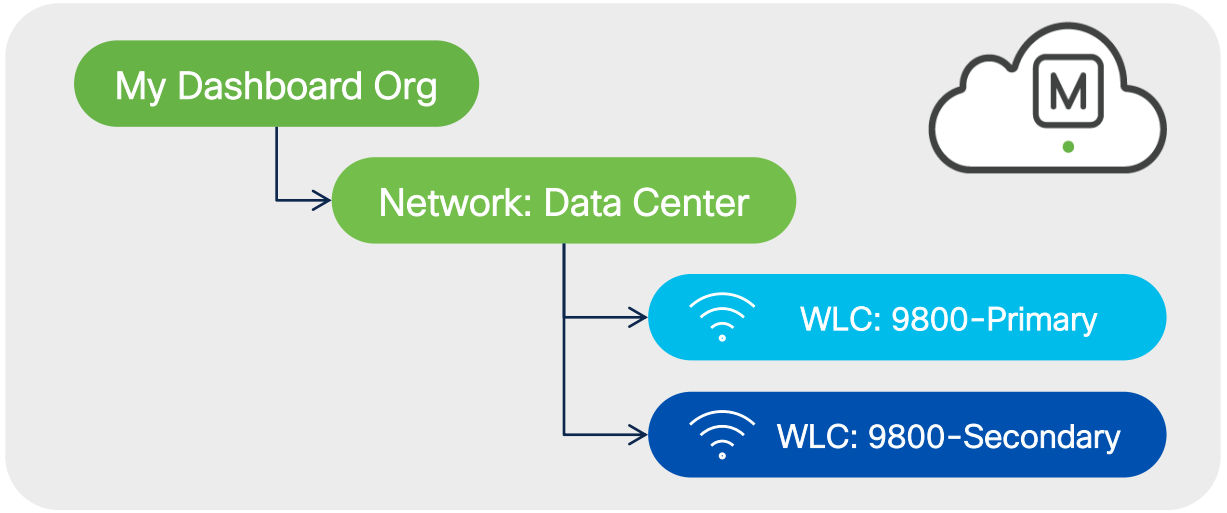


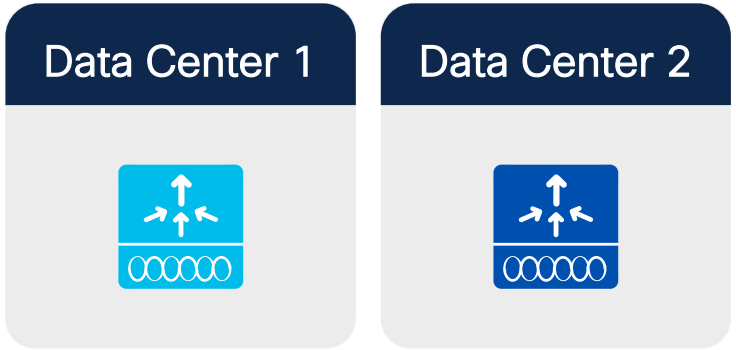
Dashboard Networks Assignment: Site-Based

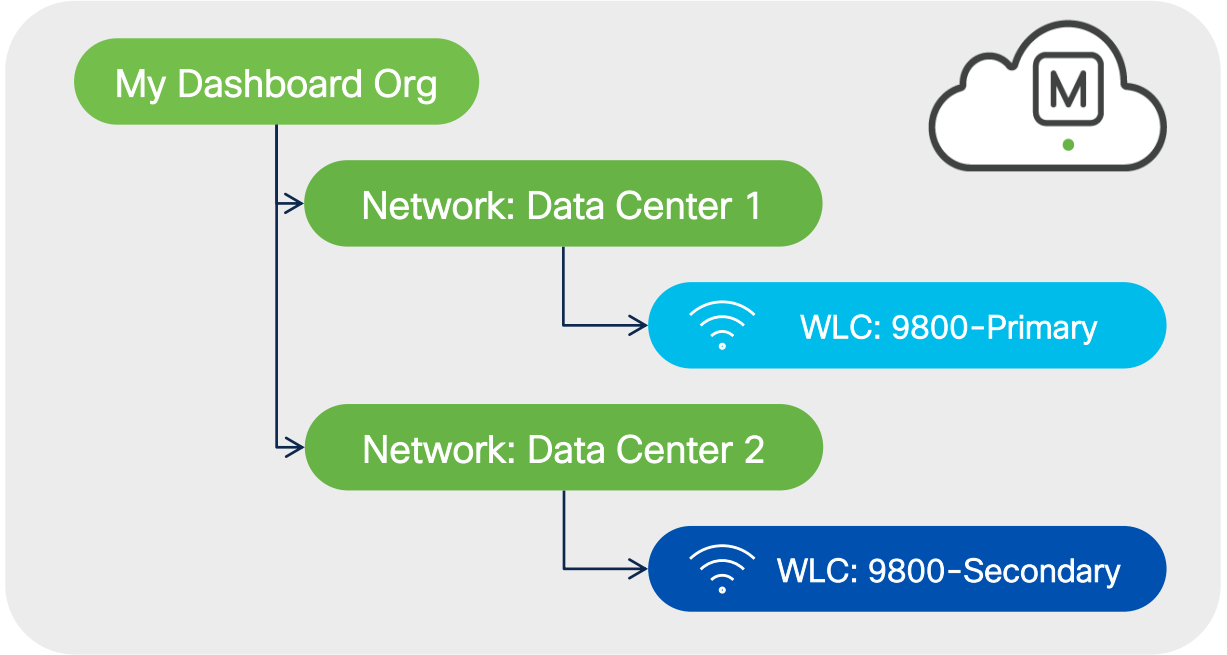


N+1 HA

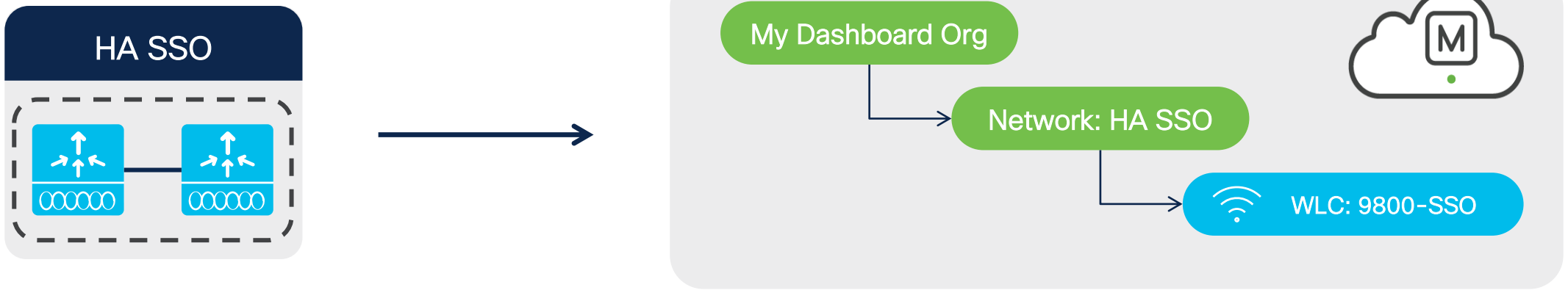






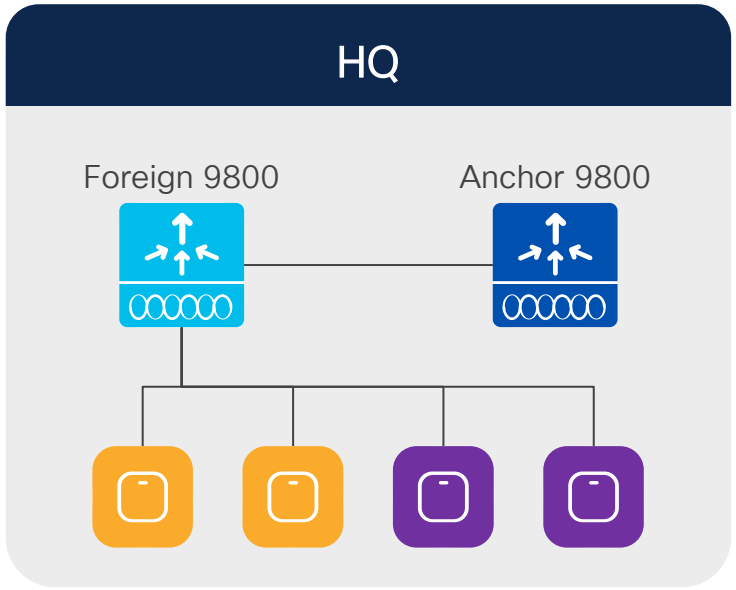


HA SSO

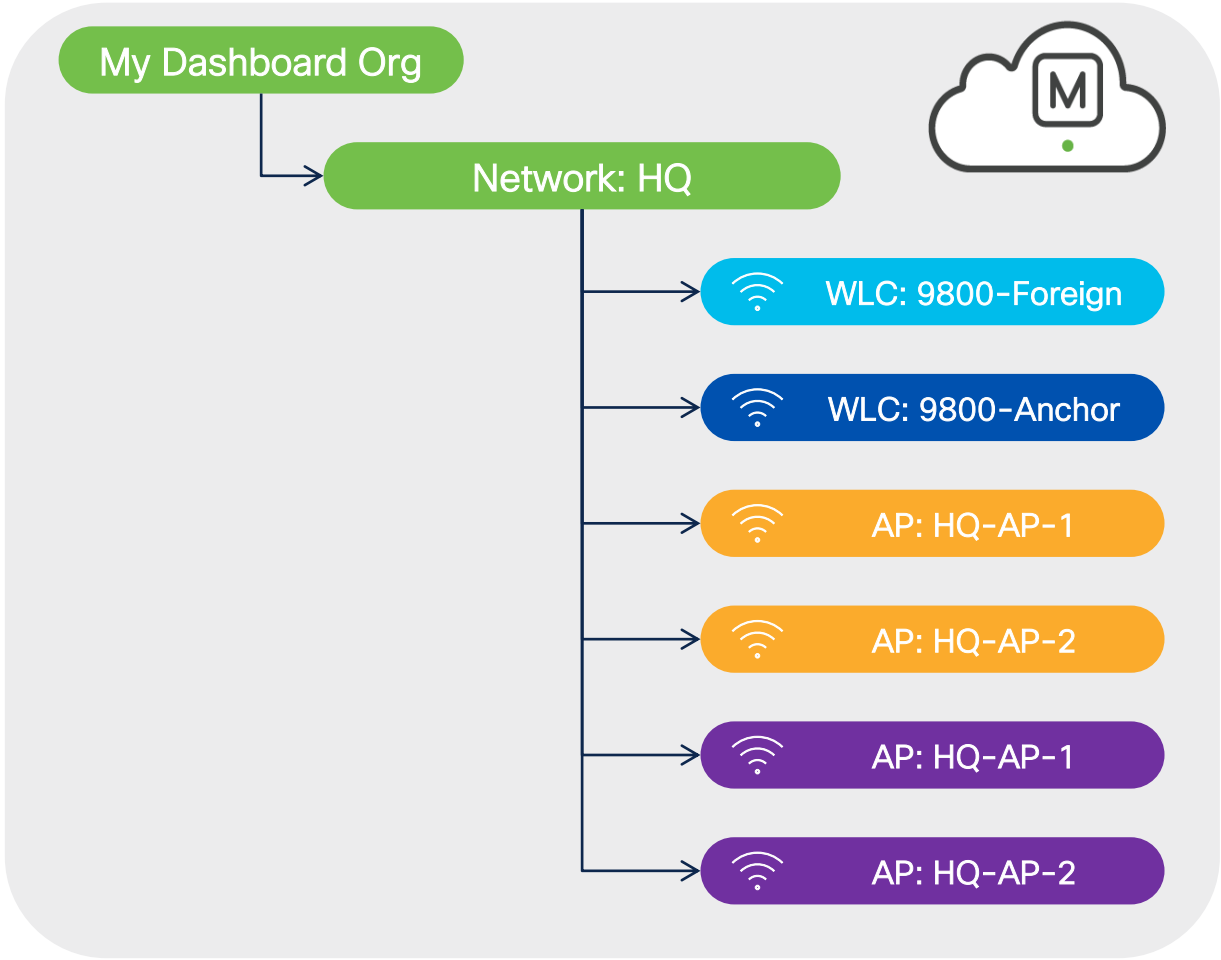


Since an HA SSO pair is logically one 9800, it will be represented as a single Wireless Controller in the Dashboard.

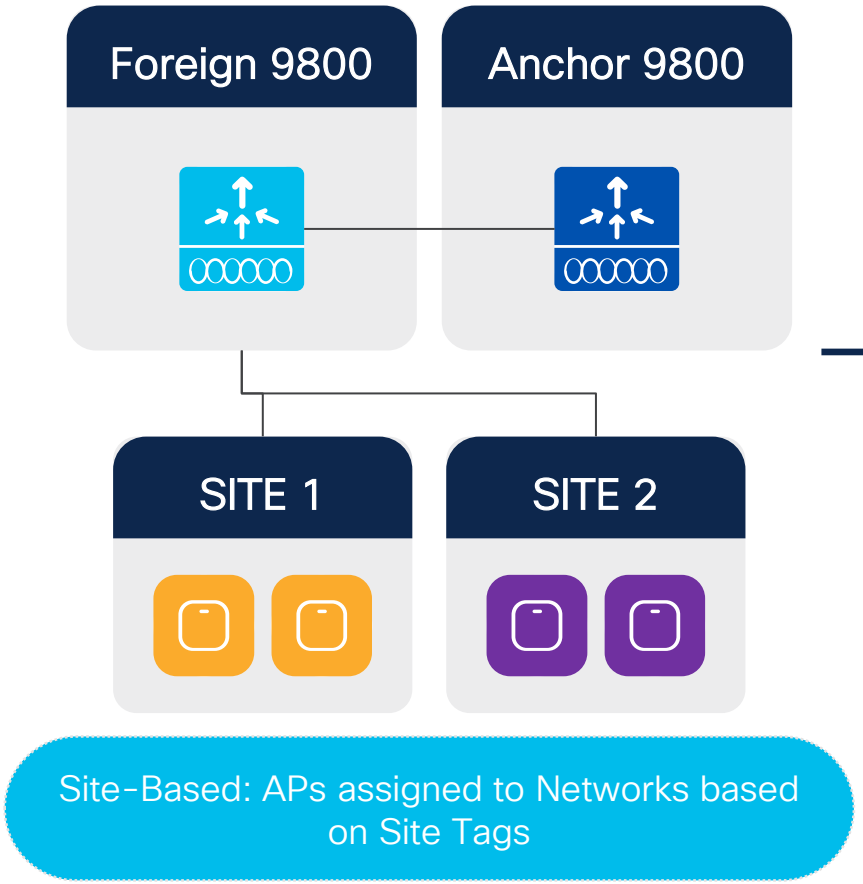
Foreign – Anchor

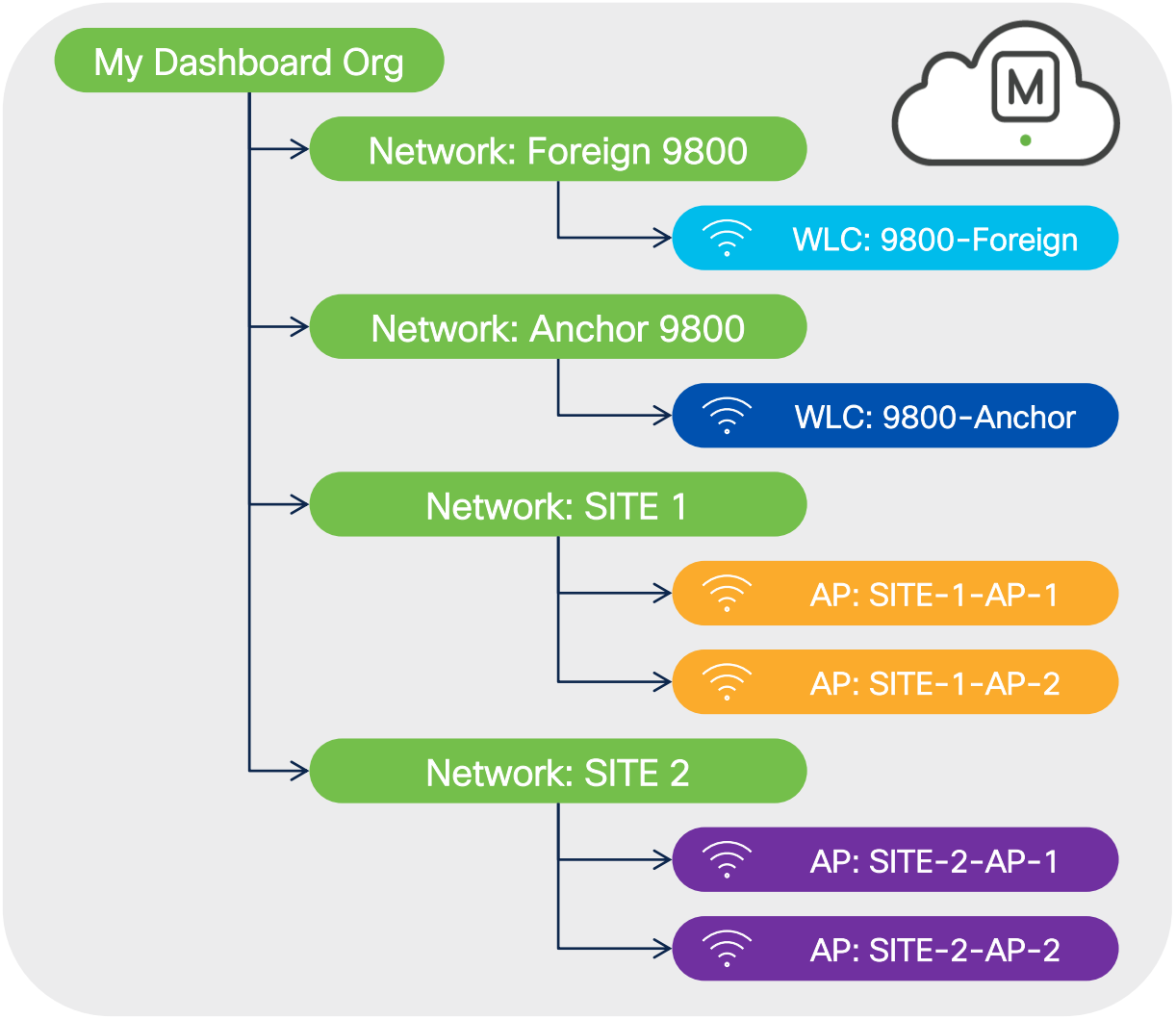


All in One: APs in the same Network as the Foreign 9800

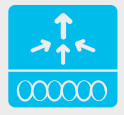


Foreign – Anchor



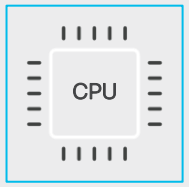


Wireless Controller Alerts & Events



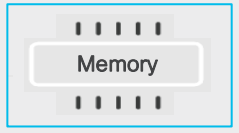
Unreachable device
Controller unexpected reload at <timestamp>
A power supply is offline

Redundancy Switchover Detected
Redundancy Standby Failure Detected



Controller CPU Utilization is High
Controller CPU Utilization is Critical
WNCD Process CPU Utilization is High*
WNCD Process CPU Utilization is Critical*

Mobility Tunnel Flap Detected on Peer <peer mac>
Mobility Tunnel Down to Peer <peer mac>



Controller Memory Utilization is High
Controller Memory Utilization is Critical

RADIUS Server Timeout on SSID <name(s)>*
RADIUS Server Timeout on all SSIDs*

Interface <interface name> is Disconnected
Flap Detected on Interface <interface name>
Errors Detected on Interface <interface name>

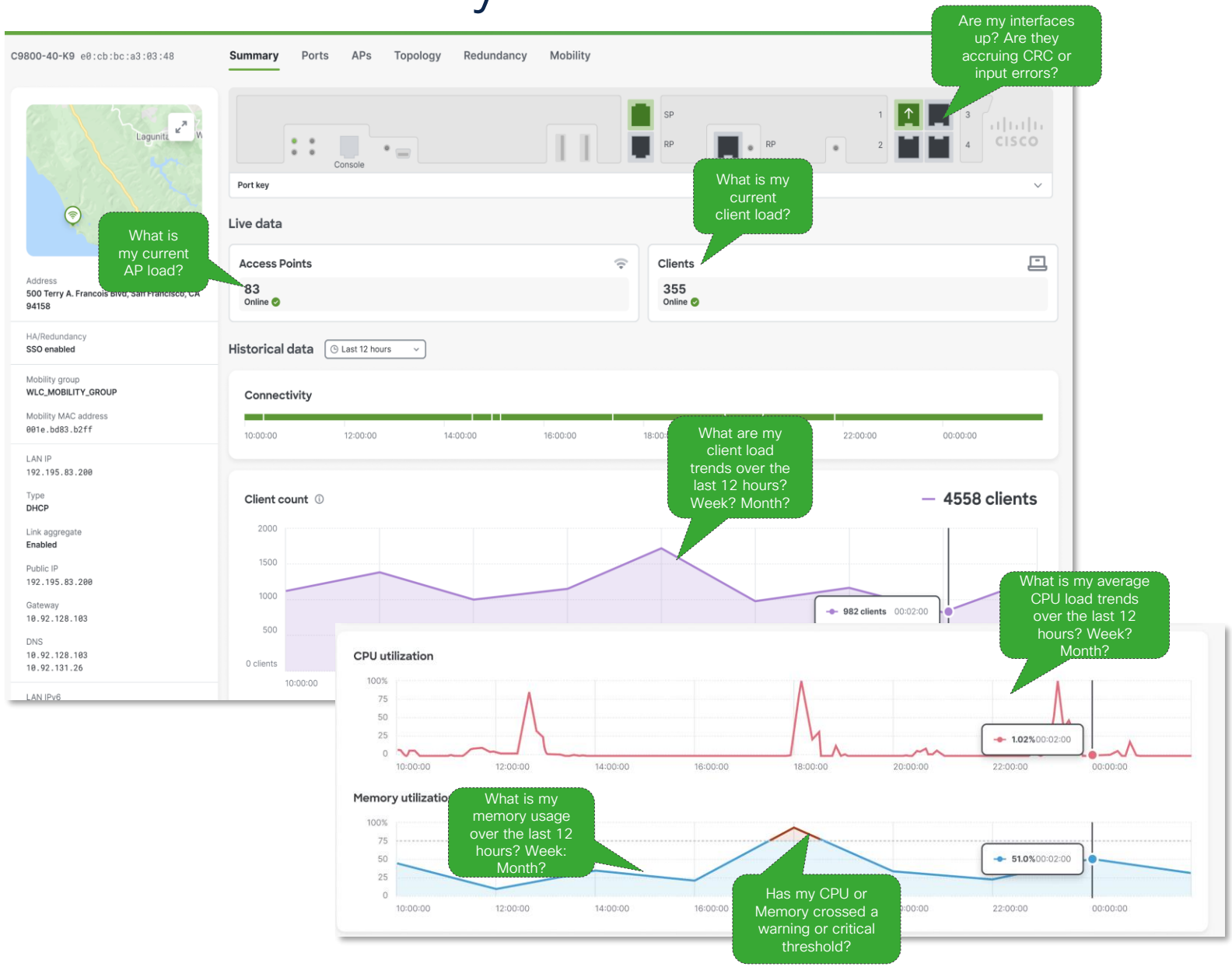
DHCP Server Timeout on SSID <name(s)>*
DHCP Server Timeout on all SSIDs*

** Roadmap items planned after the initial launch*

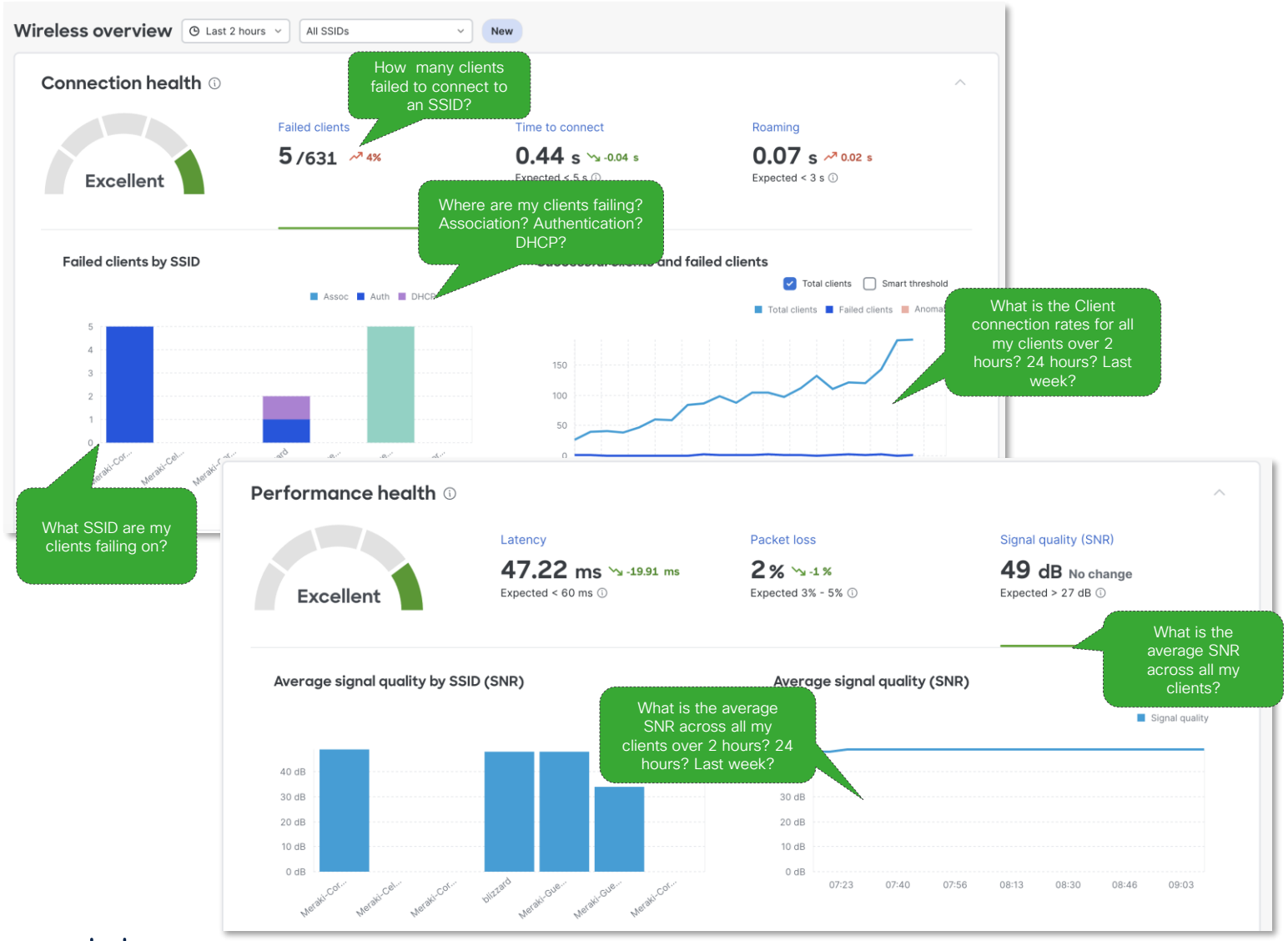
Health and Assurance for Catalyst Wireless

Wireless LAN Controller

Track historical CPU and Memory Utilization, Client Load, and Ports and Interfaces status and traffic statistics



Health and Assurance for Catalyst Wireless



Client Connection Health

See the health of wireless connections across the entire network

Client Performance Health

View Latency, Packet loss and SNR of the client devices

Active poll

0

Join at

slido.com

#1205 501

Passcode:

qznb62

Quels modèles de contrôleurs wireless Catalyst 9800 seront supportés en Cloud Monitoring dans la toute première phase ?

a) 9800-CL

0%

b) 9800-CL, 9800-L, 9800-40, 9800-80

0%

c) 9800-L, 9800-40, 9800-80

0%

d) 9800-40, 9800-80

0%

e) 9800-CL, 9800-40, 9800-80

0%

Demo Time

Active poll

0

Join at

slido.com

#1205 501

Passcode:

qznb62

À partir de quelle version d'IOS-XE on supportera le Cloud Monitoring pour Catalyst Wireless ?

a) IOS-XE 17.9.5 ou supérieure

0%

b) IOS-XE 17.12.3, 17.15.1 ou supérieure

0%

c) IOS-XE 17.9.5, 17.12.3 ou supérieure

0%

d) IOS-XE 17.9.5, 17.15.1 ou supérieure

0%

e) IOS-XE 17.12.3 ou supérieure

0%

Cloud Monitoring for Catalyst Wireless

Unified view of Cisco Wireless Infrastructure

Device Health and Troubleshooting

Network Client and Traffic Information

Licensing
DNA Essentials
DNA Advantage

Wireless Platforms
Controllers - Physical 9800s
APs - 28xx, 38xx, 48xx,
C91xx, CW91xx

Q&R

Un événement virtuel ultime pour les étudiants en technologie du monde entier. Et c'est gratuit !

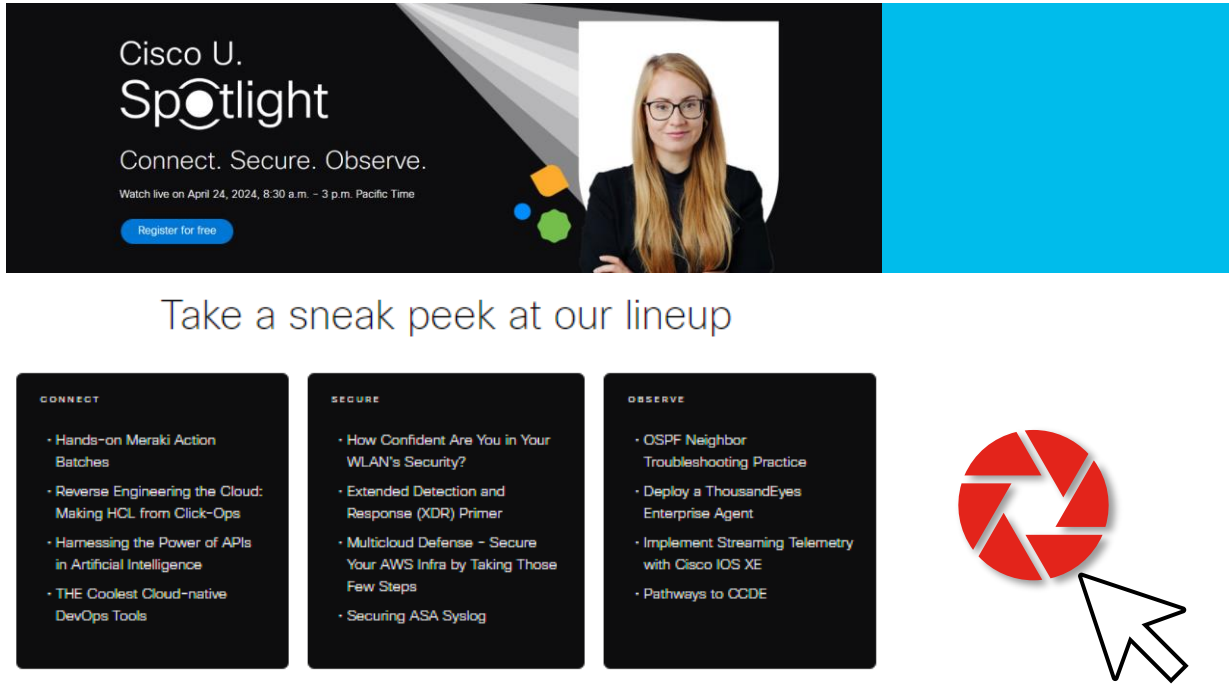
Rejoignez-nous pour notre première diffusion en direct de Cisco U.

Mercredi 24 avril 2024 (*sessions en anglais)

Nous mettons en lumière les sujets et les technologies les plus importants – depuis les fondamentaux et les meilleures pratiques, jusqu'aux compétences spécialisées – qui génèrent les principales tendances et innovations d'aujourd'hui. Découvrez les dernières stratégies et technologies pour connecter, protéger et observer les environnements réseau les plus complexes d'aujourd'hui.

Explorez plus de 25 sessions animées par des technologues, des leaders du secteur et des experts de Cisco ou de technologies adjacentes, et plongez-vous dans des keynotes, des ateliers pratiques, des présentations de niveau expert, ou les trois !

Apprenez aujourd'hui, dirigez demain. Développez les compétences nécessaires pour progresser, exceller et piloter la prochaine innovation de votre organisation.



Avez-vous des questions ?

Si vous avez posé une question sur le panneau de Q&R (Q&A en anglais) ou que vous revenez sur la communauté dans les jours qui suivent notre webinaire, nos experts peuvent encore vous aider !

Soumettez vos questions jusqu'au 12 abril 2024.

https://bit.ly/AMA-apr24

Faites valoir votre opinion

Répondez à notre enquête pour...

- Proposer des nouveaux sujets
- Évaluer nos experts et contenus
- Envoyer vos commentaires ou suggestions

À la fin de cette session, une enquête s'ouvrira dans la fenêtre de votre navigateur, cliquez sur le lien.

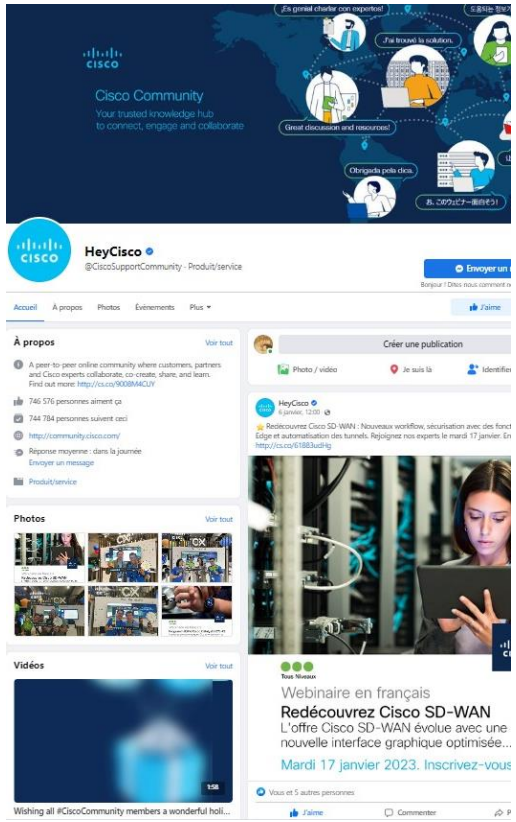
Nos réseaux sociaux

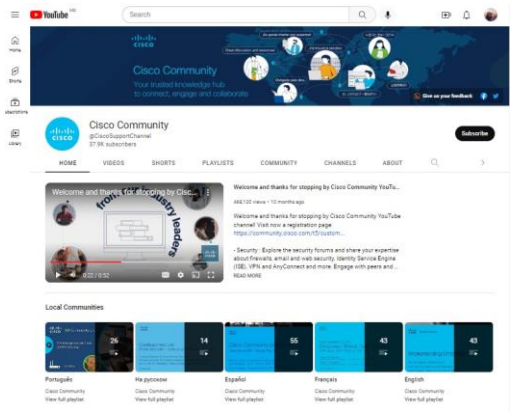
LinkedIn
[Cisco Community]

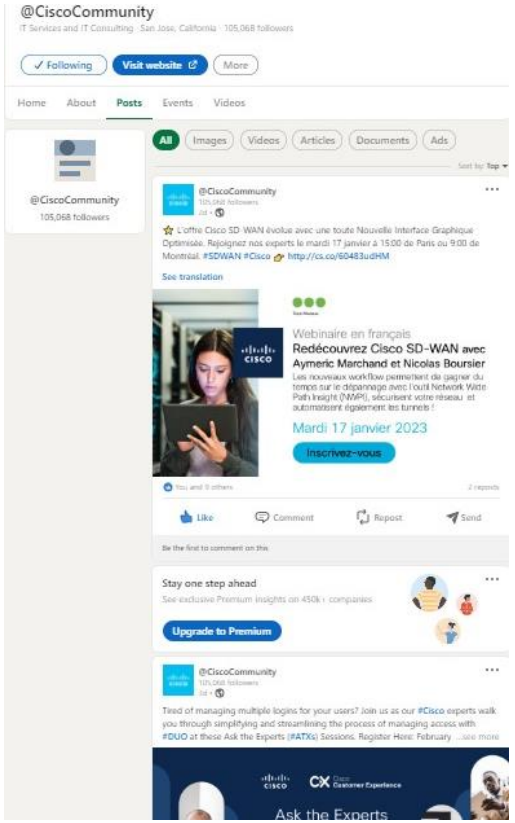
Twitter
[@CiscoCommunity]

YouTube
[CiscoCommunity]

Facebook
[CiscoCommunity]







The bridge to possible