START Hack Challenge 24

With Cisco SPACES

Who are we

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Networking
Experiences CH

Anna Summerauer
Solution Engineer
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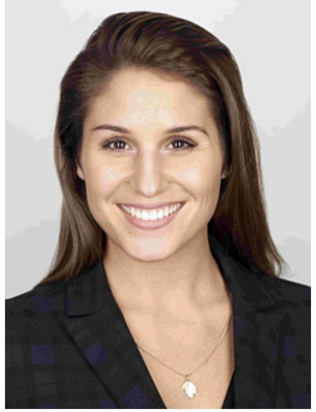
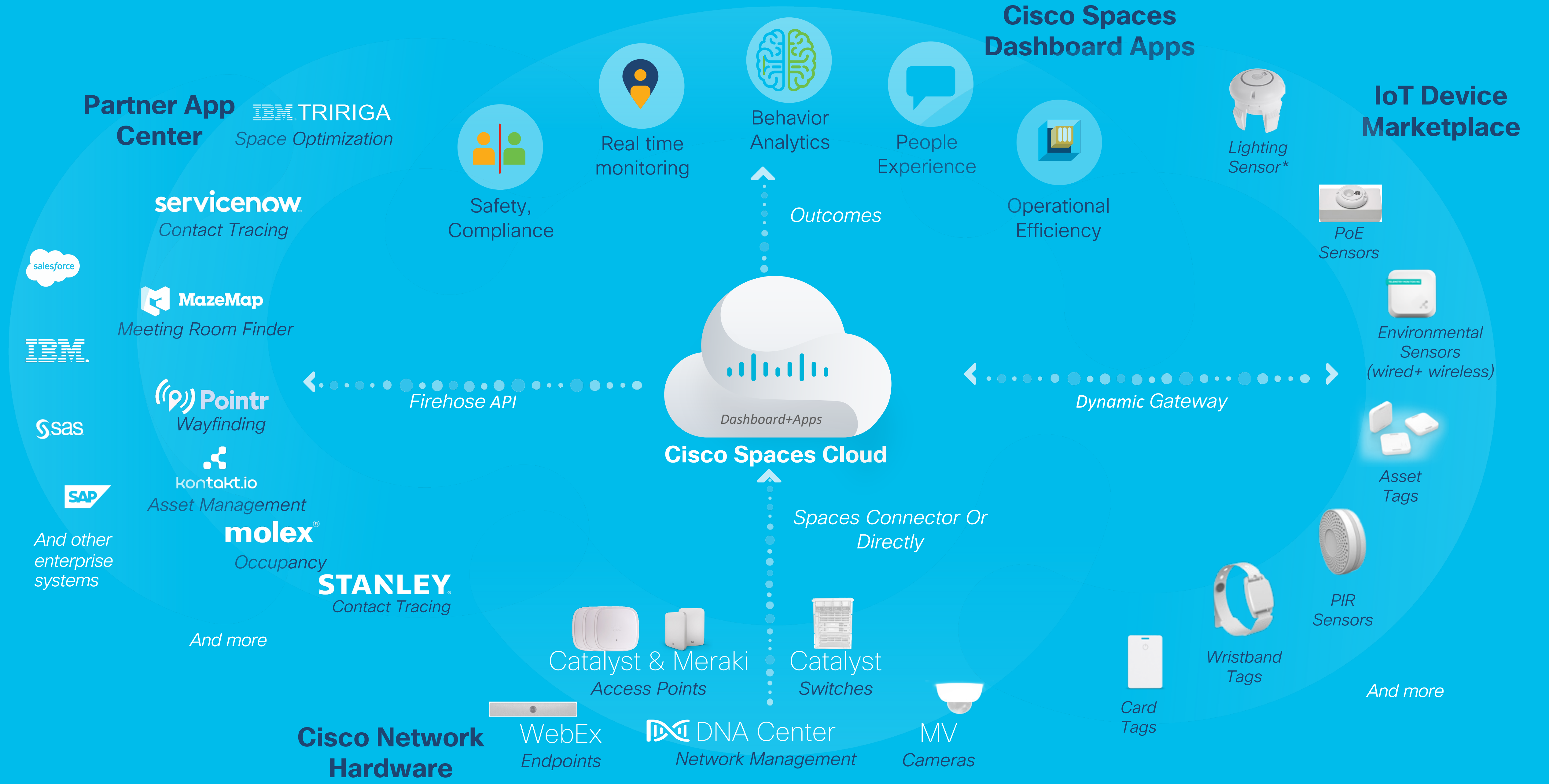


Florence Boivin
Sales Specialist
Cisco Spaces

High Level Data Flow Architecture



Cisco Spaces Dashboard Apps

Safety, Compliance

Real time monitoring

Behavior Analytics

People Experience

Operational Efficiency

Outcomes

Partner App Center

TRIRIGA
Space Optimization

servicenow
Contact Tracing

MazeMap
Meeting Room Finder

Pointr
Wayfinding

kontakt.io
Asset Management

molex
Occupancy

STANLEY
Contact Tracing

And more

salesforce

IBM

sas

SAP

And other enterprise systems

Firehose API

Dashboard+Apps

Cisco Spaces Cloud

Dynamic Gateway

Spaces Connector Or Directly

IoT Device Marketplace

*Lighting Sensor**

PoE Sensors

Environmental Sensors (wired+ wireless)

Asset Tags

PIR Sensors

Wristband Tags

Card Tags

And more

Cisco Network Hardware

Catalyst & Meraki
Access Points

Catalyst
Switches

WebEx
Endpoints

DNA Center
Network Management

MV
Cameras

Cisco Spaces Partner App Center & IoT Device Marketplace

Cisco Spaces Partner App Center

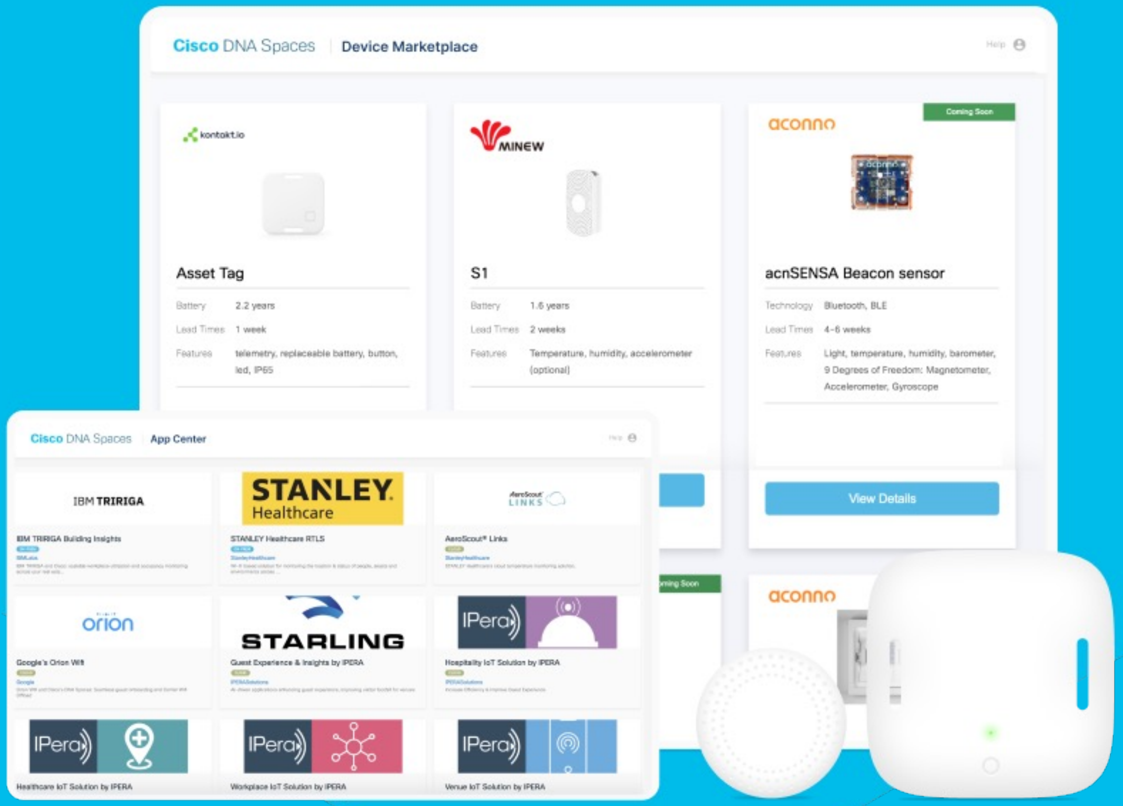
Integrated marketplace of application partners focused on business outcomes

- **Rapid Activation:** Activate pre-validated apps provided by Independent Software Vendors (ISVs) and enterprise vendors, in minutes!
- **More Control over Data:** Customers completely control their data. Customers can add, edit, or remove app access at anytime.
- **Privacy & Support:** Automated health checks, L1 support, app validation and testing.

IoT Device Marketplace

Ecosystem of third party IoT devices

- **Devices for a wide range of use cases:** Choose and order from a wide selection of devices with various form factors and price points
- **Pre-validated: All devices are pre-validated** for compatibility with App Center apps



Asset Tag

Battery	2.2 years
Lead Times	1 week
Features	telemetry, replaceable battery, button, led, IP65

S1

Battery	1.6 years
Lead Times	2 weeks
Features	Temperature, humidity, accelerometer (optional)

acnSENSA Beacon sensor

Technology	Bluetooth, BLE
Lead Times	4-6 weeks
Features	Light, temperature, humidity, barometer, 9 Degrees of Freedom: Magnetometer, Accelerometer, Gyroscope

IBM TRIRIGA Building Insights

STANLEY Healthcare RTLS

AeroScout® Links

Google's Orion Wifi

Guest Experience & Insights by IPERA

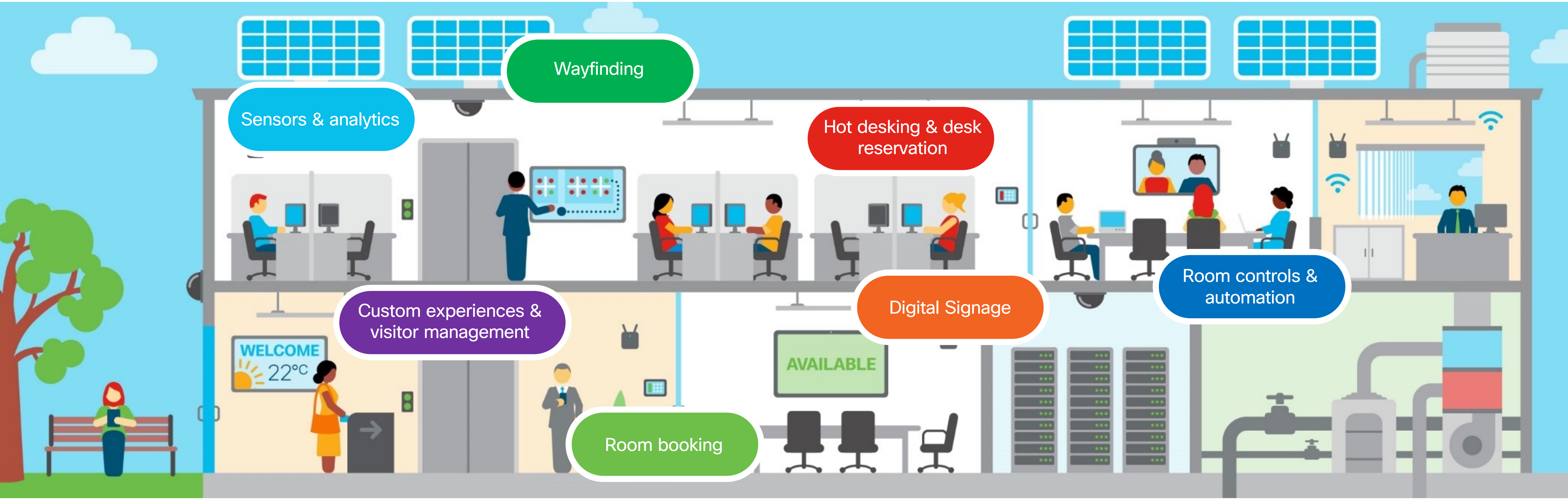
Hospitality IoT Solution by IPERA

Healthcare IoT Solution by IPERA

Workplace IoT Solution by IPERA

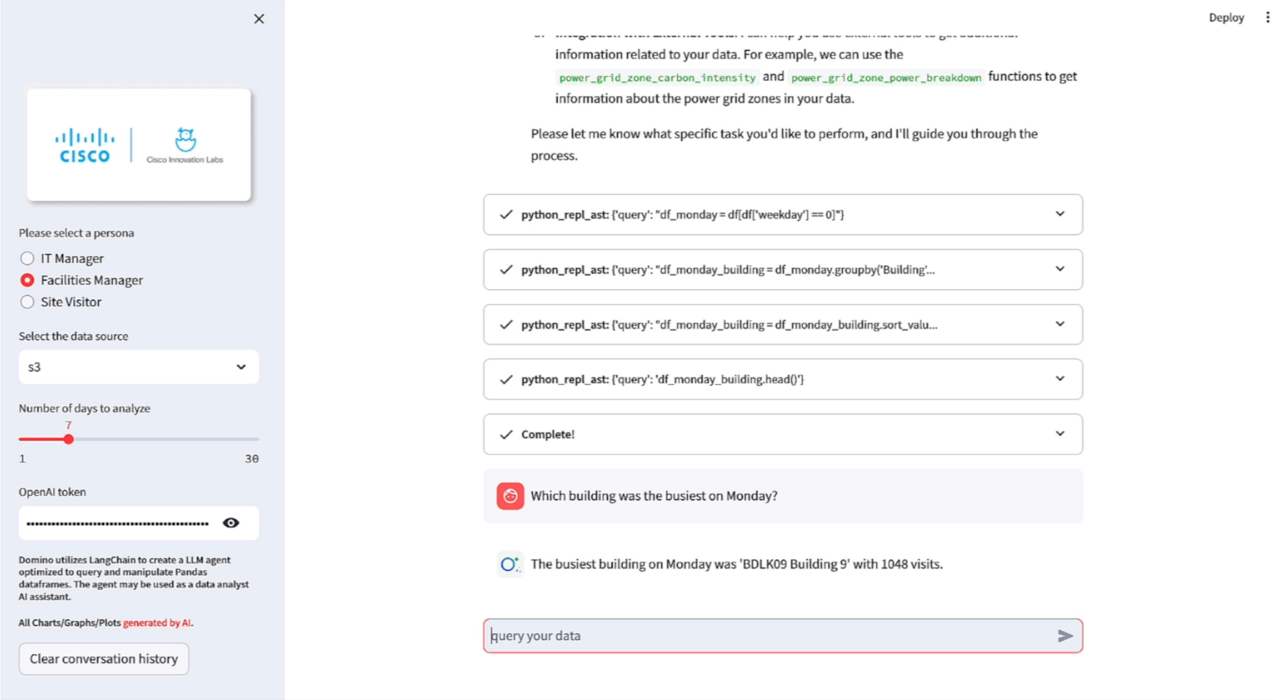
Venue IoT Solution by IPERA

Cisco Intelligent Workplace


Wayfinding
Sensors & analytics
Hot desking & desk reservation
Custom experiences & visitor management
Digital Signage
Room controls & automation
Room booking
WELCOME
22°C
AVAILABLE

Cisco & partners accompany knowledge workers from beginning to end of day, providing Webex consistent & advanced experiences, managed from a single pane of glass.

Example Use Case



Please select a persona

○ IT Manager
● Facilities Manager
○ Site Visitor

Select the data source

s3

Number of days to analyze

7

1 30

OpenAI token

••

Domino utilizes LangChain to create a LLM agent optimized to query and manipulate Pandas dataframes. The agent may be used as a data analyst AI assistant.

All Charts/Graphs/Plots generated by AI.

Clear conversation history

information related to your data. For example, we can use the `power_grid_zone_carbon_intensity` and `power_grid_zone_power_breakdown` functions to get information about the power grid zones in your data.

Please let me know what specific task you'd like to perform, and I'll guide you through the process.

✓ **python_repl_ast:** {'query': "df_monday = df[df['weekday'] == 0]"}

✓ **python_repl_ast:** {'query': "df_monday_building = df_monday.groupby('Building'...

✓ **python_repl_ast:** {'query': "df_monday_building = df_monday_building.sort_valu...

✓ **python_repl_ast:** {'query': 'df_monday_building.head()'}

✓ **Complete!**

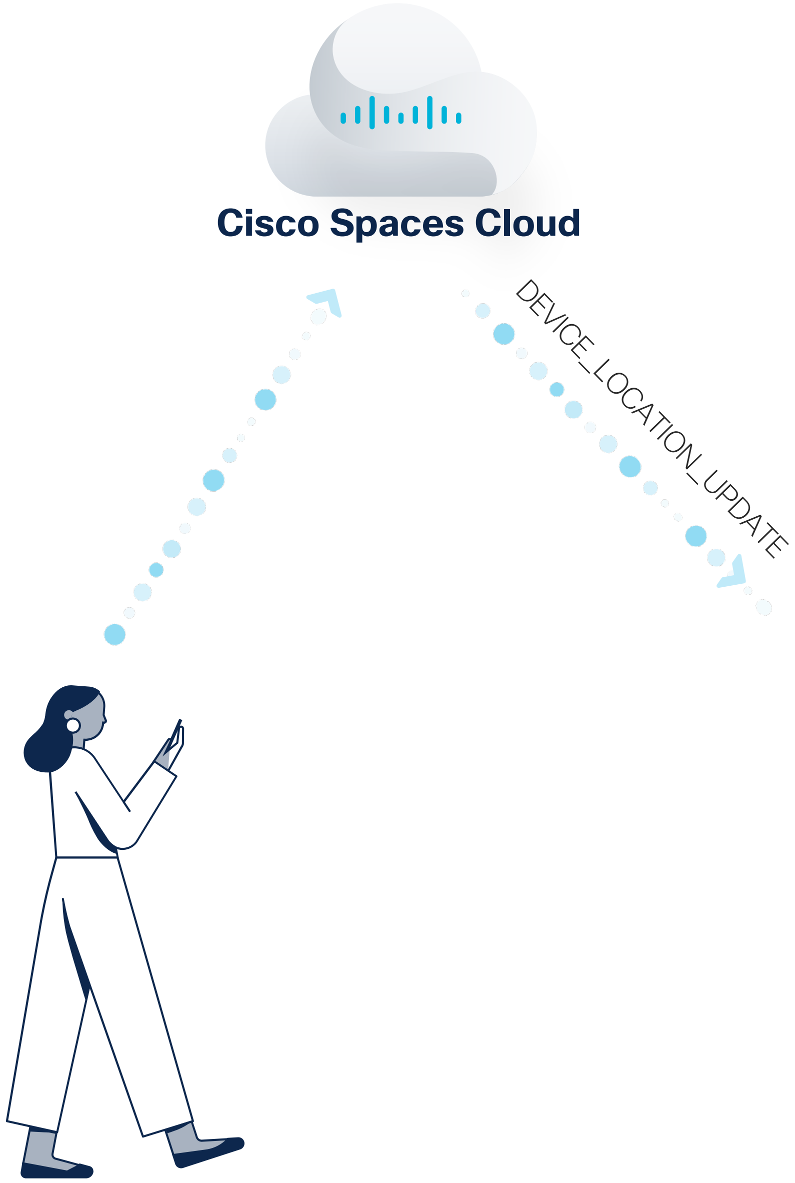
Which building was the busiest on Monday?

The busiest building on Monday was 'BDLK09 Building 9' with 1048 visits.

query your data

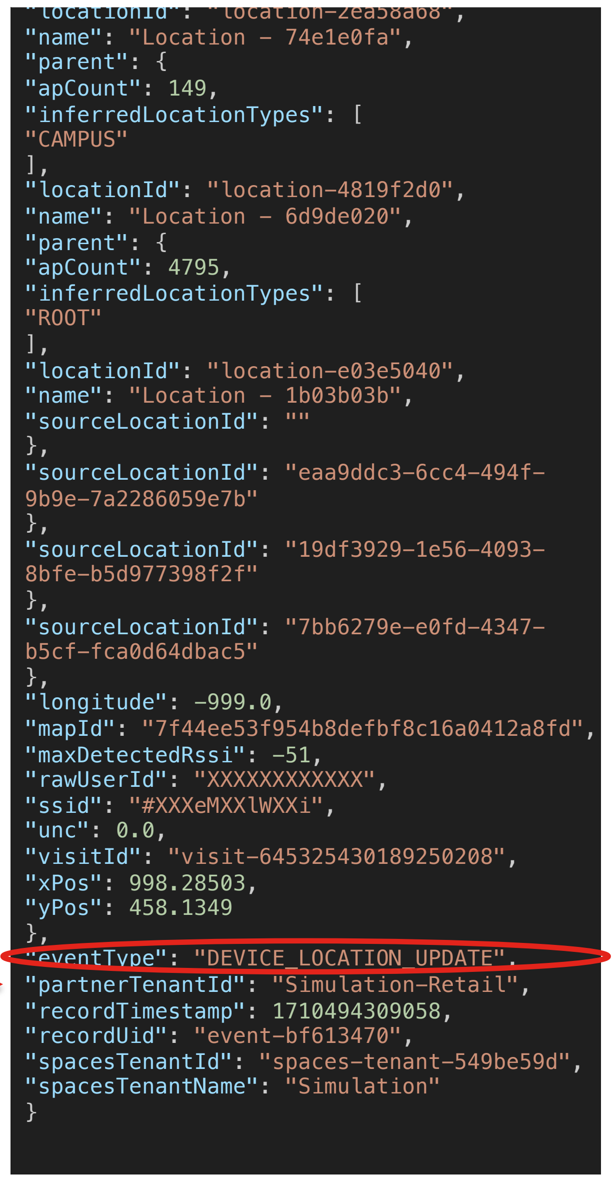
Firehose API

- The Firehose API provides a continuous stream of data
- Different Event Types exits for different use cases, e.g.:
    - WiFi events
    - IoT events
    - Camera events
    - Location hierarchy events
- The simulated data represent two scenarios:
    - Workspace or
    - Retail



Cisco Spaces Cloud

DEVICE_LOCATION_UPDATE



```
"locationId": "location-2ea58a68",
"name": "Location - 74e1e0fa",
"parent": {
"apCount": 149,
"inferredLocationTypes": [
"CAMPUS"
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"locationId": "location-4819f2d0",
"name": "Location - 6d9de020",
"parent": {
"apCount": 4795,
"inferredLocationTypes": [
"ROOT"
],
"locationId": "location-e03e5040",
"name": "Location - 1b03b03b",
"sourceLocationId": ""
},
"sourceLocationId": "eaa9ddc3-6cc4-494f-
9b9e-7a2286059e7b"
},
"sourceLocationId": "19df3929-1e56-4093-
8bfe-b5d977398f2f"
},
"sourceLocationId": "7bb6279e-e0fd-4347-
b5cf-fca0d64dbac5"
},
"longitude": -999.0,
"mapId": "7f44ee53f954b8defbf8c16a0412a8fd",
"maxDetectedRssi": -51,
"rawUserId": "XXXXXXXXXXXX",
"ssid": "#XXXeMXXlWXXi",
"unc": 0.0,
"visitId": "visit-645325430189250208",
"xPos": 998.28503,
"yPos": 458.1349
},
"eventType": "DEVICE_LOCATION_UPDATE",
"partnerTenantId": "Simulation-Retail",
"recordTimestamp": 1710494309058,
"recordUid": "event-bf613470",
"spacesTenantId": "spaces-tenant-549be59d",
"spacesTenantName": "Simulation"
}
```
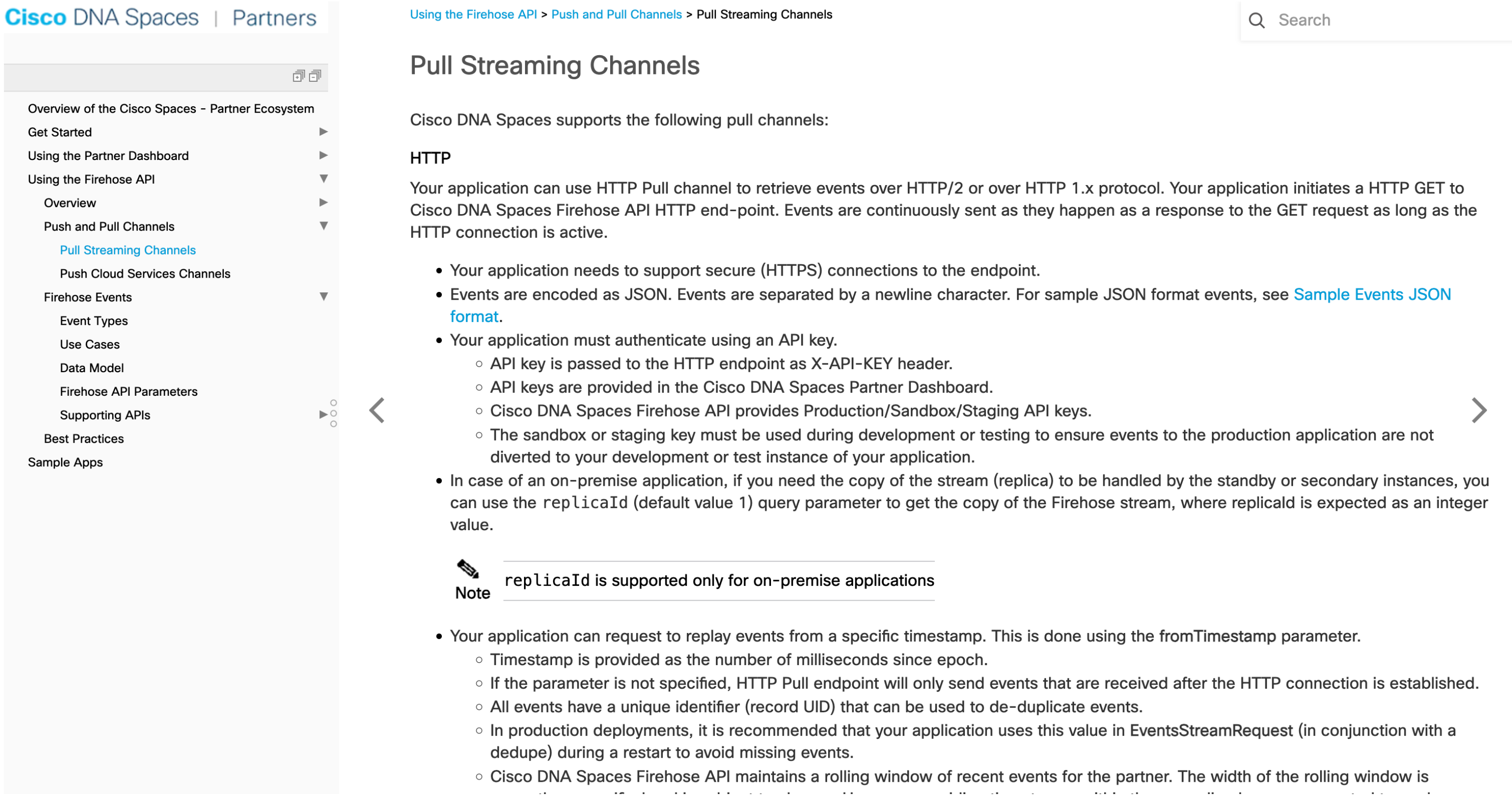

Documentation

- Main Spaces API Reference Guide
  Cisco Spaces API Documentation

- Cisco SPACES API Guide

- Firehose API Parameters: Cisco DNA Spces Partner Fireose API Events For Standard Partners


Cisco DNA Spaces | Partners
Overview of the Cisco Spaces - Partner Ecosystem
Get Started
Using the Partner Dashboard
Using the Firehose API
Overview
Push and Pull Channels
Pull Streaming Channels
Push Cloud Services Channels
Firehose Events
Event Types
Use Cases
Data Model
Firehose API Parameters
Supporting APIs
Best Practices
Sample Apps
Using the Firehose API > Push and Pull Channels > Pull Streaming Channels
Search

Pull Streaming Channels

Cisco DNA Spaces supports the following pull channels:

HTTP

Your application can use HTTP Pull channel to retrieve events over HTTP/2 or over HTTP 1.x protocol. Your application initiates a HTTP GET to Cisco DNA Spaces Firehose API HTTP end-point. Events are continuously sent as they happen as a response to the GET request as long as the HTTP connection is active.

- Your application needs to support secure (HTTPS) connections to the endpoint.
- Events are encoded as JSON. Events are separated by a newline character. For sample JSON format events, see Sample Events JSON format.
- Your application must authenticate using an API key.
  - API key is passed to the HTTP endpoint as X-API-KEY header.
  - API keys are provided in the Cisco DNA Spaces Partner Dashboard.
  - Cisco DNA Spaces Firehose API provides Production/Sandbox/Staging API keys.
  - The sandbox or staging key must be used during development or testing to ensure events to the production application are not diverted to your development or test instance of your application.
- In case of an on-premise application, if you need the copy of the stream (replica) to be handled by the standby or secondary instances, you can use the `replicaId` (default value 1) query parameter to get the copy of the Firehose stream, where replicaId is expected as an integer value.

Note `replicaId` is supported only for on-premise applications

- Your application can request to replay events from a specific timestamp. This is done using the fromTimestamp parameter.
  - Timestamp is provided as the number of milliseconds since epoch.
  - If the parameter is not specified, HTTP Pull endpoint will only send events that are received after the HTTP connection is established.
  - All events have a unique identifier (record UID) that can be used to de-duplicate events.
  - In production deployments, it is recommended that your application uses this value in EventsStreamRequest (in conjunction with a dedupe) during a restart to avoid missing events.
  - Cisco DNA Spaces Firehose API maintains a rolling window of recent events for the partner. The width of the rolling window is

Prizes

- B&O Cisco 950 True Wireless In-Ear. USB-A Cable – Black
- Cisco Goody Bag
- Meeting&Lunch with Cisco to present the Use-Case