Cisco Spaces Federal Support Configuration Guide

First Published: 2025-04-03

Last Modified: 2025-06-20

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
http://www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Preface

This preface describes the audience, organization, acronyms, and conventions used in the document.

This document contains the following sections:

Audience

This guide is meant for account administrators who manage the Cisco Spaces user accounts and perform the configurations required for Cisco Spaces. This guide is also meant for business and store administrators who use Cisco Spaces to create the proximity rules to send notifications to customers and business users.

Other target audience includes portal designers and access code managers.

Document Conventions

This document uses the following conventions:

Table 1: Document Conventions

Convention	Description
Boldface	Commands, command options, and keywords are in boldface.
Italics	Arguments for which you supply values are in italics
Option > Option	Used to describe a series of menu options.

Note Means reader take note. Notes contain helpful suggestions or references to material not covered in this guide.

Tip Means *reader take tip*. Tips contain helpful suggestions to resolve issues.

List of Acronyms and Abbreviations

Table 2: List of Acronyms and Abbreviations

Acronym	Expansion
ACL	Access Control List
BLE	Bluetooth Low Energy
CUWN	Cisco Unified Wireless Network
CNA	Captive Network Assistant
RSSI	Received Signal Strength Indicator
SSID	Service Set Identifier
UUID	Universally Unique Identifier

Communications, services, and additional information

- To receive timely, relevant information from Cisco, sign up at Cisco Profile Manager.
- To get the business impact you're looking for with the technologies that matter, visit Cisco Services.
- To submit a service request, visit Cisco Support.
- To discover and browse secure, validated enterprise-class apps, products, solutions, and services, visit Cisco DevNet.
- To obtain general networking, training, and certification titles, visit Cisco Press.
- To find warranty information for a specific product or product family, access Cisco Warranty Finder.

Cisco Bug Search Tool

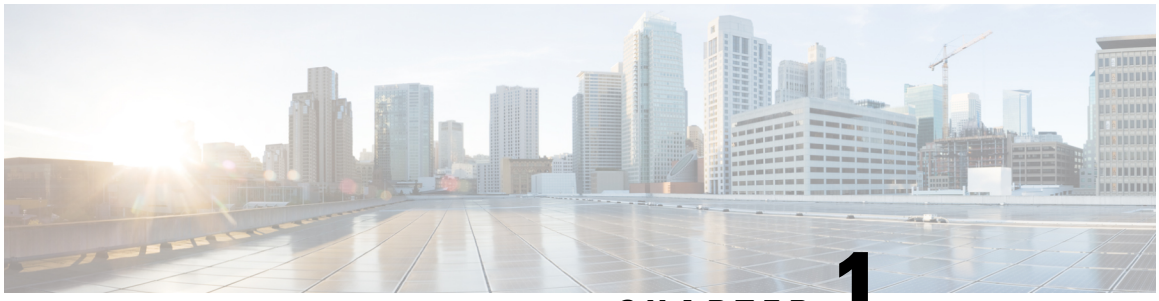
Cisco Bug Search Tool (BST) is a gateway to the Cisco bug-tracking system, which maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. The BST provides you with detailed defect information about your products and software.

Documentation feedback

To provide feedback about Cisco technical documentation, use the feedback form available in the right pane of every online document.

PART I

Prerequisites



CHAPTER 1

Cisco Spaces Prerequisites

This chapter describes the system requirements for Cisco Spaces, the bandwidth requirements to deploy Cisco Spaces, and ports and IP addresses for Cisco Spaces.

This chapter contains the following sections:

System Requirements

The system requirements for Cisco Spaces is described in the following table:

Table 3: System Requirements

Item	System Requirements
Operating System	• Microsoft Windows XP or a later version • macOS X 10.6 or a later version
Browser	Windows OS • Firefox Version 30 or a later version • Chrome Version 34 or a later version • Safari Version 5.1.7 or a later version macOS • Firefox Version 30 or a later version • Chrome Version 34 or a later version • Safari Version 5.1.7 or a later version

Item	System Requirements
Cisco AireOS Wireless Controller	8.3 or a later version **Note** 8.3 is End-of-Life (EOL). We recommend that you migrate to one of the recommended releases as per the *Guidelines for Cisco Wireless Software Release Product Bulletin* at: https://www.cisco.com/c/en/us/products/collateral/wireless/wireless-controllers/bulletin-c25-738147.html
Cisco Connected Mobile Experiences (CMX) - this is required only for Cisco AireOS/Catalyst Controllers used with Cisco CMX.	10.6 or a later version
Cisco Spaces: Connector (Only applicable for Cisco AireOS/Catalyst Controllers)	• vCPU: 2/4/8 • RAM: 4/8/16 GB • Hard Disk: 60 GB

Bandwidth Requirements to Deploy Cisco Spaces

The following table shows the internet bandwidth requirements for Cisco Spaces: Connector and Cisco Wireless Controller Direct Connect to send location updates.

Table 4: Bandwidth Requirements

Test Data	Type	Required Bandwidth
5000 APs 60000 clients	Cisco Wireless Controller Direct Connect	250 Kbps
5000 APs 60000 clients	Cisco Spaces: Connector	4 Mbps

Accessible Ports and IP Addresses

Cisco Spaces is a cloud-based solution, and there is no physical installation involved. So, there is no need to open any port to deploy Cisco Spaces for cloud-based wireless networks such as Cisco Meraki.

For some networks such as Cisco AireOS or Cisco Catalyst that are not cloud-based, you must open the required ports to establish a connection between your wireless network and. You can establish this connection through a public IP or VPN. In addition, some Cisco Spaces IP addresses must be allowed in the customer infrastructure. For more information on the IP addresses to be allowed, see the Cisco Spaces IP Addresses, on page 3.

Note For a default Cisco Unified Wireless Network installation, port 443 must be open to be publicly accessible.

Cisco CMX must be publicly accessible in the following scenarios where Cisco Spaces has to establish a connection with Cisco CMX:

- Connect to Cisco CMX
- Import location and access points
- View Cisco CMX maps
- View Cisco Spaces reports

Cisco Spaces IP Addresses

To establish a connection between Cisco Spaces and a Cisco AireOS or a Cisco Catalyst 9800 Series Wireless Controller, you must allow some Cisco Spaces IP addresses in your network infrastructure.

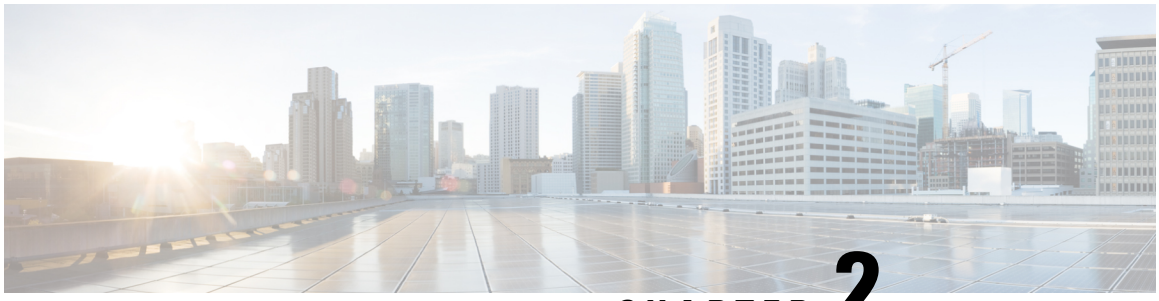
To establish a VPN connection, contact Cisco Spaces support team.

Note A publicly resolvable domain name is not required to connect to Cisco Spaces.

Certain domain names must also be allowed in a customer's infrastructure for the Cisco CMX instances that are deployed in a customer's network to be able to communicate with the Cisco Spaces analytical and notification servers. To know the domain names that should be allowed in the Cisco Spaces dashboard, in the **SSIDs** window, click **Configure Manually** link.

PART II

Getting Started



CHAPTER 2

Get Started with Cisco Spaces

This chapter provides an overview of Cisco Spaces, its features, the process flow, license packages, and system requirements for Cisco Spaces.

This chapter contains the following sections:

Overview of Cisco Spaces

Cisco Spaces is a multichannel engagement platform that enables you to connect, know, and engage with visitors at their physical business locations.

Cisco Spaces is the industry's most scalable end-to-end indoor location services cloud platform that empowers customers to achieve business outcomes at scale. With its comprehensive suite of services, it offers a robust solution for all your location-based needs.

Cisco Spaces provides solutions for monitoring and managing the assets in your premises.

It covers various verticals of business such as

- retail
- manufacturing
- hospitality
- healthcare
- education
- financial services

- enterprise workspaces, and so on.

With Cisco Spaces, users gain centralized access to all location technology and intelligence via a unified dashboard interface. Designed for compatibility with existing Cisco Aironet, Cisco Catalyst, and Cisco Meraki infrastructure, Cisco Spaces stands out as a versatile solution for location-based service needs.

Log In

As a Cisco Spaces user, you can log in to Cisco Spaces using the existing account login credentials. The domain specific URL to log in to Cisco Spaces is https://spaces-gov.cisco/.

Single Sign-On for Cisco Spaces

Cisco Spaces supports Single Sign-On (SSO) so that users can login to Cisco Spaces using their SSO credentials. For example, if the Cisco domain is SSO-enabled, Cisco employees, who have a Cisco Spaces account, can access Cisco Spaces using their Cisco e-mail address and password. Additionally, if a Cisco employee is already logged in to the Cisco domain through any other Cisco website or application, that Cisco employee can access Cisco Spaces by simply specifying the Cisco e-mail address.

When you click the **Login** button, only the **e-mail ID** field will appear in the **Login** window along with a **Continue** button. If the user is already logged into the SSO-enabled domain, then the user will be directly taken to the Cisco Spaces Dashboard after clicking the **Continue** button. If the Cisco Spaces account supports multiple customer names, then the **Select Customer** window will be displayed. If the user has not logged into the domain, then the user will be redirected to the IDP page for login authentication, and user can login by specifying the SSO credentials.

To enable SSO for your Cisco Spaces account, contact the Cisco Spaces support team and provide the following information:

- Account name
- Domain name (for which SSO needs to be enabled)
- Application Name
- SSO type: Currently, only SAML is supported.
- If only authentication is needed or both authentication and authorization needs to be enabled. This is done by setting the **authenticateOnly** flag to True or False.
    - True: Only authentication is enabled for the user.
    - False: Both authentication and authorization is enabled for the user.

Note

- If you set **authenticateOnly** to `False`:
  - You need to pass additional information from the IDP while sending the user details. For example, **role**=dnaspaces:174923535949:Dashboard_Admin.
  - The value for **role** is mandatory and must be available in the IDP while sending the user details.
  - You need not invite individual users from the **Cisco Spaces dashboard** > **Admin Management**. User invitation and activation is based on both authentication and authorization process by the specific customer IDP & Cisco Spaces.

    You can use the Cisco Spaces dashboard existing default roles or create a new role in the Cisco Spaces dashboard and use that specific role name. The Cisco Spaces dashboard default roles are:

    Unordered List bullet 5: **Dashboard Admin Role**: Provides full admin permission to the user for the selected account

    Unordered List bullet 5: **Dashboard Admin Read**: Provides read permission to the user for the selected account

    If you use the Cisco Spaces dashboard default roles, you must pass the **role** string value in the specified format:

    ```
    role": "dnaspaces:<account number>:Dashboard Admin Role",

    role": "dnaspaces:<account number>:Dashboard Admin Read",
    ```

    If you use custom roles, create these custom roles in **Cisco Spaces** > **Admin Management** > **Roles** and pass the role name as the **role** string value in the IDP response.

- The following information from the metadata.xml file:
  - SSO Details
  - Entity
  - Entry point

Once you provide the above details, the Cisco Spaces support team will send you the following so that you can configure your application:

- Entity ID
- Reply URL (also known as Assertion Consumer Service URL)

- Cisco metadata file with the following information:
  - Depending on the location of your application, either the US or EU Cisco Spaces IDP metadata
  - Identifier: https://spaces-gov.cisco
  - Sign On URL: https://spaces-gov.cisco/api/tm/v1/account/login

You need to configure your IDP metadata to return the **firstName**, **lastName** and **email** fields as below:

```
nameid-format:"emailAddress","firstName":"Jane","lastName":"Doe","phone":"9876543210","level":"info","
```

Start Working with Cisco Spaces

Before starting working with Cisco Spaces ensure that you have the prerequisites mentioned in System Requirements, on page 1.

Note Initially, you must contact the Cisco Spaces support team for creating a Cisco Spaces account. You will get an invite to activate your Cisco Spaces account through e-mail. Click the **Accept Activate** button, and in the window that displays configure the log in credentials, and click **Activate Account**. You are now logged into Cisco Spaces. If you are a **Dashboard Admin**, you can now invite other Cisco Spaces users.

To start working with Cisco Spaces, perform the following steps:

Procedure

Step 1 Log in to Cisco Spaces.

Note
You can enable Single Sign-On for Cisco Spaces.

Step 2 Connect to your wireless network and configure the wireless network for Cisco Spaces referring to the instructions in the **Setup** section of the Cisco Spaces dashboard.

The setup instructions are also available in the following sections of this guide:

- **Meraki**: For configuring a Cisco Meraki network, see Configuring Cisco Meraki for Cisco Spaces.
- **Cisco Unified Wireless Network with Cisco CMX**: For connecting Cisco Spaces with Cisco AireOS Controller through Cisco CMX, see Connecting Cisco Spaces to Cisco Wireless Controller through Cisco CMX, on page 34.
- **CiscoAireOS Wireless Controller or Cisco Catalyst 9800 Series Wireless Controller (without Cisco CMX)**.

  Note
  Connecting through the Cisco Wireless Controller Direct Connection method is only recommended for small scale deployments. All large-scale production deployments require a Cisco Spaces: Connector.

  - **Using Cisco Wireless Controller Direct Connect**: For configuring Cisco Spaces with Cisco Wireless Controller using Wireless Controller Direct Connect, see the Connecting Cisco Catalyst 9800 Series Wireless Controller

or Cisco Wireless Controller to Cisco Spaces Using WLC Direct Connect or Cisco Spaces: Connector, on page 35 section.

Note
Cisco Spaces provides a universal account so that you can connect Cisco Spaces to multiple wireless networks.

Step 3 Add your team members, and assign them roles and permissions. For more information about adding Cisco Spaces users, see Managing Cisco Spaces Users, on page 103.

Step 4 Import the location hierarchy defined in your wireless network to Cisco Spaces. For more information on configuring the location hierarchy, see Location Hierarchy in Cisco Spaces and Overview of Location Hierarchy 2.0.

Step 5 Monitor the Cisco Spaces domain and apps using the Monitor section.

Profile Information

Cisco Spaces supports adding the profile information such as first name, last name, and mobile number of the Cisco Spaces dashboard user.

- A tab, **My Profile**, is available in the **Account Preferences** window to add the profile information. You can specify the first name, last name, and mobile number in this window, where mobile number and its verification are optional. When you specify the mobile number, a **Verify Mobile Number** link appears, which allows you to verify the mobile number using One Time Password. Once the mobile number is verified, the status **Verified** is shown. The **Verify Mobile Number** link will appear again when you change your mobile number.
- The Login workflow for Cisco Spaces displays the **Update Profile Information** dialog box as part of the login process if the Profile Information is not available for the particular Cisco Spaces user. You can skip this step, and can proceed to log in. You can then add the profile details through the Account Preferences window any time later. However, the **Profile Information** dialog box is shown as part of the Login workflow till the time information is provided.

  Note
  The SSO users will not be able to edit the profile information or verify the mobile number. Also, the **Update Profile Information** dialog box will not be shown to SSO users during login.

Support to Change Password after Expiry Date

Cisco Spaces allows you to change your password even after your password is expired. After entering your credentials when you click the **Continue** button, a pop-up window to change the password appears.

Onboard Workflow

Follow these steps to log in to Cisco Spaces.

Before you begin

We recommend that you completed FRMOD onboarding process and have the FRMOD credentials available. For a successful onboarding experience, use your organization specific Identity Provider (IDP) by configuring the domain.

Procedure

Step 1 Complete the FRMOD onboarding process.

Step 2 Use your IDP and configure the domain.

For example, Cisco uses the frmod-cisco domain for Production onboarding and fedmod-cisco domain for staging environmemt.

Step 3 Use your organization's email address to request invite for Cisco Spaces Dashboard and Administrator Management access.

Step 4 Use the **`frmod-company.com`** email address and proceed with the activation instructions.

Step 5 Use the same **`frmod-company.com`** credentials to log in to Cisco Spaces.

What to do next

Verticals overview

Cisco Spaces apps supports various verticals to provide tailored solutions for different industries.

Currently, **Space Utilization** App supports verticals.

These are the four verticals supported:

- Generic: Provides insights into behavior patterns, monitors and locates assets in real-time to optimize operations.
- Workspaces: Utilizes Wi-Fi-associated devices and room sensors to provide accurate occupancy data. Campus-level computation is implemented for the Workspaces vertical.
- Retail: Uses Wi-Fi probing to gather data.
- Education: Smart campus solutions, attendance tracking, and wayfinding.

Verticals for apps are defined at the backend level. Currently, Cisco Spaces does not support a GUI to select verticals for apps.

Cisco Spaces supports associating verticals to the Cisco Spaces account. Verticals are added with the Cisco Spaces account when the account is onboarded to Cisco for the first time.

If you want to update the vertical for your account, contact Cisco Spaces support team.

Note By default, for workspaces and education vertical accounts, Wi-Fi metrics data will be displayed.

For more information, see Cisco Spaces: Space Utilization App Guide.

Idle Timeout for Cisco Spaces

A user who is logged in to the Cisco Spaces dashboard can remain idle only for a specific time period. If inactive for 20 minutes, the user is automatically logged out of the dashboard. A notification is displayed 5 minutes before the idle timeout and the title of the browser window where the Cisco Spaces application is open changes to `INACTIVE: You will be logged out in 5 mins`. Any action performed on the corresponding window extends the user's session.

Contact Cisco Spaces Support

The process for requesting support for Cisco Spaces is enhanced. To contact Cisco Spaces support, you now need to raise a case using the Support Case Manager, based on the account types: **Paid** and **Non-Paid**.

Note All the support contact email addresses are decommissioned.

Follow these steps to raise a support case.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces Dashboard, click the  (**Support**) icon displayed at the top-right.

Step 3 Click **Support**. The **Support** slide-in pane displays.

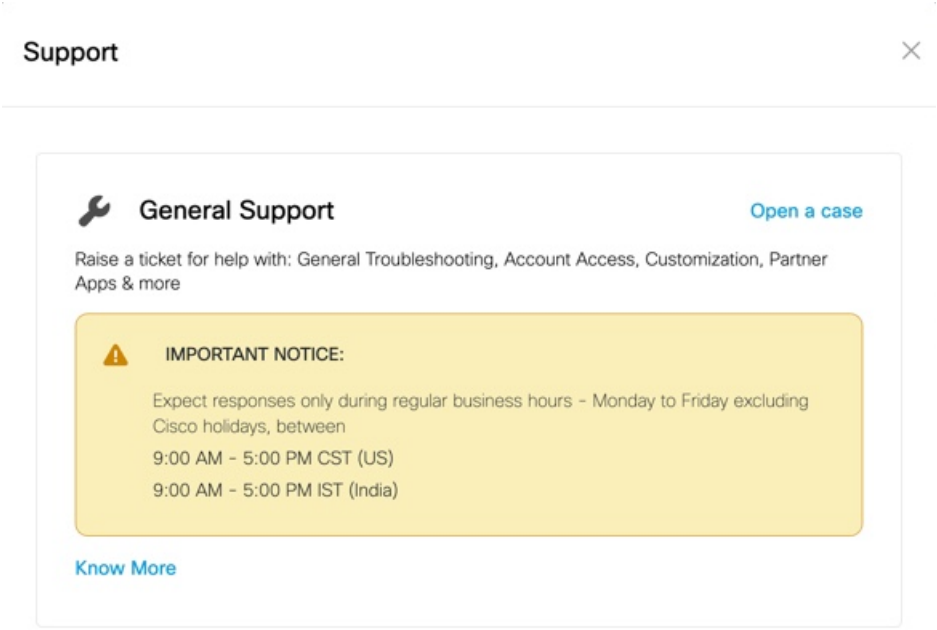
Step 4 Depending on the account types, the following support options are available:

- **Paid**: There are two different SCM links for **Paid** accounts.
  - For General Support, raise a case with Moderate Impact (S3) severity.
  - For Configuration & Deployment Support, raise a case with Ask a Question / Warranty (S4) severity.

Figure 1: Paid Account Support Options

- **Non-Paid**: Use the General Support link to raise both general support and onboarding/use case deployment assistance cases.

Figure 2: Non-Paid Account Support Options



Step 5 Click **Open a Case** to raise a case using SCM.

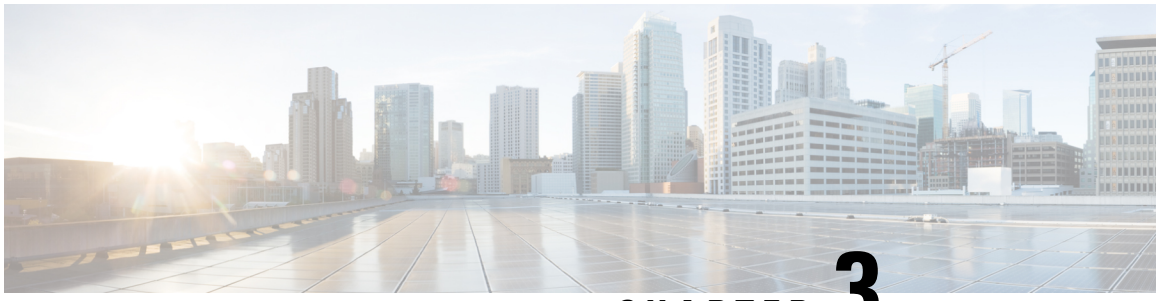
Cisco Spaces Documentation

You can access the documentation for Cisco Spaces including Configuration Guides and Release Notes using the **Cisco Spaces Support** icon ( ) displayed at the top-right of the Cisco Spaces dashboard.

You can also view the documentation, announcements, deployment guides, use cases and support information from the **Spaces LaunchPad** section. To do this, click the **Spaces LaunchPad** icon that is available at the bottom-right in Cisco Spaces UI.

PART III

Cisco Spaces Home



CHAPTER 3

Cisco Spaces Dashboard

Cisco Spaces Navigation

When you login to Cisco Spaces dashboard, the Cisco Spaces apps are displayed on the Cisco Spaces Home page. The apps are displayed under the license type for which they are available. You can access other features of Cisco Spaces such as **Location Hierarchy**, **Monitor**, **Admin Management**, and **Setup** using the three-line menu icon displayed at the top-left of the Dashboard. You can navigate to the Home page by clicking **Cisco Spaces** displayed at the top-left of the dashboard or using the **Home** option the three-line menu.

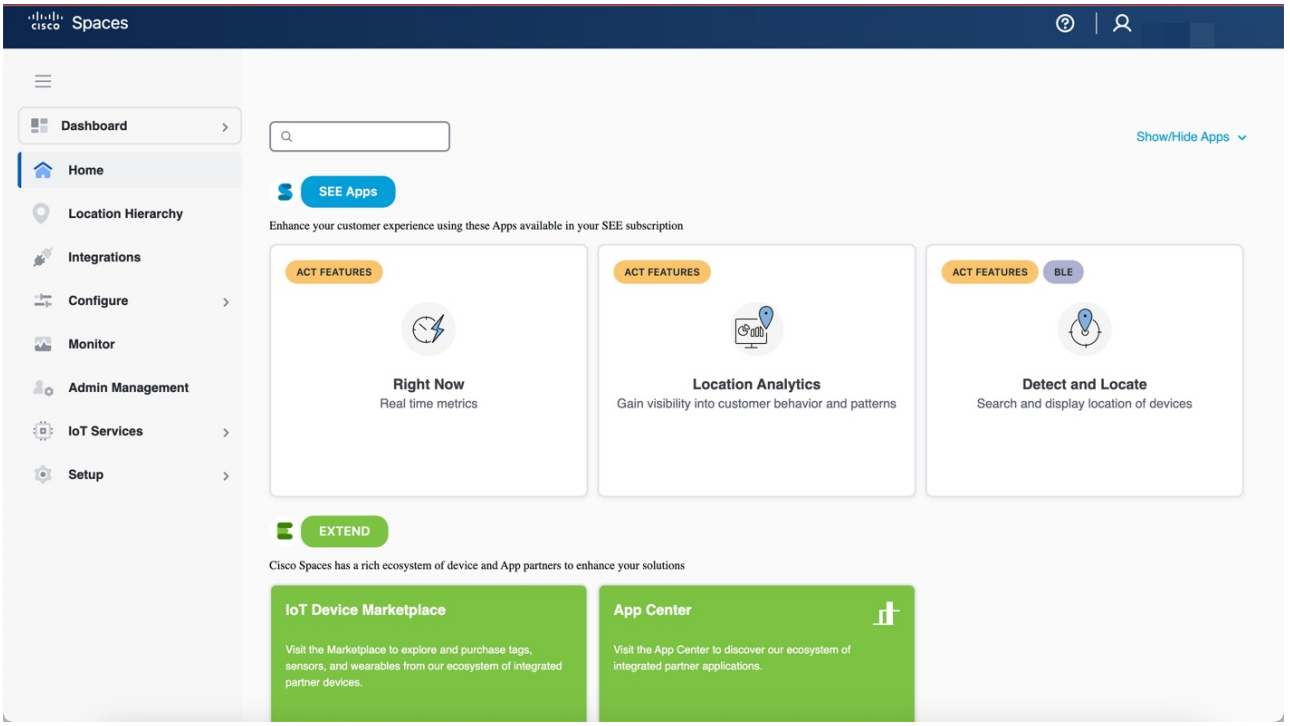
An app launcher (Grid) icon appears at the top-right of the dashboard using which you can easily navigate from one app to another app. When you click the app launcher icon, it lists all the Cisco Spaces apps activated for the user. From an app you can navigate to the home page by clicking **Cisco Spaces** displayed at the top-left of the dashboard.

Cisco Spaces Dashboard

Cisco Spaces dashboard is the default home page of Cisco Spaces application. The Cisco Spaces GUI adopts the Magnetic design implementation. Magnetic design follows a persistent header and collapsible left navigation pane.

After you log in to Cisco Spaces, the **Home** window is displayed as shown in the following image:

Figure 3: Cisco Spaces Home



The Cisco Spaces **Home** window includes the **Dashboard** drop-down list (in the left navigation pane) which allows you to search and view the available apps associated with your Cisco Spaces license.

Use the **Dashboard** drop-down list to choose and navigate to any selected app. To navigate back to the Cisco Spaces **Home** window, choose **Dashboard** option from the drop-down list.

The dashboard has the following main areas: Menu Bar, Information icon, Profile icon, and various applications available as per your subscription.

Menu Bar

Click the **Menu** icon ( ) at the left of the menu bar to access the following menu items:

- App Search - **Dashboard** drop-down list
- Location Hierarchy
- Integrations
- Monitor
- Admin Management
- IoT Services
- Setup

Icons

Click the icons at the right of the menu bar to perform common tasks:

Icon	Description
	Support: Displays help center, support and documentation links.
	User Profile: Displays account and logout options. The license information is available under **My Account** > **License Information** > **License Units Consumed**. For more information, see User Profile, on page 22.

Apps Search

This app search option is available in the left navigation pane in the **Dashboard** drop-down list.The **Dashboard** drop-down list displays all the applications that are available in your Cisco Spaces subscription.

Cisco Spaces: Connector 3.0

Cisco Spaces: Connector (referred to as Connector in all subsequent references in this document) is a fully redesigned version of the Connector with the capability to efficiently manage multiple services that connect to different network devices such as Cisco Wireless controller and switches for data. The Connector platform makes it easy to add/remove new services from the cloud. It enables enhanced troubleshooting with debugging, log upload, and restart functionalities from the cloud. Connector also provides detailed metrics for each service with CPU, Memory, Connectivity and Up/Down status.

Connector is the next generation connector of Cisco Spaces that provides an enhanced user experience, architecture to support multiple services, simplicity, modularity, seamless upgrade and High Availability. Connector supports an active-active High Availability setup. Unlike the earlier releases of Connector 2.x, you can specifically configure and monitor the High Availability pair. All services and device configurations are managed at the Connector level to make it easy to pair with High Availability.

The Connector and device status is also aggregated at the Connector level from each instance for easy monitoring. Connector provides full visibility to each instance of a High Availability pair. You can view how the services are running on each instance, their upgrade status and so on. You can also perform actions on a particular instance, such as restarting of services.

Cisco Spaces Features

The major features of Cisco Spaces dashboard includes:

Overview of Cisco Spaces Apps

In the Cisco Spaces Home page, you can view all available applications. Use the **Dashboard** drop-down list to search apps.

The apps available in Cisco Spaces are tied to various **Cisco Spaces License Packages**. In the Cisco Spaces home page, you can view the app tiles segregated according to your Cisco Spaces account license.

The following apps are available under **SEE** license:

- Right Now
- Location Analytics
- Detect and Locate
- IoT Device Marketplace

The following apps are available under **ACT** license:

- Space Manager
- Space Experience
- Space Utilization App

Monitor

The Monitor section enables you to monitor the performance status of Cisco Spaces, and its apps. It also displays the app latencies and anomalies. For more information, see the “Monitoring” section .

Admin Management

The **Admin Management** feature enables you to create Cisco Spaces users. You can restrict the privileges for each user based on the their role. For more information, see the “Managing Cisco DNA Spaces Users and Accounts” section.

Setup

Wireless Networks

Wireless Network

Displays features and instructions to connect Cisco Spaces to a particular wireless network through various methods. For more information, see Setting Up Cisco Spaces to Work with Various Wireless Networks.

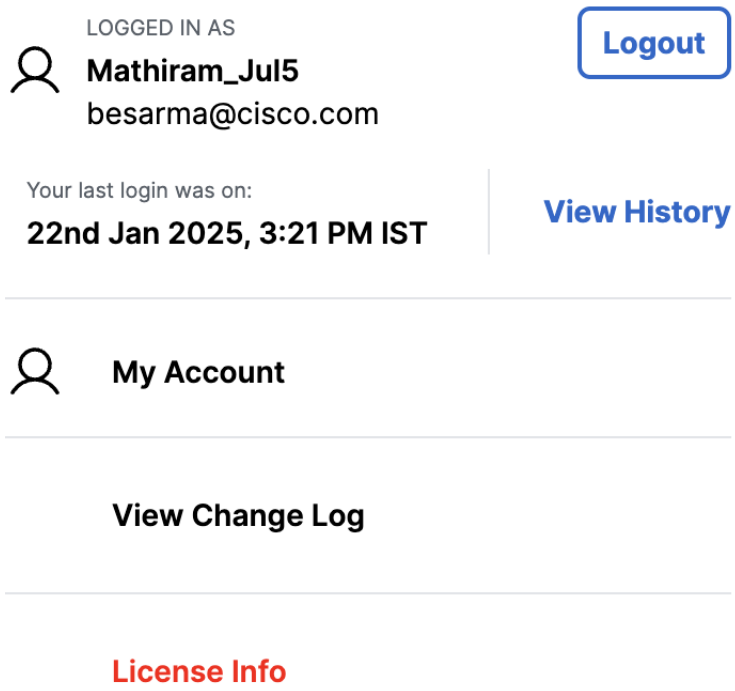
Wireless Network Status

The **Wireless Network Status** option enables you to view the synchronization status of your wireless network. You can view the time at which the last synchronization happened.

User Profile

The **User Profile** option ( ) in the top-left of the Cisco Spaces dashboard helps to view account and logout options.

Figure 4: User Profile



You can view the last login and timestamp details. Click **View History** to the recent and failed login attempts.

The **User Profile** feature includes the following options:

- **My Account**: Click to display the **My Account** window. For more information, see Viewing Cisco Spaces Account Details, on page 23.
- **View Change Log**: Click to open the **Change Log** tab that displays the activity details of all the users in a particular account. For more information, see Viewing Cisco Spaces Account Details, on page 23.

Viewing Cisco Spaces Account Details

Use the **My Account** window to view the Cisco Spaces profile details, account activity, and other account related information. The **My Account** window has the following tabs:

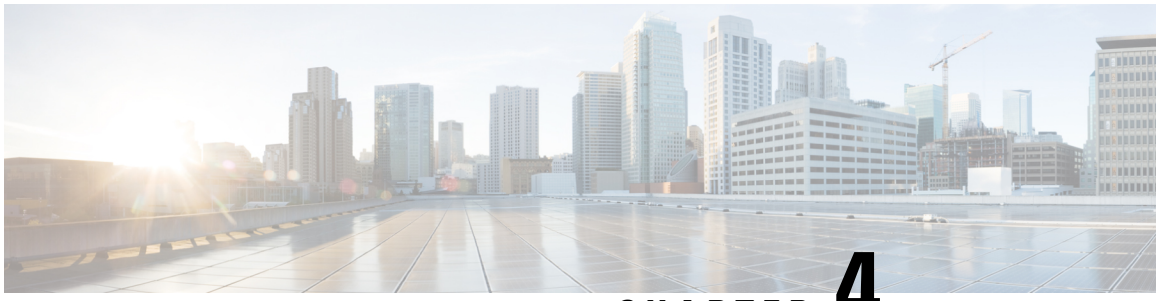
- **My Profile**: Displays the basic profile information such as first name, last name, email and mobile number.
- **Account Activity**: Displays the failed attempt account activity details such as IP address, date and browser in which the account activity failed.
- **Preferences**: This tab includes the following options:
  - **Add new domain**: Click to add a new domain for SSO authentication.

- **Enable Support Access**: Click this option to enable or disable access to their account to the Cisco Spaces support team. Enabling this option helps the Cisco Spaces support team to detect and debug issues under exceptional situations.

Note

- By default, the **Enable Support Access** option is enabled.
- When access is enabled, the Cisco Spaces support team gets access to the customer's Cisco Spaces account.

- **Change Log**: Displays the change log details such as user activity, time, app, section and user. Click the **Filter** option to filter log details.



CHAPTER 4

Cisco Spaces: Apps

Cisco Spaces provides various task-oriented apps. You can also add partner apps to Cisco Spaces.

In Cisco Spaces, apps are available as per the following license subscriptions:

- SEE
- EXTEND
- ACT

Overview of Cisco Spaces Apps

In the Cisco Spaces Home page, you can view all available applications. Use the **Dashboard** drop-down list to search apps.

The apps available in Cisco Spaces are tied to various **Cisco Spaces License Packages**. In the Cisco Spaces home page, you can view the app tiles segregated according to your Cisco Spaces account license.

The following apps are available under **SEE** license:

- Right Now
- Location Analytics
- Detect and Locate
- IoT Device Marketplace

The following apps are available under **ACT** license:

- Space Manager
- Space Experience
- Space Utilization App

Cisco Spaces: SEE License Apps

In Cisco Spaces, **SEE** subscription is the basic license version. The apps available under **SEE** subscription are:

- **Right Now**: The **Right Now** app provides you the Right Now report that shows the details of visitors currently present at your locations. Using the **Right Now** app, you can also create **Density Rules**. Use these **Density Rules** to sent notifications to the business users such as employees based on the visitor density or device count in the business locations.
- **Location Analytics**: The **Location Analytics** app enables you to view reports of visits in your locations.
- **Detect and Locate**: Cisco Spaces: **Detect and Locate** app enables you to view the current and historic location of Wi-Fi devices in your deployment. The tracked devices count is displayed on the **Detect and Locate** app tile. For more information on the **Detect and Locate** app, see Cisco Spaces Detect and Locate Configuration Guide.

Cisco Spaces: ACT License Apps

In Cisco Spaces, **ACT** subscription is the basic license version. The apps available under **ACT** subscription are:

- **Space Manager**: The **Space Manager** app allows you to configure various devices, sensors, and workspaces and to provide access to real-time occupancy data and environment telemetry (heat map, indoor air quality, temperature, humidity, and noise levels) rendered on rich maps for a specific building, floor, or meeting room.
- **Space Experience**: The app **Space Experience** enables you to create and manage signage for **Cisco Smart Workspaces**, onboard new signage for a Cisco Webex device or a non-Webex device and configure the telemetry parameters and publish the signage.
- **Space Utilization**: The **Space Utilization** app offers historical insights into the usage of your physical spaces, helping in their effective optimization. These insights are derived from data collected through sensors integrated into your networking and Wi-Fi infrastructure.

  For more information, see Cisco Spaces: Space Utilization App Guide.

Partner Apps

Cisco Spaces enables you to integrate third party apps to it. The third party apps are listed as partnership apps in the Cisco Spaces dashboard.

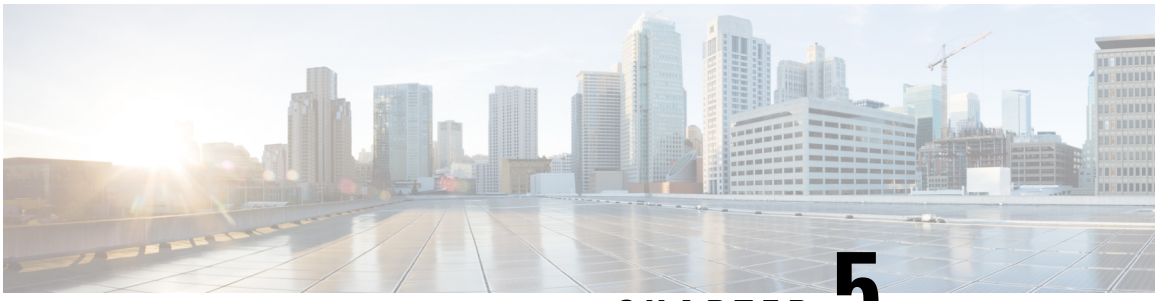
IoT Device Marketplace Application

A new app **IOT Device Marketplace** is now available in the Cisco Spaces dashboard. This app is available only for the **ACT** license users. For the SEE and EXTEND accounts, the **IOT Device Marketplace** tile is shown in the disabled mode.

The **IOT Device Marketplace** app enables you to learn about devices tailored to your industry and use cases and order them.

When you click the **IoT Device Marketplace** tile on the Cisco Spaces dashboard, it automatically redirects you to the IoT Device Marketplace application. Before this enhancement, you had to provide the login credentials again to log in to the **IoT Device Marketplace** application.

After you login, you can proceed further to select your industry and the usecase, and can view the IoT devices available for the selected use case. You can then view the device details and can request a quote. Once the quote request is submitted, it will be redirected to the respective vendor along with your contact details. The remaining purchase procedures will be directly between you and the vendor where there will be no involvement of Cisco Spaces.



CHAPTER 5

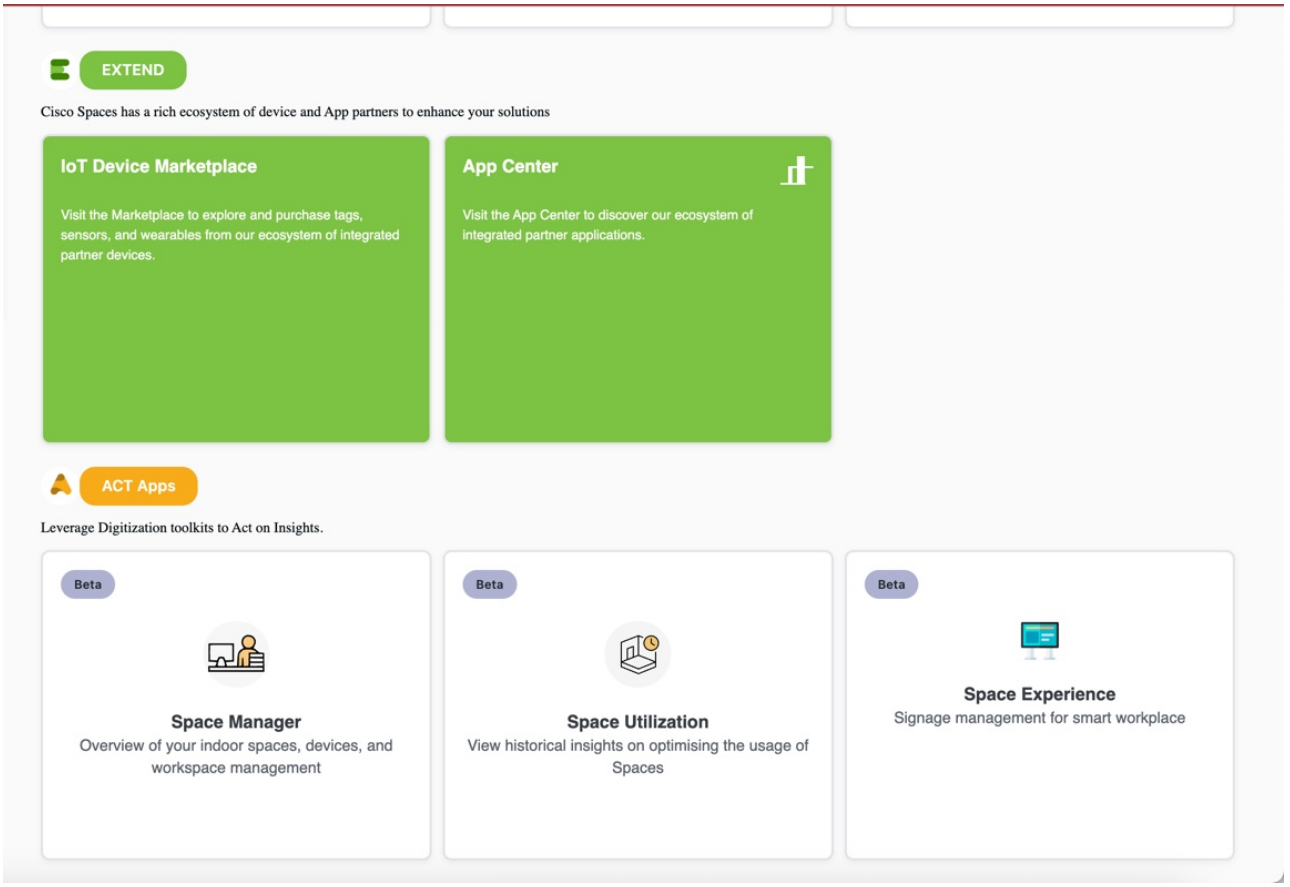
Partner App Management

Overview of App Center

The Cisco Spaces - Partner Dashboard offers Cisco Spaces partners, a single location to view, update, add, and test their application. Cisco Spaces is seamlessly integrated with the Cisco Spaces - Partner App Center. As a partner, you can access location data that the access points collect and use this data to extend your business apps. Log in to the Cisco Spaces - Partner Dashboard to create and integrate your applications.

Note This feature is only available for Cisco Spaces Extend licenses.

Figure 5: App Center



The combination of the Cisco Spaces platform plus the Partner-led ecosystem provides the ability to work with third-party application developers, to build customized applications for individual businesses and customers, by leveraging the power of Cisco Spaces and the Cisco Spaces - Partner Firehose API.

Application developers use the Partner APIs, also called the Cisco Spaces - Partner Firehose API to create and publish their Apps. The Partner ecosystem allows independent software vendors to enable vertical-relevant, pre-validated, and tested location-based solution applications and to publish their live applications on the Cisco Spaces - Partner App Center. As a registered partner, you can access the Cisco Spaces - Partner App Center.

Your customers can view and activate the applications from the Cisco Spaces - Partner App Center. For example, your customer can click on any available App from the Cisco Spaces - Partner App Center and choose to activate the App for their business use cases. After the app is approved and made live in the Cisco Spaces - Partner App Center, it is available for all the customers of Cisco Spaces for activation. When a customer activates the app, the customer's data starts flowing to your app as events over the Cisco Spaces - Partner Firehose API.

For more information about Partner App Management, see Overview of the Cisco Spaces - Partner Ecosystem online help.

Activate an App

Cisco Spaces partners uses Partner Dashboard to create and publish apps. After app creation and publishing, those customer apps are listed in Cisco Spaces - Partner Dashboard. Cisco Spaces the administrator must approve the new applications and once the app is approved it is listed under **App Center** in Cisco Spaces - Dashboard.

You must activate the app from **App Center** so that your customers can use them. These apps can be activated for selected locations as per the customer requirement. App includes multiple events and partner enable the events for these apps and activate them.

Events are triggered through Firehouse APIs. These APIs checks for the device status and then events are triggered accordingly. For more information, see Firehose API.

When a Cisco Spaces partner adds a new event to an already activated app, it will be sent through Firehose APIs only when the customer subscribes to the new event by accepting the permissions. Prior to this enhancement, customer permission was not required for new events.

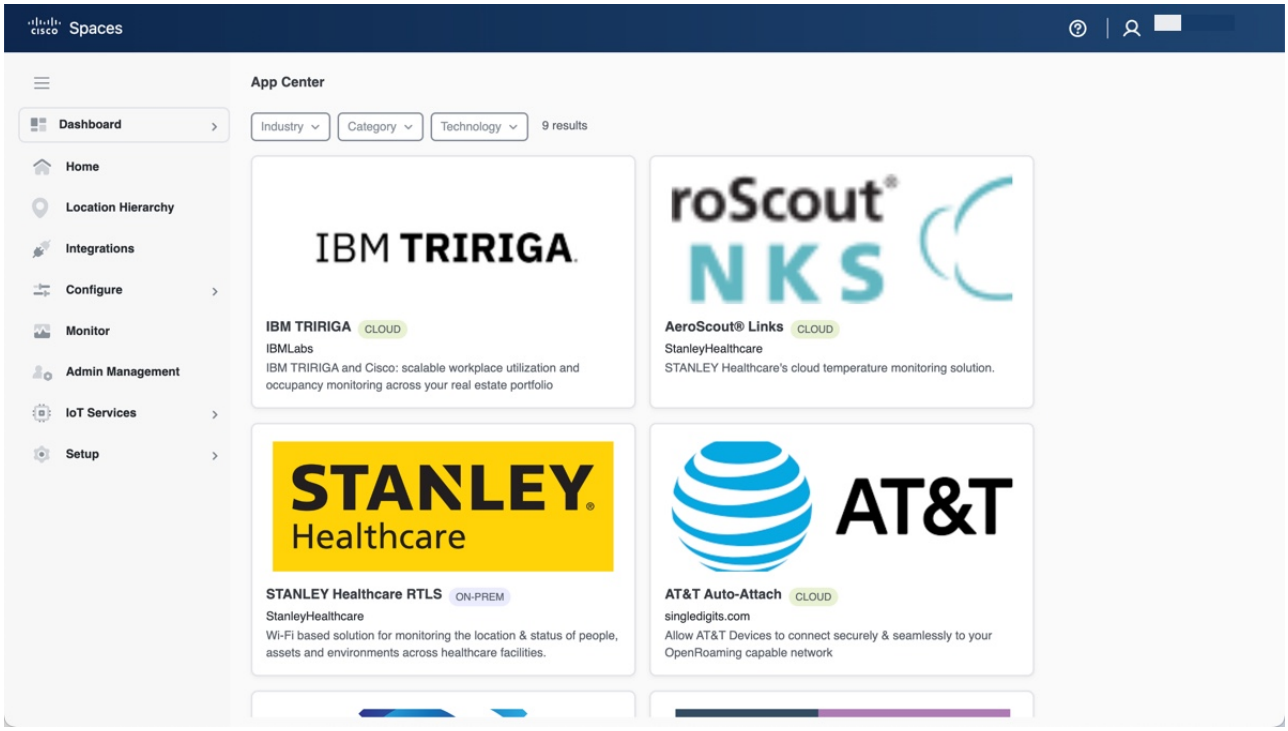
You are prompted with the following notification message `New Permission Required` on the app tile and you must click and accept the new app permission to subscribe to these new app events. An email notification is also sent to the customer indicating that a new event is added to the app.

Procedure

Step 1 In the Cisco Spaces dashboard, click **App Center**.

The App Center window displays the published apps. The app title displays the name of the application, a brief description and whether the app is hosted on **Cloud** or **On-prem**.

Figure 6: App Center



Step 2 (Optional) Use the options in the **Filter By** section, to filter the applications.

Step 3 Click on the app that you want to activate.

Step 4 Click **Activate**.

The corresponding app activation window is displayed. Each application will have different activation instructions as per the customer authentication configuration.

Step 5 Complete the **Sign Up & Onboarding** configurations.

Step 6 Click **Continue**.

Step 7 In the **Permissions** section, read location data requirements.

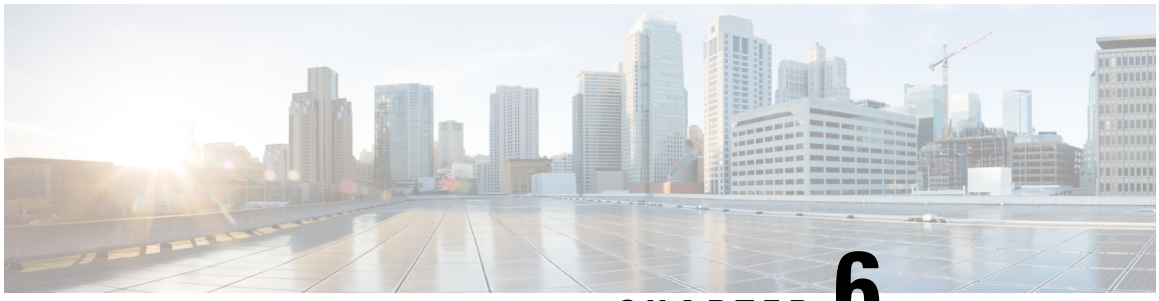
Step 8 Click **Accept Permission**.

Step 9 Choose the locations you would like to activate the app for. You can select **Enable for all locations** checkbox to select all location.

Step 10 Click **Next**.

The specific customer website displays and you must complete the required cusomter authentication to procceed.

Step 11 Follow the on-screen instructions and complete the app activation steps.



CHAPTER 6

Configuring Cisco Wireless Controllers and Cisco Catalyst 9800 Series Controllers for Cisco Spaces

This chapter describes the configurations to be done in the CiscoWireless Controller (Cisco AireOS) or Cisco Catalyst 9800 Series Controllers to work with Cisco Spaces. The configurations required differ based on the wireless controller type and connector you use.

Note

- You cannot connect a Cisco Wireless Controller with hyper location with Cisco Spaces and Cisco CMX simultaneously.
- If you want to connect a Cisco Wireless Controller with both Cisco CMX and Cisco Spaces simultaneously, you must use a Cisco Spaces: Connector. Check the limitations for the number of NMSP connections your Cisco Wireless Controller can support, and ensure that your Cisco Wireless Controller can support the addition of a new connection to Cisco Spaces: Connector, especially if there are existing connections to multiple Cisco CMX servers.
- You cannot use a Cisco Wireless Controller simultaneously with Cisco WLC Direct Connect and Cisco Spaces: Connector. Disable the Cisco WLC Direct Connect before using the Cisco Spaces: Connector.
- It is recommended to use Cisco Spaces: Connector rather than Cisco WLC Direct Connect, especially when you are using a lower version of Cisco Wireless Controller.Also, certain apps such as Operation Insights, Detect and Locate, and so on are supported only by Cisco Spaces: Connector.
- It is not recommended to compare the data displayed in your wireless network with the data shown in Cisco Spaces reports as it is expected to defer as per the design.

Note The configurations are done in the external applications that are not a part of Cisco Spaces, and the menu path and names specified for the tabs, windows, options, and so on in this documentation are subject to change.

The features supported by various connector types, and the configurations for various combinations of wireless controllers and connectors are as follows:

- Connecting Cisco Spaces to Cisco Wireless Controller through Cisco CMX, on page 34
- Connecting Cisco Catalyst 9800 Series Wireless Controller or Cisco Wireless Controller to Cisco Spaces Using WLC Direct Connect or Cisco Spaces: Connector, on page 35

• Cisco Spaces Scale Benchmark, on page 38

Connecting Cisco Spaces to Cisco Wireless Controller through Cisco CMX

To connect Cisco Spaces with Cisco Wireless Controllers through Cisco CMX, you must have Cisco CMX 10.6 or later.

For Cisco Unified Wireless Network with Cisco CMX, the following configurations are required to work with Cisco Spaces:

Note

- The configuration for internet provisioning and RADIUS authentication is required only if you need RADIUS authentication. This configuration is required only if you need social authentication for your portals.

Configuring Cisco Wireless Controller for Social Authentication

For social authentication with Cisco Unified Wireless Network, you must do some configurations in the Cisco Wireless Controller.

To configure the Cisco Unified Wireless Network for social authentication, perform the following steps:

Procedure

Step 1 Log in to Cisco Wireless Controller using your credentials.

Step 2 Choose **Security** > **Access Control Lists** > **Access Control Lists**.

Step 3 In the **Access Control List** window that appears, click the Access Control List configured for Cisco Spaces.

Click **Add New Rule** and add additional two rules with following information. .

No	Action	Source IP Address/Netmask	Destination IP Address/Netmask	Protocol	Source Port Range	Destination Port Range	DSCP	Direction
1	Permit	0.0.0.0/0.0.0.0	0.0.0.0/0.0.0.0	TCP	HTTPS	Any	Any	Any
2	Permit	0.0.0.0/0.0.0.0	0.0.0.0/0.0.0.0	TCP	Any	HTTPS	Any	Any

Note
This wall garden ranges configured for social authentication will allow the customers to access all the HTTPS web sites directly after connecting to your SSID, without using the captive portal.

Step 4 Add social platform specific domains as ACLs based on the social networks that you want to use for authentication. To add social domains as ACLs, perform the following steps:

a) In the Cisco Wireless Controller dashboard, choose **Security** > **Access Control Lists**.

b) Click **More Actions** for the Access Control List configured for Cisco Spaces.

c) Click **Add Remove URL**.
d) Enter a social URL name, and click **Add**.
e) Repeat steps **c** and **d** for each domain.

Note
These domain names are managed by the social networks and can change at any time. Also, these domain names are subjected to change based on country/region. If you are facing any issue, contact the Cisco Spaces support team.

The commonly used domain names for various social platforms are as follows:

Facebook

- facebook.com
- static.xx.fbcdn.net
- www.gstatic.com
- m.facebook.com
- fbcdn.net
- fbsbx.com

LinkedIn

- www.linkedin.com
- static-exp1.licdn.com

Twitter

- abs.twimg.com
- syndication.twitter.com
- twitter.com
- analytics.twitter.com

Connecting Cisco Catalyst 9800 Series Wireless Controller or Cisco Wireless Controller to Cisco Spaces Using WLC Direct Connect or Cisco Spaces: Connector

To import the locations from Cisco 9800 Series Wireless Controller or Cisco Wireless Controller (without CMX) to Cisco Spaces, you must first connect the Controller to Cisco Spaces through one of the connectors.

The connectors, **Cisco WLC Direct Connect** and **Cisco Spaces Connector** can be used for both Cisco Wireless Controller and Cisco Catalyst 9800 Series Wireless Controller.

Note

- If you want to connect a Cisco Wireless Controller with both Cisco CMX and Cisco Spaces simultaneously, you must use a Cisco Spaces: Connector. However, it is not recommended to connect a single Controller to both Cisco Spaces and Cisco CMX simultaneously.
- It is recommended not to compare the data displayed in Cisco Spaces reports such as Behavior Metrics with the data displayed in Cisco Wireless Controller or Cisco CMX, as it is expected to differ as per design.
- For importing a Controller to Cisco Spaces, ensure that at least one AP is connected to that particular Controller.
- In the Controller, if new APs are added to the Controller, those APs get automatically imported during the next Controller synchronization. If an imported AP is deleted from the Controller, the changes will be reflected in Cisco Spaces only after 48 hours. However, an AP without updates will be deleted after 48 hours only if updates are coming from other APs. For example, if there are 10 APs that are configured, and if 2 APs are removed from Controller, these 2 APs will be removed from Cisco Spaces only when updates are received from other 8 APs.
- If an AP is disassociated from the Controller, it is not immediately removed from Cisco Spaces to release the AP count. The APs will be removed from Cisco Spaces only after 48 hours.

The configurations required for various combinations of Wireless Controllers and Connectors are as follows:

Connecting Cisco Spaces to Cisco Wireless Controller Using Cisco WLC Direct Connect

To connect the Cisco Wireless Controller Version 8.3 or later (without Cisco CMX installation) to the Cisco Spaces, and to import the Cisco Wireless Controller and its access points to the Cisco Spaces, perform the following steps:

Before you begin

- You need Cisco Wireless Controller Version 8.3 or later.
- For importing a Cisco Wireless Controller to Cisco Spaces, ensure that at least one AP is connected to that particular Cisco Wireless Controller.
- The Cisco Wireless Controller must be able to reach Cisco Spaces cloud over HTTPS.
- Cisco Wireless Controller must be able to reach out to the internet.
- To use Cisco Spaces with anchor mode, you must have a network deployment with Cisco Wireless Controllers in both anchor controller mode and foreign controller mode. If the network deployment contains Cisco Wireless Controller in Anchor Controller mode and Foreign Controller mode, Cisco WLC Direct Connect must be enabled in both controllers using the commands described in this section. In addition, the Cisco Wireless Controllers in both modes must be able to reach the Cisco Spaces cloud over HTTPS. However, Cisco Spaces does not support Cisco Wireless Controller Version 8.3.102 in anchor mode.
- To connect the Cisco AireOS Wireless Controller Version 8.3 or later successfully to the Cisco Spaces using Cisco WLC Direct Connect, you must have a root certificate issued by DigiCert CA. If the network

deployment contains Cisco Wireless Controller in Anchor Controller mode and Foreign Controller mode, you must import the certificate to the Cisco Wireless Controllers in both modes".

Procedure

Step 1 Import the DigiCert CA root certificate.

a) Download your root certificate from the following link:

https://cacerts.digicert.com/DigiCertGlobalRootCA.crt.pem

b) Copy the root certificate content to a file with .cer extension, and save the file as {your_filename}.cer.

c) Copy the **{your_filename}.cer** file to the default directory on your TFTP.

d) Log in to the Cisco Wireless Controller CLI, and execute the following commands:

```
transfer download datatype cmx-serv-ca-cert
transfer download mode tftp
transfer download filename {your_filename}.cer
transfer download serverip {your_tftp_server_ip}
transfer download start
```

e) Type **Y** to start the upload

f) After the new root certificate has been uploaded successfully, execute the following commands to disable, and then enable your Cisco CMX Cloud Services:

```
config cloud-services cmx disable
config cloud-services cmx enable
```

Note
After uploading the root certificate, Cisco Wireless Controller will prompt for reboot. Rebooting is recommended, but not mandatory. The certificate will be installed in either case.

If you try to connect the Wireless Controller to Cisco Spaces using a root certificate not issued by DigiCert CA, you will get the following error:

```
https:SSL certificate problem: unable to get local issuer certificate
```

Step 2 In the Cisco Wireless Controller CLI mode, execute the following commands:

```
config cloud-services cmx disable
 config cloud-services server url https://{Customer Path Key}.{LB Domain} {LB IP Address}
config cloud-services server id-token <Customer JWT Token>
 config network dns serverip <dns server ip>
 config cloud-services cmx enable
```

Note
To view the {Customer Path Key}, {LB Domain}, {LB IP Address}, and {Customer JWT Token}, log in to Cisco Spaces dashboard, and click the three-line menu icon that is displayed at the top-left of the dashboard. Choose **Setup > Wireless Networks**. Then expand **Connect WLC / Catalyst 9800 Directly**, and click **View Token**. Click the **WLC** tab, and you can view the {Customer Path Key}, {LB Domain}, and {LB IP Address} at Step 1b and {Customer JWT Token} at Step 1c.

Step 3 Check the summary using the following command:

```
show cloud-services cmx summary
```

The result appears.

Now in the Cisco Spaces dashboard, when you choose **CUWN-WLC** in the **Add a Wireless Network** window, the WLC will be listed. So, you can import the APs of that WLC to the Cisco Spaces.

Example:

Sample Result

(Cisco Controller) >show cloud-services cmx summary

CMX Service

Server ..... https://$customerpathkey.dnaspaces.io

IP Address..... <Local System IP Address>

Connectivity..... https: UP

Service Status ..... Active

Last Request Status..... HTTP/1.1 200 OK

Heartbeat Status ..... OK

Now the Cisco Wireless Controller will be available for import in the Cisco Spaces location hierarchy. You can import the locations using Map services or Access Point Prefix.

Configuring Cisco Wireless Controller (without Cisco CMX) for Notification and Reports

Without Cisco CMX, you can connect Cisco Wireless Controller to Cisco Spaces using the connectors **WLC Direct Connect** and **Cisco Spaces Connector**. In these cases, the configurations required for notifications and reports aredone automatically when you import the Cisco Wireless Controller.

Note If you are using Cisco Spaces with **WLC Direct Connect** or **Cisco Spaces Connector**, the controller must be in **Foreign controller** mode.

Cisco Spaces Scale Benchmark

Table 5: Scale Summary

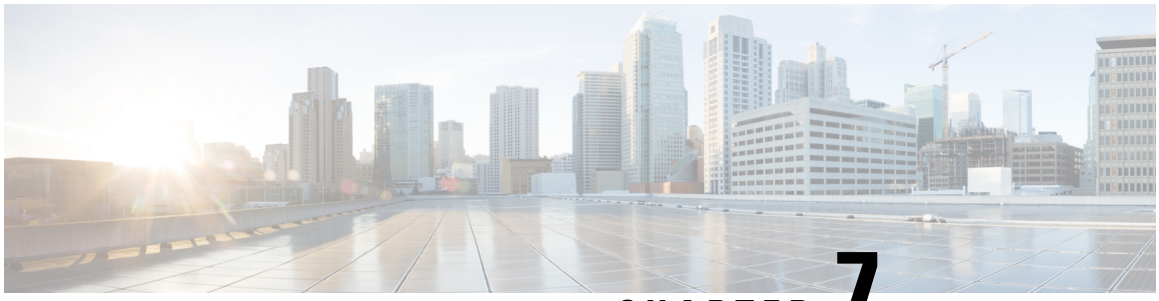
SNO	Cisco Spaces: Connector	Cisco WLC Direct Connect		CMX Tethering Connector
Platforms	Cisco AireOS	Cisco AireOS	Cisco Catalyst 9800 Series	Cisco AireOS

SNO	Cisco Spaces: Connector	Cisco WLC Direct Connect		CMX Tethering Connector
Max Scale on supported appliance.	12.5K APs, 250K clients Incoming NMSP should not be more than 10.5K messages/sec.	50 APs and 50 Clients	50 APs and 50 Clients	60K clients, 5K APs, and 50k RFID tags Maps with 1BLDG-100 Floors and each floor with 50 APs
Scale supported releases	Connector version 2.1.1 with docker v2.0.204	8.8MR2	16.12, 17.1	8.8MR2 with CMX 10.6 (high end)

Note Currently, scaling is not available for Mobility Express.

PART IV

Cisco Spaces: SEE License Apps



CHAPTER 7

Cisco Spaces: Right Now App

This chapter describes about the **Right Now** app.

Right Now Overview

The **Right Now** app provides you the Right Now report that shows the details of visitors currently present at your locations. Using the **Right Now** app, you can also create **Density Rules** through which you can send notifications to business users such as employees based on the visitor density or device count in the business locations.

The **Right Now** app is enhanced to address issues with counts when there are any changes in the **Location Hierarchy**. Prior to this enhancement, changes in **Location Hierarchy** such as adding new locations, removing existing locations or updating vital parameters such as **TimeZone** introduced stale or incorrect counts for Wi-Fi.

With this enhancement, the **Presence** chart count gets reset (removes all existing numbers until the current time) for the present day because the counts are invalid after the **Location Hierarchy** changes.

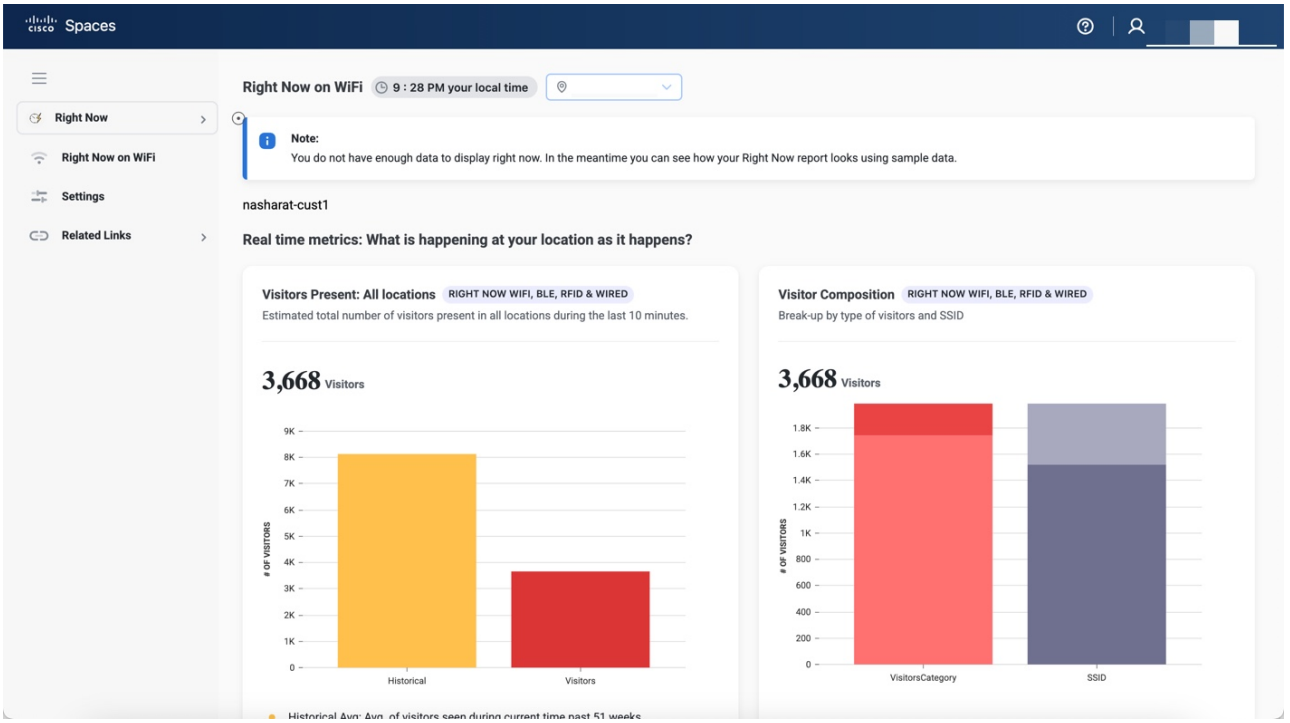
Right Now on WiFi

The Right Now on WiFi report displays the details of the visitors currently present at your locations. By default, the report shows the details of visitors currently present at all locations. You can filter upto the floor level.

The Right Now WiFi is enhanced to show the count of excluded devices that are not considered as visitors or filtered during data processing. The excluded device count is displayed as a message in the **Note** section of the Right Now Wifi.

The **Right Now** app is available for SEE, ACT, and EXTEND license types.

Figure 7: Right Now App



Note

- If a location is removed or modified in the location hierarchy or timezone is changed, the existing **Presence** chart count is reset.
- For BLE processing:
  - BLE group information should be received as part the IoT updates
  - RSSI value should be greater than -85
- For probing devices:
  - **Cisco Connector** and other device types: RSSI value should be greater than -70
  - **Cisco Meraki**: RSSI value should be greater than -100.

  Only those probing devices meeting the specified signal strength thresholds are allowed to share the device location update events as part of the Firehose data stream.
- For wired device processing: Contact Cisco Spaces support to configure the IP addresses for switches in the backend.

Viewing the Right Now Report

To view the Right Now report, perform the following steps:

Procedure

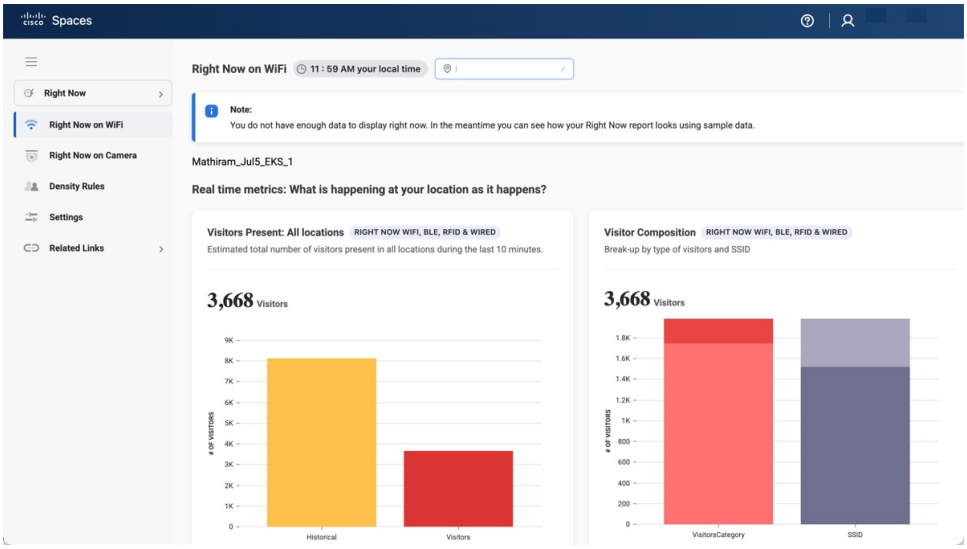
Step 1 In the Cisco Spaces Dashboard, choose **Right Now**.

The **Right Now** window appears.

Step 2 From the **Location** drop-down list, choose the desired network location.

The Right Now report for the selected network location is displayed.

Figure 8: Right Now on Wi-Fi



The local time of your system is displayed under the **Right Now** section at the top of the report.

The Right Now report displays the following charts:

- **Visitors Present: All locations**: Displays an estimated total number of visitors, during the last 10 minutes, in the filtered location including its child location.
- **Visitor Composition**: Displays the composition of active visitors, in percentage, by SSID category (employee, guest, etc.) and by SSID (top 5 SSIDs).
- **Visitors Present: All Locations**: Displays a trend of the total number of visitors during the last 10 minutes for the filtered location.
- **Visitors Present: Map View**: Displays the location-wise count of active visitors in the child locations of the filtered location.
    - **Map View**: The child locations of the filtered location are shown in the world map along with the total number of visitors in each of those child locations.
        - **Floor map view**: Select a specific floor to see the chosen floor map view as well.

          If the selected location has a map, imported from Cisco CMX, which is uploaded to Cisco Spaces, you can view the floor and the total number of visitors on the displayed floor.

- **List View**: The child locations of the filtered location are listed, and the number of current visitors for each child location is shown against that location.

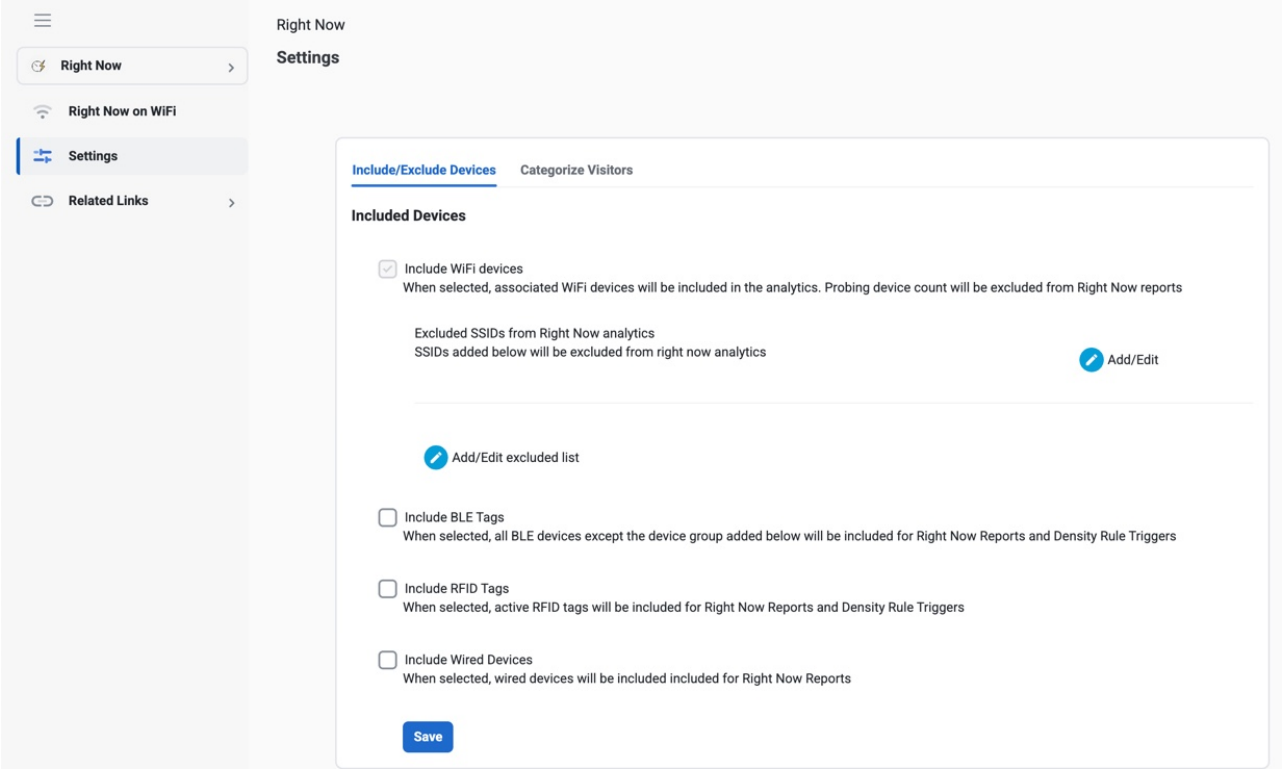
Note

- An "active visitor" can be any visitor who is present at the location during the last 10 minutes and is connected to the network (WLAN or SSID).
- If a device has a dwell time lesser than a minute, during the 10-minute window, it is excluded from the Right Now report.
- The average value for the last 51 weeks is shown as historical data for each chart in the report.

Settings

The **Settings** menu helps you manage devices, SSIDs, and visitors in the **Right Now** app reports. The **Settings** menu includes the **Include/Exclude Devices** and **Categorize Visitors** tabs.

Figure 9: Right Now - Settings



Including or Excluding Devices

Use the **Include/Exclude Devices** tab to select among the following options for Wi-Fi, BLE, and RFID devices for the Right Now reports:

- Wi-Fi devices option is included by default and you cannot deselect the same.

  To exclude devices connected to specific SSIDs from the Right Now analytics, click **Add/Edit** or **Add/Edit excluded list** and select the desired SSIDs from the **Exclude SSIDs** list.

- BLE Tags: To include BLE tags in the Right Now reports, select **Include BLE Tags**.

  To exclude specific device groups from the Right Now analytics, click **Add/Edit** or **Add/Edit excluded list** and select the desired BLE devices from the **Exclude BLE devices** list.

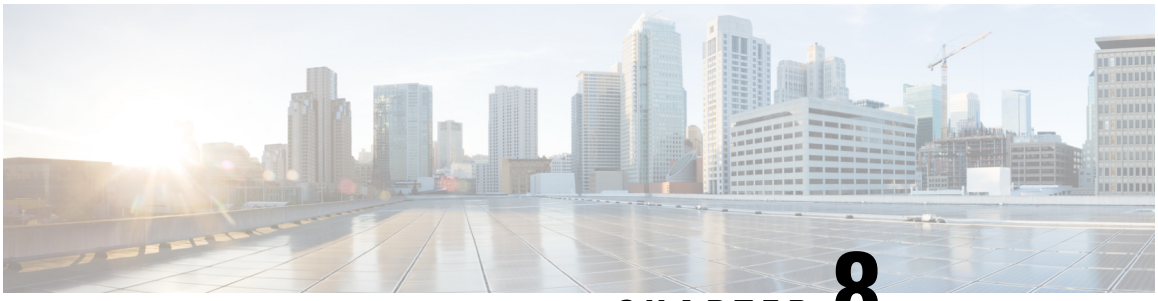
- RFID Tags: To include RFID tags in the Right Now reports, select **Include RFID Tags**.
- Wired Devices: To include wired devices as part of active visitors in the Right Now reports, select **Include Wired Devices**. By default, wired devices are excluded.

Note If you select RFID and BLE tags, then the corresponding device count is displayed in the Right Now report.

Categorizing Visitors

Use the **Categorize Visitors** tab to automatically or manually classify visitors, based on the visitor type, that have joined an SSID. The options available are:

- Auto
- Guest
- Employee
- Custom



CHAPTER 8

Cisco Spaces: Location Analytics App

This chapter describes the Location Analytics Report.

Overview of Location Analytics App

The Location Analytics app enables you to understand and analyze footfall, visitors, visit patterns and dwell time distribution across various areas in your building, across regions and different locations. The visits of your employees are also included in the report.

Use the Location Analytics app to view the reports with visits, visitor insights and dwell time distribution data and also create custom reports as per your preferred filter criteria.

The Location Analytics app has two options on the main menu: **Reports** and **Custom Reports**.

Reports

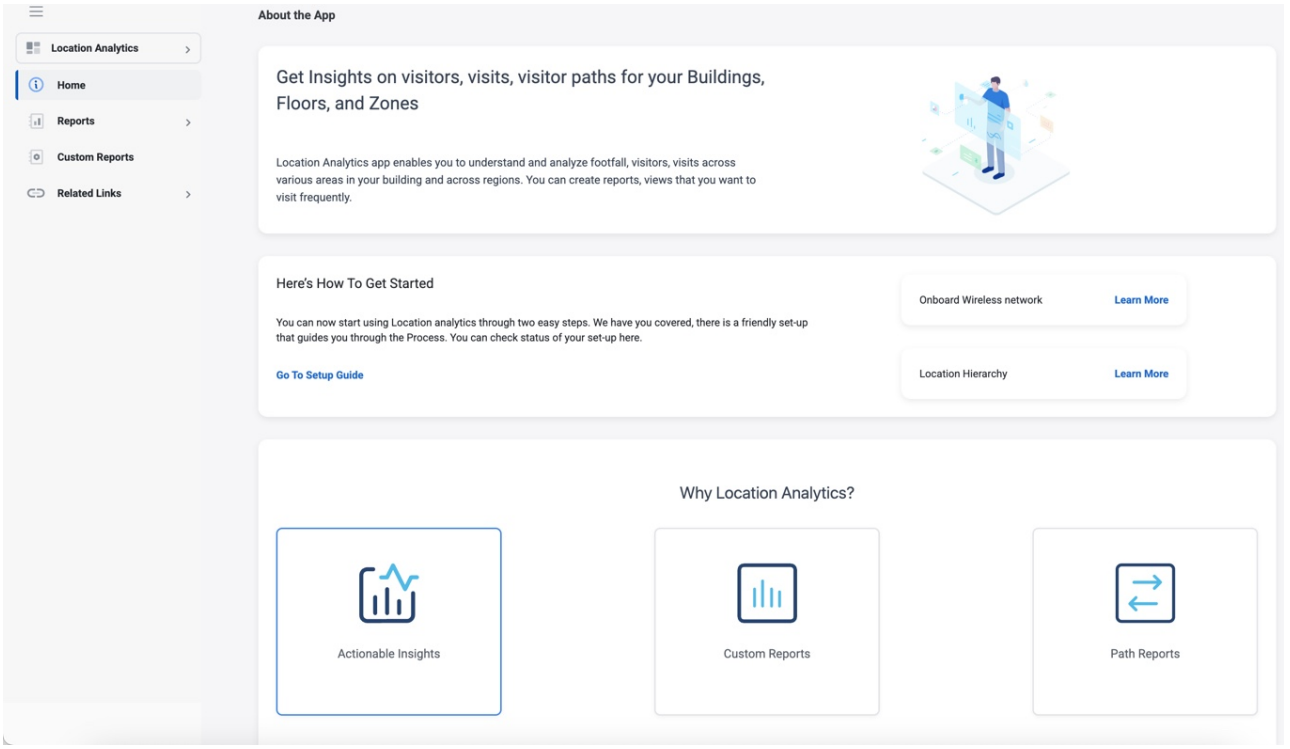
Click **Reports** on the left panel to expand the list and click **Overview** to view the reports. The **Overview** window displays visits, visitor details and dwell time distribution data in both tile and graphical format. You can click the arrow icon on the tile to view the details in graphical format.

Custom Reports

Choose **Location Analytics App** > **Custom Reports** to view and save custom reports. You can create custom reports with the available report type and also with **Path** widget included in the report.

In the Location Analytics app, choose **Reports** > **Overview** to view Location Analytics reports with visitor/visit trends/dwell time distribution in both tile and graphical format. You can also compare reports based on the available filter parameters. For more information, see Compare Reports, on page 53.

Figure 10: Location Analytics Overview



Note

- By default, a report for all locations, all SSIDs and for the last 365 days is displayed. Use the filters available on top of the window to modify the report as needed.
- If you are new to the Location Analytics app with no data, click **Location Analytics** in the left menu to view the sample reports and understand how visitor details are displayed.

The **Overview** window displays the information related to **Visitors**, **Visits**, **Daily Average Visitors** and **Daily Average Visits** as per the selected parameters.

- **Visitors** are defined as the total number of unique visitors based on the selected criteria.
- **Visits** are defined as the total number of visits for a specific location.
- **Daily Average Visitors** are defined as the daily average calculated by adding the total number of daily visitors for the selected period and then dividing that by the number of days.
- **Daily Average Visits** are defined as the daily average calculated by adding the total number of daily visits for the selected period and then dividing that by the number of days.

The **Overview** window displays the following information in tile format:

- Visitors: Daily Average Visitors
- Visitors: New vs Repeat Visitors
- Visits: Daily Average Visitors

- Visits: Average Dwell Time

The **Overview** window displays the following information in graphical format.

- Visitors Trend
- Visits Trend
- Dwell Time Distribution

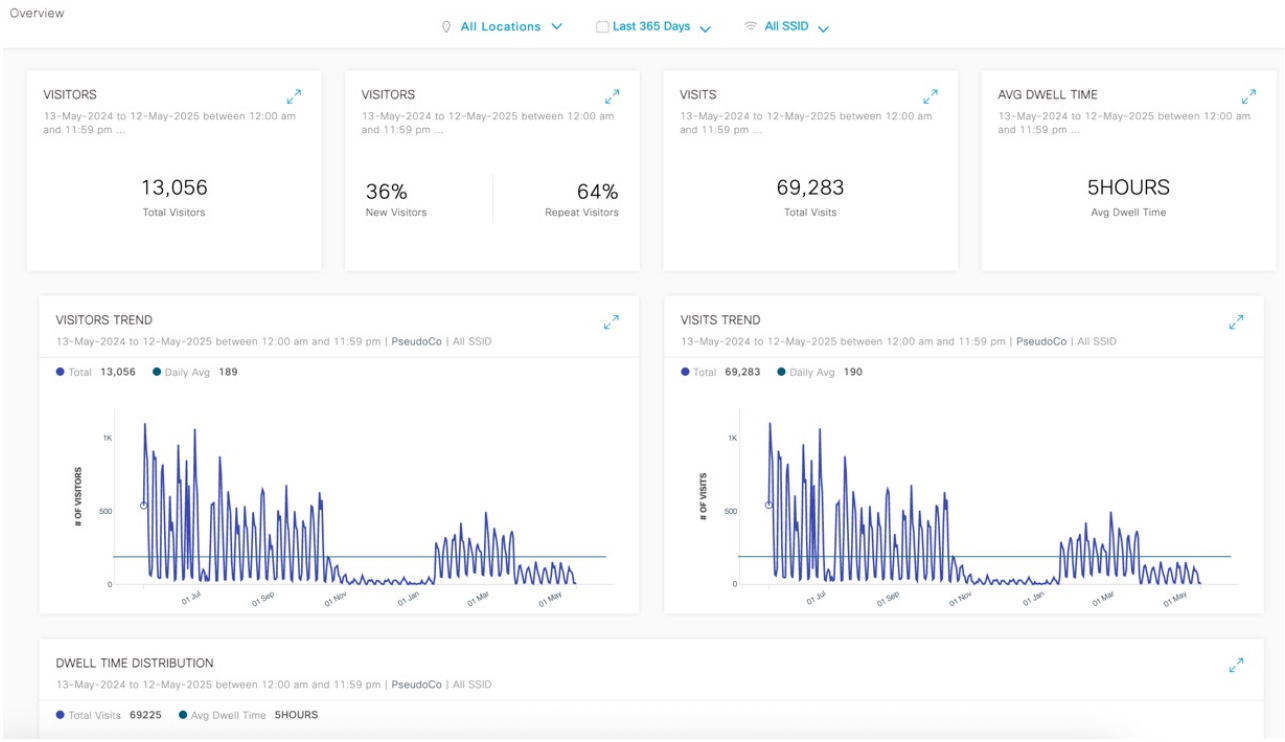
View Location Analytics Report

Procedure

Step 1 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Home**.

Step 2 In the **SEE** apps area, click **Location Analytics**.

The **Overview** window in the Reports menu is displayed by default.



Note

- By default, the report is displayed for the root location, all SSIDs and for the last 365 days. You can filter the report by location, date range, and SSID.
- The SSID filter option is available only to ACT license users; it is not available to the SEE and EXTEND license users. However, they can use the date range filter, and filter the locations except the group, floor and zone locations.

Step 3 From the **All Locations** drop-down list, select the location for which you want to view the report.

Note
ACT license users can view the report for floors and zones. The SEE and EXTEND license users can filter only network locations.

Step 4 From the **Date** drop-down list, select the date range for which you want to view the report.

The following options are available:

Table 6: Date Range Options

Date Range	Description
Today	Total number of visits every hour of the current date
Yesterday	Total number of visits every hour of the previous day
Current Week	Total number of visits on each day of the current week
Previous Week	Total number of visits on each day of the previous week
Current Month	Total number of visits on each day of the current month
Previous Month	Total number of visits on each day of the previous month
Current Year	Total number of visits on each day of the current year
Custom	Total number of visits on each day of the time range specified. In the **Custom Date Range** pop-up window, specify the start and end date and click **Apply**.

Note
To view the visit details for a particular day, hover over that day on the graph.

Step 5 From the **All SSID** drop-down list, select the SSID for which you want to view the report.

The **Overview** window displays the Location Analytics report as per the selected filter options.

Step 6 View the following information in the Location Analytics report in the tile format:

Table 7: Location Analytics Report Information

Report Item	Description
Visitors	Total number of visitors and the daily average visitors as per the selected filter parameters
Visitors	Total number of visitors as per the selected filter parameters. The count for **New Visitors** and **Repeat Visitors** are displayed separately with percentage information

Report Item	Description
Visits	Total number of visits and daily average visits as per the selected filter parameters. The count for **Total Visits** and **Daily Avg Visit** are displayed separately with percentage information **Note** • Visits having a duration of less than five minutes are excluded. This helps to exclude transient and transitory visitors, who contribute to inflating the visitor and visits count. • Visits having a duration of more than 1440 minutes are excluded. This helps to exclude devices that are always on, and contribute to inflating the average duration metric.
Dwell Time Distribution	The dwell time break-up for the visits occurred in the filtered location during the period specified for selected SSIDs
Path widget	The visitor traverse pattern between locations and also the percentage of visits at various floors or zones within the same **Network**. In your custom report, hover the mouse over any floor or zone in the **Path widget** to view the exact visit count. You can filter using only the locations available below the **Network** to view the path analytics. The **Path widget** is available only to the ACT license users.

Note
You can view the **Visitors Trend**, **Visits Trends** and **Dwell Time Ditribution** information in graphical format also.

Compare Reports

You can compare Location Analytics reports based on various filter parameters and thereby analyze the trends and visitor pattern. To compare reports, choose **Location Analytics** > **Reports**. The Reports menu has the following three options: **Compare Locations**, **Compare Dates** and **Compare SSIDs**.

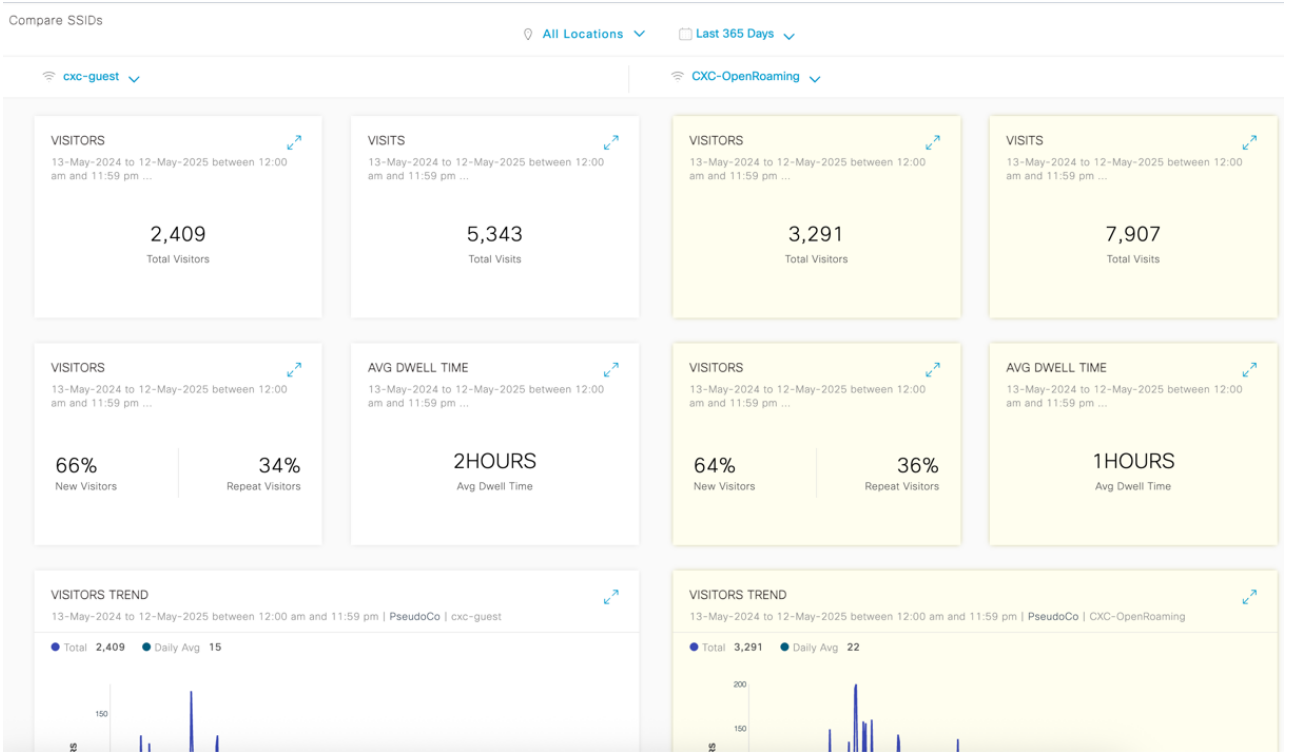
- **Compare Locations**: Use this tab to compare two location reports and view the visitors' trend. By default, two locations with most number of visitors are considered for the report. Visitor data must be available for atleast two network locations to display as charts. In the **Compare Locations** window, from the **Locations** drop-down list displayed at the top, select the locations to compare and view the reports.
- **Compare Dates**: Use this tab to choose two specific dates or date range and view the report. By default, the current week is selected as date range for the first report and previous week for the second report. In the **Compare Dates** window, from the **Date** drop-down list displayed at the top, select the required date range options to compare and view the reports.

- **Compare SSIDs**: Use this tab to compare two different SSIDs and view the visitors' trend. By default, two SSIDs with most number of visitors are considered for the report. In the **Compare SSIDs** window, from the **SSIDs** drop-down list displayed at the top, select the required SSIDs to compare and view the reports.

Depending on the selected compare options, the Location Analytics reports are displayed on the left and right side of the Location Analytics window. You can compare the Location Analytics report displayed on the left side (white background) aganist the report displayed on the right side (yellow background).

Note You can also use the filter parameters available on the top of the window to view the Location Analytics report.

Figure 11: Compare Report Options



Create Custom Report

Use the **Custom Reports** option to create custom location analytics reports based on filters that you can apply to the default report types.

You can create custom reports based on the following default report types that are available:

The **Custom Reports** feature helps to view the default location reports and also create custom-tailored reports. The **Custom Reports** window displays all avaliable reports, default overview reports and reports with compare options along with the number of reports in each category.

The three categories are:

- All Reports
- Overview
- Compare Reports (reports with all categories)

Use the **Custom Reports** feature in the Location Analytics app to create a report with the default filter parameters and save this as the default Location Analytics report for reference. While creating the default Location Analytics report, default filter parameters are considered such as all locations, last 365 days date range and all available SSIDs. The filter parameters at a global level are not availble to filter this default Location Analytics report.

In addition to the default Location Analytics report, you can create custom reports by including any one available report type and multiple widget filters.

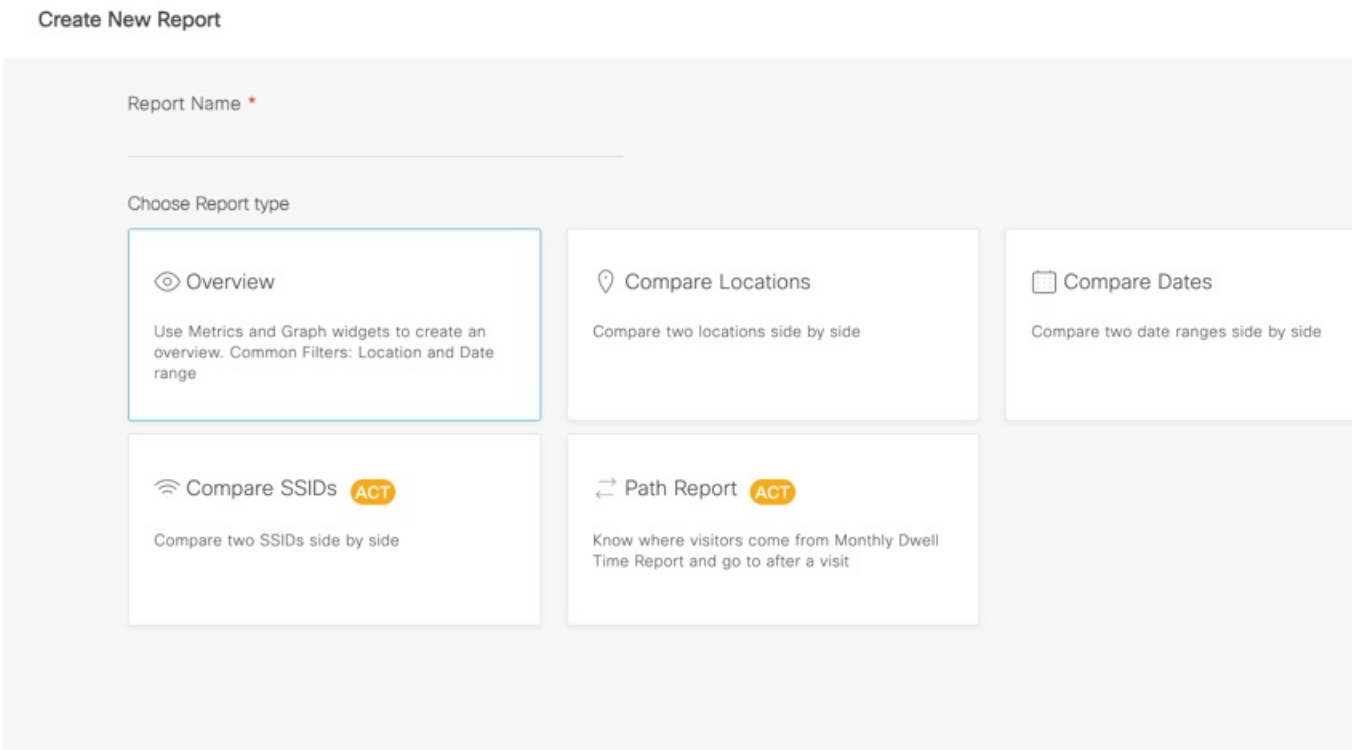
Each custom report can include multiple widgets. You can create widgets with different combinations of report types, locations, time period, SSIDs, visit ranges, and view by options. You can add more than one widget with same report type in a custom report.

Procedure

Step 1 In the Cisco Spaces dashboard, choose **Location Analytics** > **Custom Reports**.

Step 2 Click **Create New Report**.

The **Create New Report** window is displayed.



Step 3 In the **Report Name** field, enter the name for the new report.

Step 4 Select a report type.

The available options are:

- **Overview**
- **Compare Locations**
- **Compare Dates**
- **Compare SSIDs** (Available only for ACT license users)
- **Path Report**: This report type is available for ACT license. The report filters available for **Path Report** report type are **Location** and **Date**.

  Note
  In the **Path Report**, the visits count displayed on the focus area represents the total number of visits made by visitors who have come from various locations. This count is independent on the visits shown on the home page widget and should not be compared against them.

Note
You can select only one report type for a custom report.

You can also create a custom report without adding any report type or selecting any one report type. If you choose to create a custom report without any report type, all default report filter values are considered while creating the report.

The default values are:

- **Location**: Root location
- **Date Range**: 365 days
- **SSID**: All SSIDs

Step 5 Click **Next**.

Step 6 (Optional) Click **Skip & Create** to create the custom report without selecting any report filters.

Step 7 To select the required report filters, click the slide button.

The available options are:

- **Location**
- **Date**
- **SSID**

Use the **Search** option availble to search and select the required report filters.

Note
ACT (Advanced) subscription customers are allowed to apply all filters (Location, SSID, Time Range and Visit Range) in the widgets. SEE (Base) and EXTEND subscription customers are restricted to apply SSID and Visit Ranges filters, and cannot filter group, floor and zone locations.

Step 8 Click the **Date** report filter and from the **Choose Date Range value** drop-down, select the date range filter to view the report.

Step 9 Click the **SSID** report filter and from the right panel, select the SSID to filter the report.

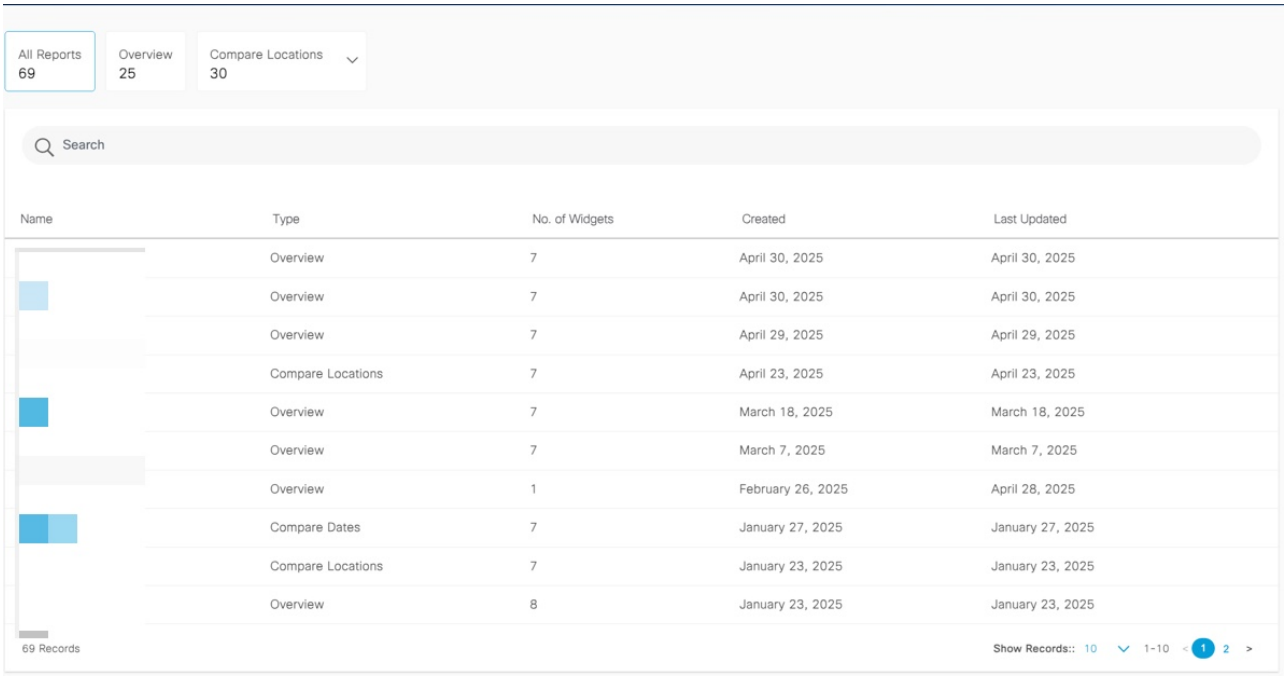
The following SSID options will be available for selection:

- **All SSIDs**: Displays the visit data in the filtered locations for the specified period captured using the SSIDs in those locations.
- **Custom SSID configured in Cisco Spaces**: Displays the visit data in the filtered locations for the specified period captured using the particular SSID.

Note
You can apply the filters only if you are an **ACT** license user. The SEE license users cannot use the SSID filter. However, they can use the date range filter, and filter the locations except the group, floor and zone locations.

Step 10 Click **Create**.

The new custom report created is displayed in the **Custom Reports** window. You can view the report name, type, number of widgets, created date and last updated date. The **Custom Reports** window also displays the selected report filters available at a global level at the top of the window.



Note

- To delete a report, click the three dots icon (•••) on its row and click **Delete**.
- Check the **Name** check box to select all reports and click **Delete** at the top right of the **Custom Reports** window to delete them.

Add Widget

You can add more widgets to your custom reports while editing a report.

Procedure

Step 1 In the **Location Analytics** window, click **Custom Reports** from the left panel.

Step 2 Select the report to edit.

The selected Location Analytics report is displayed.

Step 3 Click the three dots icon on the top-right of the window.

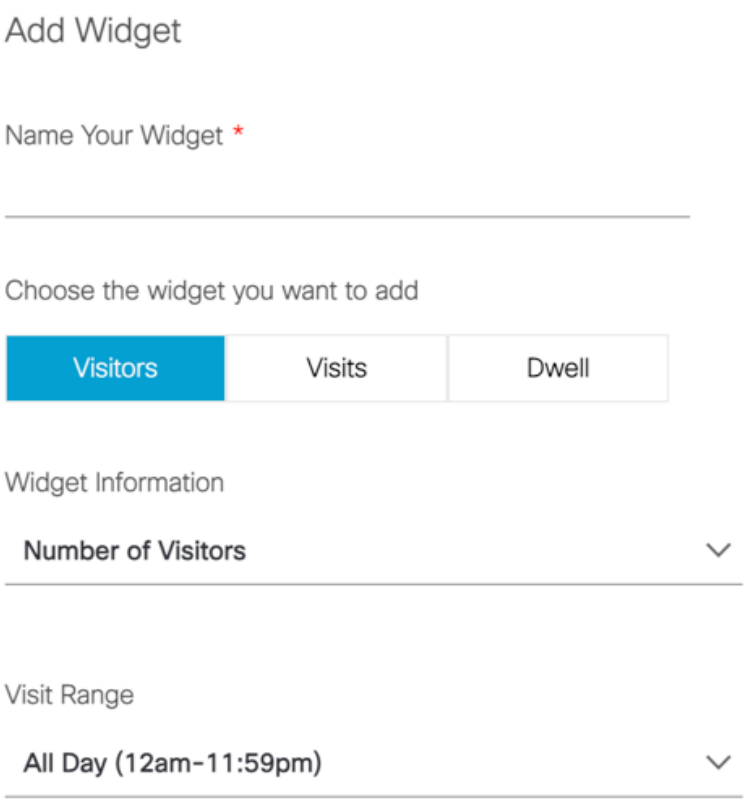
Step 4 Click **Edit Report**.

The report is displayed in edit mode.

Step 5 Click **Add Widget**.

The **Add Widget** pop-up window is displayed.

Figure 12: Add Widget



Step 6 Enter the following information:

a) **Name Your Widget**: Enter the name for the new widget to be added.
b) **Choose the widget you want to add**: Click the widget that you wanted to add. The widget available are **Visitors**, **Visits** and **Dwell**.
c) **Widget Information**: From the **Widget Information** drop-down list, select the information that must be included in the widget. The options vary depending upon the widget selection. The options available are:
   - For **Visitors** widget: **Number of Visitors** and **New vs Repeat**
   - For **Visits** widget: **Number of Visits** and **New vs Repeat**
   - For **Dwell** widget: **Distribution**
d) **Visit Range**: From the **Visit Range** drop-down list, select the date range for the report.

   The following options are available:
   - **All Day**: The visits happened during the entire day (12 am to 11:59 pm) are included in the report.
   - **Mid Night**: Only the visits during mid night (12 am to 2:59 am) are included in the report.
   - **Early Morning**: Only the visits during early morning (3 am to 4:59 am) are included in the report.
   - **Morning**: Only the visits during morning (5 am to 8:59 am) are included in the report.
   - **Business Hours**: Only the visits during business hours (9 am to 4.59 pm) are included in the report.
   - **Evening:**: Only the visits during evening (5 pm to 8:59 pm) are included in the report.
   - **Late Evening**: Only the visits during late evening (9 pm to 11:59 pm) are included in the report.
   - **AM**: Only the visits during early morning (12 am to 11:59 am) are included in the report.
   - **PM**: Only the visits during late evening (12 pm to 11:59 pm) are included in the report.

Step 7 Click **Next**.

The **Add Widget** pop-up is displayed with the following tabs: **Location**, **Date Range** and **SSIDs**. You can click these tabs and choose the required options and add them.

Step 8 Click **Locations** tab.

a) (Optional) In the **Search Location** field, enter the name and search for locations. You must enter a minimum of 3 characters to perform the location search.
b) Select the root location or click to expand and select the required zone or floor.
c) From the **View By** drop-down list, select the time duration for which you want to see the report for selected location.
   - **Day**: The report displays the visit data for each day of the specified period.
   - **Hour of Day**: The report displays the visit data for each hour of the day. The visit count for a particular hour will be total visits occurred during the specified period at that particular hour. For example, in the **Hour of Day** report for November 2022, the visit count displayed at 2:00 PM will be the total of number of visits occurred between 2.00 PM and 2:59 PM during the entire month of November 2022.
   - **Week**: The report displays the visit data for each week in the specified period.
   - **Day of Week**: The report displays the visit data for each week in the specified period with visit count for each day on that particular week.

Step 9 Click **Date Range** tab.

a) From the **Date Range** drop-down list, select the time duration for which you want to see the report.

If you choose **Custom** as the date range, enter the start and end dates in the **Start Date** and **End Date** fields.

b) From the **View By** drop-down list, select the time duration for which you want to see the report.

By default, the **View By** option selected in the **Locations** tab is displayed. You can update the time duration if required and the change is reflected in the **Locations** and **SSIDs** tabs.

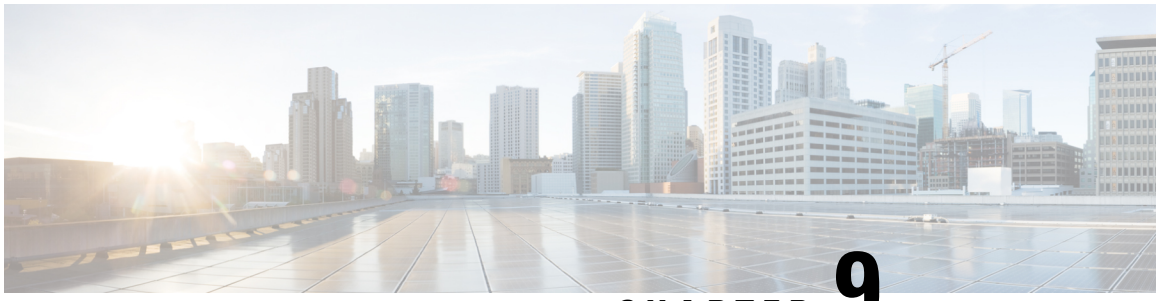
Step 10 Click the **SSIDs** tab.

a) From the **SSIDs** drop-down list, select the SSID.
b) From the **View By** drop-down list, select the time duration for which you want to see the report.

By default, the **View By** option selected in the previous tab is displayed. You can update the time duration if required and the change is reflected in the other tabs.

Step 11 Click **Add**.

The prompt `Place Widget Here` is displayed and you can click on the blue highlighted area to insert the new widget.



CHAPTER 9

Cisco Spaces: Detect and Locate App

This chapter describes the Cisco Spaces: Detect and Locate app.

Overview of Cisco Spaces: Detect and Locate App

Cisco Spaces: Detect and Locate app enables you to view the current and historic location of Wi-Fi devices in your deployment.

Using **Detect and Locate**, you can view the fixed physical layout of the buildings in your network and the Wi-Fi access points (APs) deployed in the building. You can see other fixed components such as GPS markers and Exclusion or Inclusion Zone for location calculation. **Cisco Spaces: Detect and Locate** also allows you to see the dynamic nature of the Wi-Fi devices in your network.

For more information on the **Detect and Locate** app, see Cisco Spaces Detect and Locate Configuration Guide.

PART V

Cisco Spaces: EXTEND License Apps

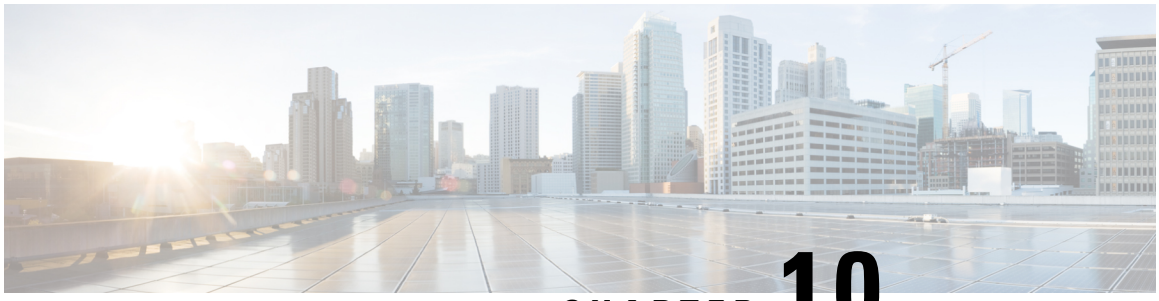
Cisco Spaces: EXTEND Apps

Cisco Spaces has a diverse ecosystem of device and app partners to enhance your solutions. Cisco Spaces: EXTEND apps includes:

- IoT Device Marketplace
- App Center

PART VI

Cisco Spaces: ACT License Apps



CHAPTER 10

Cisco Spaces: Space Utilization App

Work with Space Utilization App

The Cisco Spaces: Space Utilization App offers historical insights into how your physical spaces are used, aiding in space optimization. These insights are gathered from data collected via sensors embedded within your space's networking and collaboration infrastructure.

This app allows you to view the occupancy and utilization for any physical space within a campus, building, or floor. This information includes data such as people count, peak utilization metrics, room utilization metrics and time spent by people in that physical space.

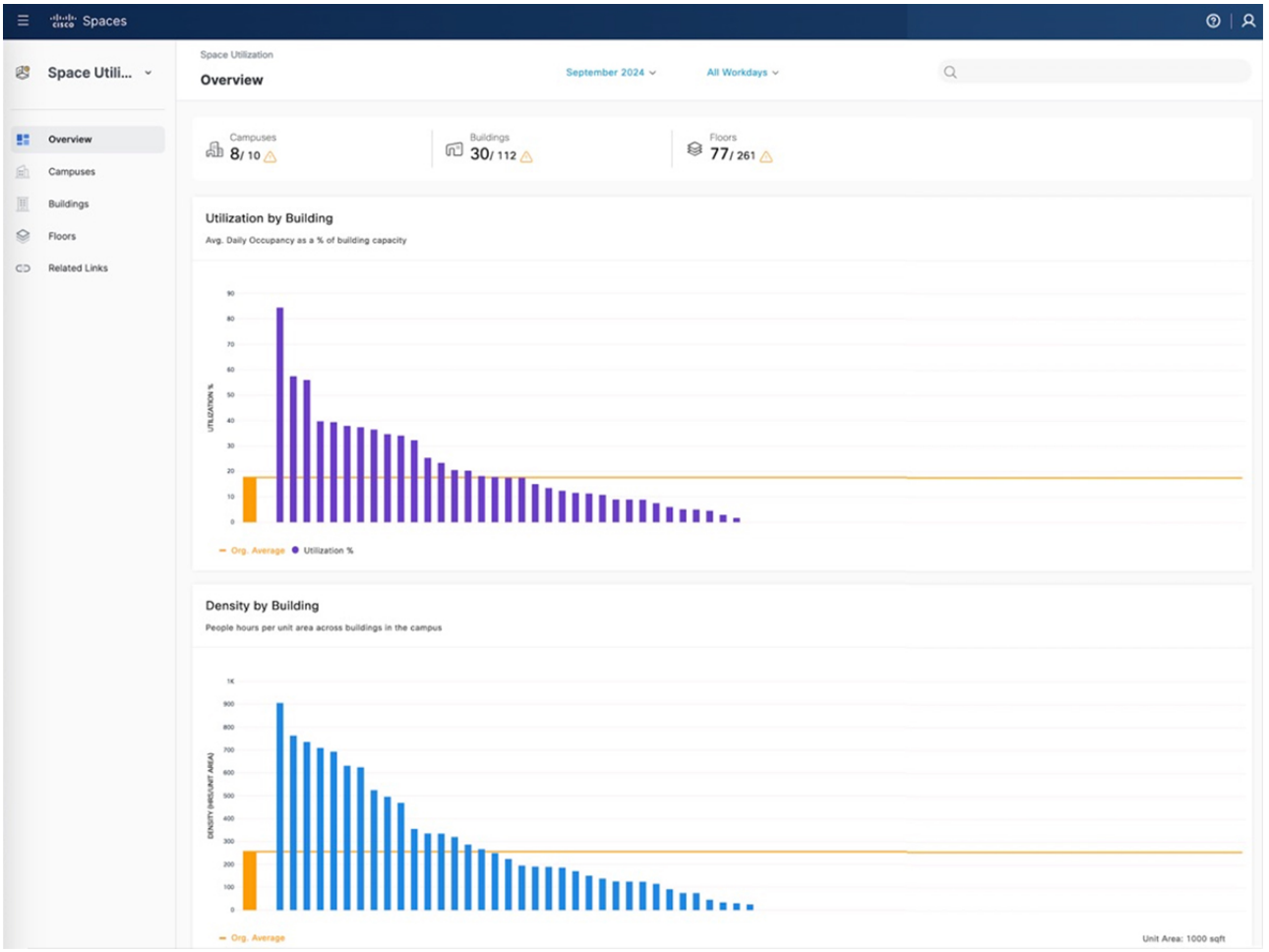
For Cisco Spaces accounts in the Workspace and Education verticals, both Floor Occupancy and Room Occupancy metrics are displayed. By default, for accounts in all other verticals, only Room Occupancy metrics are displayed.

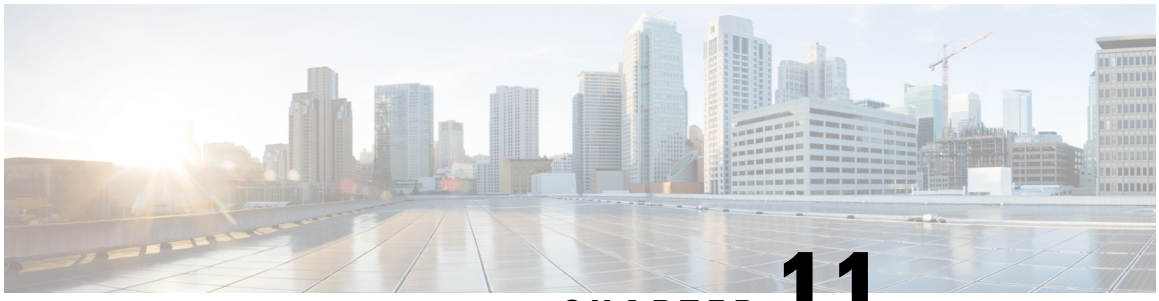
Use **Room Occupancy Reports** feature to generate an occupancy report with the data including the number of people present in the room that is aggregated in a window of every 15 minutes. This feature provides the flexibility to download and categorize the people count data based on their preferred reporting time intervals, such as 15, 30, or 60 minutes.

For more information, see Cisco Spaces: Space Utilization App Guide.

Note The **Space Utilization** app is available to users with **Cisco Spaces ACT** and **Cisco Spaces Unlimited** licenses.

Figure 13: Space Utilization App





CHAPTER 11

Cisco Spaces: Smart Workspaces App

The Cisco Spaces: **Cisco Smart Workspaces** app offers applications like **Space Manager** and **Space Experience** for your wired, wireless, and WebEx deployments that are used to make your workspace hybrid-work-ready. These applications enhance and provide seamless digital experiences for your employees and visitors through metrics such as occupancy, noise & air quality, and meeting room capacity & availability.

The **Space Manager** app allows you to have a view of real-time occupancy and environment updates like humidity, air quality, and noise levels across buildings, floors, and meeting rooms. Meanwhile, the **Space Experience** app enables signage management through Cisco Spaces.

Note These apps are tied to the **ACT** license.

• Working with Cisco Spaces: Smart Workspaces, on page 69

Working with Cisco Spaces: Smart Workspaces

To support **Cisco Smart Workspaces**, two new apps are added under the **ACT** license:

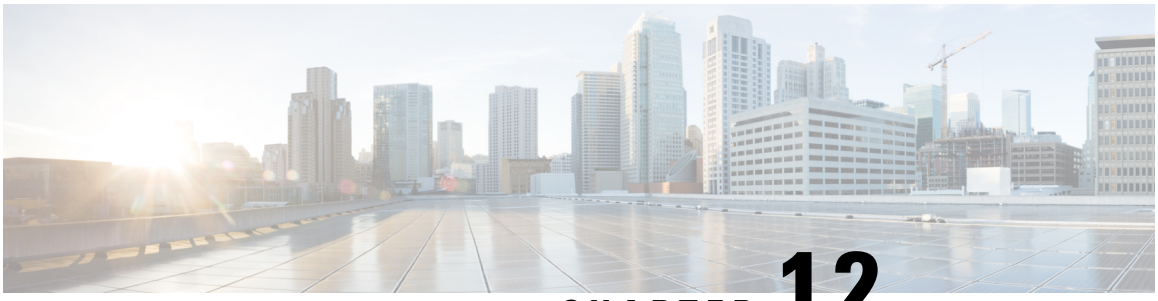
- **Space Manager**: Use this app to configure various devices, sensors, and workspaces and to provide access to real-time occupancy data and environment telemetry (heat map, indoor air quality, temperature, humidity, and noise levels) rendered on rich maps for a specific building, floor, or meeting room. In the **Devices** section, you can view the configured devices and their telemetry details on rich maps. The **Workspace Management** section displays the configured meeting room or workspace and allows you to view, add, or remove devices and sensors to and from the selected workspace.
- **Space Experience**: Use the **Space Experience** app to do the following:
  - Create and manage signage for **Cisco Smart Workspaces**
  - Onboard new signage for a Cisco Webex device or a non-Webex device.
  - Configure the telemetry parameters and publish the signage.

    The configuration updates are auto-notified to the corresponding signage devices.

For more information, see Cisco Spaces: Smart Workspaces Solution Guide.

PART VII

Location Hierarchy 2.0



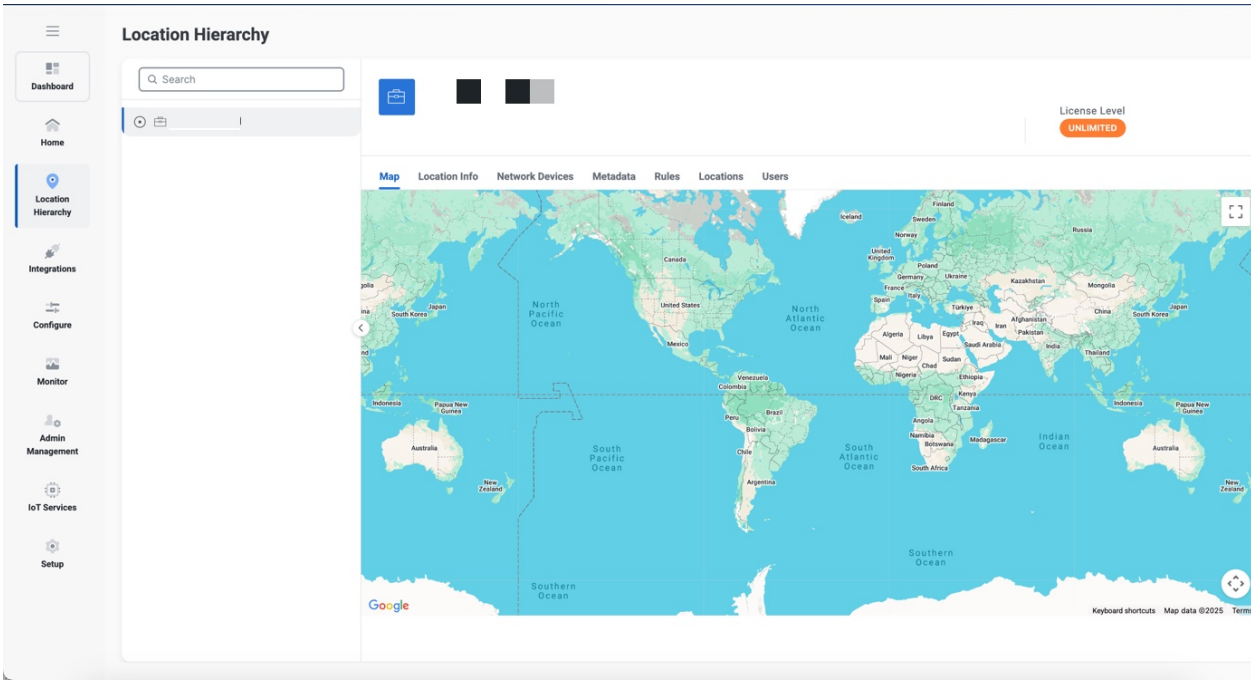
CHAPTER 12

Overview of Location Hierarchy 2.0

Location Hierarchy 2.0's enhanced user interface simplifies the import of locations in the same structure that you have defined using Cisco AireOS Wireless Controller, Cisco Catalyst 9800 Series Wireless Controller, or Cisco Meraki, in your wireless network.

The hierarchical structure in maps imported from Cisco Prime Infrastructure orCatalyst Center are automatically reflected with Location Hierarchy 2.0.

In **Location Hierarchy** window, the default customer name (root location) is automatically selected and the **Map** tab displays the location on the map. An alert message is displayed if the time zone is not updated for that particular location.



The left pane of the **Location Hierarchy** window displays the imported root locations with the default customer name (root name). You can click the plus sign to expand and view the hierarchy. You can view the buildings and the associated floors in the root location.

If you select a root location from the left pane, you can also view additional information related to the number of campuses, buildings, groups, floors and zones.

For a selected location, building or floor, additional information is displayed in the following tabs:

- **Map**: Displays the selected location on the map
- **Location Info**: Displays the location data information
- **Network Devices**: Displays the connected network devices and running devices
- **Metadata**: Displays the configured metadata information
- **Locations**: Displays the location nodes
- **Users**: Displays the users

You can perform the following additional tasks in the **Location Hierarchy** window:

- **Search**: In the **Search** field, enter the location name and press **Enter**. You must provide a minimum of four letters as the search term. The **Recent Searches** area displays the search results.
- **Rename**: Click the three dots next to the location and click **Rename Location** to edit the location name.
- **Delete**: Click the three dots next to the location and click **Delete Location** to delete the location from **Location Hierarchy**.

Note In the **Location Hierarchy 2.0** window, click the **Beta UI** toggle button to enable the new UI. If you enable **Location Hierarchy 2.0**, the feature is enabled for all the users available in the same account.

Location Hierarchy 2.0 shows rich maps, if they are available for a particular floor. The option to upload rich maps is currently managed by the Cisco Spaces support team. Click the **3D** toggle button to switch between 2D and 3D floor maps.

In **Location Hierarchy 2.0**, only those locations that a Cisco Spaces user can access are displayed. The accessibility to these locations are defined when you create or edit roles or invite or edit the Cisco Spaces user in **Admin Management**.

- View Location Information, on page 74
- Update Location Information, on page 77
- View the Network Devices, on page 80
- Configure Metadata, on page 81

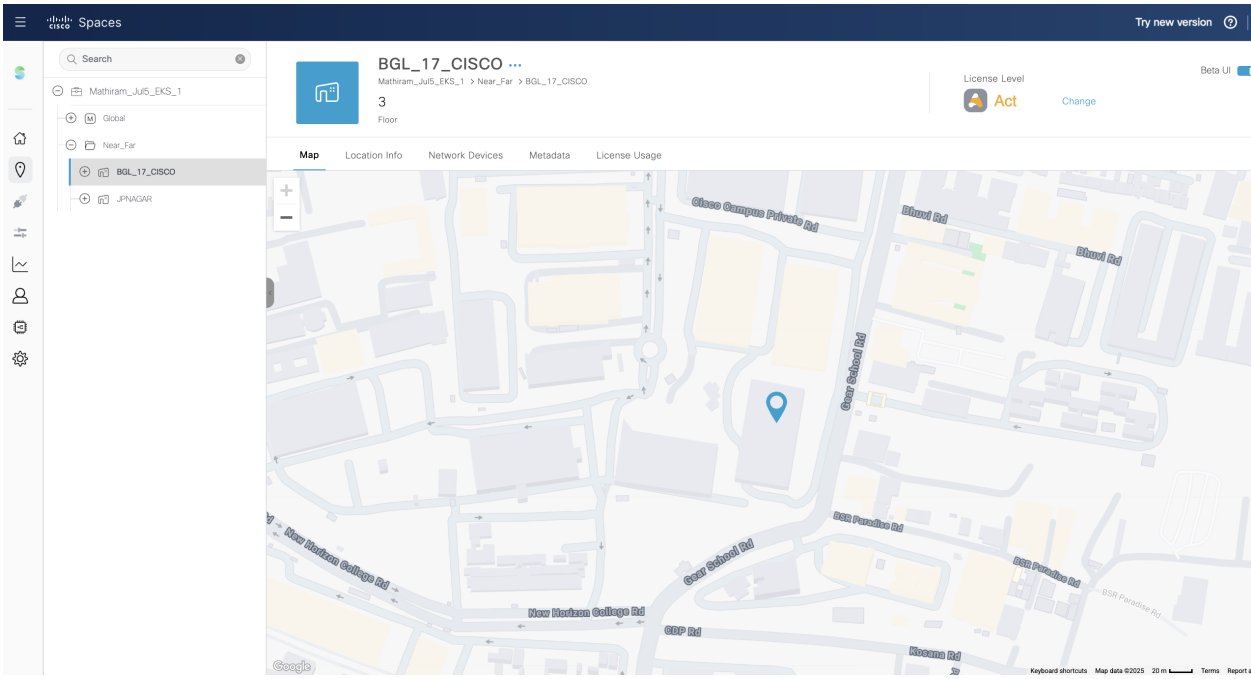
View Location Information

Use the **Map** tab (**Cisco Spaces dashboard** > **Menu icon (☰)** > **Location Hierarchy 2.0** > **Root Location**) to view the selected location, campus, building and floor information on the map.

If you select the root location, the default world map is displayed.

However, in some instances, the map automatically zooms into the precise location on the map and is displayed with a plotter icon. You can click on the plotter icon to view the additional information such as location address, total area, maximum capacity, time zone details and so on. The precise location is plotted based on the latitude and longitude information.

Figure 14: Map Tab



If you select a building, the default world map is displayed.

If you select a floor, the exact floor map image is displayed. Use the Polygon tool ( ) to create zones. For more information, see Create a Zone, on page 75.

Depending on the location you select, view the following information:

- Organization
- Campus
- Building
- Floor
- Zone
- Alerts

Create a Zone

Use the **Map** tab to create Cisco CMX zones in **Location Hierarchy**.

Note Currently, Cisco Meraki zone-based reports are only supported in the **Right Now** application and **Firehose** device location update events.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon ( ) and choose **Location Hierarchy**.

The **Location Hierarchy** window is displayed.

Step 3 In the left pane, navigate to the required floor location.

The floor map is displayed.

Step 4 Click the Polygon tool ( ) on the map.

The cursor changes to a plus icon.

Step 5 Click on the required map area and move the cursor to draw a polygonal zone of your choice.

Step 6 Double-click to complete the zone creation.

A pop-up window is displayed on the right pane.

Step 7 In the **Zone Name** field, enter the new zone name.

Step 8 Select the overlay color to distinguish the zone.

Step 9 Click **Save**.

- The new zone is created and the **Location Hierarchy** window is refreshed to display the root location.
- In the left pane, navigate to the floor where you created the new zone and the Cisco CMX zone is now listed as a new item under the floor hierarchy.

Step 10 (Optional) Click the polygon icon on the map to update the zone details.

Create a Zone for a Floor Location

In Location Hierarchy 2.0 (Beta UI), you can create polygon zones for the floor locations under the Cisco Meraki network. To create polygon zones on the floor map, use the **Polygon tool** ( ) that is available in the floor map view under the **Map** tab. The new polygon zones created are displayed under both Location Hierarchy and Location Hierarchy 2.0.

Procedure

Step 1 Log in to Cisco Spaces.

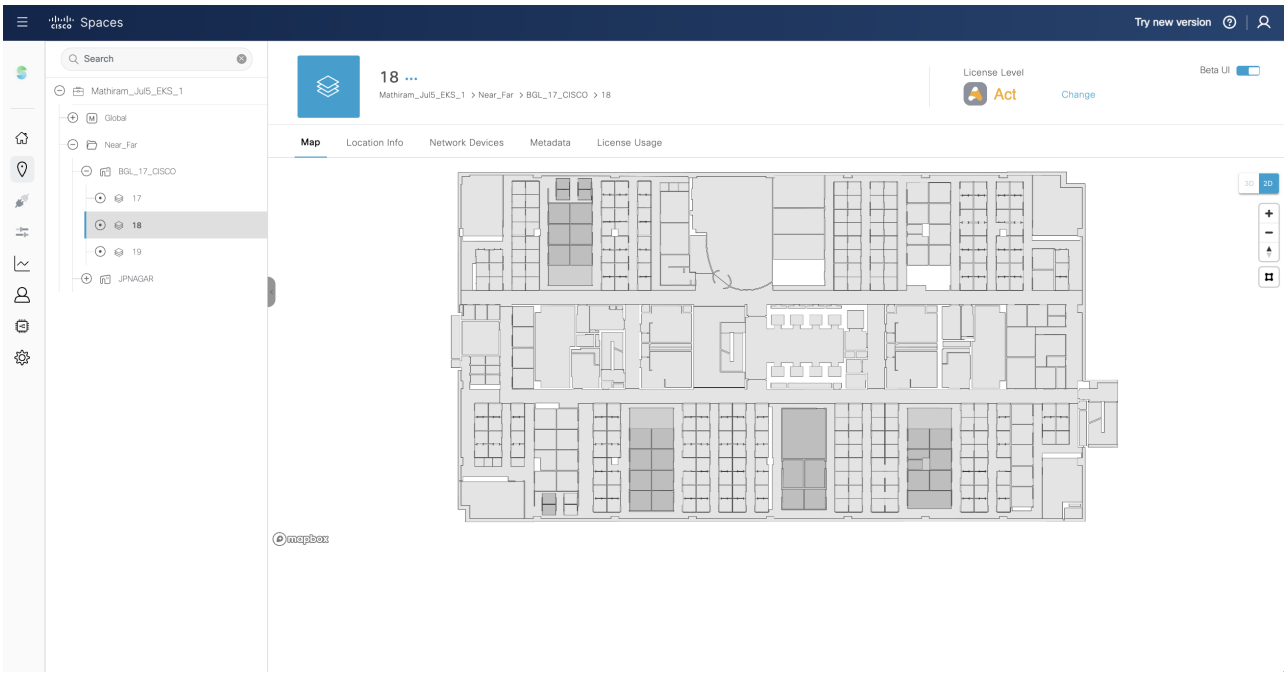
Step 2 In the Cisco Spaces dashboard, click the **Menu** icon ( ) and choose **Location Hierarchy**.

The **Location Hierarchy** window is displayed.

Step 3 In the left pane, navigate to the required floor location.

The floor map is displayed.

Figure 15: Map Tab



Step 4 Click the Polygon tool (⌗) on the map.

The cursor changes to a plus icon.

Step 5 Click the required map area and move the cursor to draw a polygonal zone of your choice.

Step 6 Double-click to complete the zone creation.

A pop-up window is displayed on the right pane.

Step 7 In the **Zone Name** field, enter the new zone name.

Step 8 Select the overlay color to distinguish the zone.

Step 9 Click **Save**.

- The new zone is created and the **Location Hierarchy 2.0** window is refreshed to display the root location.
- In the left pane, navigate to the floor where you created the new zone and the zone is now listed as a new item under the floor hierarchy.

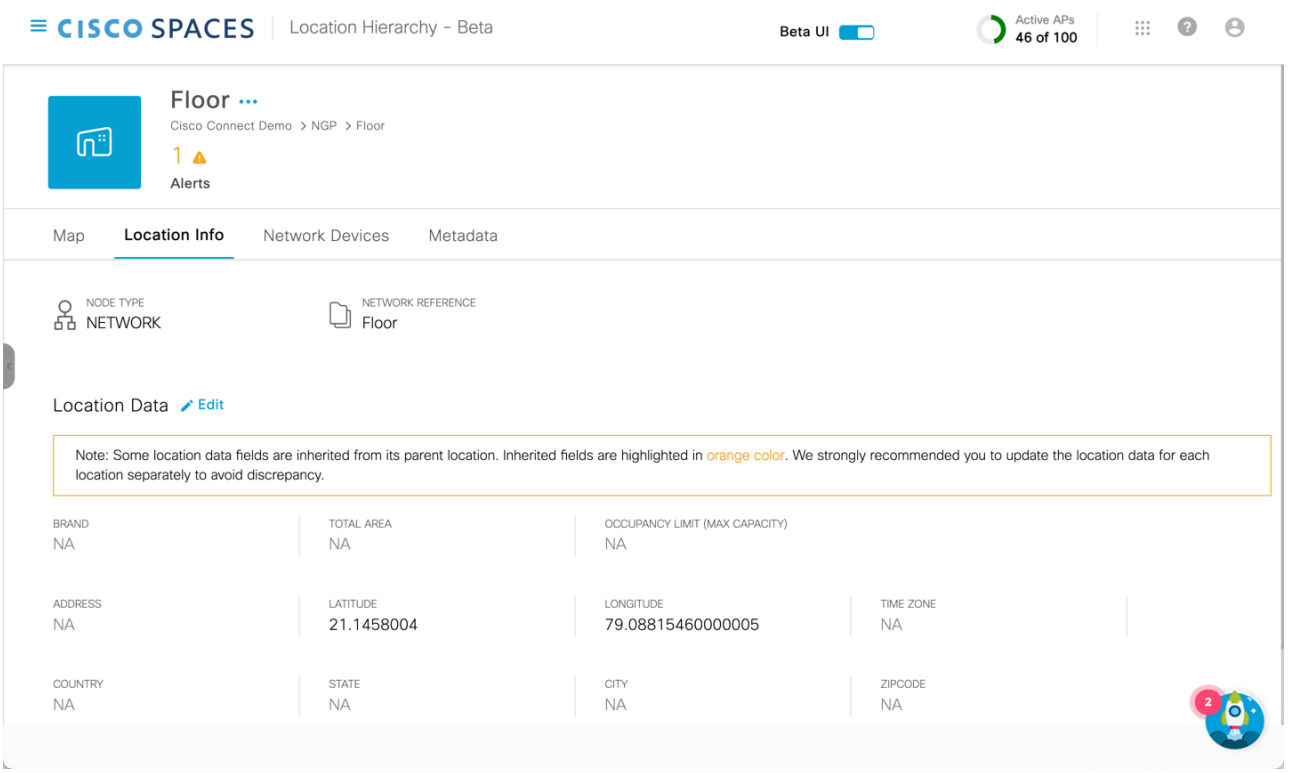
Step 10 (Optional) Click the Polygon tool (⌗) on the map to update the zone details.

Update Location Information

Use the **Location Info** tab (**Cisco Spaces dashboard** > **Menu icon (☰)** > **Location Hierarchy 2.0** > **Root Location**) to view and edit the location information.

For the selected location, the **Node Type** and **Network Reference** details are displayed.

Figure 16: Location Info Tab



Click **Edit** to update location information. For more information, see Edit Location Info, on page 78.

Note The location data fields inherited from the parent location are highlighted in orange. We recommend that you update the location data for each location separately to avoid discrepancies.

Edit Location Info

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Location Hierarchy**.

The **Location Hierarchy** window is displayed.

Step 3 In the left pane, navigate to the required location.

Step 4 Click the **Location Info** tab.

Step 5 Click **Edit** next to **Location Data**.

The slide-in window is displayed.

Step 6 Update the following location information as required:

a) **Location Name**: Edit the name of the location.
b) **Brand**: Edit the name of the brand.
c) **Total Area**: Edit the total area details.
d) **Unit**: Select the unit for the total area entered. The options are **Square Feet** and **Square Meter**.
e) **Occupancy Limit (Max Capacity)**: Edit the occupancy limit/maximum capacity details.
f) **Address**: Enter the address details and select from the displayed options. The selected address is plotted on the map displayed on the right side.
g) **Latitude**: Displays the latitude of the selected address. You cannot edit this value.
h) **Longitude**: Displays the longitude of the selected address. You cannot edit this value.
i) **Time Zone**: Enter the search term in the **Search Timezone** field and search or select from the available options.

Step 7 Click **Save**.

Edit Access Point Prefix

You can add APs of multiple prefixes to a network. For example, if you have APs with prefixes, AB, BC, and CA, and if you want to group the APs with AB and BC under one wireless network, you can do so.

The **Access Points Prefix Used** option will be available in the **Location Info** tab only for the network locations. However, the Access Points Prefix Used option will not be available for the **Unconfigured** network.

To add APs of multiple prefixes to a network of a Cisco Wireless Controller or Cisco Catalyst 9800 Series Wireless Controller, follow these steps:

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Location Hierarchy**.

The **Location Hierarchy** window is displayed.

Step 3 In the left pane, navigate to the required network.

Step 4 Click the **Location Info** tab.

Step 5 Click **Add/Edit** next to **Access Point Prefix Used**.

Step 6 In the **Add/Edit Prefix** window, in the **Prefix** field, enter the prefix.

The access points with the prefix entered get listed.

Step 7 Click **Add Prefix**.

The newly added prefix gets listed under **Added Prefixes** in the right pane of the window. **Add Prefix** is enabled only if the APs with prefix entered are available.

Step 8 Click **Save**.

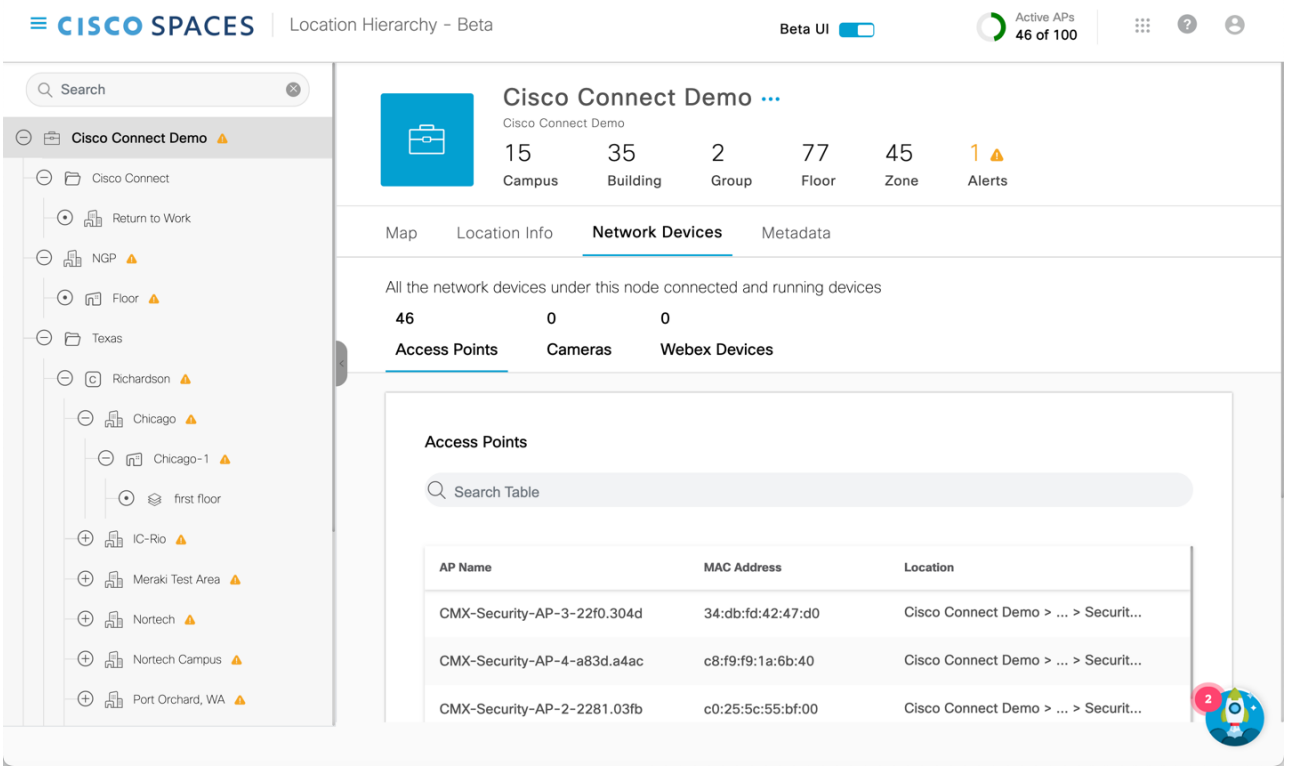
After adding the prefix, the APs under the **unconfigured** network with this prefix is moved to this network.

To delete a prefix, hover over that prefix under **Added Prefixes**, and click the **Delete** icon.

View the Network Devices

Use the **Network Devices** tab (**Cisco Spaces dashboard** > **Menu icon (☰)** > **Location Hierarchy 2.0** > **Root Location**) to view all the network devices under the selected node. The root location displays all the connected devices available within the location hierarchy.

Figure 17: Network Devices tab



Depending on the selected location, you can view the following information:

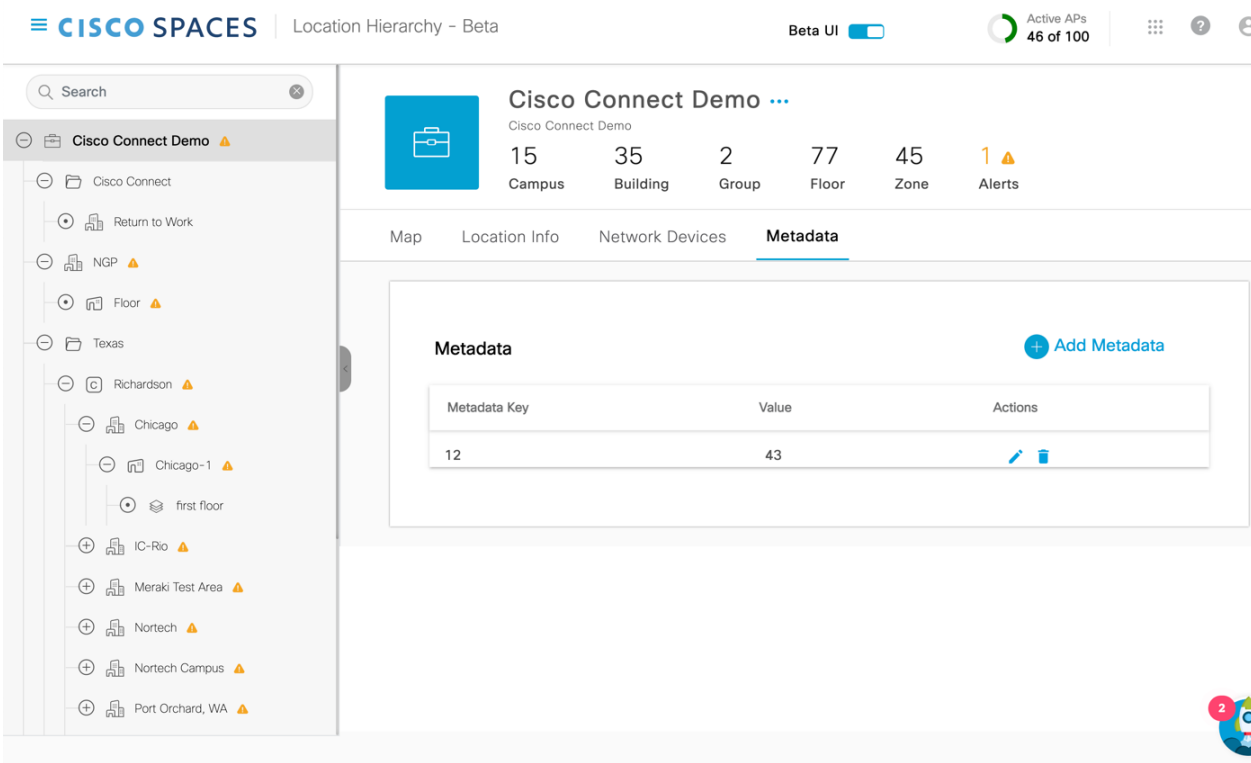
- **Access Points**: Displays the name of the AP, MAC address and the location hierarchy path. Use the **Search Table** field to search for a specific AP. Click the copy icon next to the **Location** field to copy the hierarchy path. Navigate to the **Setup** window to configure the AP.
- **Cameras**: Displays the connected camera details such as camera name, serial number, MAC address and status of the trip-wire as a set or not. Use the **Search Table** field to search for a specific camera. Navigate to the **Connect your Meraki Camera** window to connect additional devices.
- **Webex Devices**: Displays the connected Cisco Webex devices.
- **Linked Devices**: Displays the linked devices configured for this location. You can link IoT Devices, Non Webex Signages and Smart PUDs.

- **Switches**: Displays the switches configured for this location. Navigate to **Setup** > **Wired Network** to onboard your switches.

Configure Metadata

Use the **Metadata** tab (**Cisco Spaces dashboard** > **Menu icon (☰)** > **Location Hierarchy 2.0** > **Root Location**) to view the metadata information. If metadata is not configured yet, click **Add Metadata** to add metadata. For more information, see Add Metadata, on page 81.

Figure 18: Metadata Tab



Depending on the selected location, you can view the following information:

- **Metadata Key**: Displays the metadata key.
- **Value**: Displays the value for the metadata key. The value can be alphanumeric and accepts special characters also, for example, xyz123@.

Add Metadata

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon ( ) and choose **Location Hierarchy**.

The **Location Hierarchy** window is displayed.

Step 3 In the left pane, navigate to the required location.

Step 4 Click the **Metadata** tab.

Step 5 Click **Add Metadata**.

Step 6 In the **Key** field, enter or select a metadata key.

Step 7 In the **Value** field, enter a value for the key.

Step 8 (Optional) Click **Add Metadata** to add multiple metadata keys and the corresponding values.

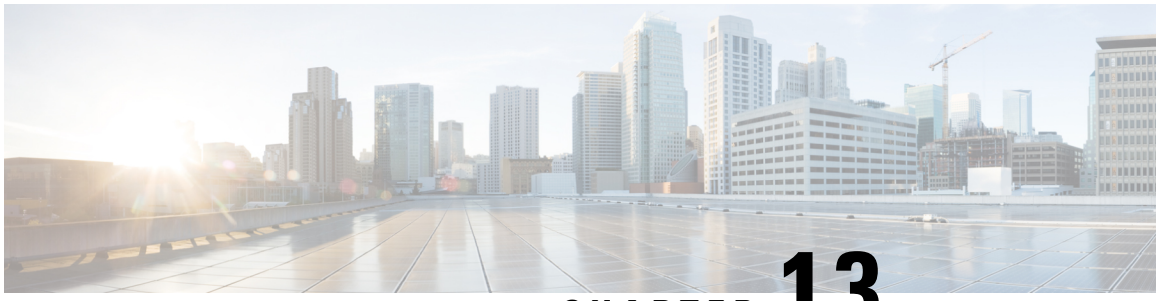
Click the **Delete** icon next to the metadata key to delete the keys.

Step 9 Click **Save**.

The new metadata keys and values are displayed under the **Metadata** tab. Click the **Edit** icon to update the key information.

PART VIII

Integration



CHAPTER 13

Cisco Catalyst Center (formerly known as Cisco DNA Center) Integration

This chapter provides information on the integration of Cisco Spaces with Catalyst Center.

Overview

Cisco Spaces enables you to integrate with Cisco Catalyst Center (formerly known as Cisco DNA Center) so that you can monitor the Catalyst Center sites using Cisco Spaces.

Note The Catalyst Center and Cisco Spaces integration is currently limited to only automatic map exports and synchronization for the location hierarchy. The integration does not support captive portal-based authentication features.

For more information, see "About Cisco Spaces Integration" in the *Catalyst Center User Guide* at:

https://www.cisco.com/c/en/us/support/cloud-systems-management/dna-center/products-user-guide-list.html

Prerequisites

- Catalyst Center, Release **2.1.2.3 or higher**.
- Catalyst Center must be able to connect to https://dnaspaces.io:443 for the initial activation. It may also require access to European Union (EU) (https://dnaspaces.eu:443) or Singapore (https://dnaspaces.sg:443) depending on your Cisco Spaces account region.
- Catalyst Center checks SSL/TLS certificate revocation status using OCSP/CRL. TCP 80 is port used by Catalyst Center for outbound communication to device and other systems. To successfully verify the certificate revocation status, these URLs must be reachable both directly and through the proxy server that's configured for Catalyst Center. Otherwise, certificate revocation check will be skipped when Catalyst Center connects to cisco.com.

  http://validation.identrust.com

  http://commercial.ocsp.identrust.com

For more information, see "Communication ports" in the Cisco Catalyst Center Security Best Practices Guide.

Integrate Cisco Spaces with Catalyst Center

To integrate Cisco Spaces with Catalyst Center, perform the following steps:

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the window, click the **Menu** icon ( ) and choose **Integrations**.

Step 3 In the Catalyst Center **Integration** window, click **New Instance**.

Step 4 In the **Create new token** pop-up window, enter the Catalyst Center instance name and click **Create Token**.

A success message is displayed indicating that the new token is created successfully and the token is displayed in the Catalyst Center **Integration** window.

Note
The validity of the new token is two days.

Step 5 Click **Copy Token** and use this tenant token in Catalyst Center.

Step 6 Log into Catalyst Center.

Step 7 Click the **Menu** icon ( ) and choose **System** > **Settings**.

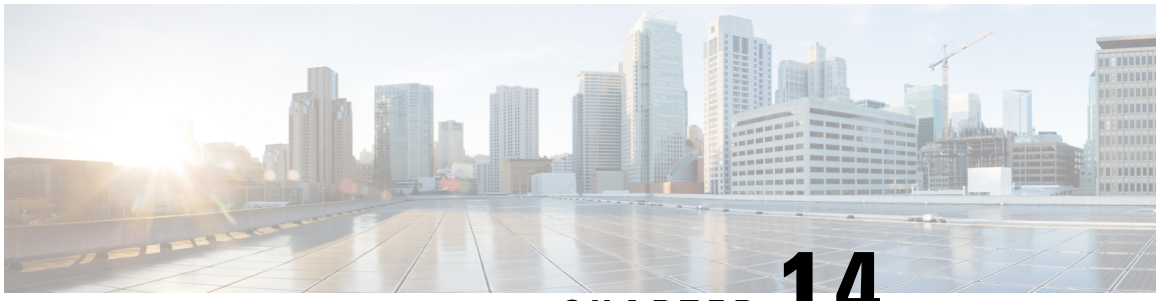
Step 8 Click **CMX Servers/Cisco Spaces**.

Step 9 In the **CMX Servers/Cisco Spaces** window, under the Cisco Spaces section, click **Activate**.

Step 10 In the **Integrate Cisco Spaces** pop-up window, paste the tenant token and click **Connect**.

After the integration is complete with Cisco Spaces, the following success message is displayed: *This cluster is integrated with Cisco Spaces successfully*. The status is displayed as **Activated**.

After activating the Cisco Spaces token, you can assign Cisco Spaces to Catalyst Center sites and begin to monitor those sites. For more information, see the Catalyst Center User Guide.



CHAPTER 14

Calendar Integrations

This chapter provides information on third-party integrations.

Google Calendar Integration

The Google Calendar integration enables you to connect your Google account with Cisco Spaces. This synchronizes meeting room booking information. The Cisco Spaces digital signage, with Google Calendar booking information, allows you to view available rooms in an intuitive, map-based approach instead of traditional lists of rooms that provide little context.

Office 365 Calendar Integration

The Office 365 calendar integration enables you to connect your Microsoft account with Cisco Spaces, which synchronizes meeting room booking information. The Cisco Spaces digital signage, equipped with Office 365 calendar booking information, enables you to easily access and visualize available rooms using an intuitive, map-based interface. This approach offers a more contextual and user-friendly experience compared to the traditional room lists.

Calendar GUI Integrations

The Microsoft 365 calendar integration feature is introduced in Cisco Spaces. Use this feature to connect your Microsoft 365 calendar account with the Cisco Spaces application and view the integrated calendar details in the Cisco Spaces dashboard **Menu** > **Integrations**.

The imported calendars are displayed in the Cisco Spaces: Space Manager application.

Integrate Google Calendar

The Google Calendar integration enables you to connect your Google account with Cisco Spaces, which synchronizes meeting room booking information. With the Cisco Spaces digital signage, you can easily view available rooms in an intuitive, map-based approach instead of traditional lists that lack context. This integration brings your meeting rooms to life by displaying dynamic calendar data on a user-friendly digital signage application.

Procedure

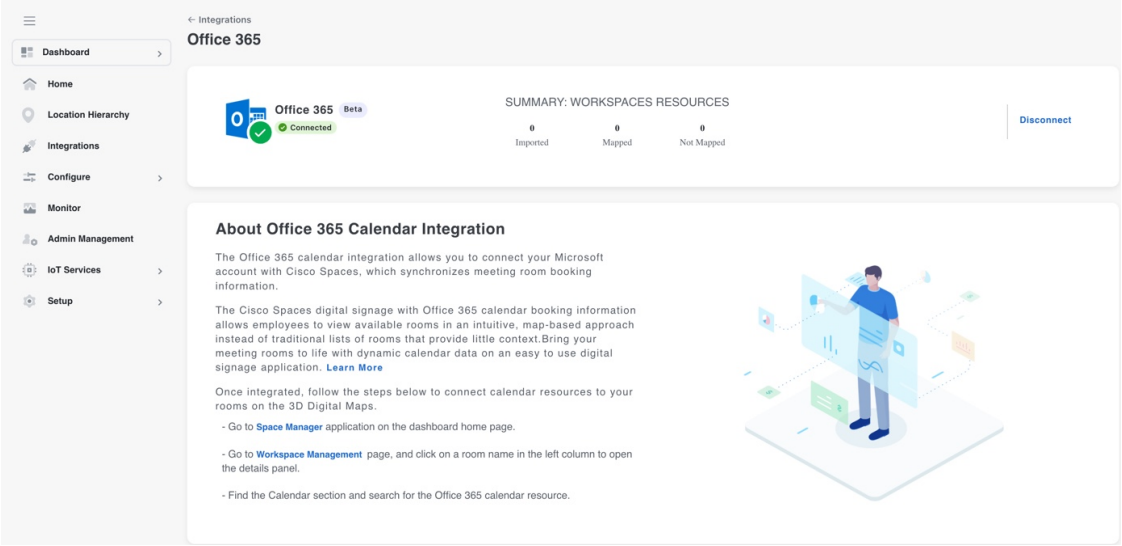
Step 1 Log in to Cisco Spaces.

The Cisco Spaces **Home** window is displayed.

Step 2 From the top-left corner, click the **Menu** icon ( ) and choose **Integrations** > **Google Calendar Integrations**.

The **Google Calendar Integrations** window is displayed.

Figure 19: Google Calendar Integrations



Step 3 Click **Connect**.

Step 4 In the **Sign in - Google Accounts** pop-up window, enter your Google account credentials.

Verfiy that you select a valid google account where the calendar bookings are available from the listed **Sign in - Google Accounts** pop-up window.

Step 5 After the account is verified, click **Proceed**.

Step 6 Click **Go to dnaspaces.io** > **Continue** to integrate the Google account with Cisco Spaces.

A success message `Calendar integration is successfull` is displayed.

Step 7 View the integrated Google calendar details in the **My Integrations** area along with the number of connected resources. A green tick mark indicates that the integration is successful.

The integrated calendars are available in the Cisco Spaces: Smart Workspaces app for use.

- To remove the Google Calendar Integrations, click **Remove** in the tile view.
- To disconnect the current account integration, click **Disconnect** and follow the instructions.

What to do next

To successfully connect calendar resources to your rooms on the 3D Digital Maps:

1. Navigate to **Cisco Smart Workspaces** application.
2. Proceed to the **Workspace Management** window and select a room name from the left column to access the **Details** panel.
3. From the **Details** panel, locate the **Calendar** area and search for the Google calendar resource.

Integrate Office 365 Calendar

The Office 365 calendar integration enables you to seamlessly connect your Microsoft account with Cisco Spaces, resulting in the synchronization of meeting room booking information. The Cisco Spaces digital signage, combined with Office 365 calendar booking information, provides you with a user-friendly and intuitive map-based approach to view available rooms. This approach is far more effective than traditional lists of rooms, which often lack context. By utilizing this easy-to-use digital signage application, you can bring your meeting rooms to life with dynamic calendar data.

Procedure

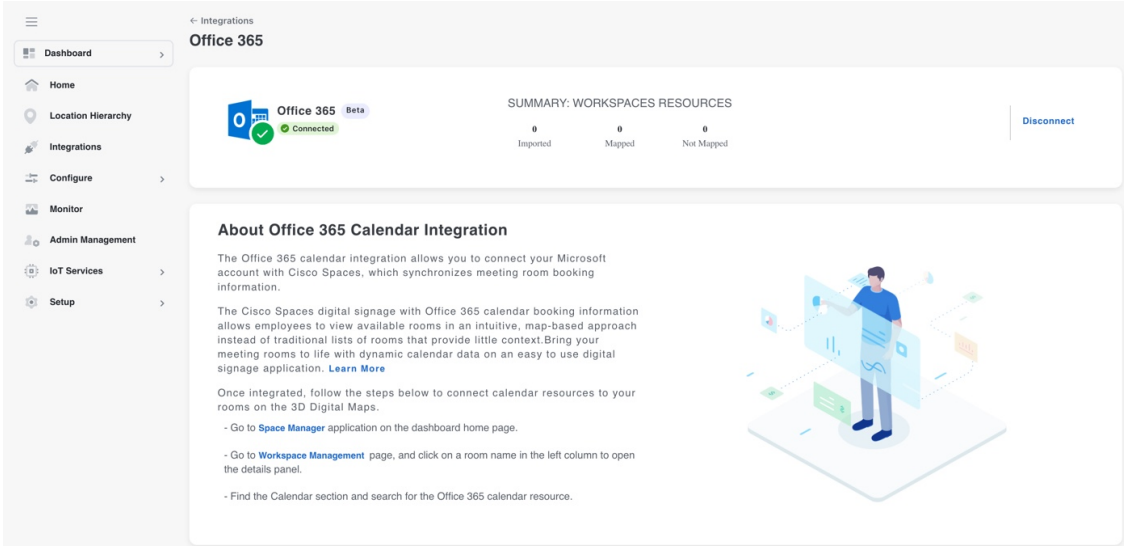
Step 1 Log in to Cisco Spaces.

The Cisco Spaces **Home** window is displayed.

Step 2 From the top-left corner, click the **Menu** icon ( ) and choose **Integrations** > **Office 365**.

The **Integrations Office 365** window is displayed.

Figure 20: Office 365 Integrations



Step 3 Click **Connect**.

Step 4 Follow the on-screen instructions and enter your Office 365 account credentials to integrate Office 365 calendar.

Step 5 After the account is validated, click **Proceed**.

Step 6 Click **Go to dnaspaces.io** > **Continue** to integrate the Office 365 account with Cisco Spaces.

A success message `Calendar integration is successfull` is displayed.

Step 7 View the integrated Office 365 calendar details in the **My Integrations** area along with the number of connected resources. A green tick mark indicates that the integration is successful.

The integrated calendars are available in the Cisco Spaces: Smart Workspaces app for use.

- To remove the Office 365 calendar, click **Remove** in the tile view.
- To disconnect the current account integration, click **Disconnect** and follow the instructions.

What to do next

To successfully connect calendar resources to your rooms on the 3D Digital Maps:

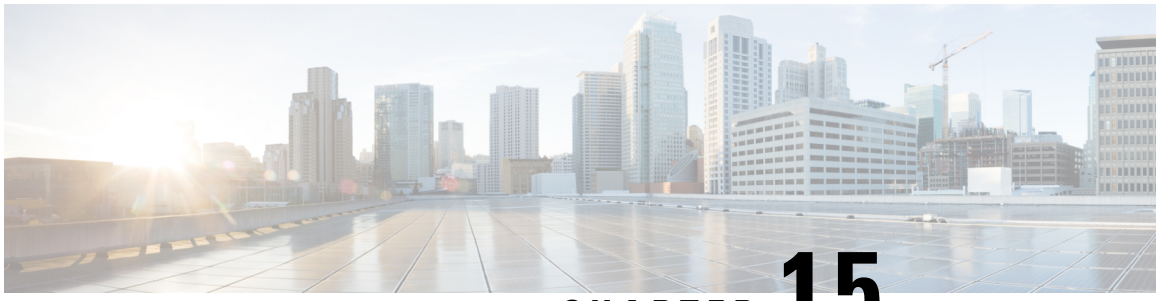
1. Navigate to **Cisco Smart Workspaces** application.
2. Proceed to the **Workspace Management** window and select a room name from the left column to access the **Details** panel.
3. From the **Details** panel, locate the **Calendar** area and search for the Google calendar resource.

PART IX

Configure

PART X

Monitor



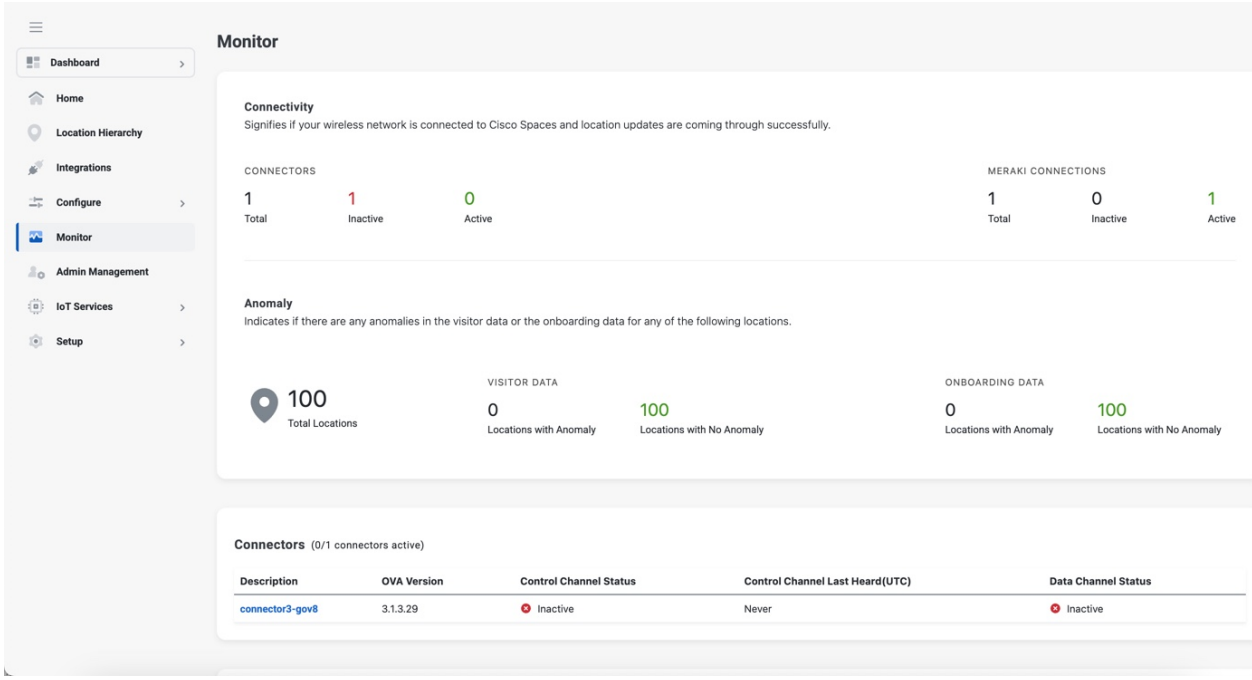
CHAPTER 15

Monitoring and Support

This chapter describes the monitoring details that are displayed in Cisco Spaces.

To access the **Monitor** window, in the **Cisco Spaces** dashboard, click the three-line menu icon at the top-left, and choose **Monitor**.

Figure 21: Monitor

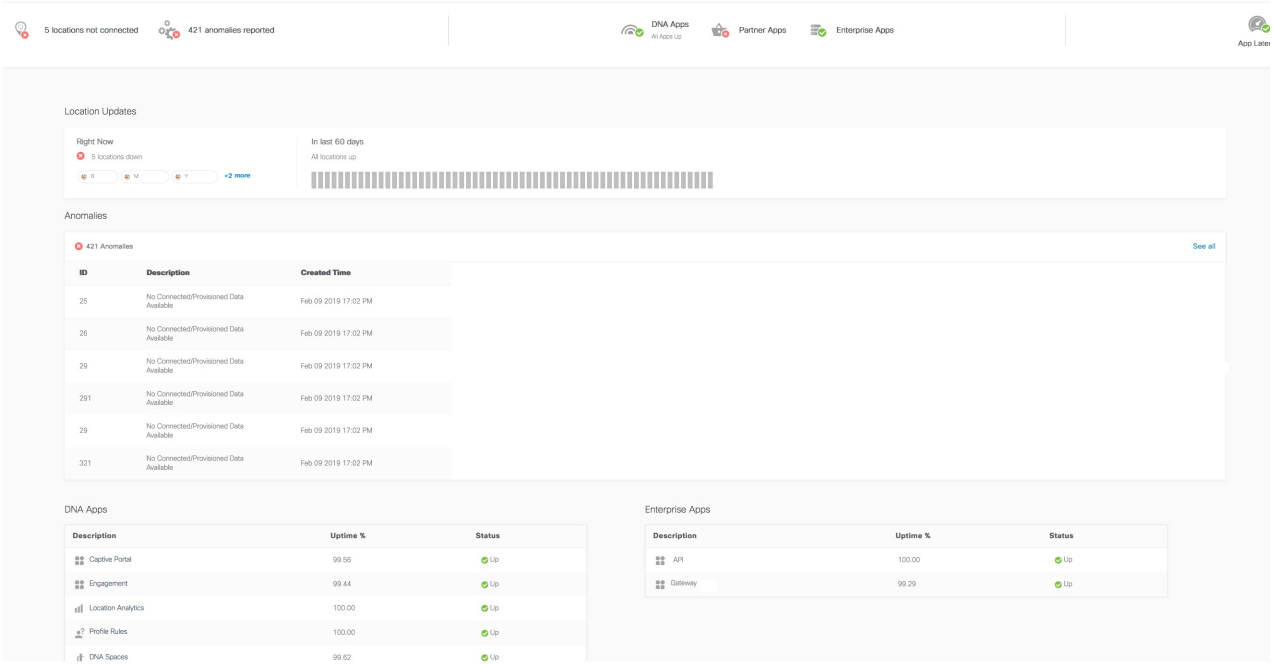


Monitoring

This section describes Cisco Spaces health details that are displayed in the **Monitor** section.

The **Monitor** section of Cisco Spaces is shown in the following figure:

Figure 22: Monitor



.

The header of the monitoring section will be having the following details:

- **All Locations connected**: Displays the current location update status for the locations to which you have access. This section will be marked as up if location updates are received from all the locations, and the status will be **All Locations Connected**. If there is any location update issue, this section will be marked as down, and the total number of locations that have location update issue will be displayed.
- **No Anomalies Reported**: Displays the current status of location updates and internet provisioning (this is applicable only of you have configured customer acquisition through captive portals) in the locations. This section is marked as up if location updates and internet provisioning are happening for all the locations without any issues. If any of them is not happening for any location, the status will be down. If both location update and internet provisioning are not happening for a location, such locations will be listed out.
- **DNA Apps**: Displays the current status of Cisco Spaces apps. This section is marked as up if all the Cisco Spaces apps are currently active.
- **Partner apps**: Displays the current status of partner apps that you have integrated with Cisco Spaces. This section is marked as up if the partner apps that are integrated with Cisco Spaces are functioning as expected. This section will be marked as down, if you have not integrated any partner app with Cisco Spaces or if the partner apps are not functioning as expected.
- **Enterprise Apps**: Displays the current status of enterprise apps that you have integrated with Cisco Spaces. This section is marked as up if the enterprise apps that are integrated with Cisco Spaces are functioning as expected. This section will be marked as down, if you have not integrated any enterprise app with Cisco Spaces or if the enterprise apps are not functioning as expected.

- **App Latency**: This area displays the current latency status for the apps.

Location Updates

The locations for which the location updates are not happening currently are listed in this area. This area also displays a bar that shows location update status for the last 30 days. Each line in the bar represents a day of last 30 days. For days having location update issues the corresponding line in the bar appears in red.

Anomalies

This area displays the location updates issues and internet provisioning issues (this is applicable only of you have configured customer acquisition through captive portals) currently occurring in the locations. The total number of anomalies for your Cisco Spaces account will be listed.

The following details for each anomaly will be displayed:

- **ID**- The ID for anomaly.
- **Description**- Describes whether it is a location update or internet provisioning issue.
- **CreatedTime**- The time at which the anomaly is recorded.

DNA Apps

This area displays the status of the apps provided by Cisco Spaces for last 30 days. The following details of each Cisco Spaces app will be shown.

The status of the following apps will be shown:.

- **Captive Portal**—Displays the status of the Captive Portal app.
- **Engagement**—Displays the status of the Engagement app.
- **Location Analytics**—Displays the status of the location updates for all your locations.
- **Location Personas**—Displays the status of the Location Personas app.
- **Cisco Spaces**—Displays the status of the Cisco Spaces domain. The status of the Cisco Spaces domain will be active only if all the associated apps are active.

Note Cisco Spaces domain will be marked as up, only if the domain is working for all the Cisco Spaces customers.

The following details will be shown for each app:

- **Description**— The name of the app.
- **Uptime %**— With in the last 30 days, the percentage of period for which the app was up. For example, if the app was active for all the last 30 days without any health issues, the **Uptime%** value will be 100 %.
- **Status**— Displays the current status of the app.

The following health properties will be considered to decide the status of the apps:

- **Captive Portal app**— Portal Health, Rule Engine Health, Subscriber Health, Email Verifier health, SMS Health, and database health.
- Cisco Spaces: Vault health, Dashboard health DMS health, TMS health.
- **Engagement app**— Dashboard health, Subscriber health, Server health, Location Receiver health, DMS health, Email Verifier health, SMS health, and Database health.
- **Location Analytics**— Dashboard health, Subscriber heath, Server Health, Location Receiver heath, and Database health.
- **Location Personas**— Dashboard Health, Subscriber Health, Server health, Location Receiver heath, and Database heath.

App Latency

This area displays the status of latencies associated with the apps for the last 30 days.

The following app latency details will be shown:

- **Description**— The name of the app. For example, Kafka server.
- **Latency**— During the last 30 days, the percentage of period for which the app latency status was up. For example, if the Kaftka server has a app latency on 1 day during the last 30 days, the latency value will be 96.6 %.
- **Status**— The current status of the app latency.

Enterprise Apps

This area displays the status of the enterprise apps for the last 30 days.

The following enterprise app details will be shown:

- **Description**-Name of the Enterprise app.
- **Uptime Percentage**-During the last 30 days, the percentage of period for which the Enterprise app was up.
- **Status**- The current status of the enterprise app.

Partner Apps

This area displays the uptime and health status of all the apps you have activated. The overall status of partner apps is shown in the Summary section.

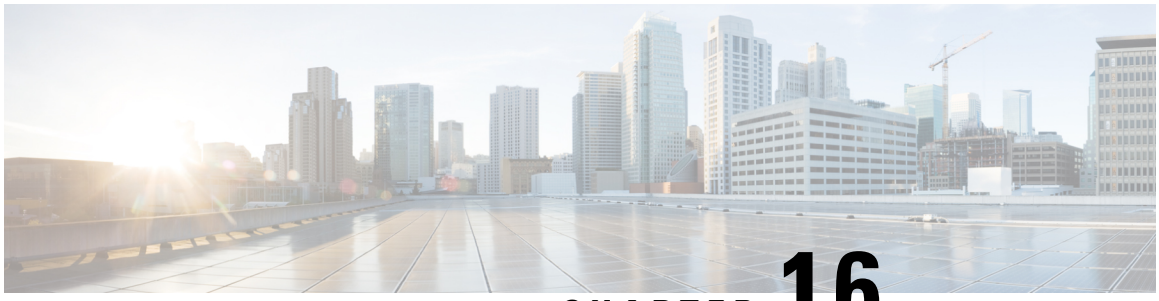
The following partner app details will be shown:

- **PartnerName**-Name of the partner.

- **AppName**-Name of the partner app.
- **Uptime %**-The percentage of period for which the partner app was up.
- **Status**- The current status of the partner app.

PART XI

Admin Management



CHAPTER 16

Managing Cisco Spaces Users and Accounts

This chapter explains how to invite and manage Cisco Spaces users and accounts.

Managing Cisco Spaces Users

Cisco Spaces provides users with different rights and privileges based on the role they perform.

In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Admin Management** to manage admin users and create roles.

The following tabs are available:

- **Admins**: Use the **Admins** tab to view the Cisco Spaces users and invite new administrators.
- **Roles**: Use the **Roles** tab to search for roles, create new roles and manage them.

Inviting a Cisco Spaces User

When a Cisco Spaces account is created, a **Dashboard Admin Role** user is created for the account with the email ID provided. This **Dashboard Admin** can invite other users to Cisco Spaces.

Cisco Spaces provides only one default user role, **Dashboard Admin Role**.

Note

- If the **Dashboard Admin Role** requires access to any other role types (apps) such as **BLEManager**, contact the Cisco Spaces support team.
- By default, a **Dashboard Admin Role** for the **SEE (Base)** license has access only to **DNA Spaces**.

Cisco Spaces allows you to define user roles with different access rights to different apps.

You can include the following role types (apps) in a user role if that particular service is enabled for your account.

- **Right Now**: This role type provides access rights to the **Right Now** app.

- **Location Analytics**: This role type provides access rights to the **Location Analytics** app.
- **Detect and Locate**: This role type provides access rights to the **Captive Detect and Locate** app.
- **Space Manager**: This role type provides access rights to the **Space Manager** app.

Note

- Import of duplicate payload from Catalyst Center to **Mapservice** is restricted. In the **Import History** section, the following error message is displayed: `Warning: Import ignored due to no changes in request payload`.
- Access to Map Services is no more provided as part of the DNASpaces. However, you can assign **MapServices** to a role only with **DNA Spaces**. For example, you can create a role with read and write access to **MapServices** and Read Only access to **DNA Spaces**.
- For the Dashboard Admin role, access to **Location Analytics** is provided by default. For other roles, you must assign access separately. However, you can assign **Location Analytics** to a role only along with the **DNA Spaces** service. For example, you can create a role with read and write access to **Location Analytics** and Read Only access to **DNA Spaces**. The Location Analytics tile is disabled for Cisco Spaces user accounts that do not have access to **Location Analytics**.

To invite a Cisco Spaces user, follow these steps:

Procedure

Step 1 In the **Cisco Spaces** dashboard, click the Menu icon (☰) and choose a **Admin Management** > **Admins** tab.

Step 2 Click **Invite Admin**.

Step 3 In the **Invite Admin** window, enter the following details:

a) In the **Email** field, enter the email address of the user to add.

b) From the **Role Name** drop-down list, select the user role that you want to provide to this user.

- The default user role and the user roles defined earlier are displayed in the drop-down list. If the required user role is not there, you can define a new user role using **Create New Role**.
- Click **Create New Role** to create a new user role. For more information on creating a new user role, see Creating a User Role, on page 105. The user roles defined are listed on the **Roles** tab.
- After you select a role name, the permission type and app details are displayed in the bottom of the **Invite Admin** window.

Step 4 Check the **Restrict this role to specific locations** check box if you want to restrict the selected role to any particular location.

a) Click **Add Locations**.

b) In the **Choose Locations** window, check the check box against the required location from the Location Hierarchy. The selected location is displayed in the **Selected Locations** area.

c) Click **Done**.

Step 5 Click **Invite**.

Note

- The **Invite Admin** option is only available for Cisco Spaces administrators with read and write permissions.
- Certain apps such as Captive Portals have provisions to manage the users for that particular app. For example, a Captive Portals app user with read and write permission can invite users with user roles **Creative User** or **Access Code Manger** from the **User Management** option in the Captive Portals app. Admin Management users are displayed in the **User Management** window. However, from the **User Management** option in the Captive Portals app, you cannot modify a user account created through **Admin Management**.

Creating a User Role

To create a Cisco Spaces user role, follow these steps:

Procedure

Step 1 In the **Cisco Spaces** dashboard, click the **Menu** icon ( ) and choose **Admin Management** > **Roles** > **tab**.

Note
You can also click **Create New Role** in the **Role Name** drop-down list in the **Invite Admin** window.

Step 2 Click **Create Role**.

Step 3 In the **Create New Role** slide-in window, enter the following details:

a) In the **ROLE NAME** field, enter a name for the user role.

b) In the **APPS** area, check the check boxes for the role types that you want to provide to this user role.

For more information on role types (apps), see the role types described in Inviting a Cisco Spaces User, on page 103.

c) From the drop-down list that displays for each role type, choose the access right to be provided for this particular user role.

You can set the access right as **Read Only** or **Read/Write**.

For example, if you want to create a user role that has complete access to Dashboard menu items, and read-only access to the captive portal app, check the **DNA Spaces** check box, and from the corresponding drop-down list choose **Read/Write**. Then check the **CaptivePortal** check box, and from the corresponding drop-down list choose **Read only**.

d) Click **Create**.

The user role is available in the **Role Name** drop-down list of the **Invite Admin** window.

Editing Cisco Spaces User

A Dashboard Admin user with read and write permission can change the user role of a user. For example, a Dashboard Admin Read can be promoted to a Dashboard Admin Read and Write user.

To edit the user privileges of a Cisco Spaces user, follow these steps:

Procedure

Step 1 In the **Cisco Spaces** dashboard, click the **Menu** icon (☰) and choose **Admin Management**.

The **Admin** window is displayed with the list of e-mail IDs of the Cisco Spaces users.

Step 2 Click the **Edit** icon at the far right of the e-mail ID of the user whom you want to edit.

The **Invite Admin** window is displayed.

Step 3 From the **Role Name** drop-down list, choose the type of access that you want to provide to the user.

The default user roles and the user roles defined earlier are available in the drop-down list for selection. If the required user role is not there, you can define a user role using **Create New Role**. For more information on creating a new user role, see Creating a User Role, on page 105.

Step 4 Click **Update**.

Deleting a Cisco Spaces User

If a user no more needs access to Cisco Spaces, we recommend that you delete such users from the Cisco Spaces user list. A **Dashboard Admin Role** user can delete other users.

To delete an existing Cisco Spaces user, follow these steps:

Procedure

Step 1 In the **Cisco Spaces** dashboard, click the **Menu** icon (☰) and choose **Admin Management**.

The **Admins** window is displayed with the list of the Cisco Spaces users.

Step 2 Click the **Delete** icon at the far right of the e-mail ID of the user whom you want to delete.

To delete multiple users, select the check box for the corresponding e-mail IDs, and click **Delete Admins** which displays on the top right of the window.

Managing the Cisco Spaces Accounts

This section describes how to manage the Cisco Spaces Accounts.

Signing Out of Cisco Spaces

To sign out of Cisco Spaces, follow these steps:

Procedure

Step 1 In the **Cisco Spaces** dashboard, click the **User Account** icon () that displays in the far right of the dashboard.

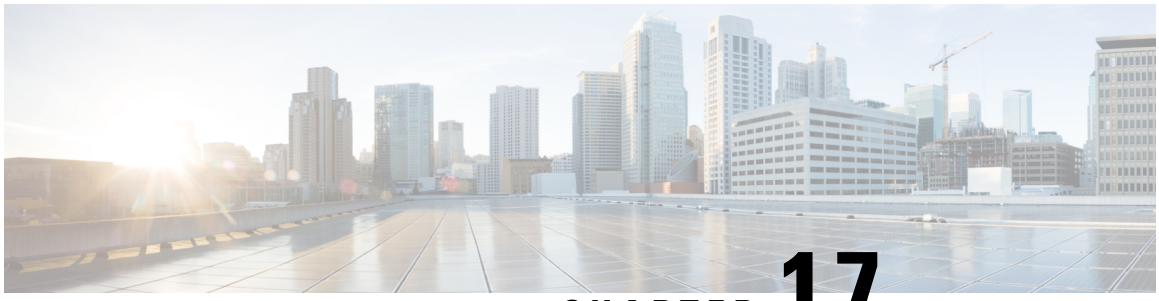
Step 2 Click **Logout**.

Location-Based RBAC

Role-based Access Control (RBAC) is now enhanced to support specific locations. Use the **Restrict this role to specific locations** option to support specific locations while creating a role (**Admin Management** > **Roles** > **Create Role**) and inviting user flows (**Admin Management** > **Invite Admin**).

PART XII

Setup



CHAPTER 17

Set Up Wireless Network

This chapter provides instructions on how to set up Cisco Spaces to work with various wireless networks and how to configure these networks using different methods.

Setting Up Cisco Spaces to Work with Various Wireless Networks

You can set up Cisco Spaces with wireless networks that are based on the following options:

- Cisco AireOS wireless controllers
- Cisco Catalyst 9800 wireless controllers
- Cisco Meraki

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon ( ) and choose **Setup** > **Wireless Networks**.

Step 3 In the **Connect your wireless Network** window, click **Add New**.

The **Connect your wireless Network** window is displayed with the options **Cisco AireOS/Catalyst** and **Cisco Meraki**.

- For **Cisco AireOS/Catalyst**, configurations for the following methods are available:
  - **Via Spaces Connector**: To connect Cisco Spaces to Cisco Wireless Controller using Cisco Spaces: Connector.
  - **Connect WLC directly**: To connect Cisco Spaces to Cisco Wireless Controller using a Cisco Wireless Controller Direct Connect.
  - **Connect via CMX Tethering**: To connect Cisco Spaces Cisco Wireless Controller using Cisco CMX.

- For **Cisco Meraki**, configurations for the following methods are available:
  - **Connect via Meraki Login**: To connect Cisco Spaces to Cisco Meraki using a Cisco Meraki account.
  - **Connect via API Key**: To connect Cisco Spaces to Cisco Meraki using a Cisco Meraki API Key.

    You can login to the **Meraki** dashboard, choose **Account Name** > **My Profile** > **API Access** section and click **Generate** to generate an API Key. Enter this key in the **Connect via API key** field in the Cisco Spaces dashboard to add your network to Cisco Spaces. For more information, see Set Up Meraki API Key Method, on page 116.

Note
For new Cisco Spaces accounts, click **Get Started** option.

Step 4 Click **Select** to choose your preferred method through which you want to connect to Cisco Spaces.

The prerequisites for connecting to the wireless network using the selected method is displayed.

Step 5 Click **Customize Setup**.

The following message is displayed: `Successfully saved the configuration`.

Step 6 A bar corresponding to the wireless network configuration method selected is displayed in the **Connect your wireless network** window. For example, if **Via Spaces Connector** is selected, a bar with the label **Connect via Spaces Connector** displays.

Step 7 To view the instructions, and configure the wireless network, click the drop-down button at the far right of the bar.

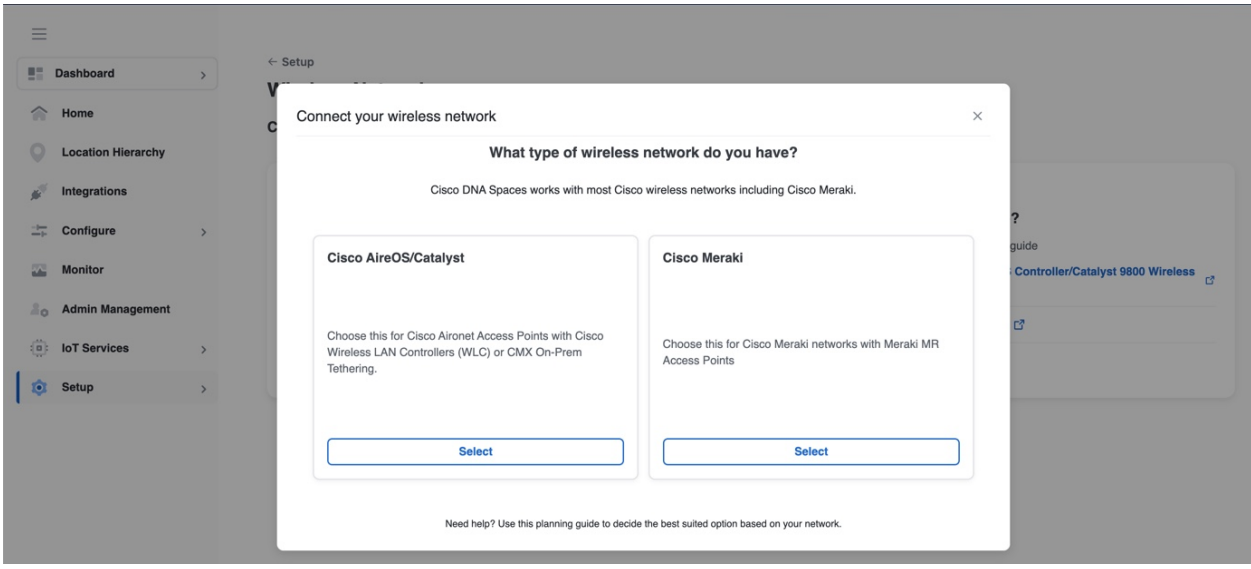
The instructions and the features to connect to prefered wireless network using the various methods are displayed.

Step 8 Follow the on-screen instructions to add the wireless network.

Wireless Network Bars

To connect your wireless network with Cisco Spaces, use any available options in the **Setup** > **Wireless Networks** > **Connect your wireless network** window.

Figure 23: Wireless Network



The following tabs are displayed for Cisco Meraki based on your selection:

- **Connect via Meraki Login**: Use this option to connect to Cisco Meraki cloud using the Cisco Meraki account credentials and import locations in to Cisco Spaces and synchronize Cisco Meraki networks. Follow the on-screen instructions to connect Cisco Spaces to Cisco Meraki network.

  Perform the following:

  1. **Connect**: Connect Cisco Meraki with Cisco Spaces using your Meraki login credentials.
  2. **Configure Meraki scanning API**: Cisco Meraki scanning APIs are automatically configured after importing the networks into the location hierarchy.
  3. **Import Meraki Networks into Location Hierarchy**: Use the **Import Networks** option to import a Cisco Meraki organization and the related child locations to the location hierarchy.

- **Connect via Meraki API Key**: Use this option to connect Cisco Spaces to Cisco Meraki Cloud Controller using your Cisco Meraki API key. Follow the on-screen instructions to import a Cisco Meraki organization and the related child locations to the location hierarchy using the **Import Networks** option.

Note We recommend that you use the **Connect via API Key** to connect your Meraki with Cisco Spaces.

Perform the following:

1. **Connect your Meraki**: Connect Cisco Meraki with Cisco Spaces using the API key.
2. **Configure Meraki scanning API**: Cisco Meraki scanning APIs are automatically configured after importing the networks into the location hierarchy.

Note To configure manually, use the **Post URL** with URL validator and **Secret Key** and validate manually in the Cisco Meraki dashboard to establish a connection with Cisco Spaces.

3. **Import Meraki Networks into Location Hierarchy**: Click **Import Networks** to import the Cisco Meraki networks.

Note The user count that is getting synchronized with Cisco Meraki is displayed under the **Connect your Meraki** options (**Connect via Meraki Login** and **Connect via Meraki API Key**).

The following bars are displayed for Cisco AireOS based on the connection method selected:

- **Connect via Spaces Connector**: Use this option to connect Cisco Spaces to Cisco Wireless Controller using a Cisco Spaces: Connector.

Note You need not upgrade your Cisco Wireless Controllers or reconfigure your wireless network when you use **Connect via Spaces Connector** option.

Perform the following:

1. **Install Spaces Connector OVA**: Download and install Cisco Spaces: Connector OVA as a virtual machine.
2. **Configure Spaces Connector**: Click **Create Connector** to create a new connector. You need a token to configure Cisco Spaces: Connector. Connect to `https://<your connector IP>/` from a browser to configure the token. You can optionally configure Cisco Spaces: Connector to connect via HTTPS proxy.

   Click **View Connectors** to view the available connectors.
3. **Add Controllers**: Click **Add Controllers** to add Cisco Wireless Controllers. Click **View Controllers** to view the available controllers.
4. **Import Maps**: Click **Import/Sync Maps** to import or synchronize the maps. You must upload a Cisco Prime Infrastructure or Catalyst Center (version 1.3.1 and above) map to work with Cisco Spaces: Detect and Locate, Asset Tracker, and IoT Services.
5. **Setup location hierarchy**: Click **Add Locations** to add the imported maps to Location Hierarchy.

Note

- You can view the location hierarchy using the **View Location Hierarchy** option.
- For the OpenRoaming app, you can configure the hotspots through the **Add OpenRoaming Hotspot** option. You can also view the configurations for the OpenRoaming app for various controllers separately using the **OpenRoaming Controller Configuration** option.
- The Network Configuration Protocol (NETCONF) support is available from Hotspot client version v2.2.95 and on Cisco Catalyst 9800 Series Wireless Controllers version 17.12.

For more information, see Cisco Spaces: Connector Configuration Guide.

- **Connect AireOS Controller/Catalyst 9800 Wireless Controller Directly**: Use this option to connect Cisco Spaces to Cisco AireOS Wireless Controller or Cisco Catalyst 9800 Series Wireless Controller.

Note To connect to this wireless network, you need either an AireOS Controller with software version 8.8 MR2 or later, or a Catalyst 9800 Wireless Controller with software version 16.12.2 or later. The wireless controller needs direct internet connectivity.

Perform the following:

1. **Install Root Certificate**: You can install the root certificate from the controller GUI
2. **Configure Token in AireOS Controller**: You can view token and contollers using the View Token and View Controllers options
3. **Import Maps**: You can now manage maps from the **Setup** window under Connect WLC/Catalyst 9800 Directly and Connect Via Spaces Connector
   - **Import/Sync Maps**: Upload a Cisco Prime Infrastructure or the Catalyst Center map in order to work with Detect & Locate, Asset Tracker, and IoT Services seamlessly.
   - **Map Upload History**: View the list of uploaded maps. You can view the filename, source type, status and other related information.
   - **Manage Maps**: Navigate to the **Map Service** application to manage maps.
4. **Setup location hierarchy**

- **Connect via CMX Tethering**: Displays step-by-step instructions to configure location updates for a Cisco CMX node using CMX tethering with token. You can create the token using the **Create New Token** option in Step 2, and configure it in Cisco CMX.

The other options available on the **Connect your wireless network** window are:

Table 8: Connect your wireless network Options

View Configuration Steps	Redirects to the documentation for the particular wireless network.
System Requirements	Provides the system requirements for Cisco Spaces.
Frequently asked questions	Provides the link to the frequently asked questions for Cisco Spaces.
Cisco AireOS/Catalyst	Displays instructions to import a Cisco CMX Node (CMX On-Prem) to the **Location Hierarchy** window.
Cisco Meraki	Displays instructions to import a Meraki Organization to the **Location Hierarchy** window.

Set Up Meraki API Key Method

Use the **Cisco Meraki** option to integrate Cisco Spaces with Meraki. Use the Meraki account credentials to connect to Cisco Meraki cloud, import locations into Cisco Spaces and activate or synchronize the Meraki networks.

Procedure

Step 1 In the Cisco Spaces dashboard, click the **Menu** icon ( ) and choose **Setup** > **Wireless Networks** > **Add New** > **Cisco Meraki** > **Connect via API key**.

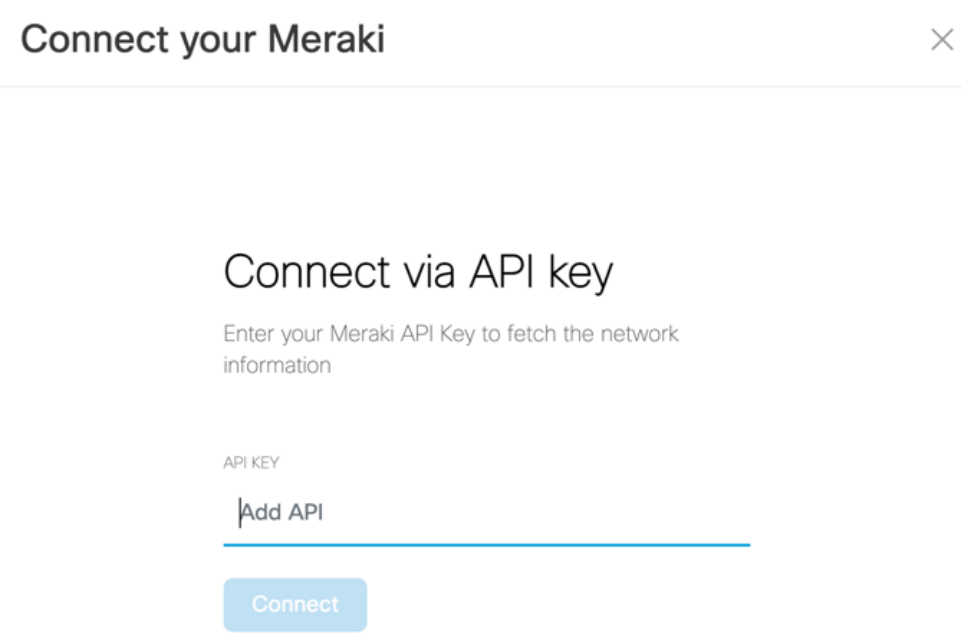
Step 2 In the Meraki dashboard, navigate to **Organization** > **Configure** > **Settings** and enable **Dashboard API Access**.

Step 3 In the Meraki dashboard, navigate to **Username** > **My Profile** > **API Access** and generate the API token. The generated API token is an alphanumeric value.

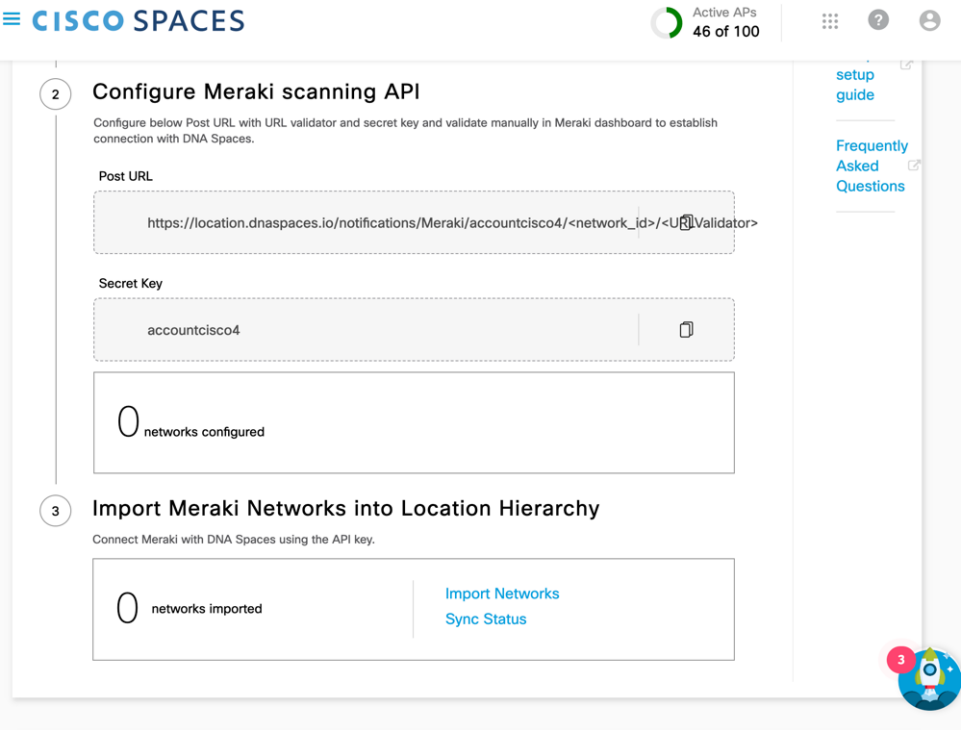
Step 4 Copy the generated API token to enter it in the Cisco Spaces dashboard.

Step 5 In the Cisco Spaces dashboard, perform the following:

a) In the **Connect our Meraki** pop-up window, paste the copied API token in the **API KEY** field.



b) Click **Connect**. After a successful synchronization with Meraki, the connection status displays as active.
c) From the **Configure Meraki scanning API** area, copy the values for **Post URL** and **Secret Key**.



Step 6 In the Meraki dashboard, navigate to your specific network and choose **Network-wide** > **Configure** > **General**.

Step 7 Scroll down to **Location and Scanning** and enable **Analytics and Scanning API**.

Step 8 In the **Post URLS** field, paste the post URL and secret key.

Step 9 From the web browser's address bar (Meraki URL), copy the network_id (after the /n/). For example https://xxxx.meraki.com/your-net/n/network_id/.

Step 10 Edit the post URL **<network_id>** to include your network ID.

Step 11 From the **Location and Scanning** field, copy the **validator id**.

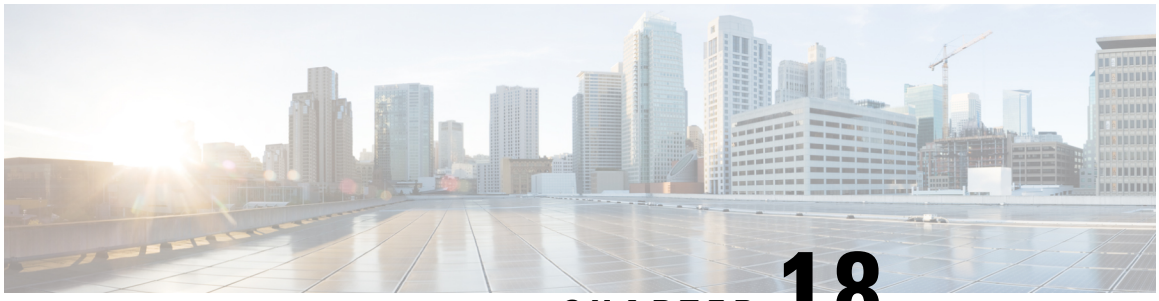
Step 12 Edit the post URL **<URLValidator>** with the validator.

Step 13 Click **Validate** to validate the post URL functions.

Step 14 In the Cisco Spaces dashboard, from the **Import Meraki Networks into Location Hierarchy**, select **Import Networks**.

After successful synchronization, verify if the networks are displayed in the **Location Hierarchy**.

Note
If IP address restriction is enabled on the Cisco Meraki dashboard, reach out to Cisco Spaces support to add Cisco Spaces IP addresses to the allowed list.



CHAPTER 18

Set Up Wired Network

Set Up Wired Network

The Cisco Spaces**: Connector** enables you to connect your wired and wireless networks with Cisco Spaces.

To set up a wired network, you must have Cisco Catalyst 9300 Series switches and also Cisco Spaces**: Connector** installed on a virtual machine.

Cisco Spaces: Connector 3.0 is now available under the **Menu (** ☰ **)** > **Setup** > **Wired Network** section. You can create both 2.x and 3.0 connectors under the **Wired Network**.

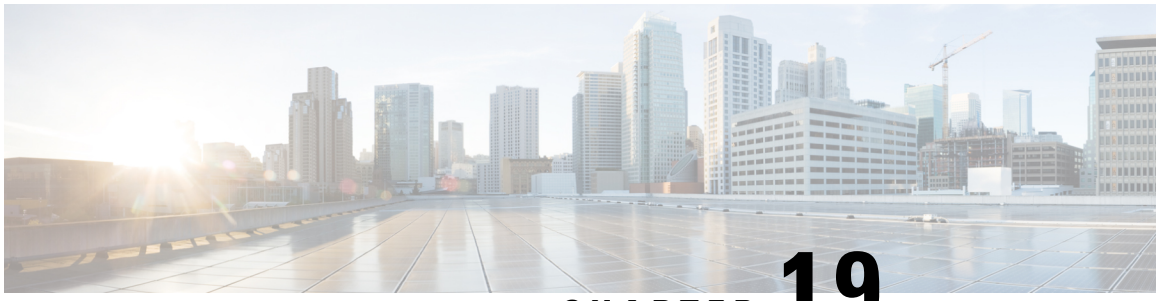
Connector 3.0 capabilities such as service association, instance tracking, and metrics visualizations are available in the **Wired Network** section.

For more information about setting up Cisco Spaces**: Connector**, see the *Cisco Spaces**: Connector** Configuration Guide* at:

https://www.cisco.com/c/en/us/td/docs/wireless/spaces/connector/config/b_connector_30.html.

Starting from December 2023, Cisco Spaces: Connector 2.x has entered maintenance mode, and only security updates will be available up to June 2024. Extended support is limited to critical bug fixes, offered until October 2024. We strongly recommend that you upgrade to connector 3.

To migrate from Connector 2.x to Connector 3, see Migrate from Connector 2.x to Connector 3.



CHAPTER 19

Set Up Locations and Maps

Locations and Maps

The Locations and Maps feature in Cisco Spaces helps to import, normalize and unify network hierarchies from various sources such as Cisco Meraki, Catalyst Center, and Cisco Prime Infrastructure into a single business orientated hierarchy. Use this feature as a platform to standardize the network hierarchy structure and provide a standardized location hierarchy view.

Apart from the traditional way of creating location hierarchy by importing/syncing from network sources, this new feature includes a new option to create a business centric hierarchy from a Microsoft Excel (.xlsx) file. The Microsoft Excel (.xlsx) file import allows to perform bulk add/update of the metadata information for multiple locations.

While Cisco Spaces creates a logical location hierarchy matching the network hierarchy, most Cisco Spaces users have one more source where the hierarchy/names differ because of the taxonomy, or because they are managed by different teams/people. With the Locations and Maps feature, you can create a business orientated hierarchy, merge/unify hierarchies from different network sources into the business hierarchy making it a clean unified hierarchy thereby helping in managing various outcomes.

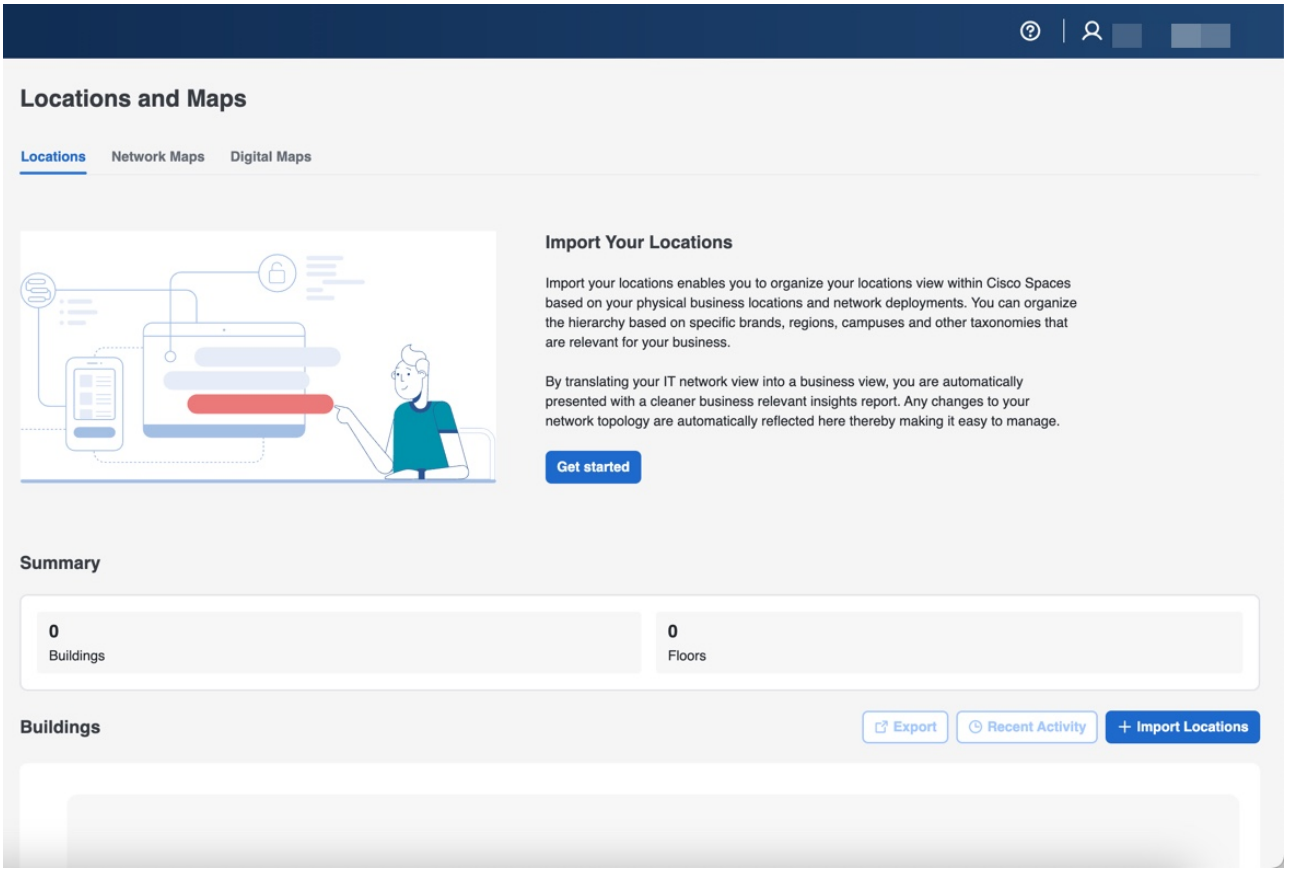
You can import your business locations and organize them within Cisco Spaces based on the physical business locations and network deployments. You can also organize the hierarchy based on specific brands, regions, campuses, and other taxonomies relevant for the business.

The Locations and Maps feature in Cisco Spaces helps to translate your IT network view into a business view and present a cleaner business relevant insights report. Any changes to your network topology are automatically reflected in Cisco Spaces making it easy to manage.

The **Locations and Maps** window has the following tabs:

- **Locations**: Use this tab to add or manage locations.
- **Network Maps**: Use this tab to add Network Maps.
- **Digital Maps**: Use this tab to add or manage Digital Maps.

Figure 24: Locations and Maps



Locations Tab

The **Summary** section in the **Locations** tab displays the number of buildings and floors. The **Buildings** section in the **Locations** tab displays the following information related to the imported location:

- Name
- Path
- #of Floors
- Source
- Essential Location Info

Click **Add Locations** to import locations. For detailed information, see Import Locations, on page 124.

Network Maps Tab

The **Network Maps** tab also displays the imported location information. The **Buildings** section in the **Network Maps** tab displays the following information related to the imported location:

- Name
- Path

- #of Floors
- #of APs
- Source
- Network Map Status

Use the **Add Network Map** to add network maps. For detailed information, see, Add Network Map, on page 136.

Digital Maps Tab

Digital Maps is an upgraded version of Rich Maps. Two variations of Digital Maps available are:

- **STANDARD** Maps: Shows 2D flat maps without support for meeting rooms or integration with **Cisco Smart Workspaces**.
- **PRO** Maps: Shows 3D visualizations and include all the available features of **Cisco Smart Workspaces**, similar to Rich Maps.

The **Digital Maps** tab also displays the imported location information.

The **Buildings** section in the **Digital Maps** tab displays the following information related to the imported location:

- Name
- Path
- #of Floors
- #of APs
- Status
- Actions

Click **Add Digital Map** to add digital maps. For detailed information, see, Add Digital Map, on page 137.

You can also click **Upload CAD File** under **Actions** column to add digital maps to the selected location.

Note Locations with ACT/UNLIMITED licenses have exclusive access to the PRO variant, while the STANDARD variant remains accessible to other license types, including SEE, EXTEND, and SMART_OPERATIONS.

Digital Maps: User Experience Enhancements

The following enhancements are made in the Cisco Spaces dashboard:

- The **Select Floor** window is redesigned to minimize user effort. The new design reduces the number of entries required from users, enabling a quicker and more efficient process by automatically generating the floor level number and short name for each floor.
- The file upload process is enhanced to improve efficiency. You can now upload files for multiple floors simultaneously, with each being processed in parallel. The full-page loader that previously displayed

during single floor uploads is replaced by individual loader indicators for each floor, allowing clear visibility into the status of each upload.

If any floor file requires additional time, you have the option to cancel that specific upload without affecting the progress of others. This enables better management of successful uploads and more effective time allocation.

- **Map Processing Status Reporting with Estimated Time and Email Notifications**: Map Processing feature is enhanced to address the issues reported with time-intensive map generation. With this enhancement, after you successfully submit the map, the window is displayed with an estimated processing time. You can also view the processing status, including a tentative ETA or error details, by hovering over the status message for each building in the Digital Maps list view. Additionally, the submitter receives email notifications regarding any changes in the map status.
- **Re-Processing Maps/Re-submission of CAD Files**: The map re-processing experience is enhanced to include a feature that allows you to specify the exact changes needed. This helps to reduce the turnaround time. You can select from a list of common reasons and provide additional comments, along with any supporting documents or images as evidence for the re-processing request.

STANDARD Maps (BETA)

STANDARD Maps (BETA): The beta version of STANDARD Digital Maps (with a beta watermark) has been introduced in Cisco Spaces. The STANDARD maps gets generated more quickly compared to the PRO version but with fewer features, thus supporting a limited range of use cases.

You might notice that the orientation and positioning of STANDARD maps may not always align perfectly with the actual building position on the earth map. We recommend that you adjust the position and orientation of STANDARD maps using the tools available in the **Standard Map** preview.

Note

- The PRO maps are exclusively available to locations with ACT or UNLIMITED licenses, while STANDARD maps are accessible for locations with SEE or Extend licenses.
- You can use the STANDARD version of the map for device placement. For locations with ACT or UNLIMITED licenses, use the STANDARD map until the PRO version is fully generated.

Import Locations

Use the **Locations** tab to import the business hierarchy.

Procedure

Step 1 Log in to Cisco Spaces.

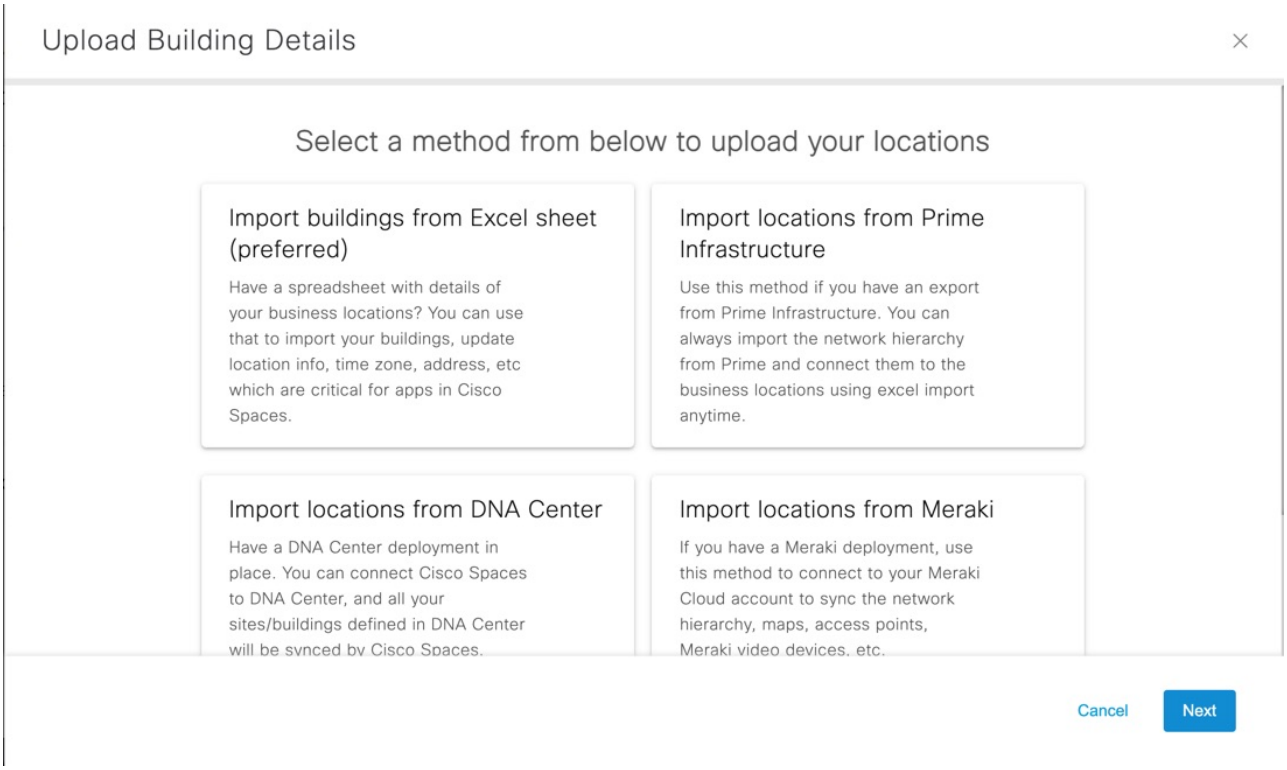
Step 2 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Setup** > **Locations and Maps**.

The **Locations and Maps** window is displayed with the **Locations** tab selected. The other tabs available are **Network Maps** and **Digital Maps**.

Step 3 In the **Locations** tab, click **Add Locations**. If locations are already imported and available, then **Import Locations** option is displayed.

The **Upload Building Details** window is displayed with the various methods to upload the locations.

Figure 25: Upload Building Details



Step 4 Import the locations using the following methods:

- Import buildings from Excel sheet (preferred)
- Import locations from Cisco Prime Infrastructure
- Import locations from Catalyst Center
- Import locations from Cisco Meraki
- Import locations from Cisco Webex
- Add locations manually

The imported location details are displayed in the **Locations** tab.

- The **Summary** section displays the details of the buildings, floors, missing location metadata information and locations that need review.
- The **Building** section in the **Locations** tab displays the location details such as name, path, number of floors, source and so on.
- In the **Building** section, the **Essential Location Info** field displays an alert if the required location metadata is not updated.

Step 5 In the **Essential Location Info** field, click **Alert** icon ( ) to add the missing metadata if required.

A pop-up window is displayed with the information related to missing location metadata. Click **Click Here** to update the location info.

Step 6 Click **Review** to view and proceed with location reviews. For more information, see Review Locations.

The **Review** option is displayed when you import locations using methods other than **Import buildings from Excel sheet** method.

Step 7 (Optional) In the **Locations** tab, use the following options as required:

- **Export**: Click to export the imported business location details into a Microsoft Excel file (.xls). You can click **Download** to download the same.
- **Recent Activity**: Click to view the recent activity details. The **Recent Activity** slide in window displays the history of activities happened in the recent past.
  - File Name
  - User
  - Type
  - Time
  - Status
- **Filter**: Click to view the filter options. In the **Filter** slide-in window that is displayed, choose the location from the **Locations** drop-down list and the required filter options and click **Apply**. The filter options are: **Source**, **# of Floors** and **Location Metadata**.

Import Buildings from Microsoft Excel Sheet

Use the **Import buildings from Excel sheet** option to add locations by importing a Microsoft Excel (.xlsx) file. We recommend that you choose this method to import the locations with buildings, location metadata, time zone, address, and so on that are important for Cisco Spaces application.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon ( ) and choose **Setup** > **Locations and Maps**.

The **Locations and Maps** window is displayed with the **Locations** tab selected.

Step 3 In the **Locations** tab, click **Add Locations**. If locations are already imported and available, then **Import Locations** option is displayed.

The **Upload Building Details** window is displayed with various methods to upload the locations.

Step 4 Click **Import buildings from Excel sheet** and click **Next**.

Step 5 In the **Import Location Details** window, drag and drop the Microsoft Excel (.xlsx) file or click **Click here to upload** to upload the Microsoft Excel (.xlsx) file with details of the business locations to be imported.

Note
If you do not have the template, you can download the template from the link available in the **Import Location Details** window and upload the same with the building details in the correct format.

Step 6 Click **Next**.

The **Import Location Details** window is displayed with location information from the Microsoft Excel (.xlsx) file in the left column and existing location level and group level information in the right column.

Step 7 In the **Import Location Details** window, map the imported location metadata in the **Column from CSV** column with the corresponding hierarchy and group levels under the **Link to** drop-down and assign respective location metadata values accordingly.

The options available in the **Link to** drop-down are:

- **Location Info**: Use this for location metadata information such as Country, City, Occupancy, Band, Address, Time Zone and so on. You must assign a corresponding metadata value also.
- **Hierarchy Level**: Use this to map the **Level** column value from the Microsoft Excel (.xlsx) file. The Microsoft Excel (.xlsx) file can have multiple **Level** values. Level values from the Microsoft Excel (.xlsx) file are mapped as **Hierarchy Level** in the Location Hierarchy.

  For each **Hierarchy Level**, you can assign a grouping level value. The options are: **Grouping Level1**, **Grouping Level2** and **Grouping Level3**.

  In the Microsoft Excel (.xlsx) file, you can have `NYC1 Campus` as **Level1** and `NYC2 Campus` as **Level2**. In the **Import Location Details** window, you can map **Level1** and **Level2** with **Hierarchy Level** in the **Link to** drop-down list. For **Level1**, you can assign the grouping value as **Grouping Level1** and **Grouping Level2** for **Level2**.
- **Location Name**: Use this to map with the **Location** column value from the Microsoft Excel (.xlsx) file.

  Note
  You need not assign any value for **Location Name**. The location name is directly fetched from the Excel file and cannot be modified or mapped with any header columns.
- **Location ID**: The Location ID is auto-generated after the location import is successfully complete.

Step 8 Click **Next**.

The **Merge Locations** window is displayed.

- A message indicating that the Location Hierarchy in Cisco Spaces is updated to include new locations discovered by importing the Microsoft Excel (.xlsx) file.
- The **Merge Locations** window displays the number of new locations and their levels imported using **Import buildings from Excel sheet** method.
- The **Merge Locations** window displays three columns: **Locations found in CSV**, **Actions** and **Existing Locations**.
- You must review the hierarchy and take necessary action using the **Action** drop-down list.
- You can use the **Search Location** field to enter search criteria and search for location name.

Step 9 In the **Locations found in CSV**, click the plus symbol to expand the location.

Step 10 From the **Actions** drop-down list, select the required action to merge the imported location with the existing Location Hierarchy displayed on the right side.

The options are:

- **Create New**: Select this option if you want to create the imported location as a new location into the existing Location Hierarchy.
- **Merge With**: Select this option if the imported locations from the Microsoft Excel (.xlsx) file are repeating and the location already exists in the Location Hierarchy. We recommend that you perform this action with attention as you cannot revert once you merge the locations.
- **Skip**: Select this option if you want to skip importing the locations into the Location Hierarchy. We recommend that you perform this action with attention as you cannot revert once you skip the locations.

Note
In the existing Location Hierarchy:

- If there are no existing campuses or buildings, the new imported locations are added as new entries.
- If there are locations with similar name, you can merge the new locations with the existing ones.

Step 11 Click **Next**.

You need to review the merge location updates displayed in the **Merge Locations** section. You can view the number of locations that are processed.

Step 12 Click **Submit**.

A success message is displayed indicating that the location details are uploaded.

You can click **Add Digital Maps** if you want to add digital maps or **View Locations** to view the locations.

Step 13 Click **Close this window** to return back to **Locations** tab.
The **Building** section in the **Locations** tab displays the location details such as name, path, number of floors, source and so on. The **Summary** section displays the details of the buildings, floors, missing location metadata information and locations that need review.

Import Locations from Cisco Prime Infrastructure

Use the **Import locations from Prime Infrastructure** option to add locations using an export file from Cisco Prime Infrastructure into Cisco Spaces. You can import the network hierarchy from Cisco Prime Infrastructure and connect them to the business locations.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Setup** > **Locations and Maps**.

The **Locations and Maps** window is displayed with the **Locations** tab selected.

Step 3 In the **Locations** tab, click **Add Locations**. If imported locations are already available, then **Import Locations** option is displayed.

The **Upload Building Details** window is displayed with the various methods to upload the locations.

Step 4 Click **Import locations from Prime Infrastructure** and click **Next**.

The **Import Location Details** window is displayed.

Step 5 In the **Import Location Details** window, drag and drop the Cisco Prime Infrastructure map file as a .GZ file (compressed archive file) or click **Click here to upload** to upload the .GZ file with the Cisco Prime Infrastructure map information.

Step 6 Click **Next**.

The **Import Location Details** displays a message indicating that the map data is processing. The Map Service takes some time to process the same. You can verify the map data processing status in the **Recent Activity** section.

After the map data is processed successfully, you must merge the map data with the locations.

Step 7 Click **Close this window** to close the window.

The **Building** section in the **Locations** tab displays the newly imported location details. The same location information is also displayed in the Cisco Spaces Location Hierarchy.

An alert message indicating that the import of maps from Cisco Prime Infrastructure added new locations to the Location Hierarchy is displayed in the **Location** tab.

Step 8 Click **Review** to review and take appropriate action.

The **Merge Locations** window is displayed.

- A message indicating that the Location Hierarchy in Cisco Spaces is updated to include new locations discovered by importing Cisco Prime Infrastructure maps.
- The **Merge Locations** window displays the number of new sites and building imported using **Import locations from Prime Infrastructure** method.
- The **Merge Locations** window displays three columns: **Locations from Prime Map**, **Actions** and **Existing Locations**.
- You must review the hierarchy and take necessary action using the **Action** drop-down list.
- You can use the **Search Location** field to enter search criteria and search for location name.

Step 9 In the **Locations from Prime Map**, click the plus symbol to expand the location.

The location hierarchy includes campus, buildings, and floors.

Step 10 From the **Actions** drop-down list, select the required action to merge the imported location with the existing Location Hierarchy displayed on the right side.

The options are:

- **Merge With**: Select this option if the imported locations from Cisco Prime Infrastructure are repeating and the location already exists in the Location Hierarchy. We recommend that you perform this action with attention as you cannot revert once you merge the locations.
- **Delete**: Select this option if you want to remove the imported locations from the existing Location Hierarchy. We recommend that you perform this action with attention as you cannot revert once you delete the locations.
- **Create New**: Select this option if you want to create or add a new location into the existing Location Hierarchy.

- **Accept**: Select this option if the locations imported from Cisco Prime Infrastructure are accepted as it is with the existing Location Hierarchy.

Note
In the existing Location Hierarchy:

- If there are no existing campuses or buildings, the new imported locations are added as new entries.
- If there are locations with similar name, you can merge the new locations with the existing ones.

Step 11 Click **Next**.

You need to review the merge location updates displayed in the **Locations** section. You can view the number of locations that are processed.

Step 12 Click **Submit**.

A success message is displayed indicating that the location details are uploaded.

You can click **Add Digital Maps** if you want to add digital maps or **View Locations** to view the locations.

Step 13 Click **Close this window**.

The **Building** section in the **Locations** tab displays the location details such as name, path, number of floors, source and so on.

The **Summary** section displays the details of the buildings, floors, missing location metadata information and locations that need review.

Import locations from Cisco Catalyst Center

Use the **Import locations from DNA Center** option to add locations from Catalyst Center. You can connect Cisco Spaces to Catalyst Center and all the sites or buildings defined in Catalyst Centeris synchronized with Cisco Spaces.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Setup** > **Locations and Maps**.

The **Locations and Maps** window is displayed with the **Locations** tab selected.

Step 3 In the **Locations** tab, click **Add Locations**. If locations are already imported and available, then **Import Locations** option is displayed.

The **Upload Building Details** window is displayed with various methods to upload the locations.

Step 4 Click **Import locations from DNA Center** and click **Next**.

To import locations from Catalyst Center, you must integrate Catalyst Center maps with Cisco Spaces.

Step 5 (Optional) Click **View How to Integrate DNA Center Maps**.

The **Cisco DNA Center Integration** window is displayed.

Cisco Spaces integrates with Catalyst Center for map synchronization and to provide device location updates to Catalyst Center. To integrate Cisco Spaces with Catalyst Center, click **Create Token** to create a token and configure the token in Catalyst Center.

Note
Cisco Spaces integration feature in Catalyst Center is available for limited users. For additional support, contact Cisco Spaces support team.

Step 6 Click **Next**.

The **Import Location Details** window is displayed.

Step 7 Follow the instructions to connect the Catalyst Center.

Step 8 Click **Finish**.

The **Building** section in the **Locations** tab displays the location details. The **Summary** section displays the details of the buildings, floors, missing location metadata information, and locations that need review.

Import locations from Cisco Meraki

Use the **Import locations from Meraki** option to add locations from Cisco Meraki. If you have a Cisco Meraki deployment, use this method to connect to your Cisco Meraki Cloud account to synchronize the network hierarchy, maps, Access Points, and Meraki video devices.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Setup** > **Locations and Maps**.

The **Locations and Maps** window is displayed with the **Locations** tab selected.

Step 3 In the **Locations** tab, click **Add Locations**. If locations are already imported and available, then **Import Locations** option is displayed.

The **Upload Building Details** window is displayed with various methods to upload the locations.

Step 4 Click **Import locations from Meraki** and click **Next**.

The **Import Location Details** window is displayed.

To import locations from Cisco Meraki, you must connect your Cisco Meraki with Cisco Spaces.

Step 5 (Optional) Click **View How to Integrate Meraki** to view the instructions.

Step 6 In the **Import Location Details** window, click **Next**.

Step 7 Read the instructions to connect Cisco Meraki and click **Next**.

The **Connect your wireless network** window is displayed. You can connect use this option to connect to Cisco Meraki.

Step 8 If you are already connected, proceed with adding locations using the Location Hierarchy.

Import Locations from Cisco Webex

Use the **Import locations from Webex** option to synchronize the Cisco Webex hierarchy and devices with Cisco Spaces.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Setup** > **Locations and Maps**.

The **Locations and Maps** window is displayed with the **Locations** tab selected.

Step 3 In the **Locations** tab, click **Add Locations**. If imported locations are already available, then **Import Locations** option is displayed.

The **Upload Building Details** window is displayed with various methods to upload the locations.

Step 4 Click **Import locations from Webex** and click **Next**.

The **Import Location Details** window is displayed.

To import locations from Cisco Webex, you must onboard Cisco Webex. After a successful onboard, your locations are automatically displayed in **Setup** > **Locations and Maps**.

Step 5 Follow the instructions to activate **Cisco Smart Workspaces**.

Step 6 In the **Activation token** field, enter the token generated from **Cisco Smart Workspaces**.

Step 7 Click **Activate**.

Add Locations Manually

Use the **Add locations manually** option to add a standalone building directly under the root location without importing a Microsoft Excel (.xlsx) file or a network map.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Setup** > **Locations and Maps**.

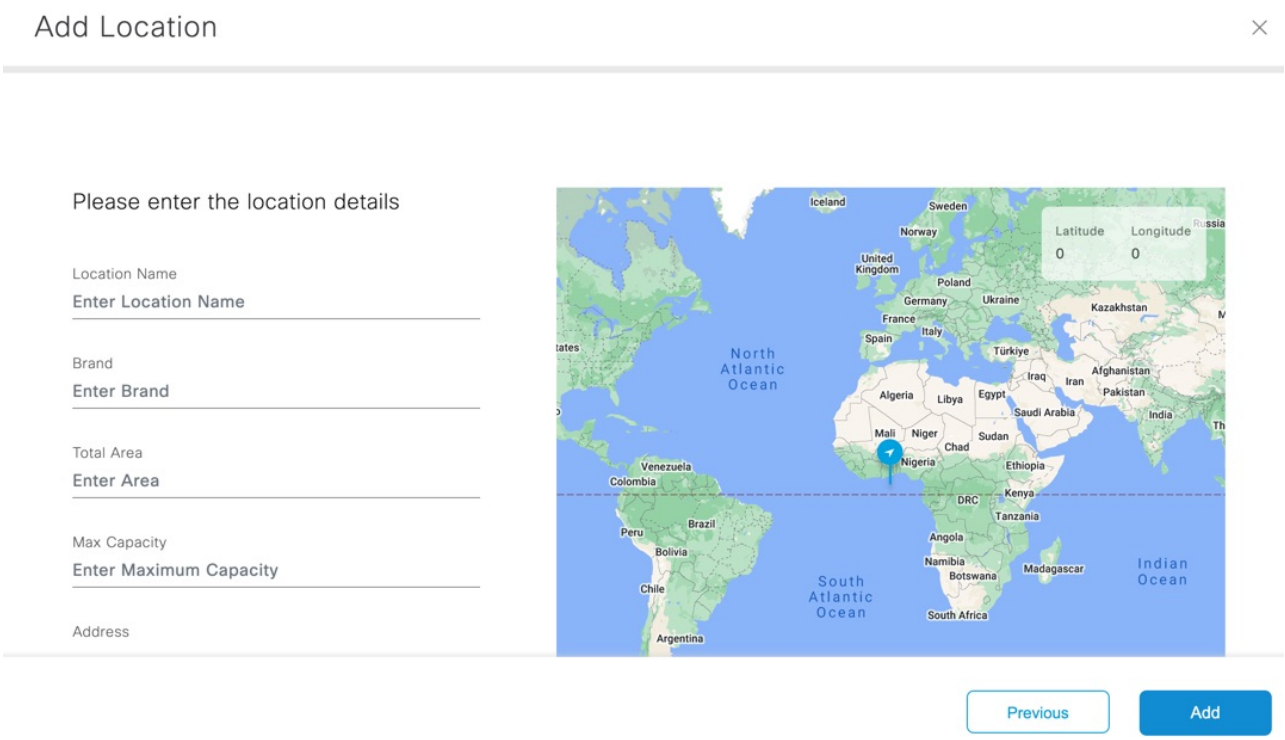
The **Locations and Maps** window is displayed with the **Locations** tab selected.

Step 3 In the **Locations** tab, click **Add Locations**. If locations are already imported and available, then **Import Locations** option is displayed.

The **Upload Building Details** window is displayed with the various methods to upload the locations.

Step 4 Click **Add locations manually** and click **Next**.

Figure 26: Add Location



Step 5 In the **Add Location** window, enter the following location details to add a new location:

- **Location Name**: Name for the new location.
- **Brand**: Brand for the new location.
- **Total Area**: Total area details for the new location.
- **Max Capacity**: Maximum capacity information for the new location.
- **Address**: The address of the new location. You can manually enter the address or drag the marker to choose the address from map displayed on the right side.
- **Time Zone**: Select the time zone from the drop-down list.
- **Latitude**: Latitude of the new location.
- **Longitude**: Longitude of the new location.

Step 6 Click **Add**.

A success message is displayed indicating that a new location is added. You can click **Add Another Location** if you want to add more locations manually.

Step 7 Click **Done**.

The **Building** section in the **Locations** tab displays the location details. The Summary section displays the details of the buildings, floors, missing location metadata information and locations that need review.

Update Location Information

The **Locations** tab displays an alert message if location metadata is missing for the imported location.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Setup** > **Locations and Maps**.

The **Locations and Maps** window is displayed with the **Locations** tab selected.

Step 3 In the **Buildings** section, next to Essential Location Info field, click the Alert icon to update the missing location metadata.

The **Update Location Info** window is displayed.

Step 4 In the **Update Location Info** window, update the following location details as required:

- **Location Name**: Name for the new location.
- **Brand**: Brand for the new location.
- **Total Area**: Total area details for the new location.
- **Max Capacity**: Maximum capacity information for the new location.
- **Address**: The address of the new location. You can manually enter the address or drag the marker to choose the address from map displayed on the right side.
- **Time Zone**: Select the time zone from the drop-down list.
- **Latitude**: Latitude of the new location.
- **Longitude**: Longitude of the new location.

Step 5 Click **Save**.

Review Locations

In the **Locations and Maps** window, an alert message is displayed if the imported location hierarchies need review. You need to review the locations and need necessary actions.

Procedure

Step 1 In the **Locations and Maps** window, click **Preview** to view and proceed with location reviews.

The **Review Locations** window displays all sources from which locations are imported, for example, Cisco Meraki or Catalyst Center. You can also view the number of sites, buildings and campuses imported for each location.

Step 2 Select the source location to review and click **Next**.

The **Review Locations** window displays the imported location hierarchy levels for the selected source in the left column and existing destination location hierarchy levels in the right column. Use the **Search Locations** field to search for specific locations.

Step 3 Use the options available in the **Action** drop-down list and select a recommended action to merge each level in the source location hierarchy with a relevant destination business hierarchy level in the right column.

By default, Cisco Spaces recommends some actions for reviewing the imported location hierarchy. The available actions are: Merge with, Accept, Create New and Delete.

- The action that you opt for the highest node in the source location hierarchy is automatically cascaded over to the subsequent nodes.
- You cannot delete a campus node from the source location hierarchy if the levels under the campus node are already merged with any relevant destination business hierarchy level.
- You cannot merge a building from the source location hierarchy to a campus in the destination business hierarchy.
- You can merge a site from the source location hierarchy to a campus in the destination business hierarchy.
- If the name of the source location hierarchy matches with any business hierarchy available in Cisco Spaces Location Hierarchy, then Cisco Spaces automatically displays the matching destination levels, and you proceed with the merge action.
- If the source location hierarchy is new, then select **Create** action to automatically create a new business hierarchy in Cisco Spaces Location Hierarchy.

Step 4 From the **Existing Locations** drop-down list, select the relevant destination level to merge and unify the imported location hierarchies from the any source location with the business hierarchy available in Cisco Spaces Location Hierarchy.

The **Existing Locations** drop-down list displays all the destination nodes available in the Cisco Spaces Location Hierarchy. You can view the source from where the business hierarchy is imported in the drop-down list.

Step 5 Click **Next**.

The **Merge Locations** window displays the summary of the actions and its implications with respect to the associated analytics data. We recommend that you review this alert information before proceeding.

Note
If a location that you selected to be deleted includes rules associated with it, you cannot proceed with the delete action. You need to review the action and update your merge preferences accordingly.

If a location that you selected to be deleted includes reports associated with it, you can proceed with the delete action. The reports are generated again after the locations are merged.

Step 6 Click **Agree and Continue**.

The selected review actions are processed, and the location is marked as reviewed. If you select to merge the source location level with a relevant destination node, all the properties of the source location levels are applied to the destination node in the business hierarchy.

Add Network Map

Use the **Network Maps** tab to add a network map and view the locations with the network maps associated with it. You can import locations only if the source has network maps associated with it. Currently, Cisco Prime Infrastructure, Catalyst Center, Cisco Meraki and Cisco Connected Mobile Experiences includes network maps.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Setup** > **Locations and Maps**.

The **Locations and Maps** window is displayed.

Step 3 Click **Network Maps** tab.

Step 4 Click **Add Network Map**.

The **Upload Building Details** window is displayed.

Step 5 Import the locations using the following methods that include network maps:

- Import locations from Cisco Prime Infrastructure
- Import locations from Catalyst Center
- Import locations from Cisco Meraki
- Import locations from Cisco CMX
- Add locations manually

The imported location details are displayed in the **Locations and Maps** window under the **Network Maps** tab.

Step 6 Click **Preview** to view and proceed with location reviews. For more information, see Review Locations.

Step 7 (Optional) In the **Network Maps** tab, use the following options as required:

- **Export**: Click to export the imported business location details into a Microsoft Excel file (.xls). You can click **Download** to download the same.
- **Recent Activity**: Click to view the recent activity details. The **Recent Activity** slide-in window displays the following information:
  - File Name
  - User
  - Type
  - Time
  - Status

- **Filter**: Click to view the filter options. In the **Filter** slide-in window that is displayed, choose the location from the **Locations** drop-down list and the required filter options and click **Select** to apply.

Import locations from Cisco CMX

Use the **Import locations from CMX** option to import locations from Cisco CMX. You must tether Cisco CMX with Cisco Spaces to import locations.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Setup** > **Locations and Maps**.

The **Locations and Maps** window is displayed.

Step 3 Click **Network Maps** tab.

Step 4 Click **Add Network Map**.

The **Upload Building Details** window is displayed with various methods to upload the locations.

Step 5 Click **Import locations from CMX** and click **Next**.

The **Import Location Details** window is displayed.

Step 6 (Optional) Click **Learn how to tether CMX** to view the instructions to tether Cisco CMX with Cisco Spaces. For more information, see Cisco CMX Tethering.

Step 7 In the **Import Location Details** window, click **Next**.

Step 8 Read the instructions to connect Cisco CMX and click **Next**.

The **Connect your wireless network** window is displayed. Use this option to connect to Cisco CMX.

Step 9 If you are already connected, proceed with adding locations using the Location Hierarchy.

Add Digital Map

Use the **Digital Maps** tab to add digital maps for buildings in your location hierarchy. You need to upload the Computer-aided design (CAD) file(s) for the floor to convert them into a three-dimensional floor plan.

The **Summary** area displays the number of buildings for which digital maps are imported, number of buildings for which map review is pending and number of buildings with errors.

The **Buildings** area displays the locations available.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon (☰) and choose **Setup** > **Locations and Maps**.

The **Locations and Maps** window is displayed.

Step 3 Click **Digital Maps** tab.

Step 4 Click **Add Digital Map**.

The **Add Digital Map** window is displayed.

Step 5 Select a building location to add a digital map and click **Next**. Optionally, use the **Search Locations** field to search for locations.

Step 6 In the **Postal Address** field, enter the address.

You must select the right location from the map and confirm the postal address.

Note
If you want to choose the location from the map displayed on the right panel, you need to provide permission to Cisco Spaces to use the current location to populate the geo-coordinates.

Step 7 Click **Confirm Address**.

Step 8 Upload the CAD file(s) for the selected location. You can drag and drop the file(s) or click **Click here to upload** to browse locally and upload them.

We recommend that CAD file must contains all layers, such as architecture, furniture, names, and IDs for all the elements to convert. Only the elements with names or IDs can support sensor assignments.

Note
- Upload only one CAD file per floor. Cross references (XREFs) are not supported.
- The supported file types are ZIP, AutoCAD Drawing file (DWG), AutoCAD Drawing Interchange File (DXF), Portable Document Format (PDF).

Step 9 (Optional) In the **Remarks** field, enter additional notes, if any.

The CAD file(s) and the location metadata are processed, and the map is digitized. An alert message is displayed in the **Digital Maps** tab.

Step 10 Click **Review**.

Step 11 In the **Review Digital Maps** window, select the building you want to review and click **Next**.

The digitized map is displayed.

Step 12 (Optional) Select a floor or space and click to update them if required.

A pop-up window is displayed, and you can edit the name or update the type category.

Step 13 Click **Publish this Building**.

The digitized map is published and available of other applications to use them, for example, Cisco Smart Workspaces, Environmental Metrics app and so on.

In Cisco Spaces Location Hierarchy, for a selected location, digital maps are displayed by default if the location has digital maps.

Click **Skip this building** if you want to discard the changes.

Setting up Map Service

Use **Map Service** in Cisco Spaces to import or synchronize multiple campuses with the same name under different sites into Cisco Spaces **Location Hierarchy** from Catalyst Center. You can move campuses between sites within Catalyst Center and allows to seamlessly import and synchronize these changes into the Cisco Spaces **Location Hierarchy**.

Map Service in Cisco Spaces includes the following features to keep **Location Hierarchy** in sync with the imported map data:

- Maps exported from Cisco Prime Infrastructure or Catalyst Center and imported into Cisco Spaces using **Map Service** appears automatically under **Location Hierarchy**.
- When you import or synchronize maps from various sources: Catalyst Center, Cisco Prime Infrastructure or Cisco Meraki, support is extended to normalize and unify network hierarchies into a single business-orientated hierarchy.
- If you delete a location from **Location Hierarchy**, it will also be removed from **Map Service**.
- When you delete a zone location from the **Map Service** UI, the zone location is also is deleted from **Location Hierarchy**.
- AP import restrictions have been implemented based on the AP license limits for the Cisco Spaces account.

The GPS markers warning message that is displayed in the **Recent Activity** section shows the entire hierarchy in the **Recent Activity** section for the floor with invalid GPS markers.

Note

- We recommend that you use Google Chrome Browser while working with maps. Map operations are best supported in Google Chrome. Map actions on other browsers are limited.
- If your locations have maps, create a map-based location hierarchy. However, if you have already created a location hierarchy through **WLCDirect > AP prefix**, **CMXOn-Prem Auto-Sync**, or **CMXManual Upload** and have imported the maps containing the overlapping APs, then the APs will be moved to a map-based hierarchy.
- If a location is deleted from **Map Service**, then only the corresponding access points are removed from **Location Hierarchy**.
- Map Service API performance is enhanced to get the recent activity and status.

Support for Map Hierarchy Migration from Cisco Prime Infrastructure to Catalyst Center: Cisco Spaces Location Hierarchy supports import of migration data with nested sites from Cisco Prime Infrastructure to Catalyst Center.

Support for Cisco DNA Center Nested Site Hierarchy: You can import or synchronize new sites from Catalyst Center to Cisco Spaces on top of the existing site hierarchy.

Support for Planned Access Point (AP) Import: You can import planned APs into Map Service.

Maps Upload

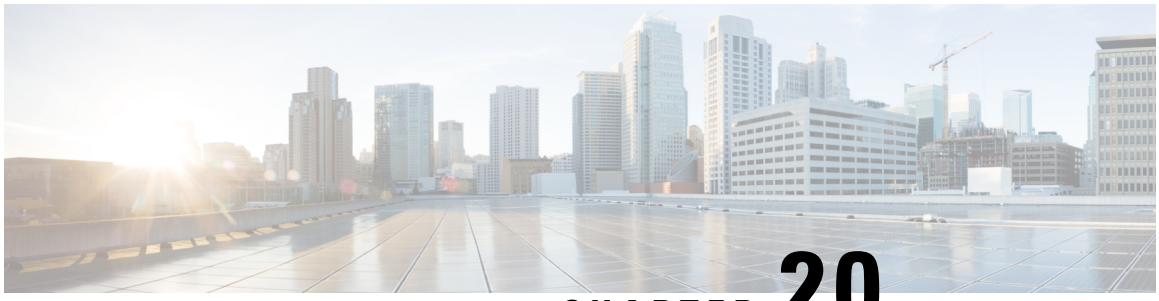
Click **Maps Upload** to upload maps from Cisco Prime Infrastructure or Catalyst Center. In the **Maps Upload** pop-up window, select the required option and click **Select File** and to upload the maps downloaded from the sources.

Note Click **Upload History** to view the map upload history details.

Cisco Catalyst Wireless 9164I Wi-Fi 6E Series Access Points (AP) Support

The Cisco Catalyst Wireless 9164I Wi-Fi 6E Series AP support is added in the **Map Service**.

You can import the Cisco Catalyst Wireless 9164I Wi-Fi 6E Series APs into Cisco Spaces using the **Map Service**.



CHAPTER 20

Set Up Cisco Webex

This chapter provides information on how to integrate Cisco Webex with Cisco Spaces.

Integrate Cisco Webex

The integration of Cisco Webex with Cisco Spaces enables Cisco Webex devices in the **Webex Control Hub** account to perform a cloud-to-cloud integration between **Webex Control Hub** and Cisco Spaces.

Note Cisco Webex integration supports only **Cisco Smart Workspaces** users.

This integration supports:

- Synchronization of Cisco Webex entities such as Cisco Webex workspaces, devices, workspace locations, and floor details from the **Webex Control Hub**. The synchronization process is scheduled at the backend every three hours after the token is configured in the Cisco Spaces dashboard. Choose **Setup** > **Webex** to configure the tokens.
- Cisco Webex devices to send device data such as temperature, air quality, occupancy, and so on, which is then used in **Cisco Smart Workspaces**.

As part of **Cisco Webex** integration, Cisco Spaces supports integration with persistent web app for **Cisco Webex** navigators. When a customer activates the control hub integration with Cisco Spaces, the necessary configuration supporting this integration is updated in the **Cisco Webex** control hub.

Note Currently, this integration is only available for **Cisco Smart Workspaces** users.

Set Up Cisco Webex

You can connect your Cisco Webex account to Cisco Spaces and then import the Cisco Webex networks into Location Hierarchy.

Procedure

Step 1 Log in to Cisco Spaces.

Step 2 In the Cisco Spaces dashboard, click the **Menu** icon ( ) and choose **Setup** > **Webex**.

Step 3 In the **Connect your Webex** window, click **Connect**.

The Webex Token slider is displayed.

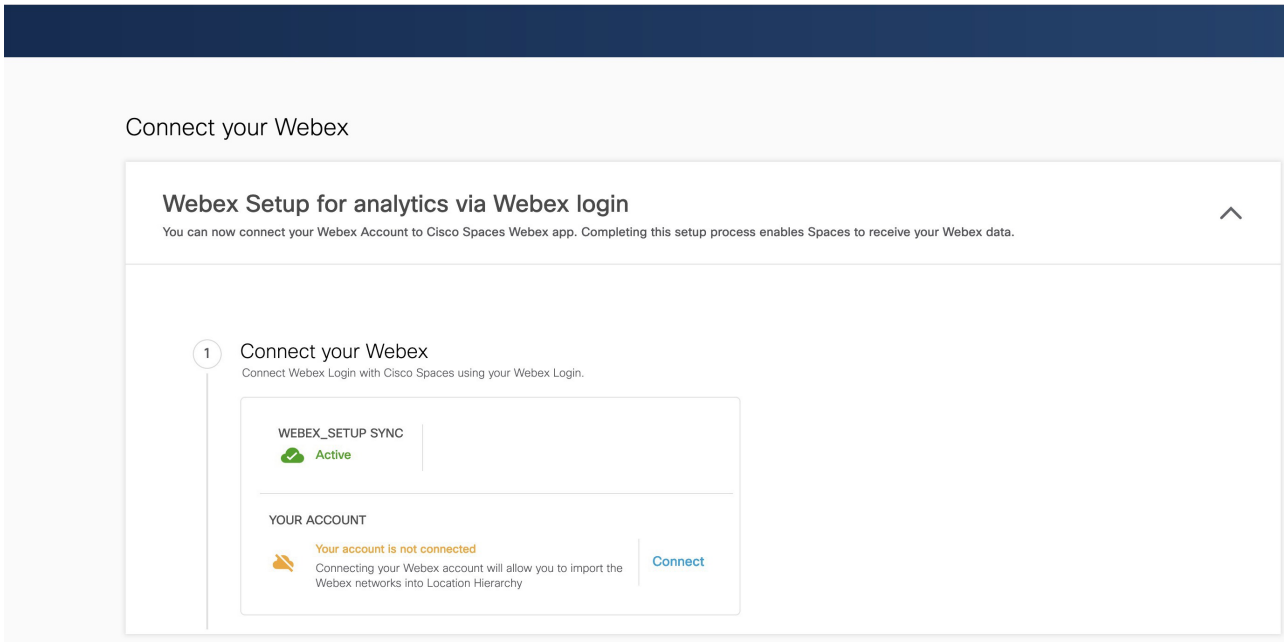
Step 4 In the **Enter or copy-paste your Webex Token** field, enter the Cisco Webex token.

You can get the token from the **Webex Control Hub**. For more information about generating an activation code, see Generate an Activation Code, on page 143.

Step 5 Click **Connect**.

The Cisco Webex synchronization status is displayed as **Active** for all active users in a specific tenant (account) if at least one user successfully connected their Cisco Spaces account with the Cisco Webex account while importing the Cisco Webex networks into **Location Hierarchy**.

Figure 27: Cisco Webex Synchronization Status



Generate an Activation Code

Use the Cisco Webex Control Hub to generate codes.

Procedure

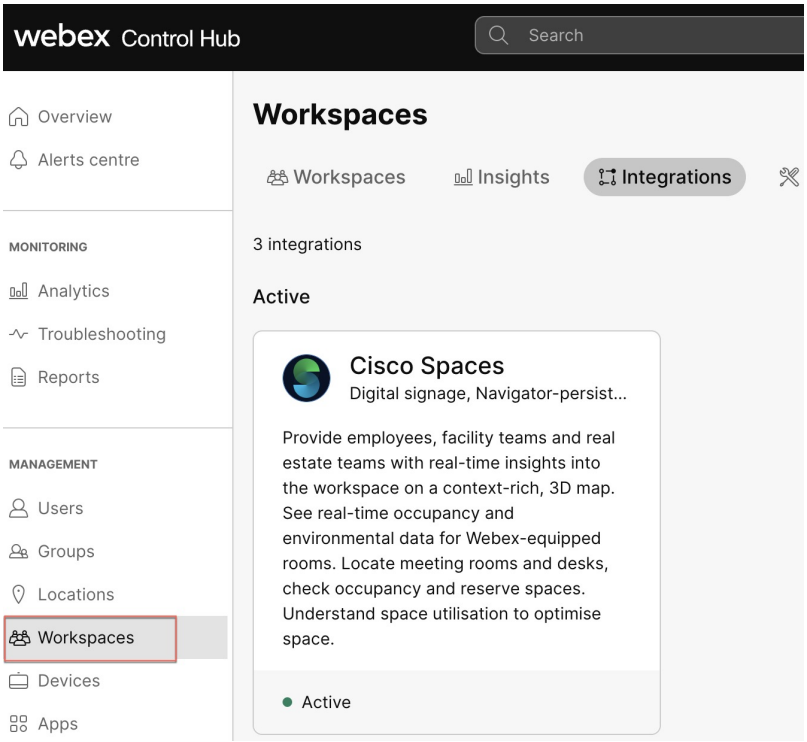
Step 1 Log in to Cisco Webex Control Hub.

Step 2 Enter your **Cisco Webex Control Hub** account email ID to sign in.

Step 3 In the **Cisco Webex Control Hub** dashboard, choose **Management** > **Workspaces**.

Step 4 Click the **Integrations** tab.

Figure 28: Cisco Webex Control Hub



Step 5 On the **Cisco Spaces** app tile, click **Details**.

The **Cisco Smart Workspaces** app integration details window is displayed.

Step 6 At the top-right corner of the window, click **Activate**.

Step 7 Review the permissions requested by **Cisco Smart Workspaces** and check the **Terms and Conditions** check box.

Step 8 Click **Activate**.

Step 9 Use the **Copy to Clipboard** option to copy the activation code and paste the code in **Cisco Spaces** to integrate **Cisco Webex**.

The generated activation code's expiry details are displayed in the **Activate Integration: Cisco Smart Workspaces** window.