# Moderní bezdrátová síť relevantní pro geeky, DevOps i business

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2021

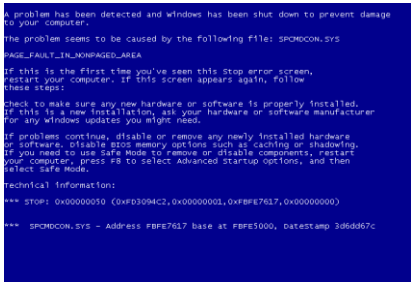
# Modern Challenges In Wireless

More devices

Enhanced experiences

IoT growth

Complicated Deployment




Complicated Management

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# Increasing Wi-Fi adoption

Cisco partners with major manufacturers to provide the best device experience

## Best Wi-Fi 6 standards solution

- Client & network interoperability
- Maximize performance increase
- Consistent & Reliable
- Improved power efficiency

## Differentiation through standards +

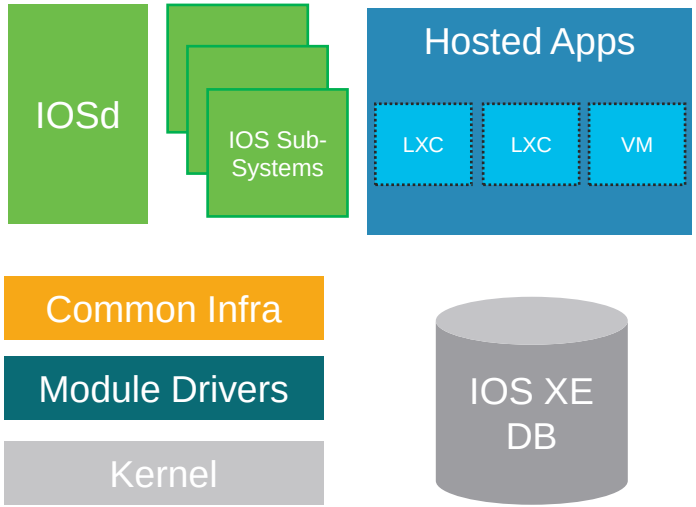
- Client network analytics
- A client-centric view to DNAC Assurance
- Improve Wi-Fi roaming
- Performance: 5x faster Wi-Fi & cellular handoff

## Open Partner Framework

New!

- Enable partners to integrate with Cisco autonomously
- Standards + features across multiple client devices
- TTM Differentiation
- Grow Wi-Fi market

# Modular, Open, Flexible OS

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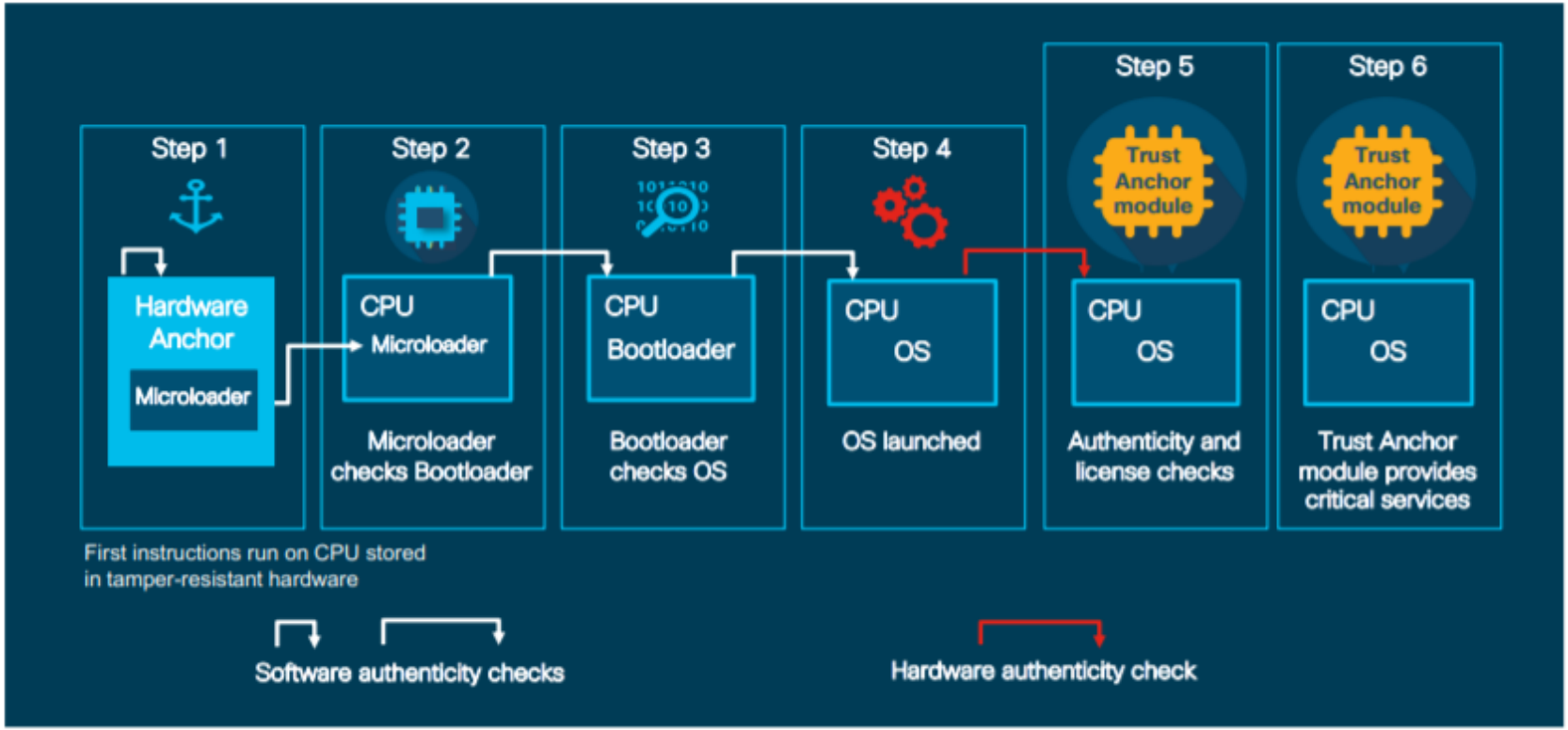
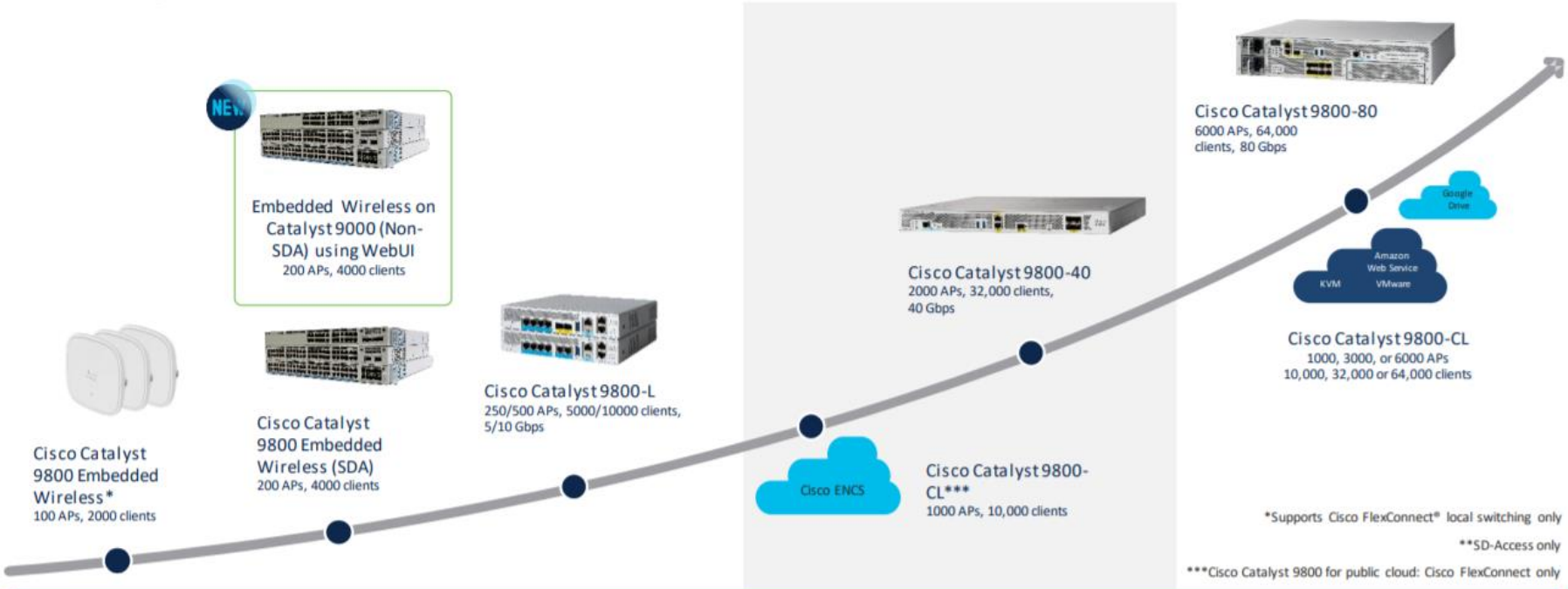
# Trustworthy systems built with Cisco Trust Anchor Technologies



*Catalyst Solution*

# Next-generation wireless infrastructure for any scale

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# New Cisco Catalyst 9100 Series Access Points

## Purpose built for Wi-Fi 6

| Ideal for small to medium deployments | Mission critical | Best in Class |
|---|---|---|

### 9105AX

- 2x2 + 2x2
- MU-MIMO, OFDMA
- Spectrum Intelligence
- IoT ready
- 1 x 2.5 mGig (WP)

### 9115AX | 9117AX

- 4x4 + 4x4 | 8x8 + 4x4
- MU-MIMO, OFDMA (only DL)
- Spectrum intelligence
- 1 x 5 mGig

Powered by Cisco RF ASIC

### 9120AX

- 4x4 + 4x4
- Cisco RF ASIC
- Dual 5GHz, HDX
- IoT ready
- Application Hosting
- 1 x 2.5 mGig

Powered by Cisco RF ASIC

### 9130AX

- 8x8 + 4x4 or 4x4 + 4x4 + 4x4
- Tri-radio (Dual 5GHz + 2.4GHz)
- Cisco RF ASIC
- Decrypted data packet iCAP
- IoT ready
- Application Hosting
- 8 port Smart Antennas
- 1 x 5 mGig

| Cisco DNA Assurance with iCAP | Bluetooth 5 | USB | Integrated or external antenna SKUs |
|---|---|---|---|

# EOS 9117 Announcement

October 30, 2020

## Ideal for small to medium deployments

### 9105AX

- 2x2 + 2x2
- MU-MIMO, OFDMA
- Spectrum Intelligence
- IoT ready
- 1 x 2.5 mGig (WP)

### 9115AX | 91~~17~~AX

- 4x4 + 4x4 | 8x8 + 4x4
- MU-MIMO, OFDMA (only DL)
- Spectrum intelligence
- 1 x 5 mGig

## Mission critical

Powered by Cisco RF ASIC

### 9120AX

- 4x4 + 4x4
- Cisco RF ASIC
- Dual 5GHz, HDX
- IoT ready
- Application Hosting
- 1 x 2.5 mGig

## Best in Class

Powered by Cisco RF ASIC

### 9130AX

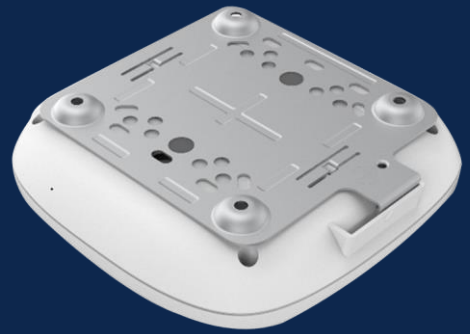
- 8x8 + 4x4 or 4x4 + 4x4 + 4x4
- Tri-radio (Dual 5GHz + 2.4GHz)
- Cisco RF ASIC
- Decrypted data packet iCAP
- IoT ready
- Application Hosting
- 8 port Smart Antennas
- 1 x 5 mGig

Cisco DNA Assurance with iCAP | Bluetooth 5 | USB | Integrated or external antenna SKUs

# Catalyst 9105AXI

9105AXI – Front

9105AXI – Back



9105AXI - Mechanical: 5.9 x 5.9 x 1.2 in.

This AP uses AIR-AP-BRACKET-8=

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# Catalyst 9105AXW – Wall plate

Kensington lock

9105AXW – Front/other side (USB)
Uses AIR-AP-BRACKET-W4=

9105AXW – Front/side

9105AXW - Mechanical: 6.3 x 3.5 x 1.3 in.

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# Flexible management options with Cisco Catalyst 9800 Series Wireless Controllers

## Cisco DNA Center

## Standards-based interoperability

CI/CD tools

Open daylight

Open Flow

puppet

now

SDN controllers

Network management systems

## Custom development

Model driven programmability

YANG data models

Zero touch provisioning

Guest shell (on-box Python)

Application hosting

Cisco Catalyst 9800 Series Wireless Controllers

Intent-based network infrastructure

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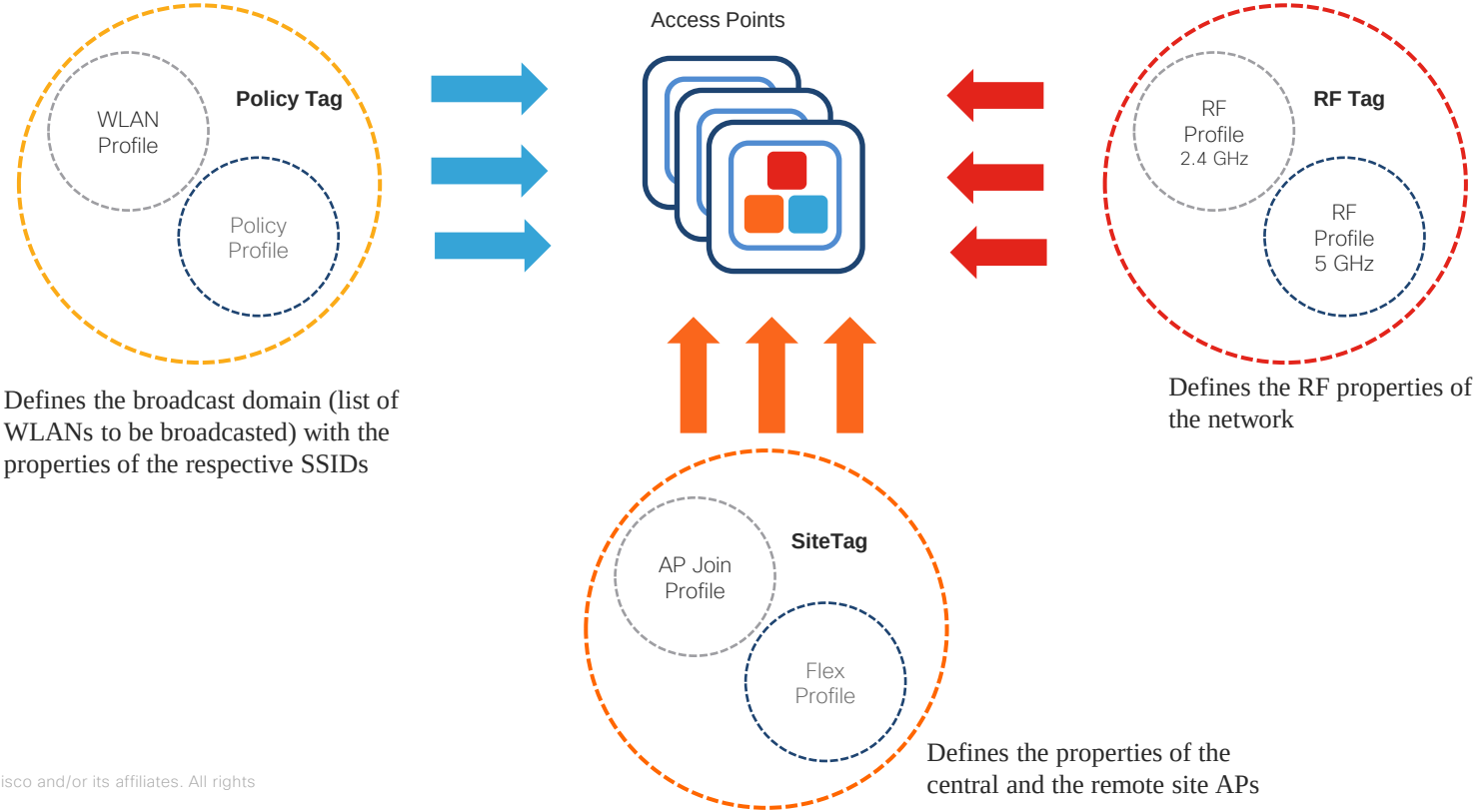
# Cisco 9800 Catalyst 9800 Config Model




Defines the broadcast domain (list of WLANs to be broadcasted) with the properties of the respective SSIDs

Defines the RF properties of the network

Defines the properties of the central and the remote site APs

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# DEMO

https://developer.cisco.com/codeexchange/

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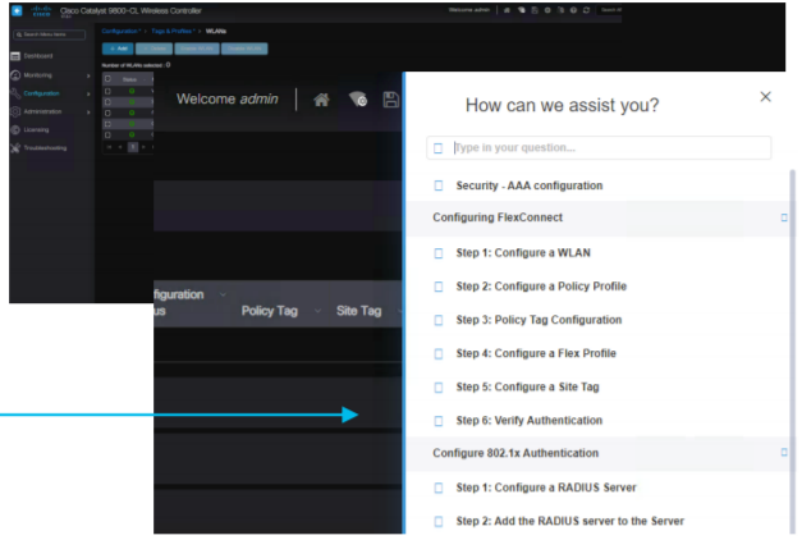
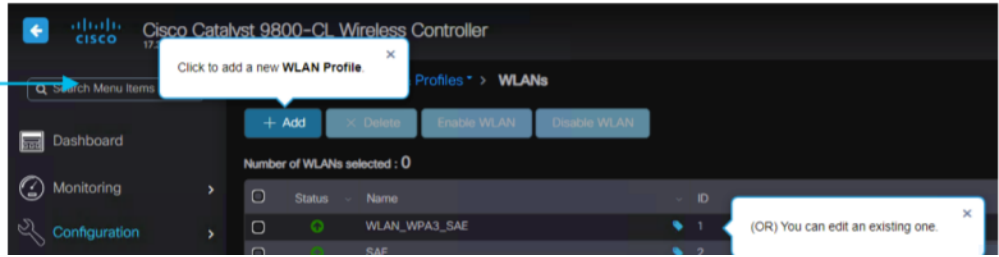
# Config Guide Assistance on WebUI*

- Click the Guide Assistance on any page
- Search and select the desired topic
- Follow the steps by steps instructions

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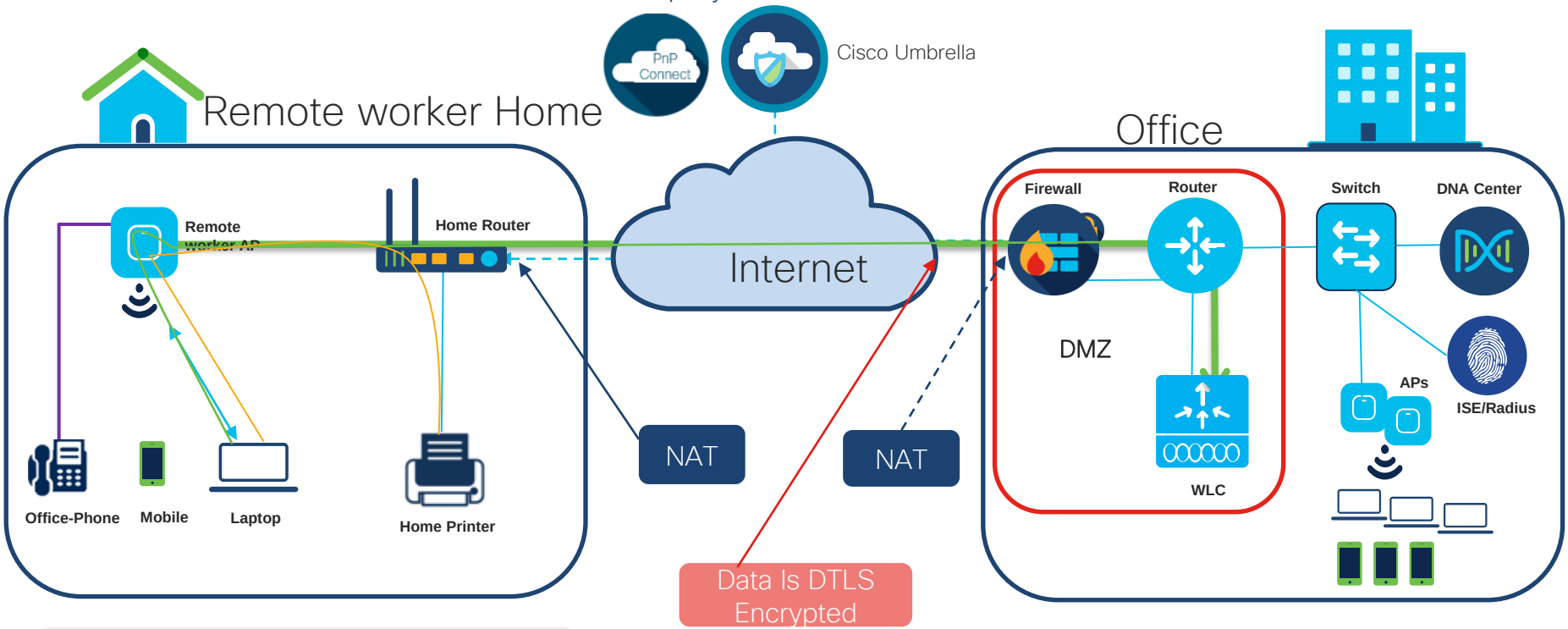
# Cisco Remote Workforce Wireless Solution Deployment model

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# EN Wireless Offer Summary

Attractive offers to move to the next-gen Wireless stack

## 1st Year on Us Offer

For both Transactional & EA customers

1 Year **Free** on Cisco DNA Essentials, Advantage or Premier when buying a 3/5/7-year license

**Who is it for?**

- ALC: Customers migrating to Catalyst 9100 Wi-Fi 6 AP's and/or Catalyst 9800 Controllers
- EA: Customers migrating to subscription or C1 customers coming up for SWSS renewal

**Additional benefits for EA customers:**

**Free** Cisco DNA Spaces EXTEND (C1 only) + **Free** DNAC appliance, multi suite discount, ramp and more.

## 9800 Everywhere Offer

50% OFF Catalyst 9800 Controllers

- 50% off C9800-80, C9800-40 and C9800-L with Cisco DNA License Purchase
- Can be combined with EA and 1st Year on Us Offer

**Who is it for?**

Cisco customers looking to move from AireOS to C9800. New customers also eligible for the offer

Offer available from August 15th 2020. Offers Valid till July 31st, 2021
Refer to offers.cisco.com for offer eligibility, details and updates

# Secure Access Bundles SKUs

## Built-in bundled discount (can be combined with other promotions)

### Available worldwide now and valid through Q4FY21

**ONENTWK-0210-9300**

**10 APs 100 Ports**

- Secure Access Advantage / Premier Bundle
- 2x 9300mGig
- Up to 10x 9130 (4 Free)*
- 18% Bundle Discount

**ONENTWK-0205-9300**

**5 APs 50 Ports**

- Secure Access Advantage / Premier Bundle
- 2x 9300mGig
- Up to 5 x 9130 (2 Free)*
- 18% Bundle Discount

**ONENTWK-0110-9407**
**ONENTWK-0110-9410**

**10 APs Modular Bundles**

- Secure Access 7-Slot / 10 Slot Bundle Advantage/Premier
- 9400 2x mGig LC
- Up to 10x 9130 (5 Free)*
- 22% Bundle Discount

*Equivalent of free APs based on discount structure

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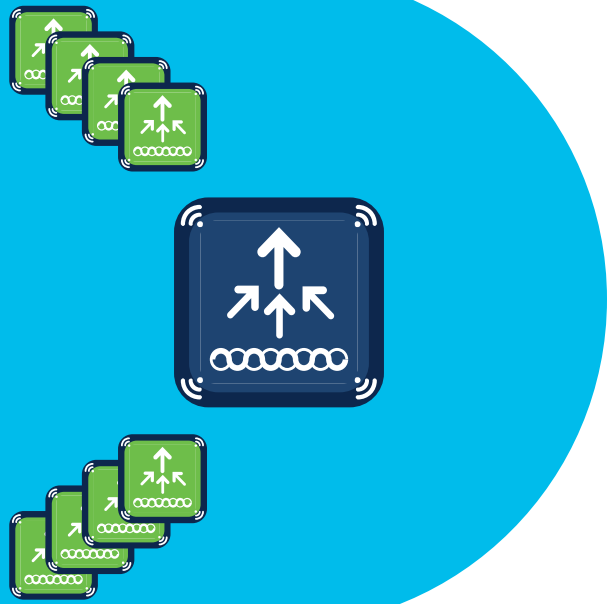
# *Catalyst EWC*

# Cisco Embedded Wireless Controller on Catalyst 9100 Access Points

Modern, open and programmable Wi-Fi solution supporting enterprise features



**Simple**

Dashboard or Mobile-App to deploy, manage and monitor

**Flexible**

License-free* for up to 100 APs when using Dashboard/Mobile App

Easy migration to an appliance or cloud-based controller

**Secure**

Enterprise class security & resiliency features keep the network running and protected

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***Use DNA Opt-Out when ordering EWC APs.**
**DNA License required when connecting to DNA center and/or WLC**

# EWC ready for enterprise branch deployments

## Simple

Simplified WebUI for monitoring, provisioning, and day-N operations

<10 seconds

Active to standby switchover in a few seconds

SMU (patching) support for both controller and access point

## Secure

aWIPS,* rogue detection, identification, and **mitigation**

Walled garden and DNS blocking

Cisco Umbrella

Cloud-delivered enterprise security with Cisco Umbrella*

## Flexible

Redundancy with active and standby controllers running simultaneously on two access points

Cisco DNA Center Plug and Play (PnP), Automation, and Assurance

Open standards-based programmability with NETCONF and YANG

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* Cisco IOS XE 17.1.

# DEMO

EWC 0-Day Provisioning

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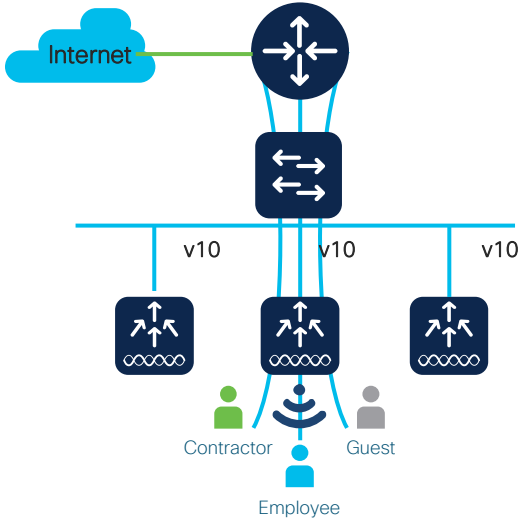
# Deploying the Cisco Embedded Wireless Controller

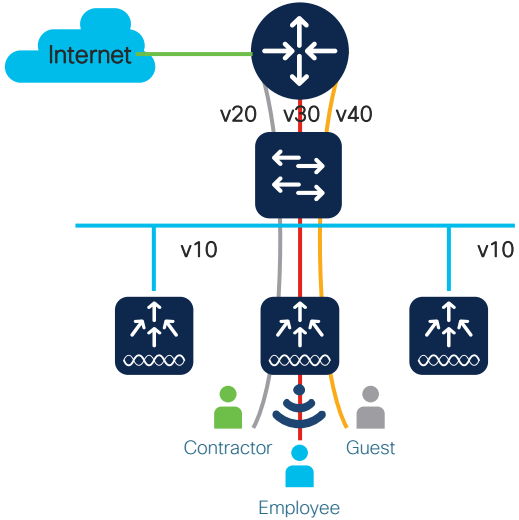
- EWC-capable access points can be connected to an **access port** or a **trunk port** on the switch, depending on the deployment method.
- Management traffic is always untagged.




VLAN10

If access points and WLANs are all on the same network, EWC-capable access points can connect to an access port on the switch port.

Pros: Simple
Cons: Less flexible




VLAN10
VLAN20
VLAN30
VLAN40

If access points and WLANs are all on different VLANs, EWC- capable access points will connect to a trunk port on the switch, and traffic for individual WLANs will be switched locally.

Pros: Flexible, secure
Cons: More configuration

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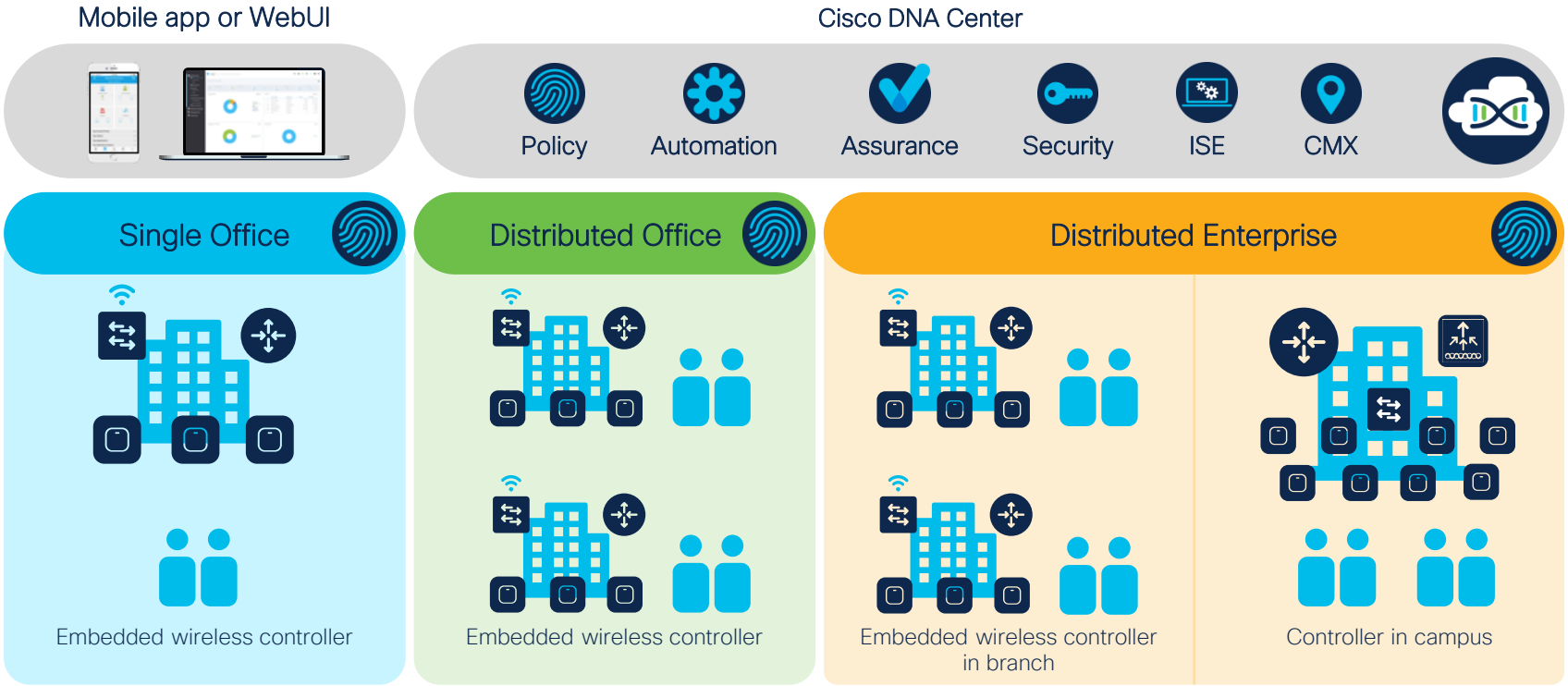
# EWC: WLAN deployment

## Next-gen Wi-Fi designed for single or multisite small to medium-sized enterprises

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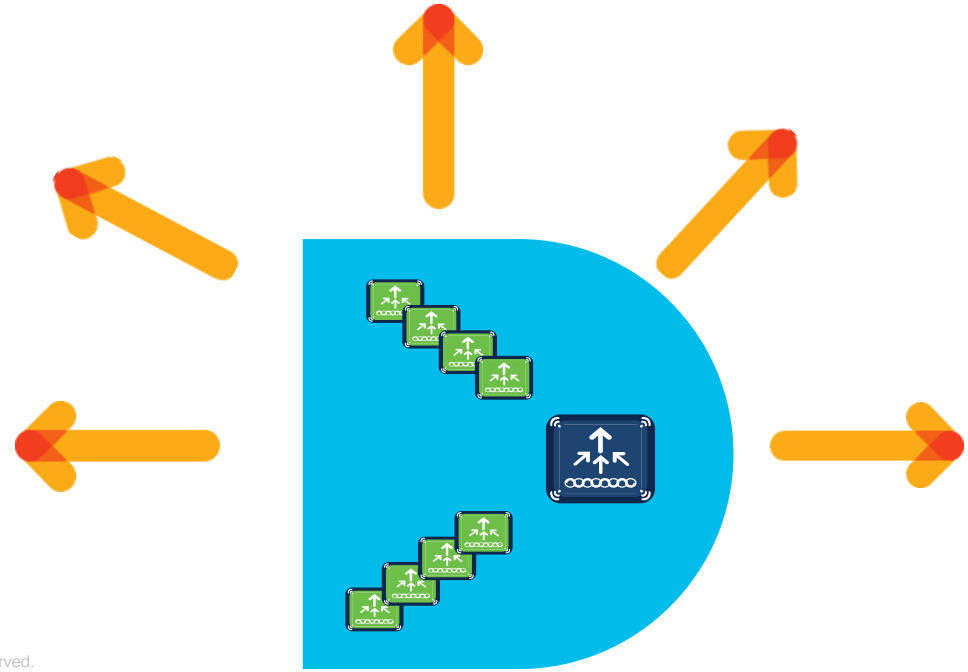
# Expand



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*Meraki*

# The next generation of Meraki Wireless

Wi-Fi Alliance Certified

## MR36

2 Tx/Rx Antennas
2 Spatial streams

1 Gbps
802.3af

Wi Fi 6 CERTIFIED

## MR46

4 Tx/Rx Antennas
4 Spatial streams

2.5 Gbps mGig
802.3at

Wi Fi 6 CERTIFIED

## MR56

8 Tx/Rx Antennas
8 Spatial streams

5 Gbps mGig
802.3at

Wi Fi 6 CERTIFIED

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# Meraki Wi-Fi 6 Portfolio Expands!

External antennas and outdoor coverage

## MR46E

4 Tx/Rx External Antennas
4 Spatial streams

2.5 Gbps mGig
802.3at

Wi Fi 6 CERTIFIED

## MR76

2 Tx/Rx Antennas External Antennas
2 Spatial streams

1 Gbps
802.3af

IP67 Rated

Wi Fi 6 CERTIFIED

## MR86

4 Tx/Rx Antennas External Antennas
4 Spatial streams

2.5 Gbps mGig
802.3at

IP67 Rated

Wi Fi 6 CERTIFIED

# Introducing the MR44

- OFDMA (DL/UL)
- MU-MIMO (DL/UL)
- Target Wake Time
- Bluetooth 5.0
- 2.4 GHz & 5 GHz

**MR44**

4-stream (5GHz)
2-stream (2.4GHz)

2.5Gbps mGig
802.3at

Available starting November 3, 2020

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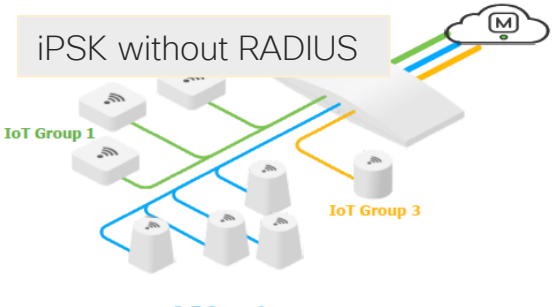
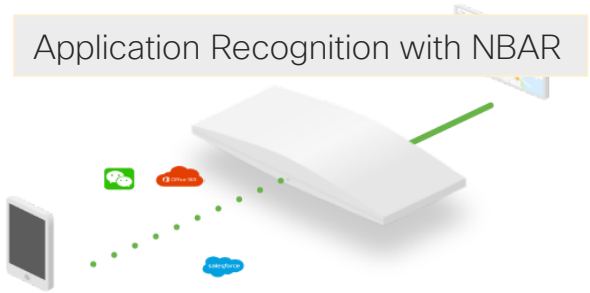
# Meraki Wireless – Tons of new features

## Wireless Client / AP Health

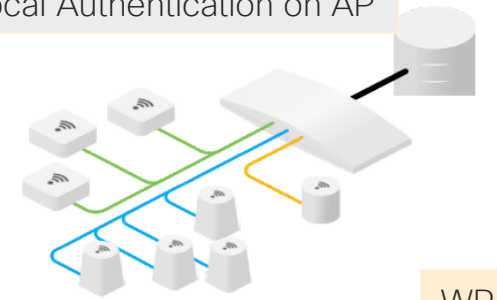
## iPSK without RADIUS



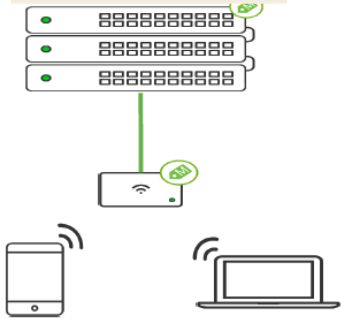

## Application Recognition with NBAR



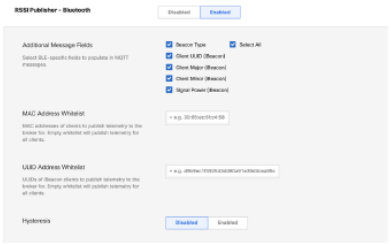
## Local Authentication on AP



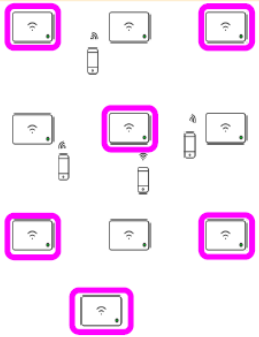
## Adaptive Policy



## MQTT for WLAN and BLE



## Rolling FW-Upgrades



WPA3

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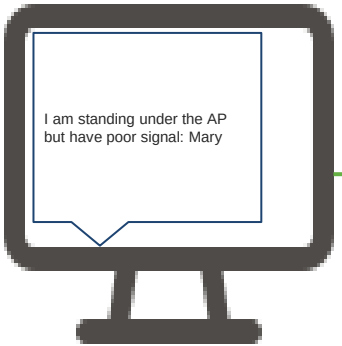
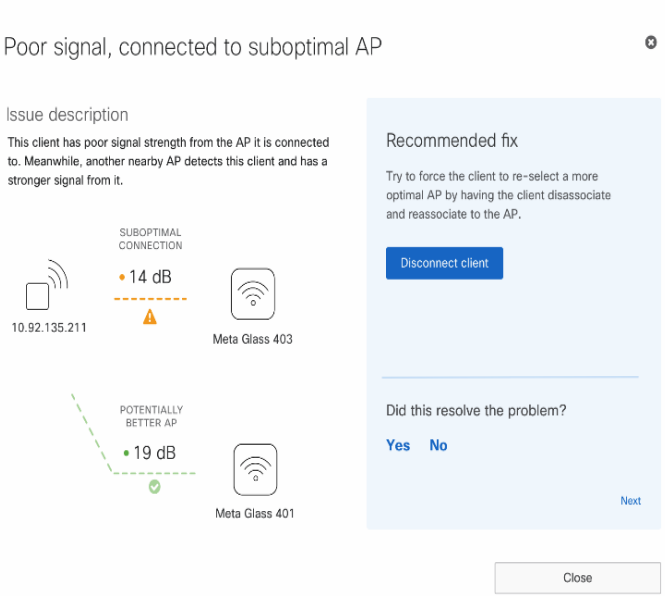
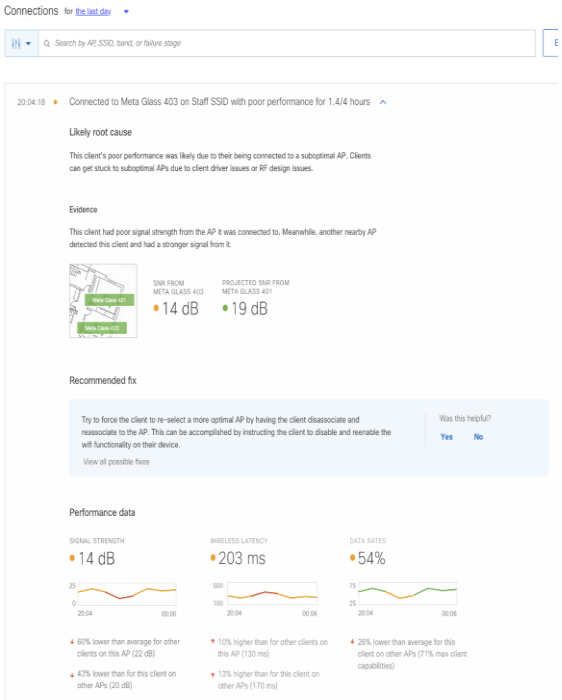
**Important notice**
The MR 27.x Release is only supported on the 802.11ac Wave 2 and 802.11ax Access Points.
Older products will not upgrade and not get these features.

# Meraki Health Timeline Enhancements

## Detect Sticky Clients in 1 click

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# MR wireless access points

## FEATURE HIGHLIGHTS

**Enterprise**

- BYOD and guest access policies
- Application traffic shaping
- Enterprise security
- WIDS / WIPS
- Location analytics
- Wireless Health

**Advanced**

- Umbrella DNS security
- Adaptive Policy

Lifetime warranty on indoor APs

Variety of models that cater to indoor / outdoor, high performance, and value-priced

802.11ac and Wi-Fi 6 models, multigigabit performance, with dedicated scanning and BLE

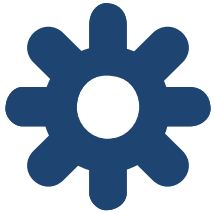
# Meraki Switches Configurator

## Change desired ports to Maintenance

**1** Select Desired Ports

The user select the desired ports and specifies the desired maintenance configuration.

**2** Using the website ports are changed to “Maintenance Mode”



Using the website the selected ports are changed to the specified maintenance configuration. A file is generated containing the “normal” configuration previous to maintenance.

**3** Rollback to Normal

When maintenance is finished, the user rollbacks the configuration to the normal mode using the file previously generated.

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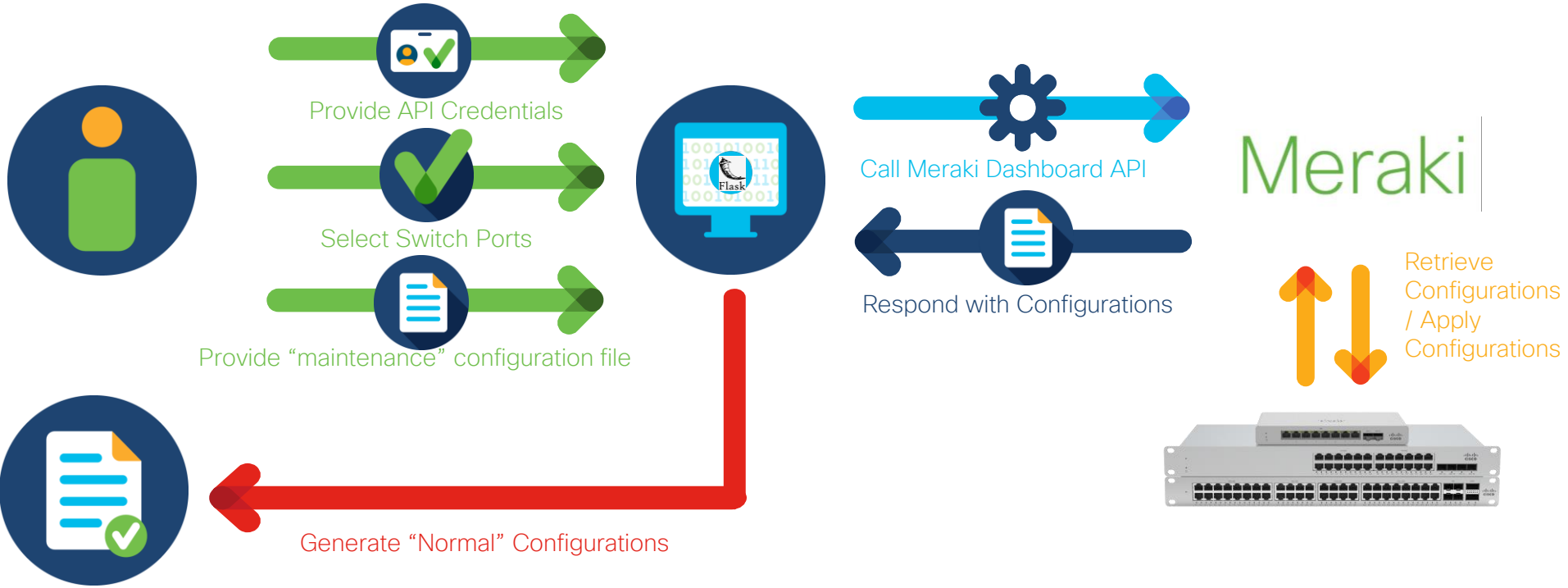
# High Level Design PoV



# DEMO

Meraki Custom Dashboard For Automation

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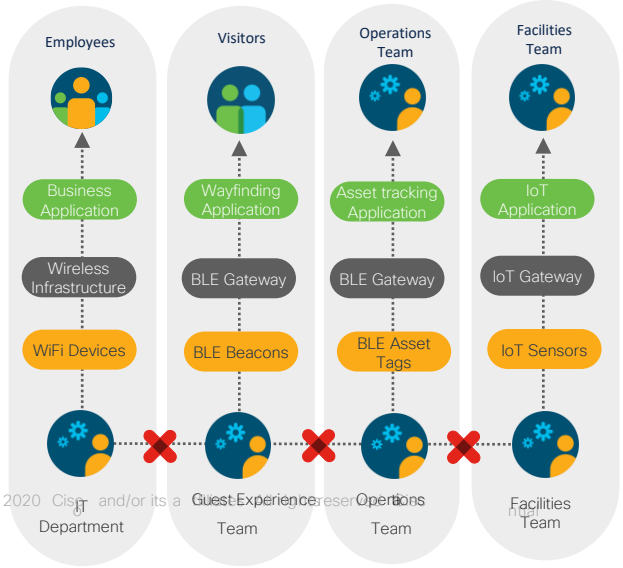
# *DNA Space & IOx*

# Cisco DNA Spaces Unified Cloud Location Platform enables critical outcomes at scale

## Fragmented & Proprietary 'Walled Gardens'

- **Fragmented** & **proprietary** solutions
- Difficult to replicate **outcomes at scale**
- **Disjointed** end-to-end support model

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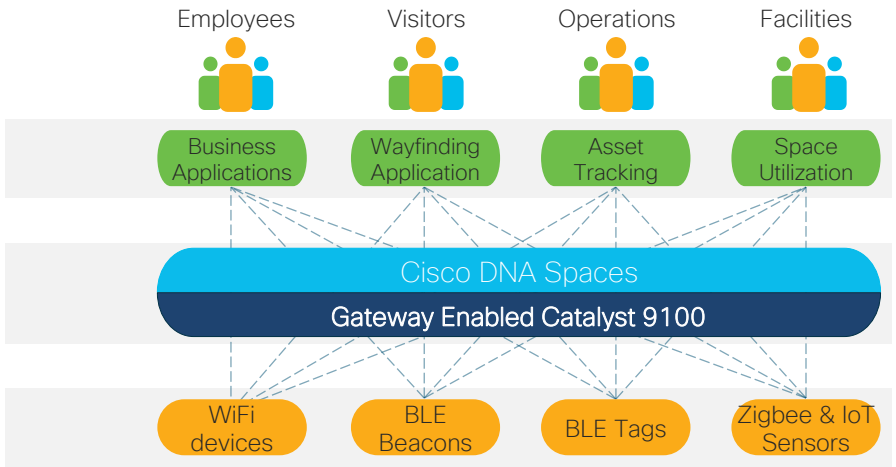
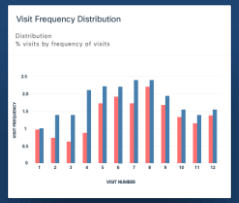
## Open & Unified Platform

- **Open stack at a lower cost** enabling multiple devices & apps
- **Higher Scalability** through the DNA Spaces cloud
- **Unified support model** with end-to-end visibility





- Unified Dashboard,
- Standardized Data,
- End-to-end monitoring

## Vertical App Partners

| | | |
|---|---|---|
| IBM TRIRIGA<br>*Space Optimization* | kontakt.io<br>*Asset Management* | STANLEY<br>*Patient tracking* |
| MazeMap<br>*Mapping & Way-finding* | AIRISTA FLOW<br>*Panic Button* | involvio<br>*Attendance tracking* |

## Enterprise Systems

salesforce | SAS | IBM | SAP

**Firehose API**

Cisco DNA Spaces Apps

**Cisco DNA Spaces**
Cloud

**Dynamic Gateway***

## IoT Device Marketplace*

| | | |
|---|---|---|
| *Asset Tags* | *Environmental Sensors* | *Beacons* |
| *Wristband Tags* | *PIR Sensors* | *Card Tags* |

*And more*

cisco Meraki

*Cisco APs*

*Meraki APs & MV*

DNA Center

*DNA Center*

# Application Hosting on Cisco Catalyst Access Points

**4 pillars** to enable enterprise IoT use cases

AP as an IoT development platform

Simplified application management

Wi-Fi and IoT convergence

Ecosystem of IoT applications

Available in all Cisco® Catalyst® 9100 Access Points

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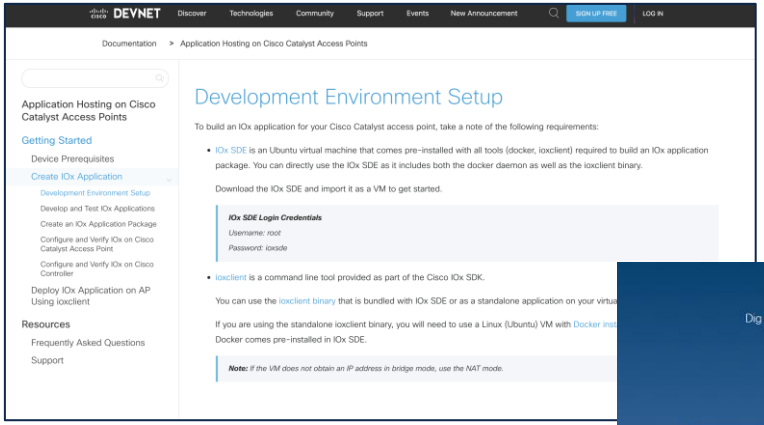
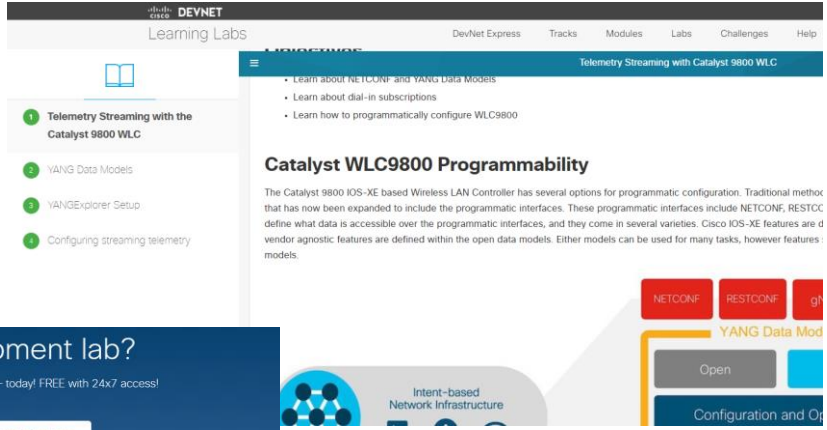
# Devnet

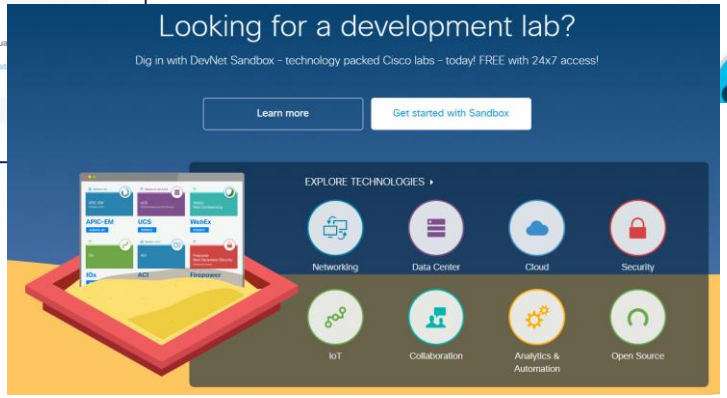
Vzdělávací materiály




Komentované laby

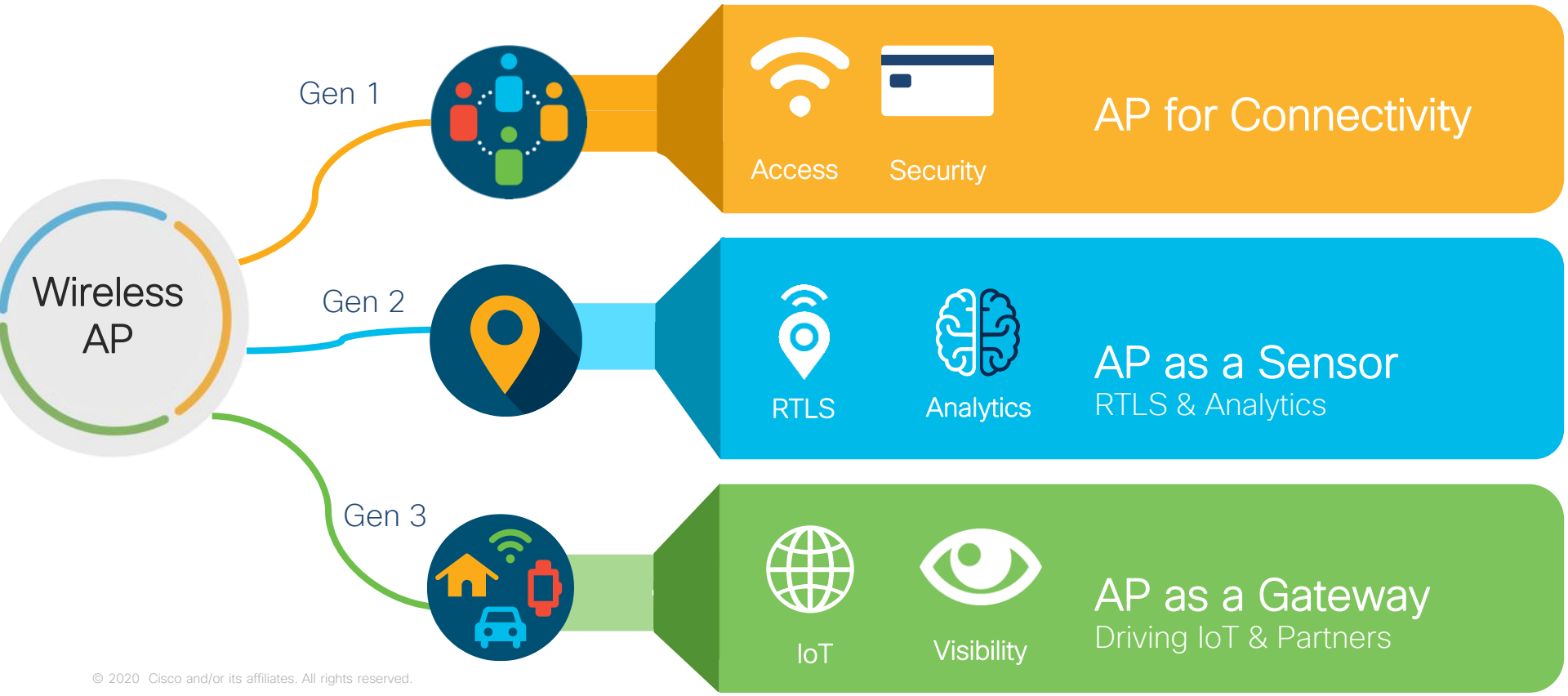



Sandboxy




https://developer.cisco.com/site/networking/

# The Evolution of the Wireless Access Point

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# Resources

- Catalyst 9800 Best Practice
- DevNet
- Cisco Catalyst Wireless Products
- Why Cisco Catalyst Wireless
- Top Reasons To Migrate To Wi-Fi 6
- Cisco WLAN YouTube Channel
- Cisco DNA Spaces

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