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The bridge to possible

A quick tour to Meraki Scanning API

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Cisco Webex App

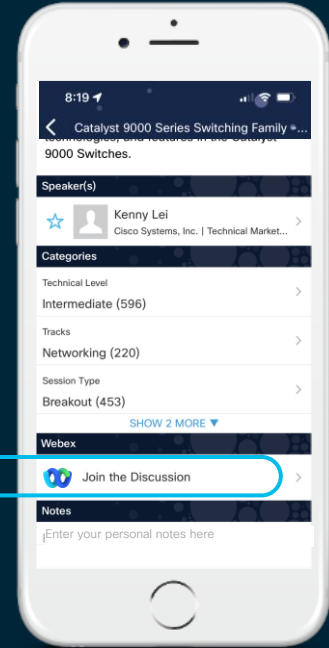
Questions?

Use Cisco Webex App to chat with the speaker after the session

How

- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
- 3 Install the Webex App or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until June 17, 2022.



<https://ciscolive.ciscoevents.com/ciscolivebot/#DEVNET-1248>

Abstract

- According to Fortune Business Insights the global location-based services (LBS) market size was USD 16.14 billion in 2018 and is projected to reach USD 66.61 billion by 2026, exhibiting a CAGR of 20.0% during the forecast period. Location-based services may include store location, proximity-based marketing, emergency services, travel information, among others.
- Meraki technology allows to aggregate raw client location data reported and provides a real-time estimate on the location of Wi-Fi (associated and non-associated) and Bluetooth Low Energy (BLE) devices in real-time using the physical placement of each access point on the Map & Floorplan of the Dashboard.
- Bring your python skills because we will code a couple of use cases.



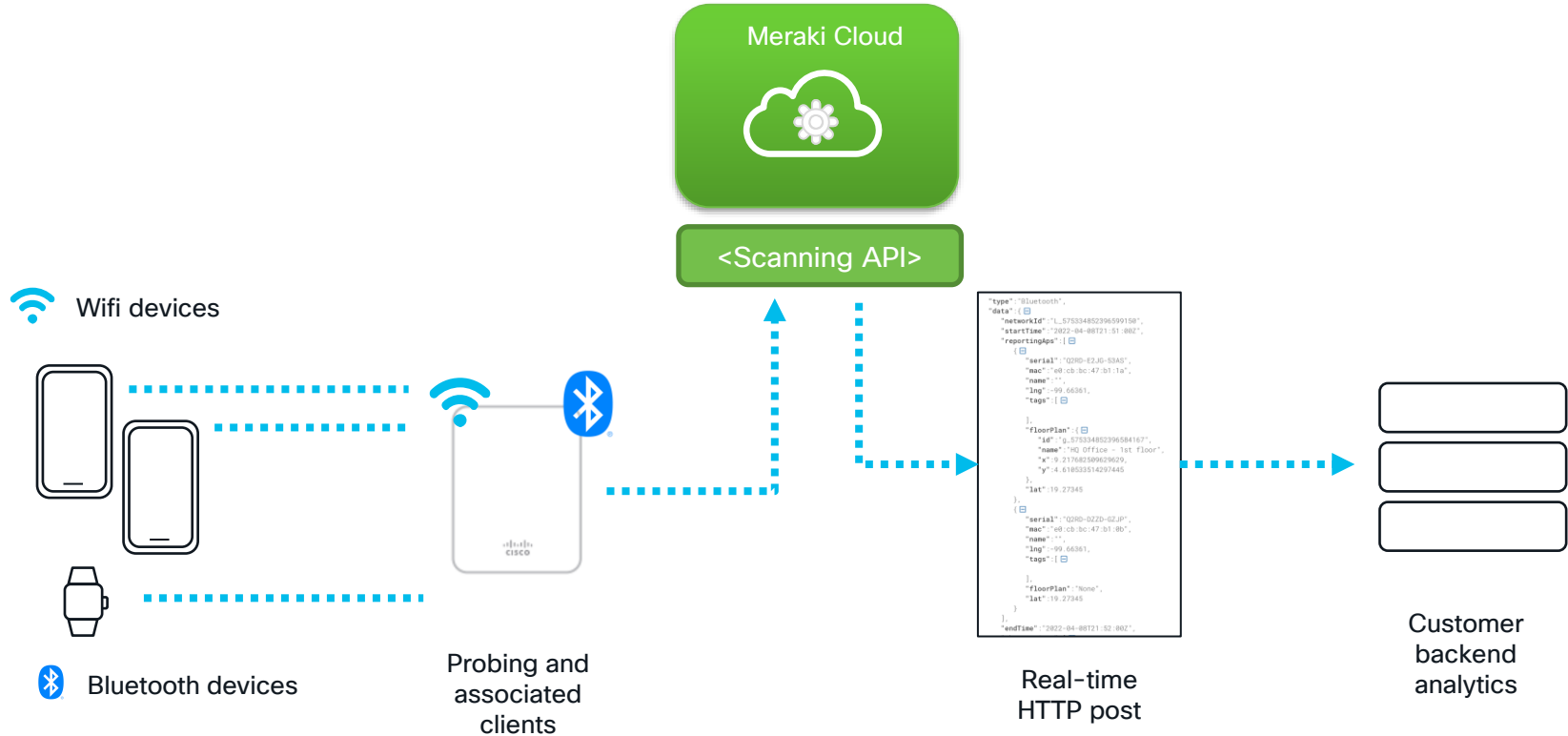
Agenda

- Introduction to Scanning API
- How Scanning API works
- Configuring Scanning API
- DNA Spaces integration
- Your own server integration
- Conclusion

Scanning API

- Using the physical placement of each access point on the Map & Floorplan of the Dashboard, the Meraki cloud aggregates raw client location data reported and provides a real-time estimate on the location of Wi-Fi (associated and non-associated) and Bluetooth Low Energy (BLE) devices in real-time. The Scanning API delivers this data to your real-time location application, data warehouse, or business intelligence systems.

How Scanning API works



Meraki Scanning API basics

- Two versions: v2 and v3 (v1 is deprecated)
- Scanning API V3 uses a triangulation approach for computing location of the client devices. This requires the wireless client to be heard by 3 or more APs to have location information populated via the API output.
- In contrast, Scanning API V2 uses a “x/y/z” approach, and only requires Z number of APs.
- Scanning API V3 offers higher accuracy for location analytics compared to the V2.
- Scanning API V3 offers a better-organized data structure compared to V2, based on actual user feedback.

Configuring Scanning API

cisco Meraki

ORGANIZATION

MSP for SMB Demo ▼

NETWORK

MS-LAB-MAIN ▼

Network-wide

Wireless

Organization

MONITOR	CONFIGURE
Clients	General
Traffic analytics	Administration
Topology	Alerts
Packet capture	Group policies
Event log	Users
Map & floor plans	Add devices

Location and scanning ⓘ

Analytics

Analytics enabled ▼

Scanning API

Scanning API enabled ▼

Validator ⓘ

8c919de11e973a619ca35baa8c1787ec

Post URLs ⓘ

There are no Post URLs for this network.

[Add a Post URL](#)

Adding POST URL

Post URLs ⓘ

HTTPS is required for Scanning API receivers. Your current Scanning API configuration includes an HTTP-only receiver. Scanning API POSTs will not be made to this receiver. For more information, see the Scanning API documentation: <https://developer.cisco.com/meraki/scanning-api/#!securing-data-in-transport>.

Status ⓘ	Post URL	Secret	API Version	Radio Type		
●	http://live-demo22.online:5013/	.....	Show secret V3 ▾	WiFi ▾	Validate	×
●	https://location.dnaspaces.io/notifications/Meraki/hectormorales/L_	.....	Show secret V3 ▾	WiFi ▾	Validate	×
●	https://location.dnaspaces.io/notifications/Meraki/hectormorales/ts	.....	Show secret V3 ▾	WiFi ▾	Validate	×

[Add a Post URL](#)

POST URL
HTTP Server location

Secret
All messages contain
the secret in the JSON
body

Scanning API Options

Post URLs ⓘ

Status ⓘ	Post URL	Secret	API Version	Radio Type		
●	https://live-demo22.online:5013	..... Show secret	V3 ▾	Bluetooth ▾	Validate	×
●	https://live-demo22.online:5013	ciscolive4M\$ Hide secret	V3 ▾	WiFi ▾	Validate	×
●	https://live-demo22.online:5014	..... Show secret	V3 ▾	WiFi ▾	Validate	×
●		..... Hide secret	V1 ▾ ✓ V2 ▾ V3 ▾	WiFi ▾	Validate	×

Choose between v2 and v3

Post URLs ⓘ

Status ⓘ	Post URL	Secret	API Version	Radio Type		
●	https://live-demo22.online:5013	..... Show secret	V3 ▾	Bluetooth ▾	Validate	×
●	https://live-demo22.online:5013	ciscolive4M\$ Hide secret	V3 ▾	WiFi ▾	Validate	×
●	https://live-demo22.online:5014	..... Show secret	V3 ▾	WiFi ▾	Validate	×
●		..... Hide secret	V3 ▾	✓ WiFi ▾ Bluetooth ▾	Validate	×

Enable WiFi and Bluetooth
Need POST URL for each option

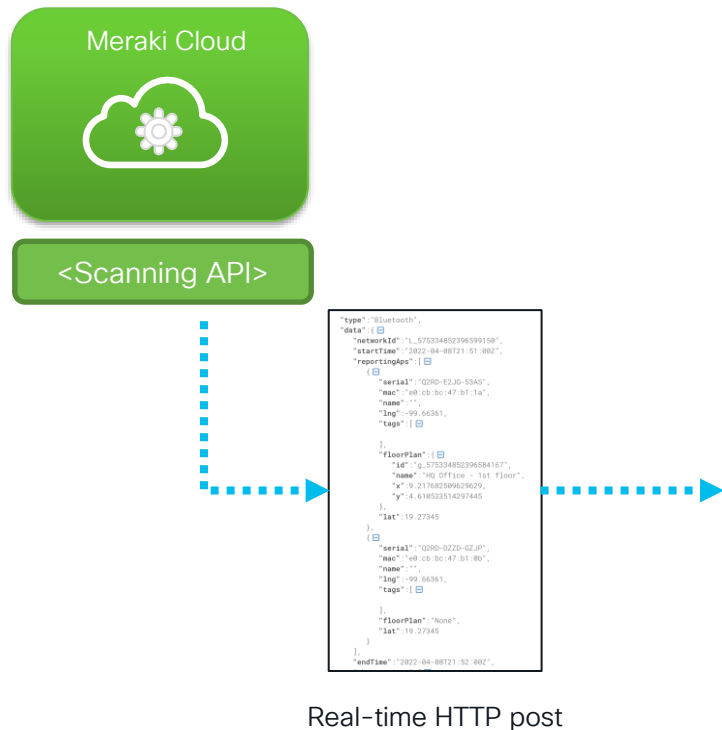
Validated https://live-demo22.online:5014

If flow is correct, then the POST URL will be validated

Status ⓘ	Post URL	Secret	API Version	Radio Type		
●	https://live-demo22.online:5013	..... Show secret	V3 ▾	Bluetooth ▾	Validate	×
●	https://live-demo22.online:5013	ciscolive4M\$ Hide secret	V3 ▾	WiFi ▾	Validate	×
●	https://live-demo22.online:5014	..... Show secret	V3 ▾	WiFi ▾	Validate	×
●	https://live-demo22.online:5014	..... Hide secret	V3 ▾	WiFi ▾	Validate	×

Click on validate to start the flow

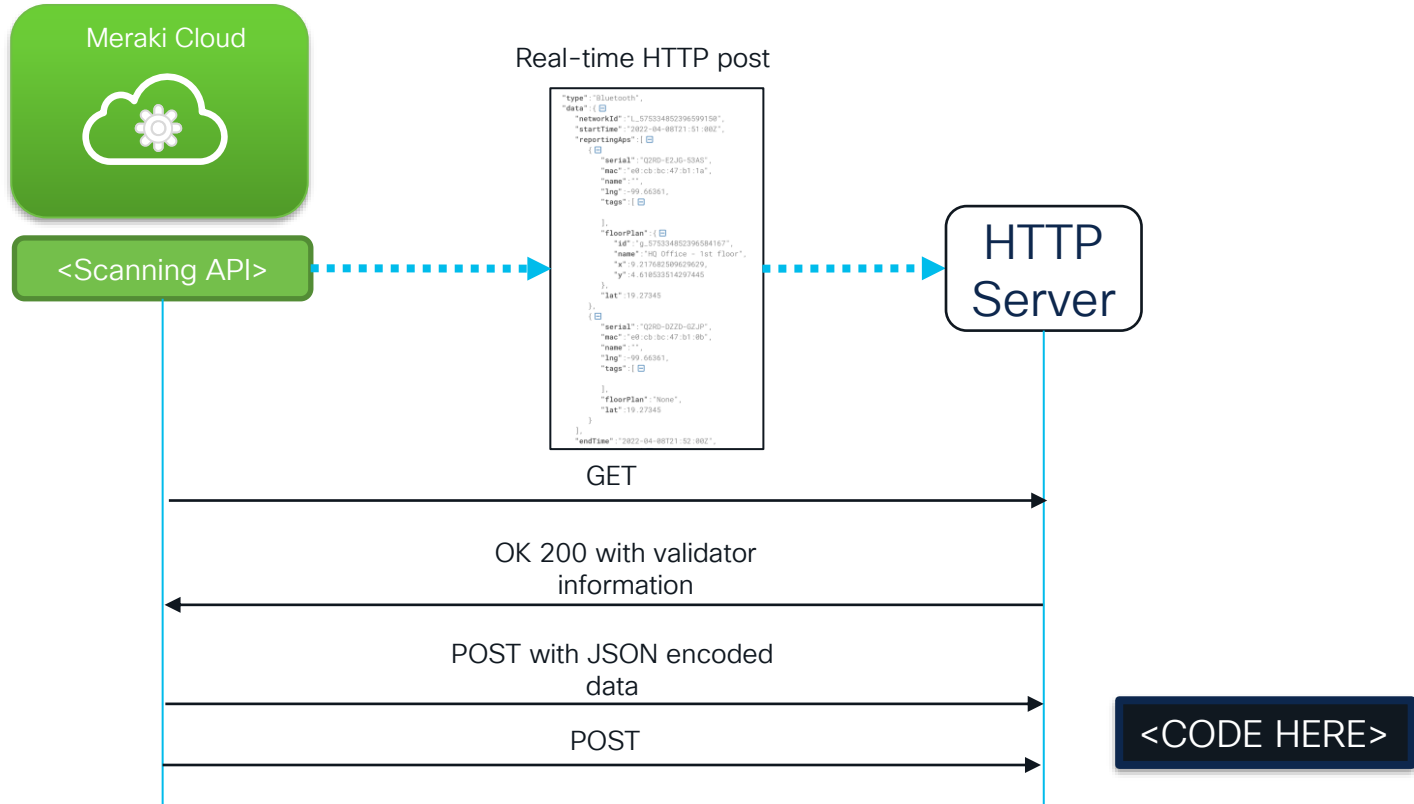
Validator and Post URL's



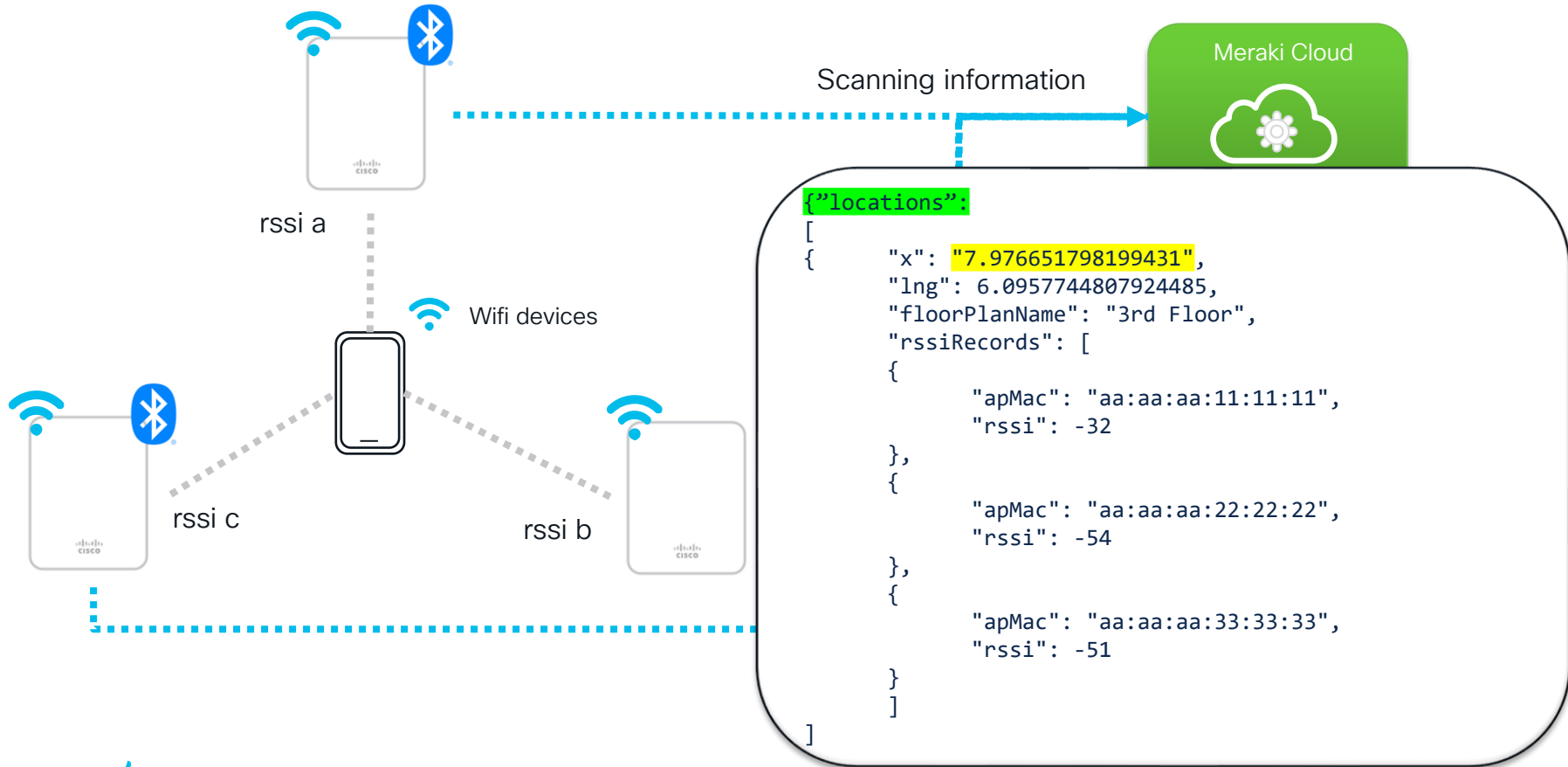
- When Scanning is enabled, Meraki cloud sends Scanning information from the configured MRs
- Scanning API requirements:
 - Firmware R26 for WiFi observations ¹
 - Firmware R27.5 for BLE observations
- Scanning information is sent in a POST message to an HTTP server
- Validator is used for Meraki Cloud to verify that the remote HTTP server is properly configured

¹ AP models which pre-date 11AC Wave 2, r27 and subsequent firmware versions are not supported. [More information](#)

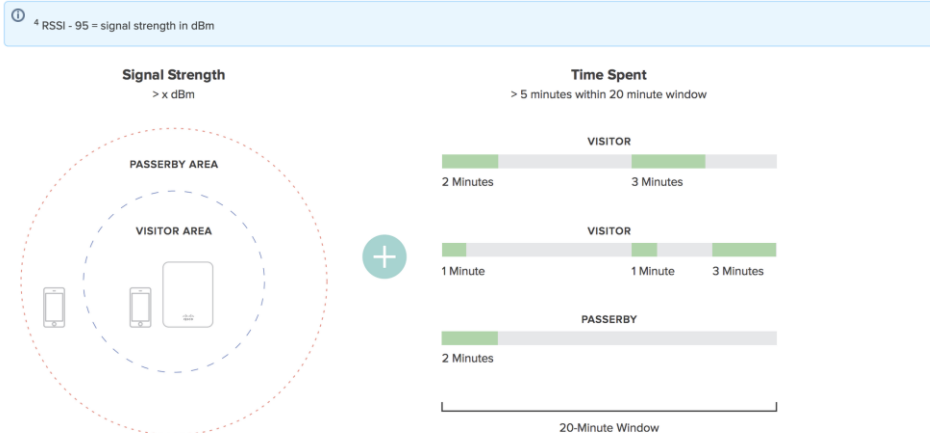
Validator and Post URL's



Scanning API v3 triangulation

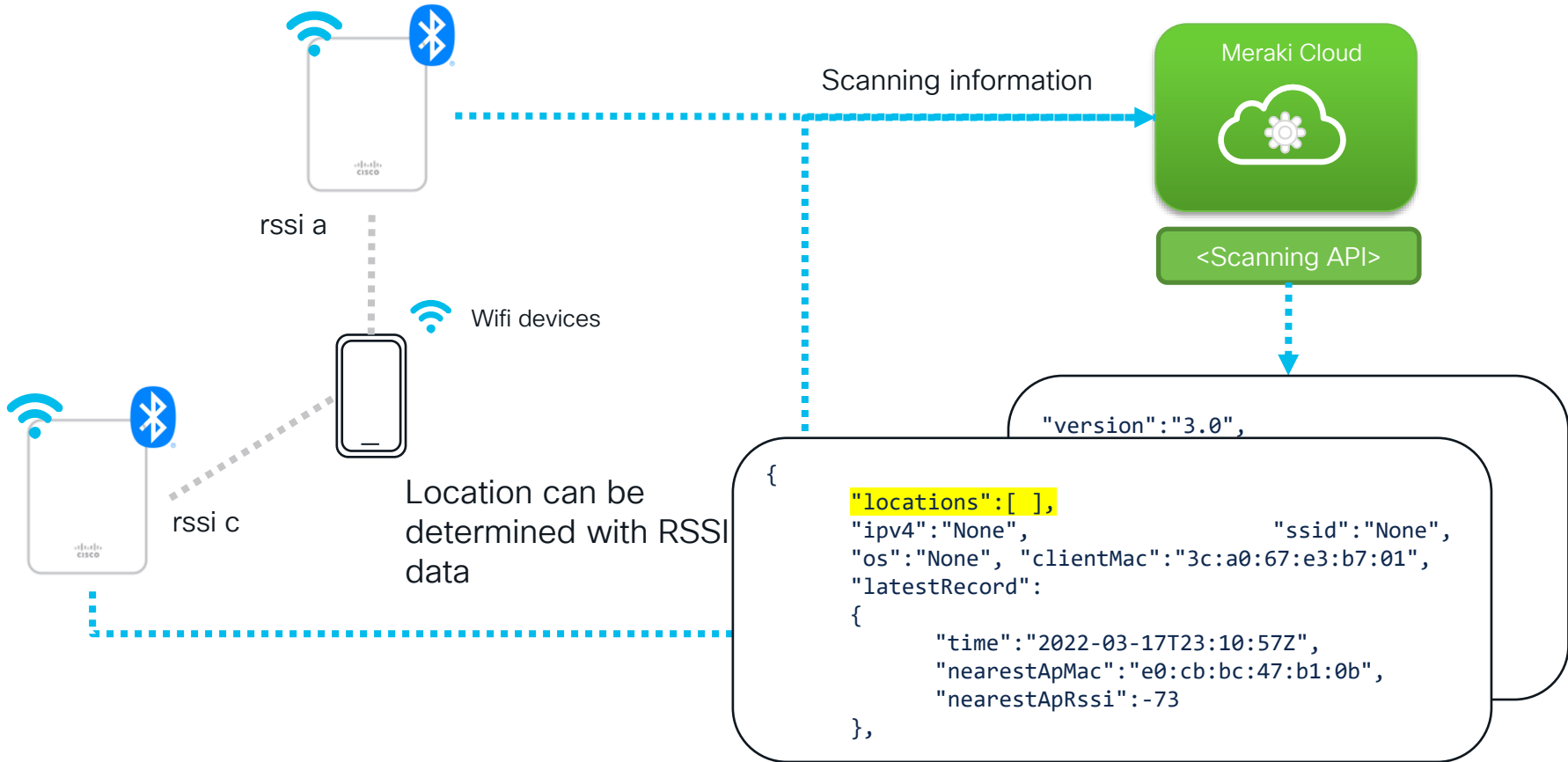


What is RSSI?



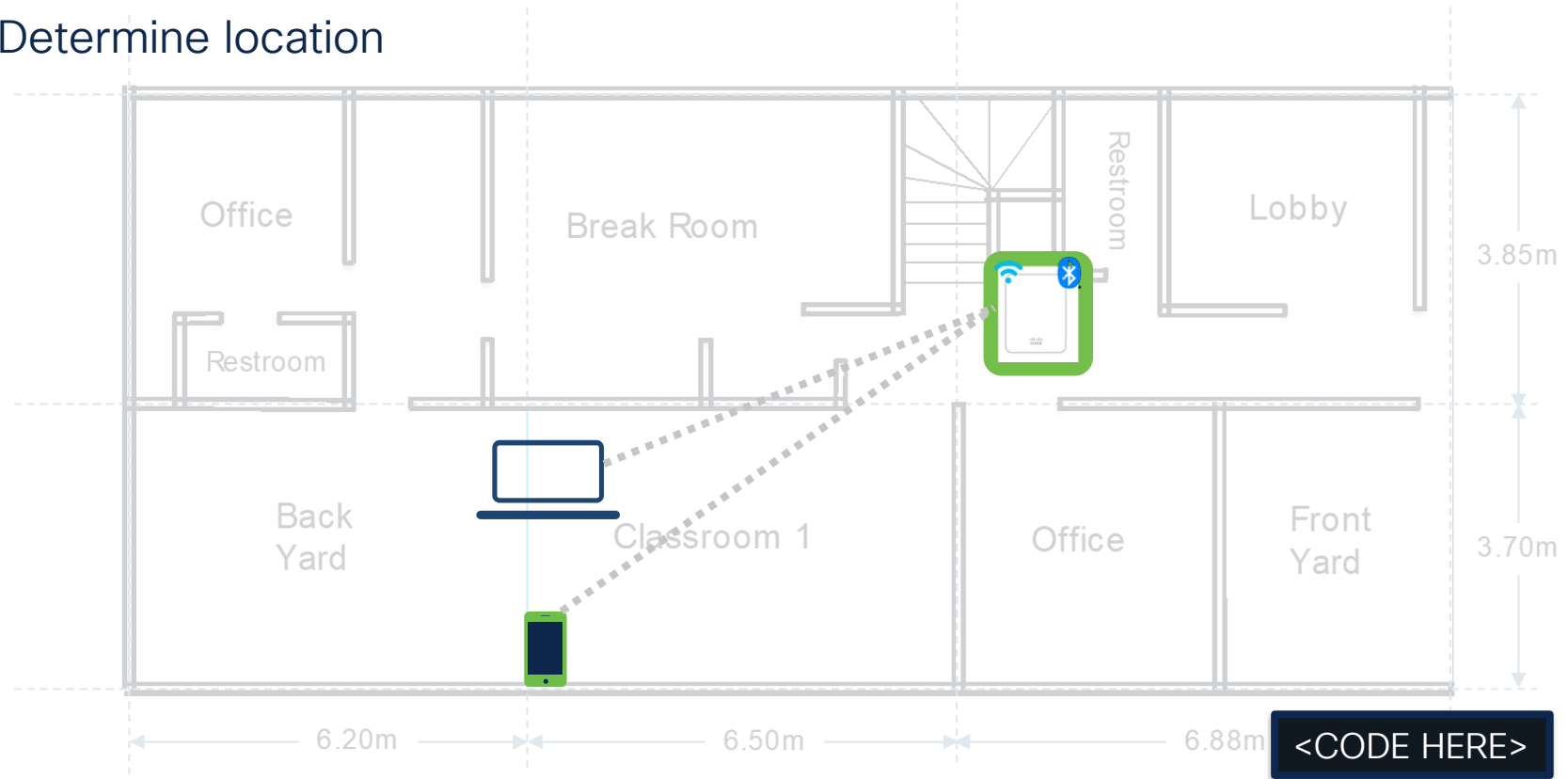
- RSSI, or “Received Signal Strength Indicator,” is a measurement of how well your device can hear a signal from an access point or router. It’s a value that is useful for determining if you have enough signal to get a good wireless connection. Note: Because an RSSI value is pulled from the client device’s Wi-Fi card (hence “received” signal strength), it is not the same as transmit power from a router or AP.
- RSSI is a term used to measure the relative quality of a received signal to a client device, but has no absolute value. The IEEE 802.11 standard (a big book of documentation for manufacturing Wi-Fi equipment) specifies that RSSI can be on a scale of 0 to up to 255 and that each chipset manufacturer can define their own “RSSI_Max” value. Cisco, for example, uses a 0-100 scale, while Atheros uses 0-60. It’s all up to the manufacturer (which is why RSSI is a relative index), but you can infer that the higher the RSSI value is, the better the signal is.
- More information on [Meraki Location Analytics](#)
- Location analytics in [Meraki Dashboard](#)

Scanning API v3 with less than 3 MR's



Floor map and RSSI

Determine location



Meraki and DNA Spaces integration

Connect via Meraki Login

Login using your Meraki account credentials to connect to Cisco Meraki Cloud, import locations in to Cisco DNA Spaces and activate/sync the Meraki Networks.



Warning!
Connect via Meraki Login method is retiring soon. We strongly recommend Connect via API Key to connect your Meraki with Cisco DNA Spaces.

1 Connect your Meraki

Connect Meraki with DNA Spaces using your Meraki login credentials.

YOUR LOGIN



hemorale@cisco.com

Connected

2 Configure Meraki scanning API

Configure below Post URL with URL validator and secret key and validate manually in Meraki dashboard to establish connection with DNA Spaces.

3 Import Meraki Networks into Location Hierarchy

Connect Meraki with DNA Spaces using your Meraki login credentials.

0

networks imported

[Import Networks](#)
[Sync Status](#)

Old method

Connect via Meraki API Key

Connect Cisco DNA Spaces to Meraki Cloud Controller using your Meraki API key.



1 Connect your Meraki

Connect Meraki with DNA Spaces using the API key.

MERAKI SYNCHRONIZATION

 active

YOUR LOGIN



*****b1bf

2 Configure Meraki scanning API

Configure below Post URL with URL validator and secret key and validate manually in Meraki dashboard to establish connection with DNA Spaces.

Post URL

`https://location.dnaspaces.io/notifications/Meraki/hectormorales/<network_id>/<URLValidator>`

Secret Key

hectormorales

2

networks configured

3 Import Meraki Networks into Location Hierarchy

Connect Meraki with DNA Spaces using the API key.

2 / 4

organization(s) imported

2 / 16

networks imported

[Import Networks](#)
[Sync Status](#)


Meraki and DNA Spaces integration

1

Connect your Meraki

Connect Meraki with DNA Spaces using the API key.

MERAKI SYNCHRONIZATION

 active

Currently 0 other DNA Spaces login is syncing

YOUR LOGIN



Your login is not connected

You will not be able to make changes to Meraki sync. Connecting your Meraki account will let you to import Meraki networks into the Location Hierarchy

[Connect](#)

Connect via API key

Enter your Meraki API Key to fetch the network information

API KEY

9194504d4e55590c5f03684d5 fc55507c6780d5e

[Connect](#)

<CODE HERE>

Meraki and DNA Spaces integration

2

Configure Meraki scanning API

Configure below Post URL with URL validator and secret key and validate manually in Meraki dashboard to establish connection with DNA Spaces.

Post URL

https://location.dnaspaces.io/notifications/Meraki/hectormorales<network_id><URLValidator>

Secret Key

Get network id from Meraki Organization API

Get URL Validator from Meraki Network wide General

0 networks configured

Meraki and DNA Spaces integration

2

Configure Meraki scanning API

Configure below Post URL with URL validator and secret key and validate manually in Meraki dashboard to establish connection with DNA Spaces.

Post URL

https://location.dnaspaces.io/notifications/Meraki/hectormorales/<network_id>/<URLValidator>

Secret Key

hectormorales

0 networks configured

https://n22.meraki.com/api/v0/organizations

▼ 5:

id: "657525545596093462"

name: "ACME SD-WAN"

▼ url: "https://n168.meraki.com/o/zi7yVc0c/manage/organization/overview"

https://n168.meraki.com/api/v0/organizations/657525545596093462/networks

▼ 0:

id: "L_657525545596103966"

organizationId: "657525545596093462"

name: "HQ Site"

timeZone: "America/Los_Angeles"

tags: null

▼ productTypes:

0: "appliance"

1: "wireless"

type: "combined"

disableMyMerakiCom: false

disableRemoteStatusPage: true

<CODE HERE>

Meraki and DNA Spaces integration

Get network id from the organization

2

Configure Meraki scanning API

Configure below Post URL with URL validator and secret key and validate manually in Meraki dashboard to establish connection with DNA Spaces.

Post URL

https://location.dnaspaces.io/notifications/Meraki/hectormorales<network_id>/<URLValidator>

Secret Key

hectormorales

0 networks configured

https://n168.meraki.com/api/v0/organization

▼ 5:

id:

"657525545596093462"

name:

"ACME SD-WAN"

▼ url:

"https://n168.meraki.com/o/zi7yVc0c/manage/organization/overview"

https://n168.meraki.com/api/v0/organizations/657525545596093462/networks

▼ 0:

id:

"L_657525545596103966"

organizationId:

"657525545596093462"

name:

"HQ Site"

timeZone:

"America/Los_Angeles"

tags:

null

▼ productTypes:

0:

"appliance"

1:

"wireless"

type:

"combined"

disableMyMerakiCom:

false

disableRemoteStatusPage:

true

<CODE HERE>

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Demo

Q&A



References

- https://documentation.meraki.com/MR/Monitoring_and_Reporting/Scanning_API_for_Location_Analytics_Solutions
- <https://www.fortunebusinessinsights.com/industry-reports/location-based-services-market-101060>
- <https://dnaspaces.io/login>

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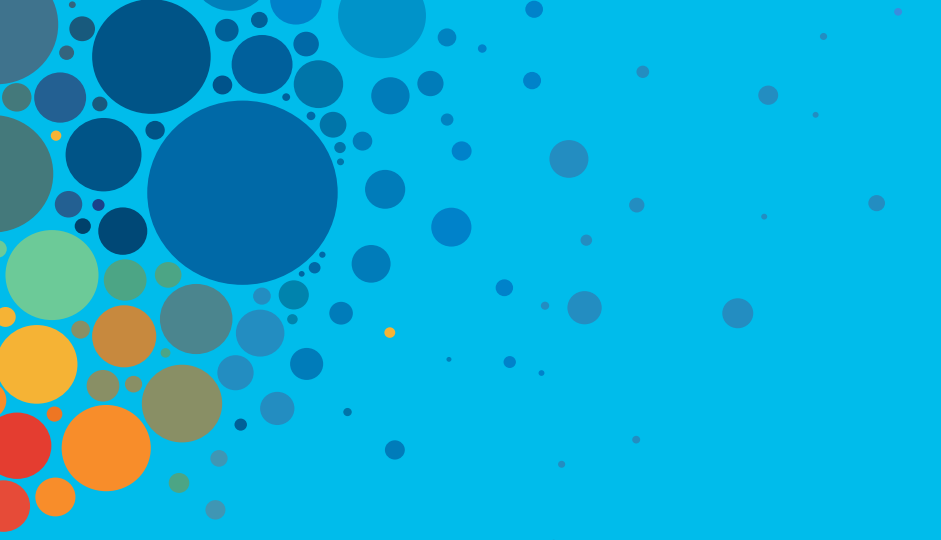
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