



**START**  
HACK

START Hack Challenge 24

With Cisco SPACES

# Who are we



Stefan Leemann  
Networking  
Experiences CH



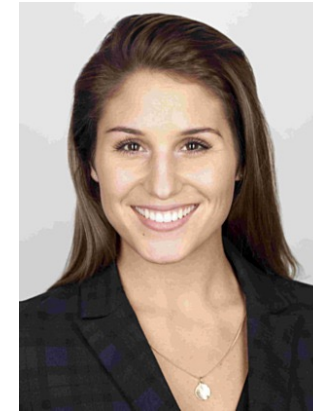
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Wireless CH



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Solution Engineer  
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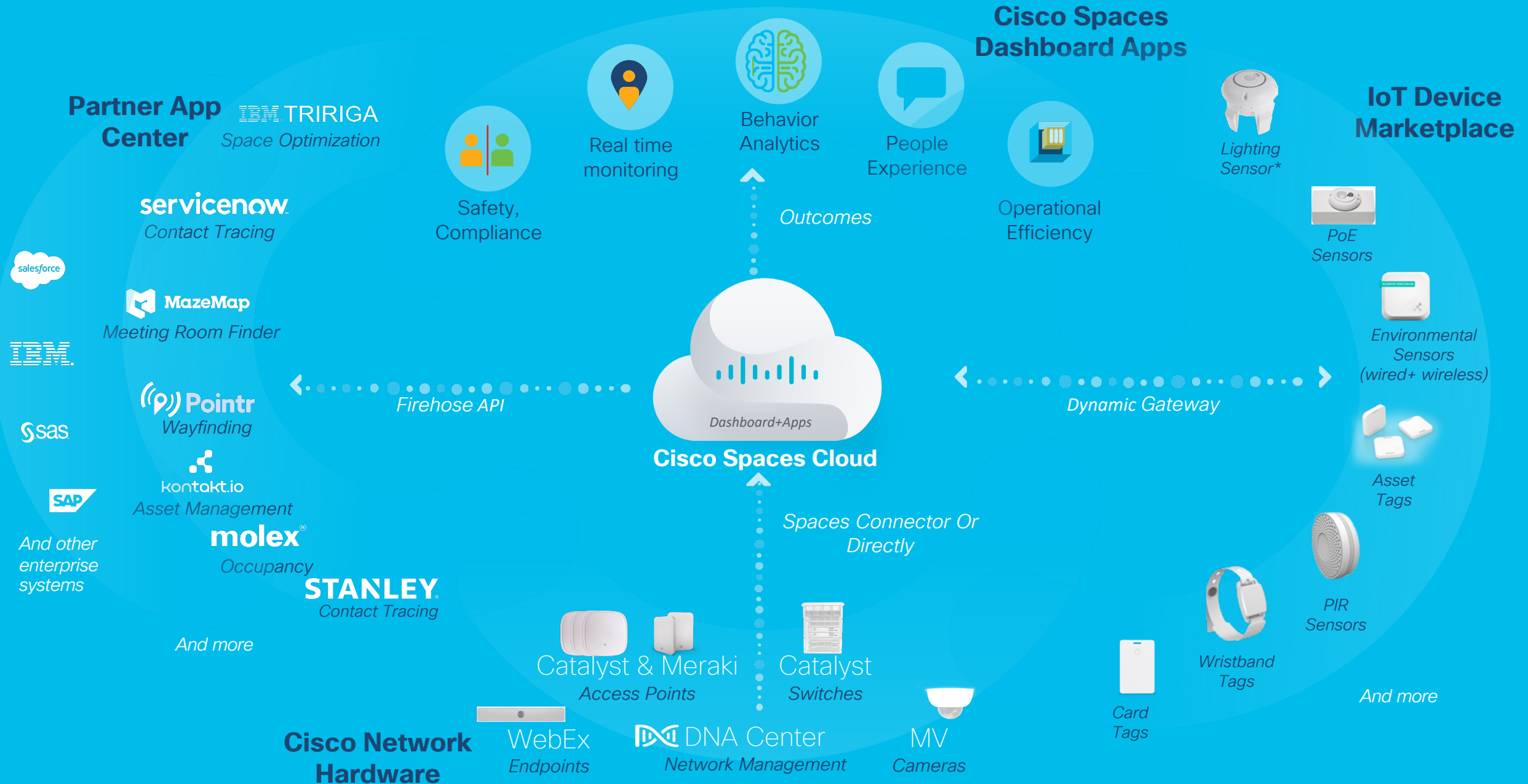


Simon Light  
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# High Level Data Flow Architecture



# Cisco Spaces Partner App Center & IoT Device Marketplace

## Cisco Spaces Partner App Center

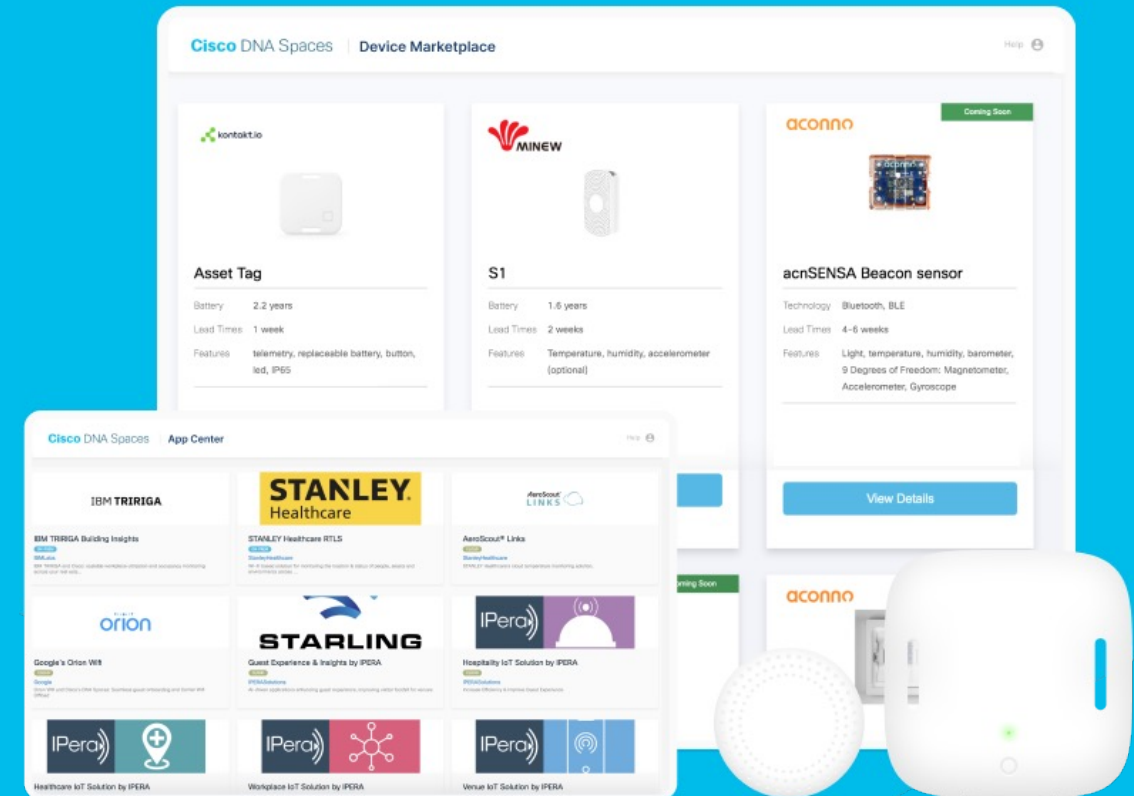
*Integrated marketplace of application partners focused on business outcomes*

- **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.

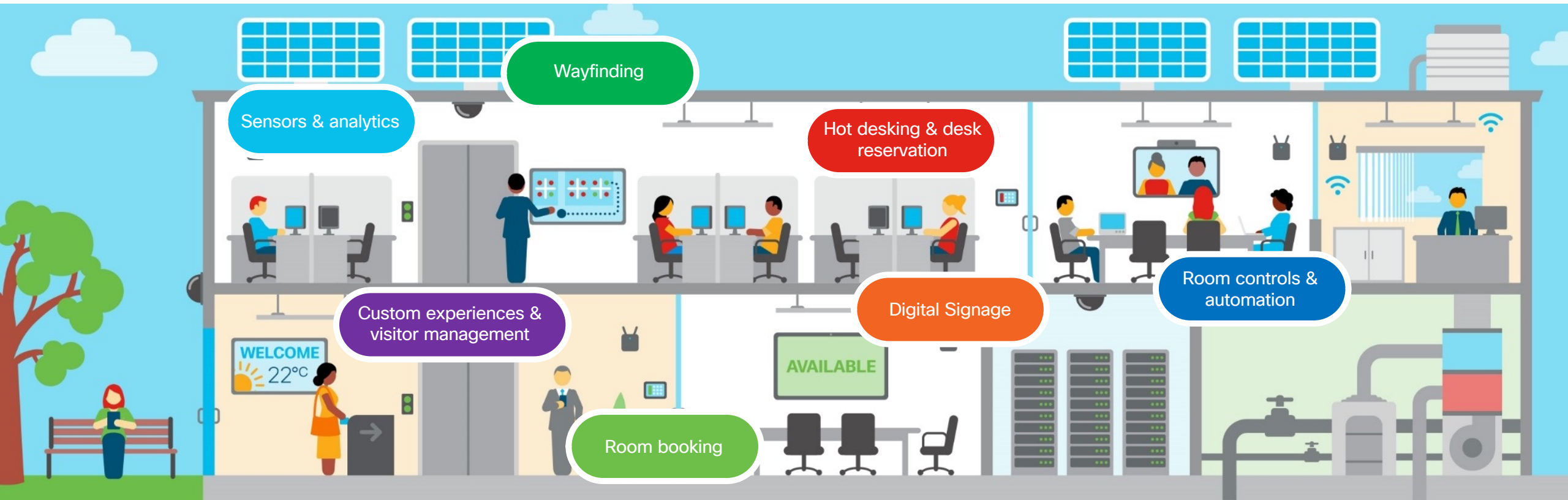
## IoT Device Marketplace

*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




# Cisco Intelligent Workplace



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

1 7 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

Deploy

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! ✓

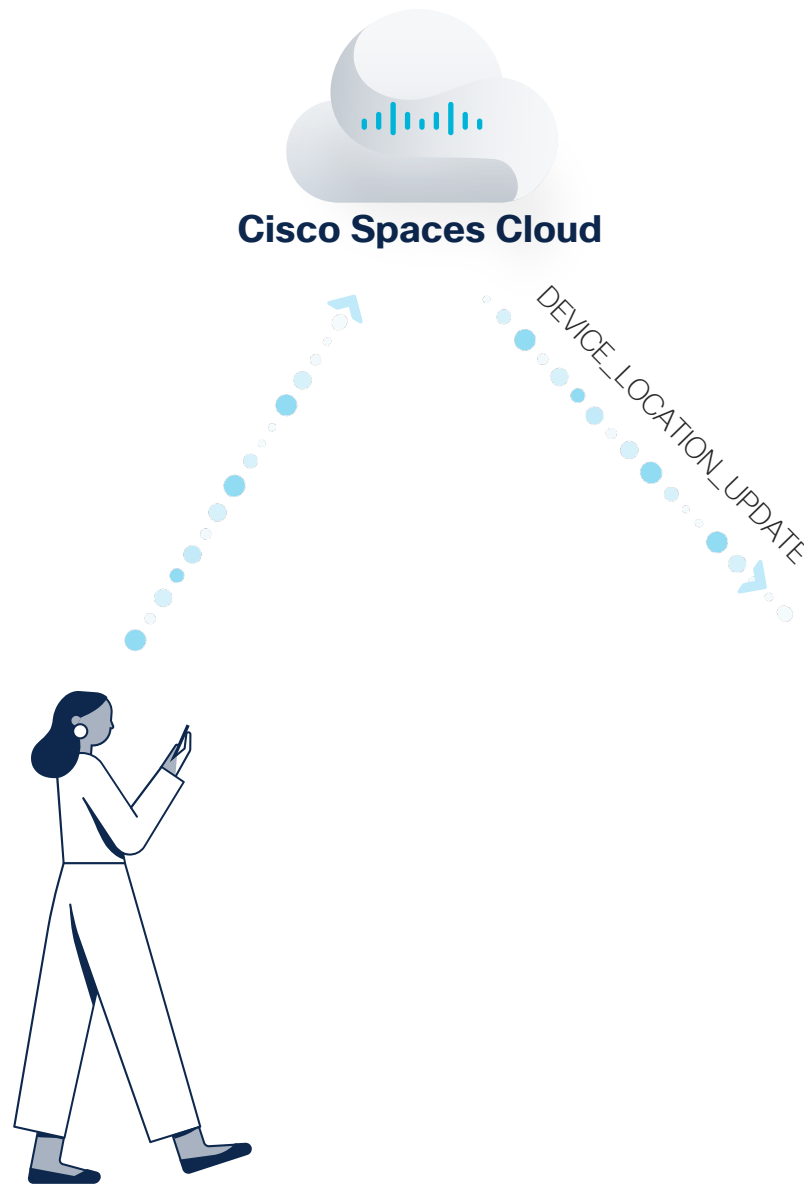
🗨 Which building was the busiest on Monday?

🔍 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](#) exists for different use cases, e.g.:
  - WiFi events
  - IoT events
  - Camera events
  - Location hierarchy events



```
{
  "locationId": "location-2ea30a08",
  "name": "Location - 74e1e0fa",
  "parent": {
    "apCount": 149,
    "inferredLocationTypes": [
      "CAMPUS"
    ],
    "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": "#XXeMXXlWXXi",
      "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



