



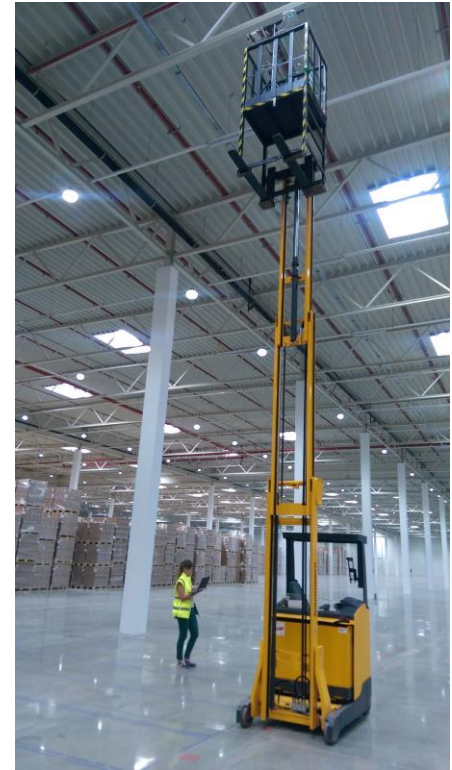
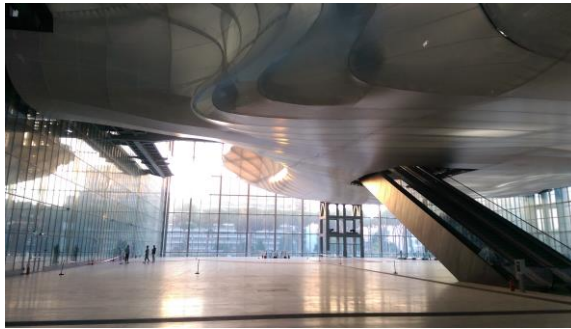
The bridge to possible

Cisco Spaces:

How to turn your Wi-Fi Network into Location Based Intelligence

Peter Malic, CX Product Management

A bit about me: Peter Malic



Cisco Webex App

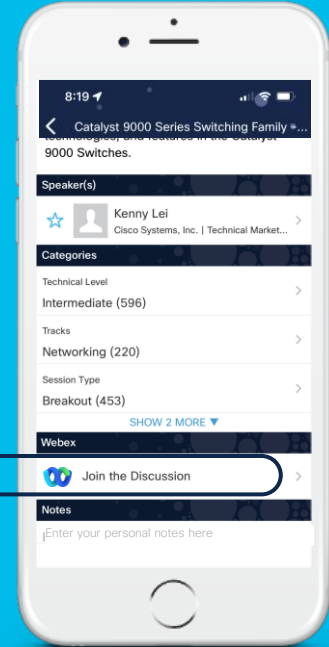
Questions?

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 until February 24, 2023.



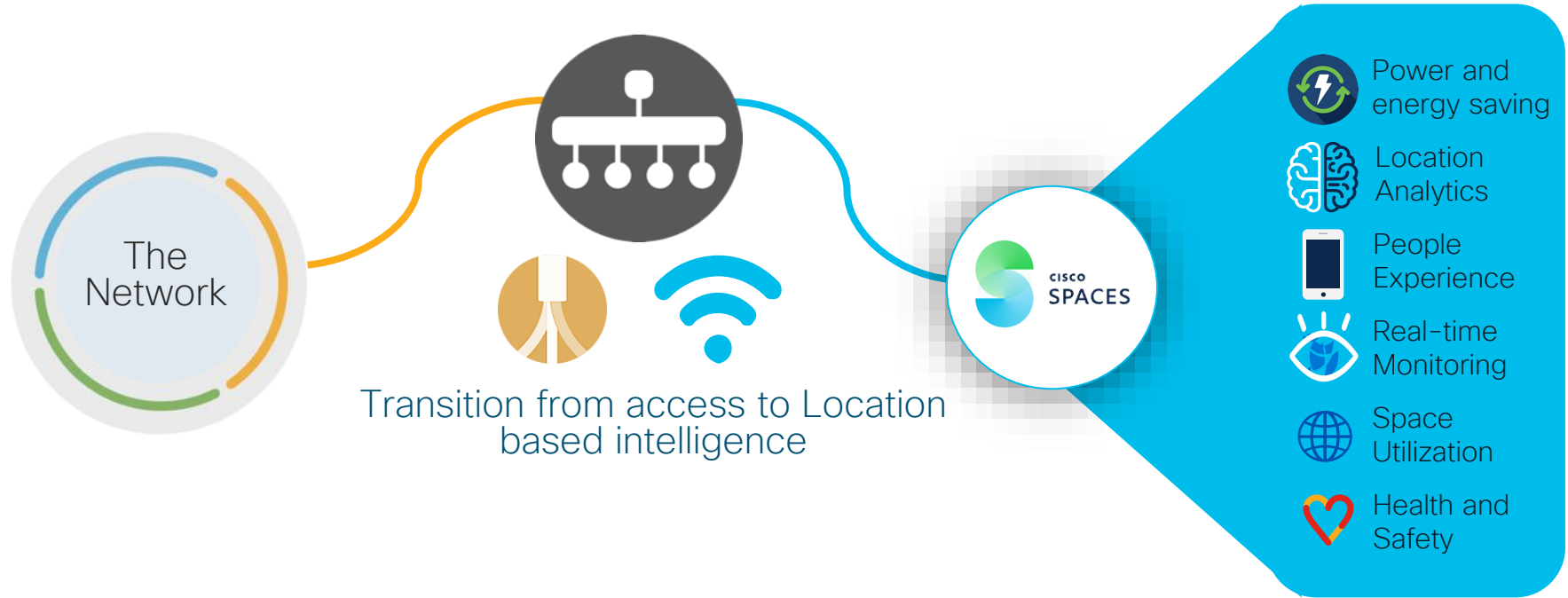
Agenda

- Introduction
- Architecture overview
- Spaces Connector and Deployment
- Before we start
- Out of the box features
- Conclusion

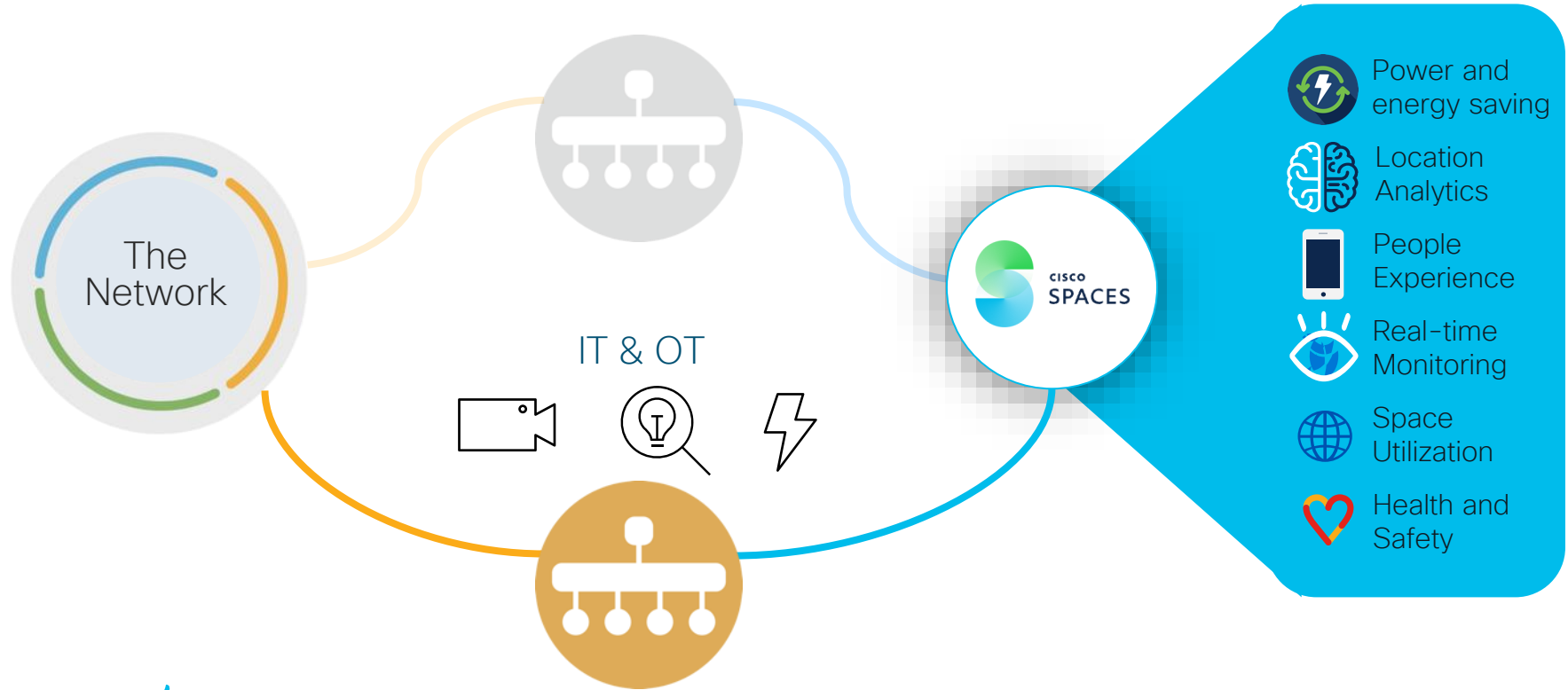
Introduction



Use your network as foundation



Use your network as foundation



High-Level Cisco Spaces Setup Flow

01

Activate Cisco Spaces Account

- Activate Account for Purchased licensing
- Start a Free Trial

02

Integrate Wi-Fi Components

- Install Connector
- Integrate AireOS/Catalyst WLC
- Integrate with Meraki

03

Build Location Hierarchy

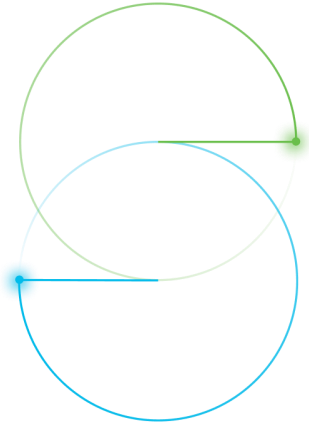
- Import Wi-Fi Maps
- Organize Meraki Networks
- Fill in Location Data

04

Use Cisco Spaces Apps

- Start Using Apps
- Define Rules to Power Apps

Cisco Spaces features at a glance



SEE

SEE what's happening at your locations and understand behavior



EXTEND

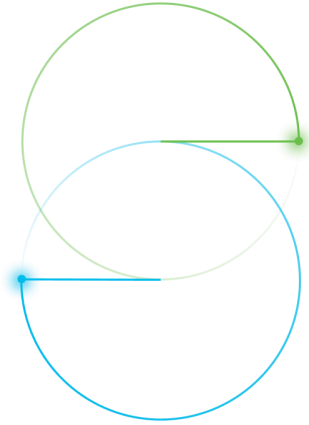
Take your data beyond the dashboard with integrations



ACT

Act on Insights using Digitization Toolkits

Cisco Spaces features at a glance - SEE



SEE



EXTEND

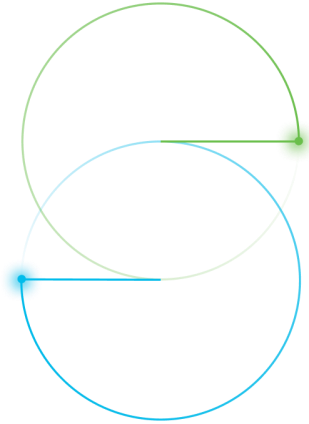


ACT

SEE Features: SEE what's happening at your locations and understand behavior

Behavior Metrics	Understand visitor behavior. Benchmark performance.
Impact Analysis	Measure impact of location behavior on events & layout changes
Location Hierarchy	Easily convert your IT networks to business taxonomy for LOB understanding
Right Now Metrics	Understand behavior of visitors in real time
Location Analytics	Gain visibility into customer behavior patterns, filter and analyze behavior based on business criteria
Open Roaming	Enhance Wi-Fi experience and boost Wi-Fi adoption by seamlessly onboarding guests
Camera Metrics	Get insights into the behavior of people within physical spaces using Meraki Video Cameras
Detect & Locate SEE	Search and display devices on a map interface
Cisco DNA Center Integration	Synchronize maps and view device locations using DNA Center

Cisco Spaces features at a glance - EXTEND



SEE



EXTEND



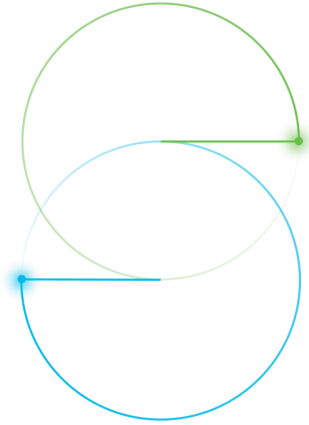
ACT

EXTEND Features: Take your data beyond the dashboard with integrations

Everything in Cisco Spaces SEE plus..

Partner App Center	App Center with ready to use enterprise partner apps specific to your industry
Firehose API	Cloud-first, high performance, low latency API
Enterprise Integrations	Integrate with enterprise software to correlate with location data
Cisco on Cisco	Integrations with Cisco WebEx etc. to improve location services
Partner Dashboard	Create new applications to ingest streaming data from dashboard to enable specific use cases
SLAs & monitoring for APIs	24x7 API monitoring and support

Cisco Spaces features at a glance - ACT



SEE



EXTEND



ACT

ACT Features: Act on Insights using Digitization Toolkits

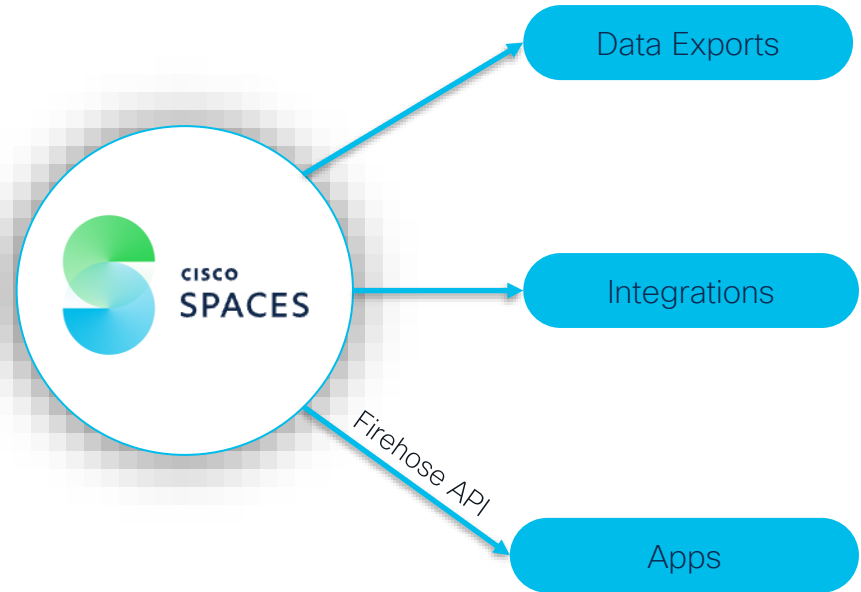
Everything in DNA Spaces SEE and EXTEND plus..

Captive Portals	Acquire & identify visitors and loyal members and expand customer base
Location Personas	Profile and segment visitors based on at-location behavior
Engagements	Trigger notifications to visitors & employees based on location and behavior
Asset Locator	Identify & monitor assets, detect anomalies (previously Operational Insights)
Detect & Locate ACT	Get detailed device location real-time as well as historical data, global search by mac or username.
Density Rules	Send contextual notifications when density or client count limits are met
Proximity Reporting	Get insights into client's location exposure and proximity reports of other clients in vicinity
Indoor IOT Services	Break adoption barriers, lower cost and unlock IOT use cases and management

Architecture



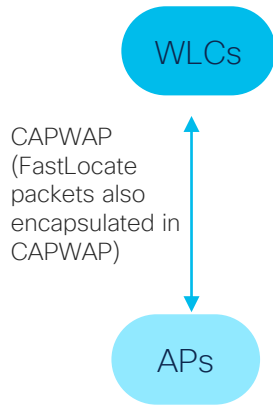
Cisco Spaces Architecture



Cisco Spaces Architecture



Cisco Spaces Architecture



US Setup

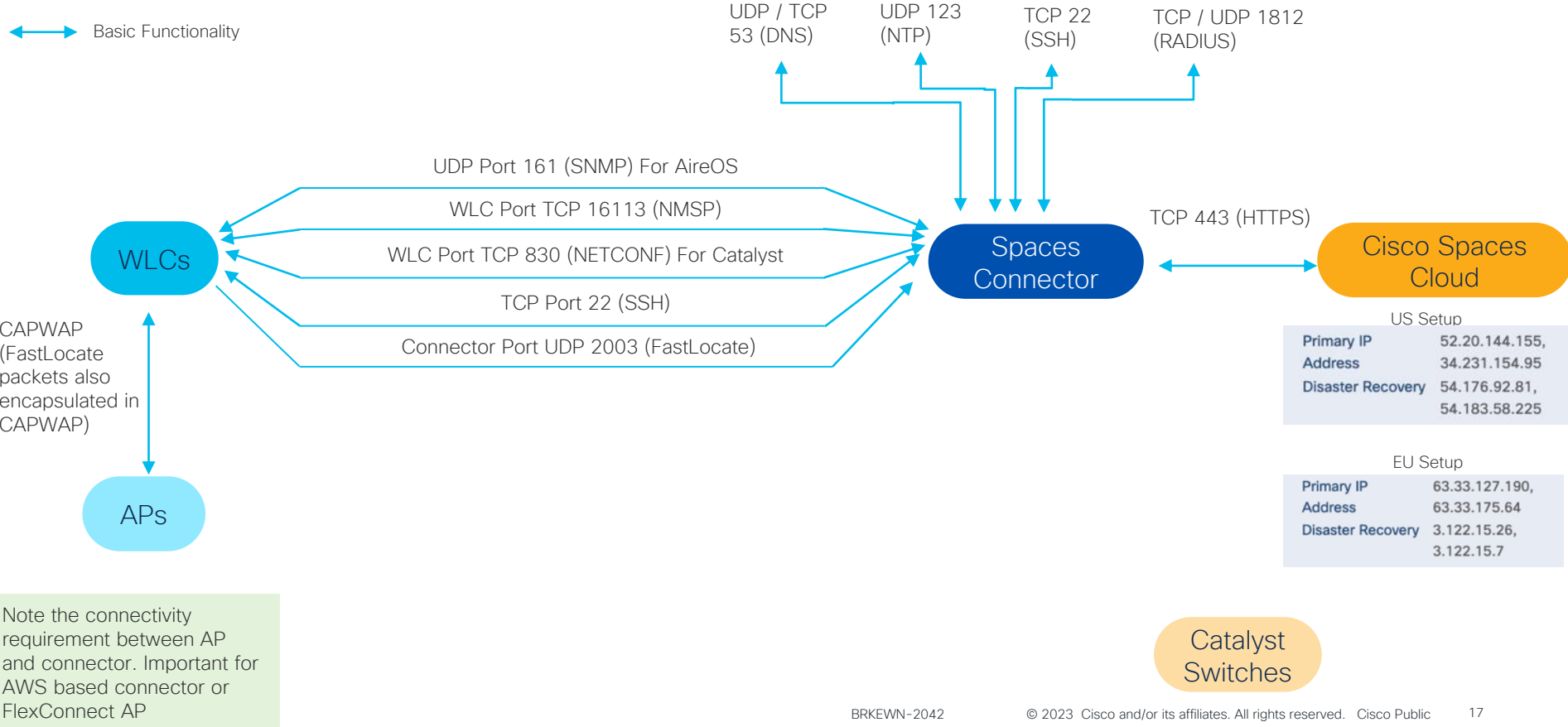
Primary IP	52.20.144.155,
Address	34.231.154.95
Disaster Recovery	54.176.92.81,
	54.183.58.225

EU Setup

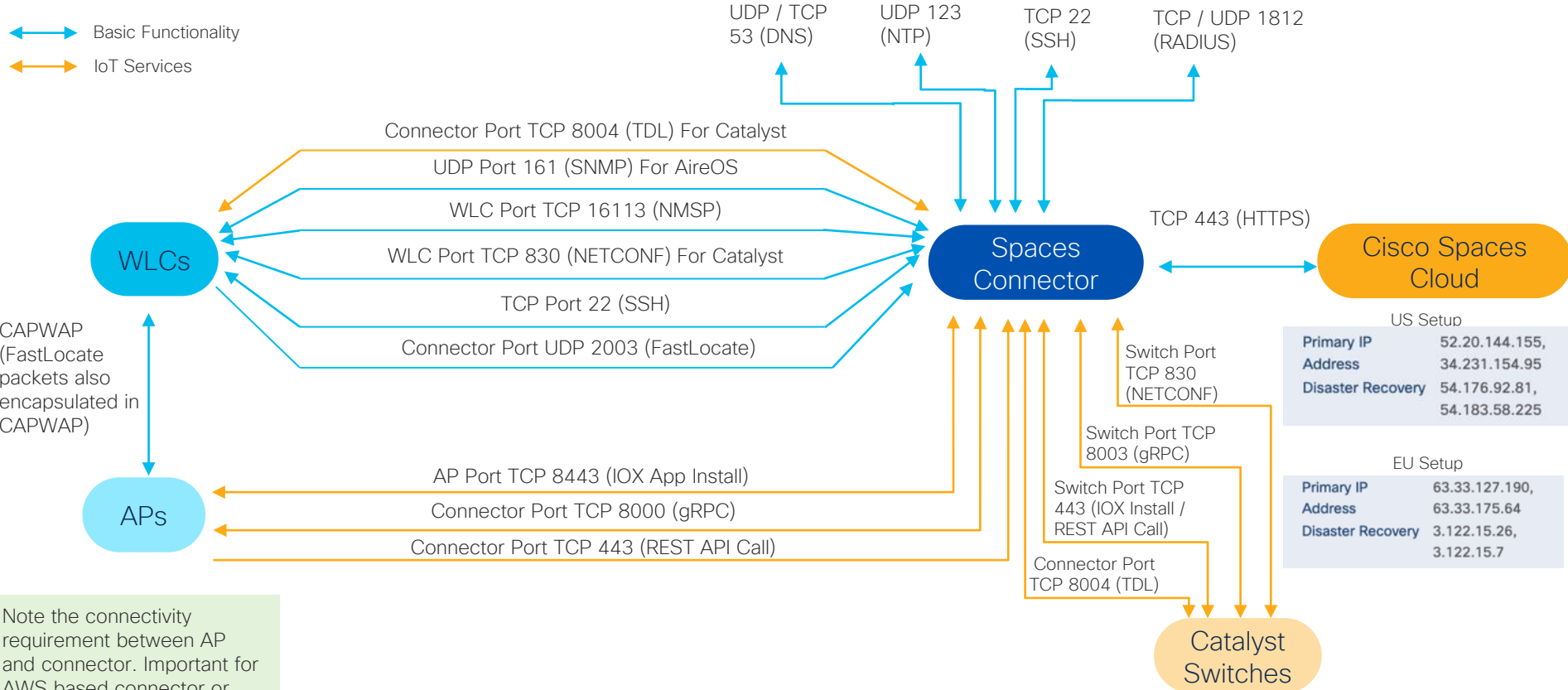
Primary IP	63.33.127.190,
Address	63.33.175.64
Disaster Recovery	3.122.15.26,
	3.122.15.7



Cisco Spaces Architecture



Cisco Spaces Architecture



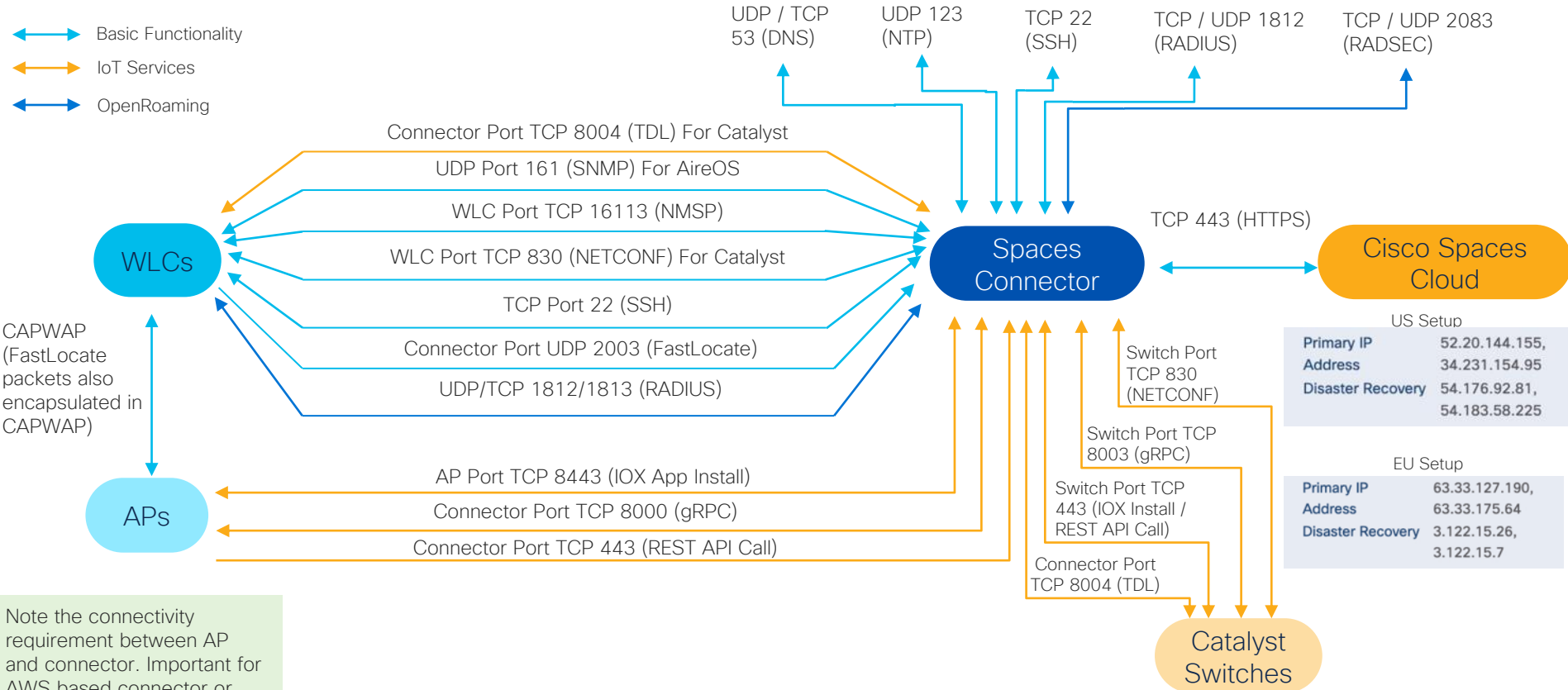
US Setup

Primary IP Address	52.20.144.155, 34.231.154.95
Disaster Recovery	54.176.92.81, 54.183.58.225

EU Setup

Primary IP Address	63.33.127.190, 63.33.175.64
Disaster Recovery	3.122.15.26, 3.122.15.7

Cisco Spaces Architecture



Why Cisco Spaces Connector ?

- Recommended way of connecting your network to Cisco Spaces Cloud
- Free VM to download in OVA form
- Created to handle high scale and performance
- “Lightweight” and easy to deploy control point towards your cloud (open ports [HERE](#))
- One Connector can support multiple WLCs (Max 16 recommended)
- Dual interface option available with HA setup

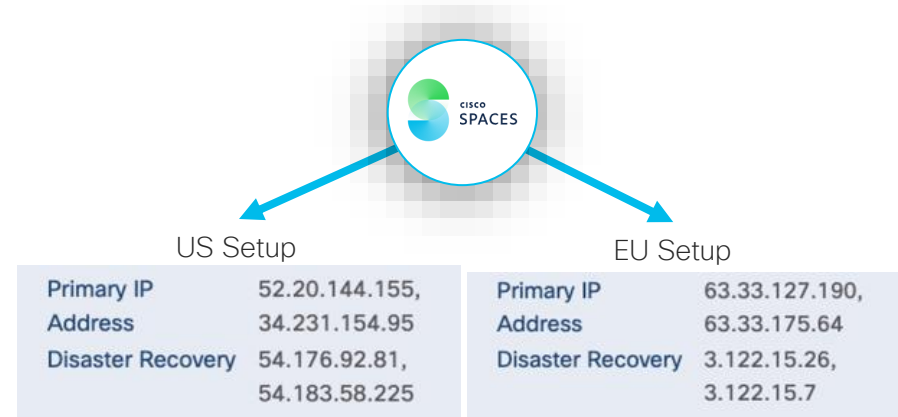
OVA Type	vCPU	RAM	Storage (HDD OK) 2.3 / 3.0
Standard (Recommended)	2	4 GB	60 GB / 120 GB
Advanced 1	4	8 GB	60 GB / 120 GB
Advanced 2	8	16 GB	60 GB / 120 GB

*Always refer to release notes for each version

Why Cisco Spaces Connector – Features

Recommended way of connecting your network to DNA Spaces Cloud

Feature	Spaces Connector
X/Y compute	Yes
DNA Spaces Apps and Rule Engines (Right Now, Captive Portals, Engagement etc.)	Yes
Mobility Express and EWC Support	Yes
Partner Apps integration / Partner App Center	Yes
Detailed visibility into incoming data stream and anomalies	Yes
IOT Services (Wireless / Wired)	Yes
Hyperlocation	Yes
Open Roaming	Yes



Demo Cisco Spaces Connector

Few more steps
before we are up
and running



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Use Cisco Spaces Apps


- Start Using Apps
- Define Rules to Power Apps

Start with Location Hierarchy in Cisco Spaces

CISCO SPACES | Location Hierarchy - Beta

Search

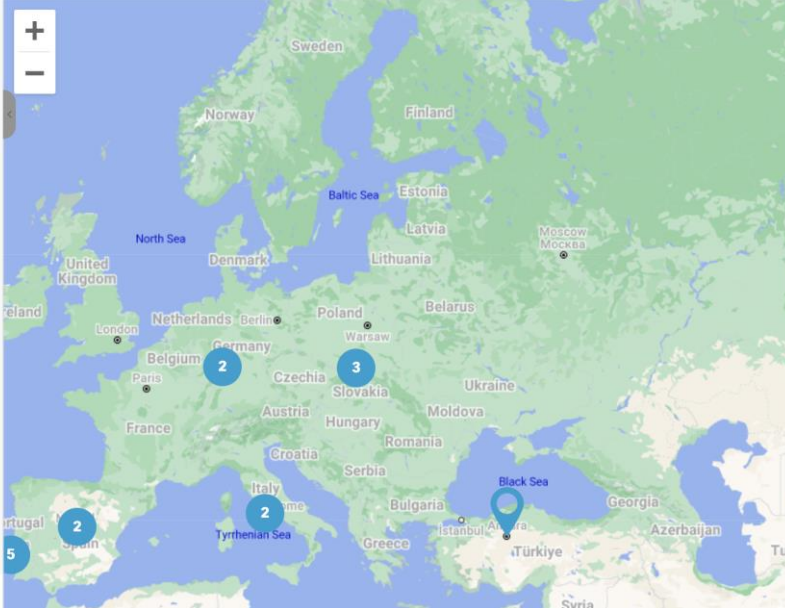
PeterMalic

 **PeterMalic** ...

PeterMalic

2	18	8	22	1	33	4
Org	Campus	Group	Building	Wlc	Floor	Zone

Map | Location Info | Network Devices | Metadata



The map shows Europe with several locations marked by blue circles containing numbers, indicating a hierarchy. The locations are: 5 (Portugal), 2 (Spain), 2 (Tyrrenian Sea), 2 (Belgium), 3 (Slovakia), and 2 (Moscow/Moskva). The map also shows various countries and bodies of water.

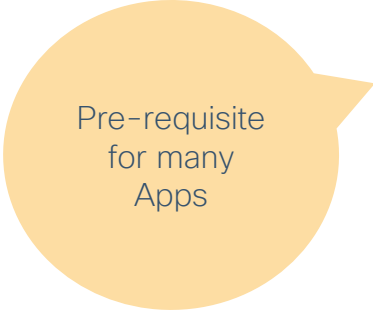
Left Sidebar (Location Hierarchy):

- + CCIE
- + Colombia
- + demo_Test
- + EMEA
- + Global
- + IndustrialSites
- + ITALY
- + Juma
- + Meraki_test
- + Poland
- + Portugal
- + Slovakia
- + SONAE Rec - admendo
- + Spain
- + TBMM Rec - admendo
- + test

Moving from using existing network hierarchy structure to a facilities/ business hierarchy

Start with Location Hierarchy in Cisco Spaces

- Creating a good location hierarchy is highly recommended in Cisco Spaces!
- Translates IT based hierarchy to business taxonomy



Pre-requisite
for many
Apps

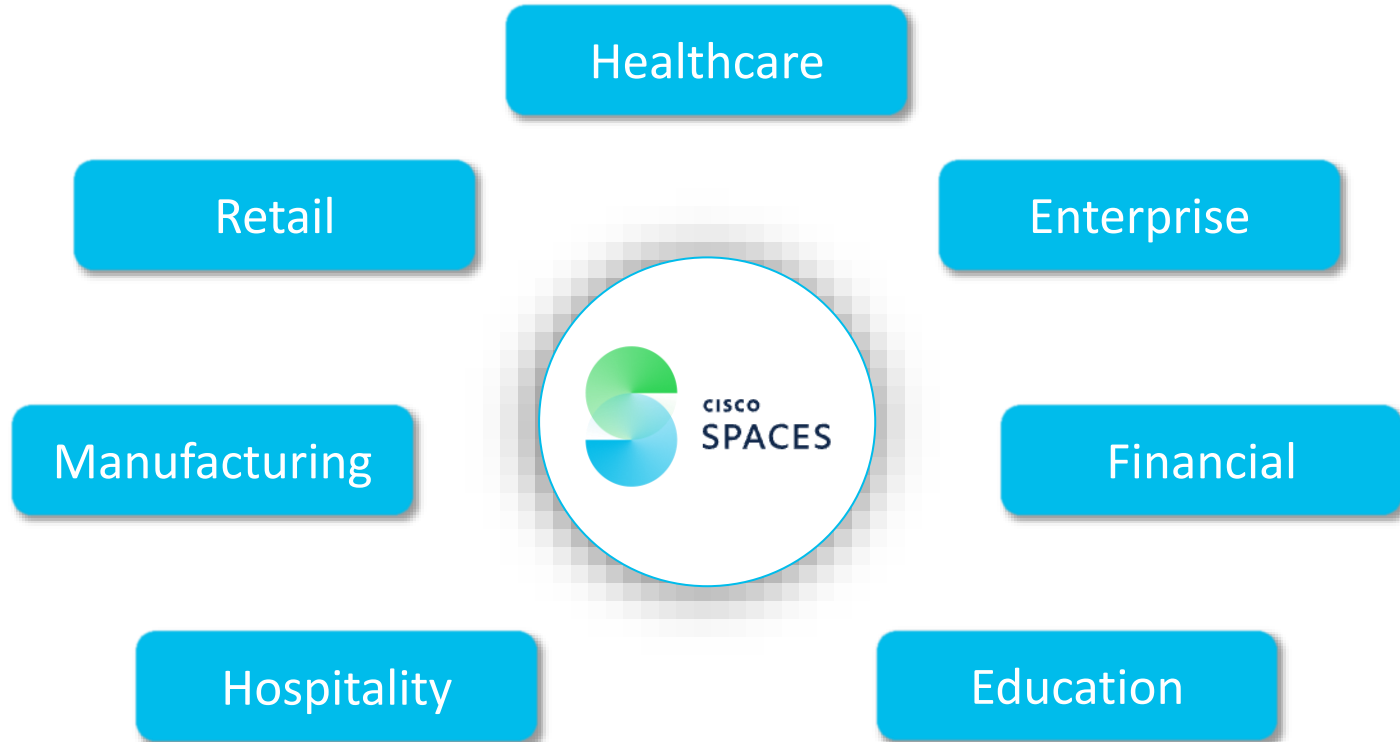
Using DNA Center or PI Maps (Recommended)	Import the Hierarchy present in DNA Center or Prime Infrastructure along with floor maps, AP placements and calibration information.
Creating Location Hierarchy Manually	Only use if maps are not available. Import the controller and manually create different node and Select APs.
Via Meraki Networks	Meraki networks are imported into the location hierarchy and follow the structure as defined in Meraki.

Location hierarchy and maps

Prerequisite or highly recommended for majority of Applications

- Creating a good location hierarchy is **highly recommended** in Cisco Spaces!
- Translates IT based hierarchy to **business taxonomy**.
- Add **Exclusion and Inclusion Zones in the maps** for best accuracy of calculated locations in Detect and Locate
- Create **accurate floor maps** for best granularity and accuracy of location calculations and analytics.
- **Add accurate metadata** to the nodes of Location Hierarchy for highest value. Example: Area of building / floors, occupancy limits, tags, address and time zone etc.
- Create **sub-zones or groups in Hierarchy** for use in other applications and rule engines

Look into different verticals



Look into different verticals

	Wi-Fi count	Challenges
Workspace	User-id data is a close approximation of actual numbers Device count trends correlate strongly with badge data at the daily count/location level	User-Id availability Vertical definition SSID labeling SSID discipline 'Campus impact'

Look into different verticals

	Wi-Fi count	Challenges
Workspace	User-id data is a close approximation of actual numbers Device count trends correlate strongly with badge data at the daily count/location level	User-Id availability Vertical definition SSID labeling SSID discipline 'Campus impact'
Education	Similar as above	User-id availability SSID labelling SSID discipline Device/person separation 'Campus Impact'

Look into different verticals

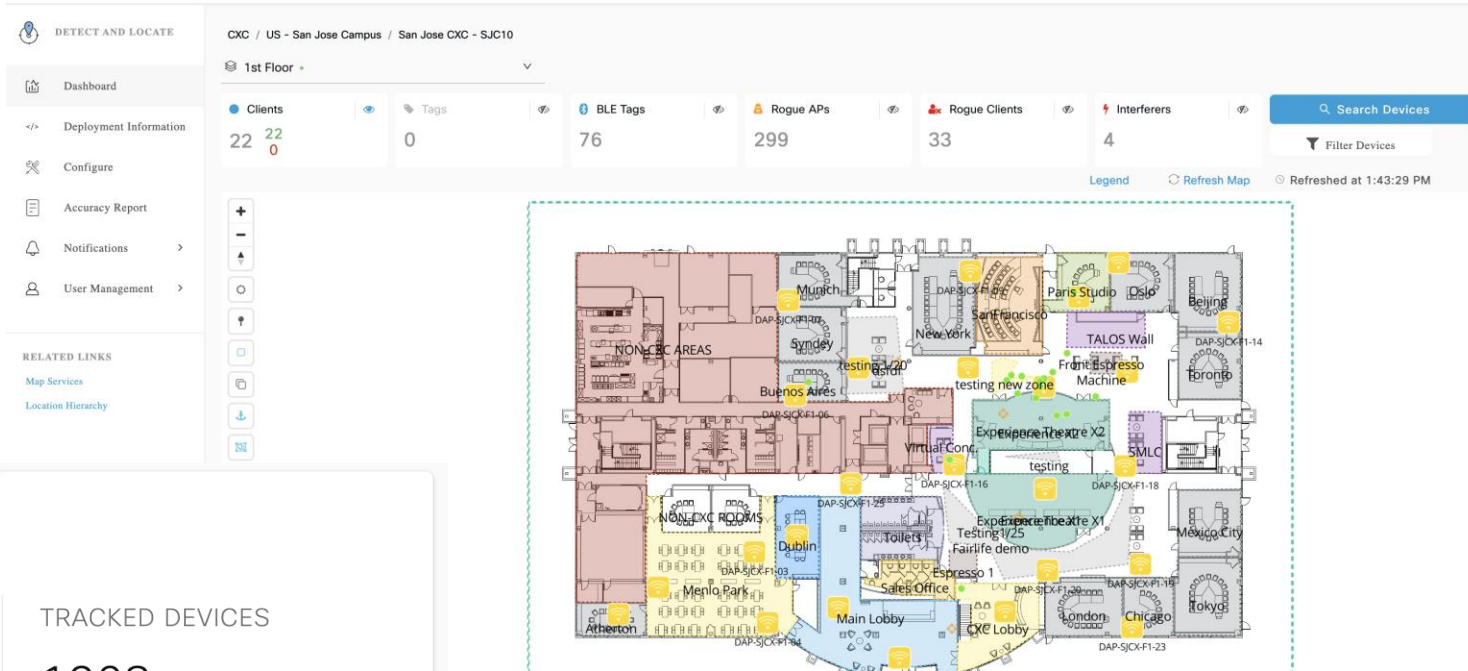
	Wi-Fi count	Challenges
Workspace	User-id data is a close approximation of actual numbers Device count trends correlate strongly with badge data at the daily count/location level	User-Id availability Vertical definition SSID labeling SSID discipline 'Campus impact'
Education	Similar as above	User-id availability SSID labelling SSID discipline Device/person separation 'Campus Impact'
Retail and Verticals with low % of associated clients / high guest count	Good for trends and behavioral metrics but limited for absolute counts	Crowded entrances could impact count Cannot count zones with no clear entrances (density metric as a proxy) Cannot count unique visitors due to other challenges

What is out of
the box?



Detect & Locate

Cisco Spaces | Detect and Locate



Detect & Locate

View and track devices in your deployment

Value

Operational efficiency

IT productivity

Use cases

- View and track devices in your deployment
- Access to client history and API to access both real-time and historical data (ACT license)

Right Now

CISCO SPACES | Right Now



RIGHT NOW



Right Now on WiFi



Right Now on Camera BETA



Density Rules



Settings

RELATED LINKS

RIGHT NOW

11:50 AM

Your local time

Location

PeterMalic



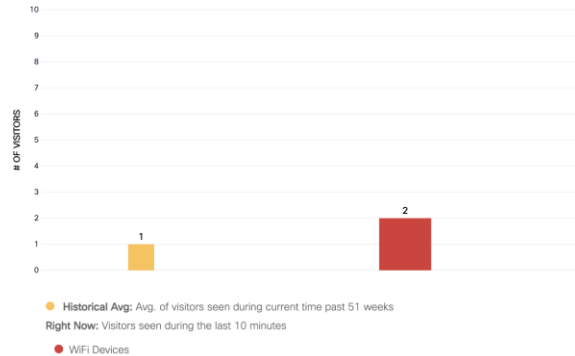
Real time metrics: What is happening at your location as it happens

Visitors Present: All locations

RIGHT NOW WIFI, BLE, RFID & WIRED

Estimated total number of visitors present in all locations during the last 10 minutes.

2 Visitors

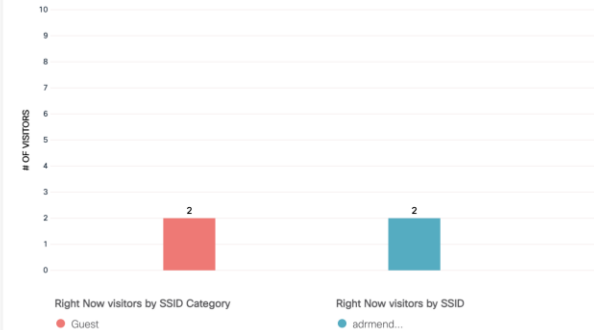


Visitor Composition

RIGHT NOW WIFI, BLE, RFID & WIRED

Break-up by type of visitors and SSID

2 Visitors



ACT FEATURES



Right Now

Real time metrics



Right Now

Gain a real-time view of visitor behavior at your properties.

Value

Understand behaviour

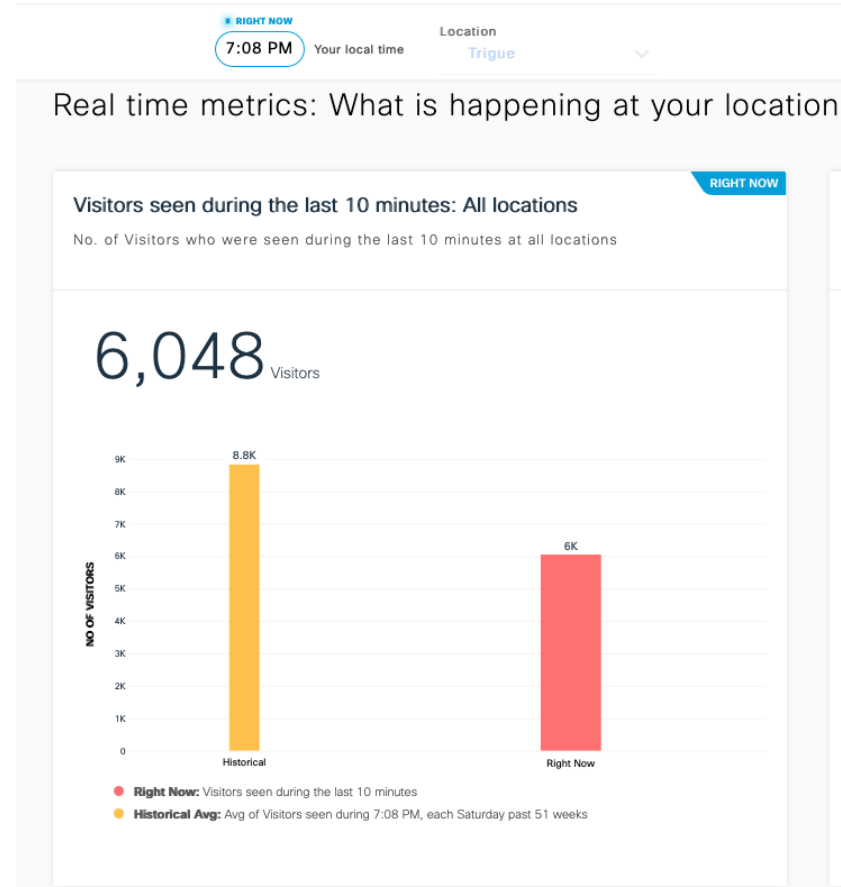
Optimize operations and
staffing

Use cases

- Get a real time view of the visitors currently present at your locations
- Respond to change in presence levels within location

Right Now - App Overview

- Provides a **real time** count of the number of people at a physical location or group of locations
- Compare with the **historical average**
- Two types of data sources:
 - Wi-Fi network data
 - Meraki Camera data
- Automated Triggers
- Assist with Safety and Compliance



Behavior Metrics



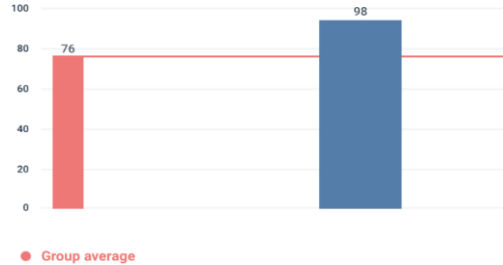
Behavior Metrics

Gold standard performance metrics
for physical spaces

Average Visit Duration

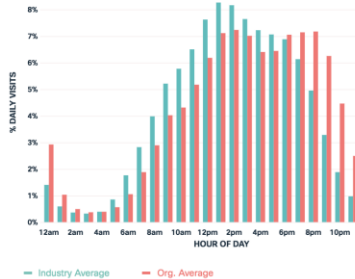
98 mins

PERCENTILE
96 +1 since
last month



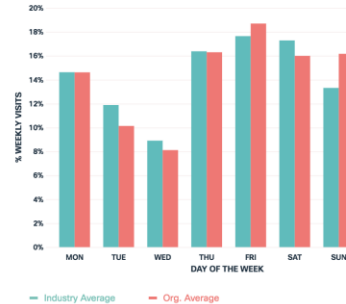
on: Hour of Day

hour of day



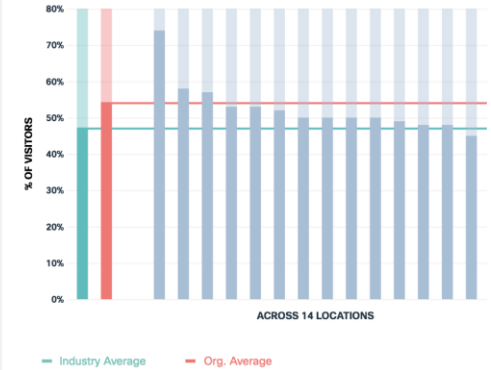
Visit Distribution: Day of Week

% weekly visits by day of week



Repeat Visitors: Across Locations

% of shoppers who repeat visit



Behavior Metrics

Gain a real-time view of visitor behavior at your properties.

Value

Understand behavior

Space optimization

Optimize operations

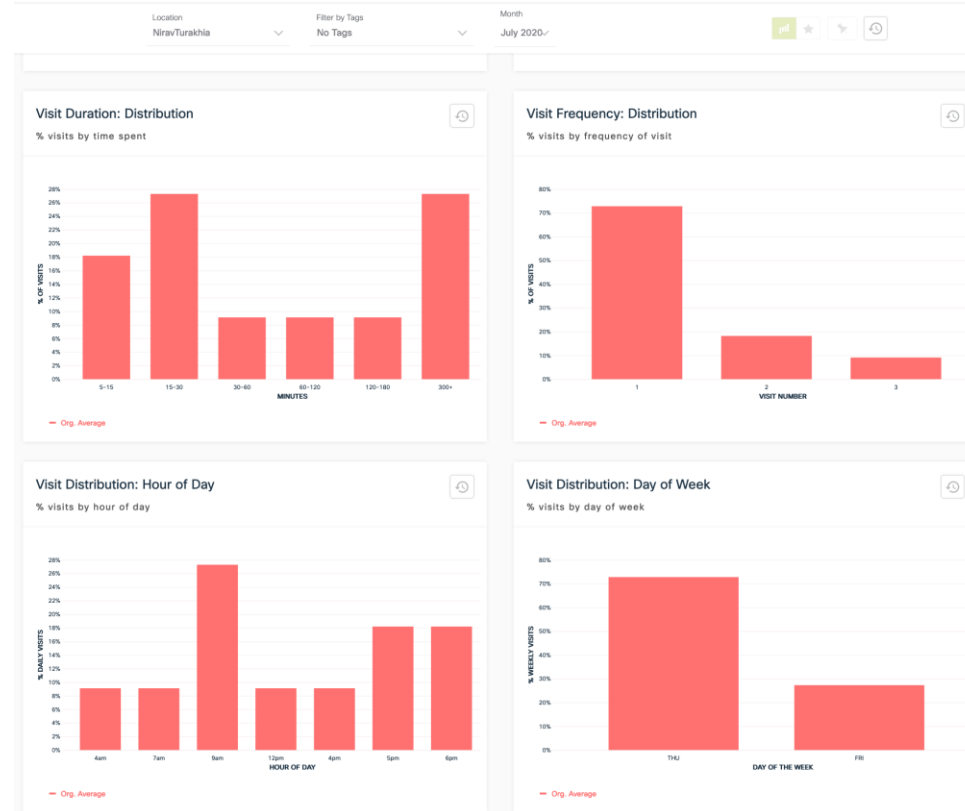
Drive productivity

Use cases

- Get understanding of on-site customer behavior across locations
- Understand peak days and times to make informed decisions such as staffing
- Measure customer loyalty by identifying new vs repeat visitors
- Benchmark performance of locations to understand below or above-average performance
- Correlate location behavior with other data sources such as – PoS, CRMs, loyalty database, etc. to get a 360-degree view of customer

Behavior Metrics

- Gives a monthly-report of how people are behaving at locations – helpful for LOB use cases and business users
- Can choose to view report by by:
 - Location Name
 - Tags created
 - Month
 - Historical View
- Associated Wi-Fi devices
- Vertical dependent metrics – A client is considered to end the visit if no location update seen for:
 - Workspace: 10 hours
 - Education: 10 hours
 - Retail: 3 hours
 - Generic: 3 hours
- Additional vertical specific insights



Location Analytics

BETA

ACT FEATURES



Location Analytics

Gain visibility into customer behavior
and patterns

ACTIVE DEVICES

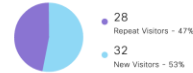
990441

Visitors

No. of Unique Visitors at **PeterMatic** connected to @AI SSIDs between 12:00 am and 11:59 pm from 09 December 2021 to 08 December 2022

60

No. of Unique Visitors

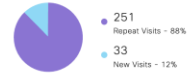


Visits

No. of Visits at **PeterMatic** connected to @AI SSIDs between 12:00 am and 11:59 pm from 09 December 2021 to 08 December 2022

284

No. of Visits



Dwell Time Distribution

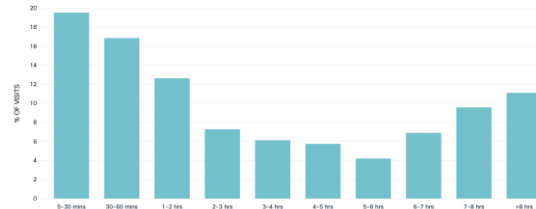
Dwell time break-up of visits at **PeterMatic** connected to @AI SSIDs between 12:00 am and 11:59 pm from 09 December 2021 to 08 December 2022

3.7 HOURS

Dwell Time of All Visits

261

No. of Visits

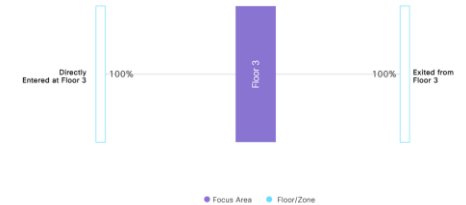


Path

Path analytics at **BTS-1/Floor 3** connected to @AI SSIDs between 12:00 am and 11:59 pm from 09 December 2021 to 08 December 2022

679

Total Visits



Location Analytics

Gain visibility into behavior patterns.

Value

Understand behavior

Space optimization

Optimize operations

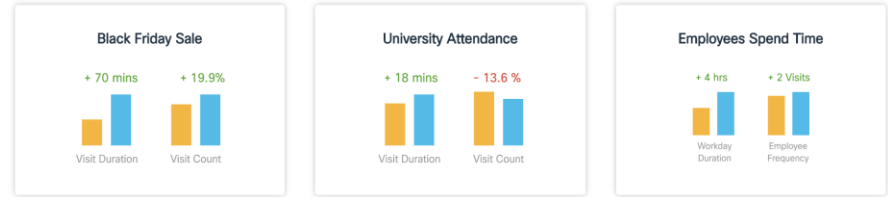
Drive productivity

Use cases

- Gain visibility into customer behavior patterns
- Create custom views and reports, filter by locations, date range
- Access historical trends to understand how customers interact with different parts of buildings or environments

Impact Analytics

Measure the impact of events through our interactive tool



Did shopper visit duration rise during the Black Friday sale?

Did the frequency of university attendance increase post holidays?

Did employees spend more time at the workspace post redecoration?

Location
Northland

Compared To
Period DURING event

Event Duration
Mar 15, 2020 - Mar 28, 2020

Delete



Impact Analysis

See the impact of events & changes to your business location on your behavior metrics.

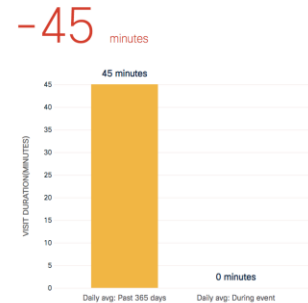
Now see Impact of COVID19

EVENTS MEASURING IMPACT

18

test Impact on Visit Duration

Increase/Decrease in visit duration during event



test % Impact on Visit Count

Increase/Decrease in visit count during event



Impact Analytics

See the impact of events & changes to your business location on your behavior metrics.

Value

Understand behavior

Space optimization

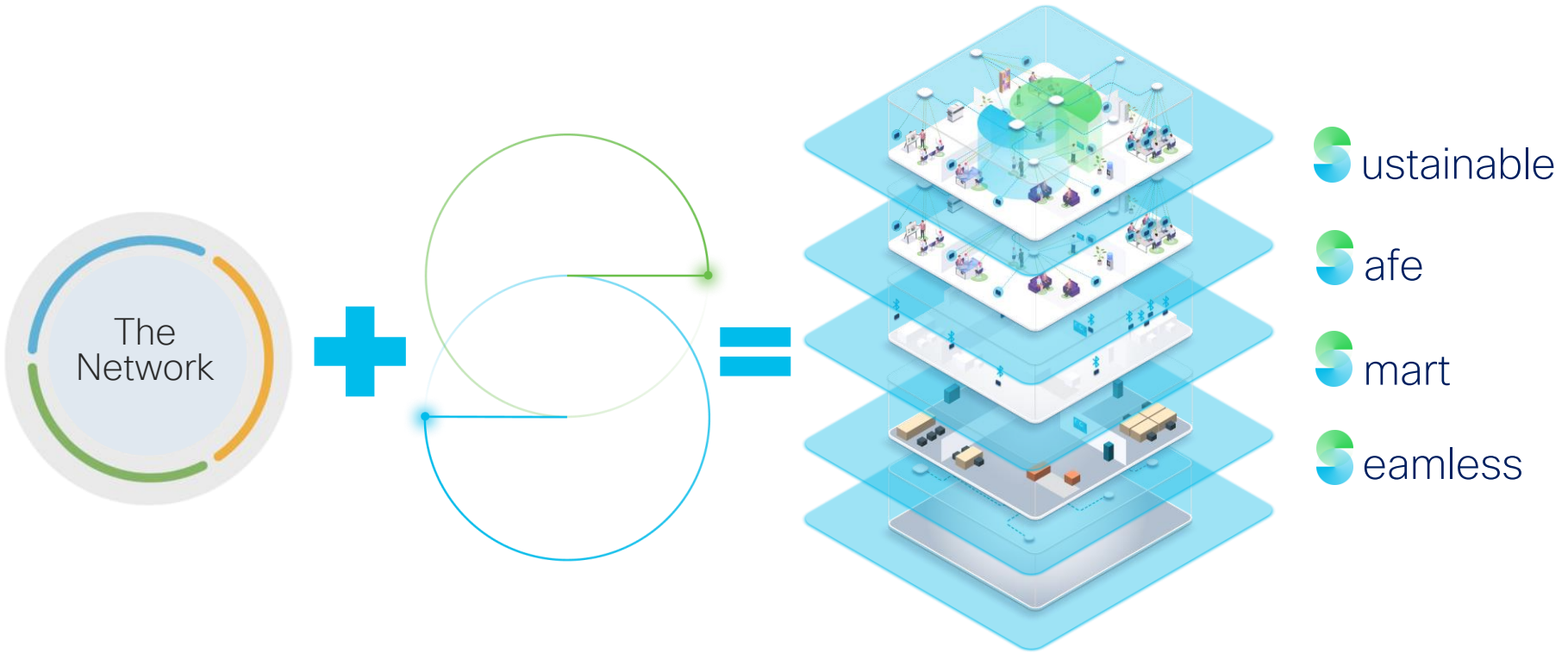
Optimize operations

Drive productivity

Use cases

- Gain visibility into customer behavior patterns
- Create custom views and reports, filter by locations, date range
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What now?



Complete your Session Survey

- Please complete your session survey after each session. Your feedback is very important.
- Complete a minimum of 4 session surveys and the Overall Conference survey (open from Thursday) to receive your Cisco Live t-shirt.
- All surveys can be taken in the Cisco Events Mobile App or by logging in to the Session Catalog and clicking the "Attendee Dashboard" at <https://www.ciscolive.com/emea/learn/sessions/session-catalog.html>



Continue Your Education



Visit the Cisco Showcase for related demos.



Book your one-on-one Meet the Engineer meeting.



Attend any of the related sessions at the DevNet, Capture the Flag, and Walk-in Labs zones.



Visit the On-Demand Library for more sessions at ciscolive.com/on-demand.

Networking

Wireless Solutions

Learn from experts on wireless topics such as wireless security and location based services including Wi-Fi and BLE technologies, extending to IoT use cases. You will learn some key fundamentals on leveraging your Cisco Wi-Fi investment to deliver smarter workspaces.

START

Feb 5 | 16:00

LABEWN-1661

Cisco DNA Spaces lab for Hybrid Workspace

Feb 7 | 14:45

BRKMER-2514

10 Things You Don't Know About Meraki Wireless

Feb 7 | 17:00

BRKOPS-2416

Seven Habits for a Successful Cisco DNA Center Deployment

Feb 8 | 08:30

LTREWN-2020

Cat 9800 Powered DNA Spaces Wireless Solutions Lab

Feb 8 | 14:45

BRKOPS-2402

Automate the Deployment of a Wireless Network with the Help of Cisco DNA Center

Feb 8 | 16:30

BRKEWN-3004

Understanding Wireless Security and the Implications for Secure Wireless Network Design

Feb 8 | 17:00

BRKEWN-1538

Internet of Things on the Next Generation Catalyst Wi-Fi 6E Access Points

Feb 9 | 08:45

BRKMER-2399

Meraki Wireless from a Troubleshooter Perspective

Feb 9 | 12:00

BRKEWN-2042

Cisco Spaces: How to Turn your Wi-Fi Network into Location Based Intelligence

Feb 9 | 15:45

FINISH

BRKEWN-2658

Implement Smart Workspaces and deliver Intelligent, Sustainable Buildings with Cisco Spaces

If you are unable to attend a live session, you can watch it [On Demand](#) after the event

CISCO *Live!*



The bridge to possible

Thank you

CISCO *Live!*

CISCO *Live!*

