

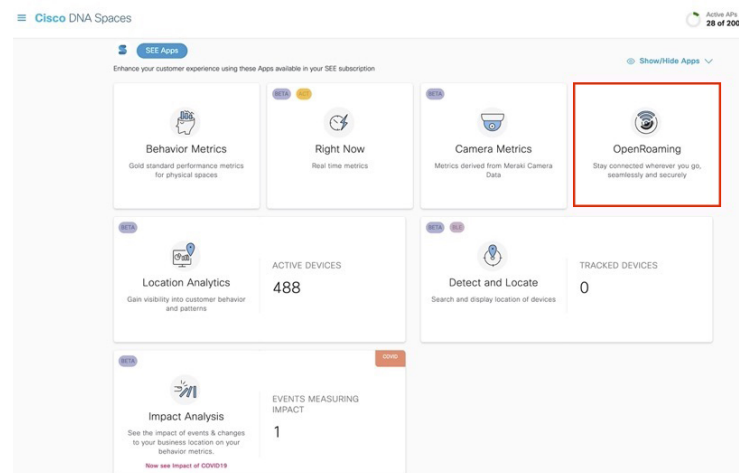


Configure OpenRoaming

Before you begin

Before proceeding with configuring OpenRoaming for your wireless network, ensure that your network meets the prerequisites described in [Prerequisites for OpenRoaming](#). To set up OpenRoaming in Cisco Spaces, click the **OpenRoaming** tile on the Cisco Spaces dashboard. The **OpenRoaming** dashboard is displayed.

Figure 1: Cisco Spaces Dashboard: OpenRoaming Tile



Note If you have configured OpenRoaming earlier, you will see your OpenRoaming reports in the **OpenRoaming** home page. To view a list of available sample reports, click the **See Sample Dashboard** link provided in the OpenRoaming home page.

To configure OpenRoaming, perform the following tasks:

- Step 1** [Create an OpenRoaming Profile.](#)
- Step 2** [Enable a Hotspot on the Cisco Spaces Connector.](#)
- Step 3** [Configure Network Controller.](#)

Step 4 Test Your OpenRoaming Network.

This chapter contains the following sections:

- [Create an OpenRoaming Profile, on page 2](#)
- [Edit an OpenRoaming Profile, on page 5](#)
- [Delete an OpenRoaming Profile, on page 5](#)
- [Enable a Hotspot on the Cisco Spaces Connector, on page 6](#)
- [Configure Network Controller, on page 10](#)
- [Test Your OpenRoaming Network, on page 12](#)
- [View OpenRoaming Reports, on page 13](#)
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- [Communications, Services, and Additional Information, on page 14](#)

Create an OpenRoaming Profile


An OpenRoaming profile contains information about the network SSID and specifies which user identities are allowed to access the guest network. You can also configure carrier offload in the OpenRoaming profile. To create an OpenRoaming profile, perform the following tasks:

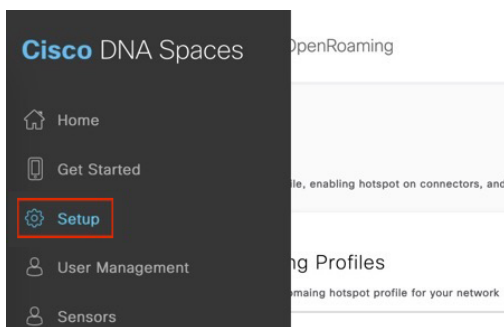
SUMMARY STEPS

1. Choose an access policy.
2. Configure an SSID.
3. (Optional) Configure carrier offload.
4. Review and confirm the OpenRoaming profile configuration.

DETAILED STEPS

Step 1 Choose an access policy.

- a) In the **OpenRoaming** window, click **Set Up OpenRoaming** or  > **Setup**.



Note If this is the first time that you are setting up OpenRoaming, when you click  > **Setup**, a **Terms and Conditions** dialog box is displayed. Click **I Agree** to proceed.

The **OpenRoaming Setup** window is displayed.

- b) In the **OpenRoaming Profiles** section, click **Create OpenRoaming Profile**.

The **Create an OpenRoaming Profile** configuration wizard is displayed.

- c) Click **Proceed**.

- d) Under **Access Policy**, specify who can access your OpenRoaming network.

The options available are:

- **Accept all authenticated users:** This is the default option.
- **Accept only users who provide their identity:** An example of an accepted identity is a real identity, such as an email ID.
- **Accept users with specified identity types:** Choose the desired identity types from the list that is displayed. Enable the **Require real identity** knob if you want users to enter their real identities.

The identity types chosen here is displayed adjacent to their real or anonymous identity settings, in a table next to this list.
- **Accept only your users:** If you choose this option, you will need to be added as an identity provider.

- e) Under **Preferred Credentials**, choose the desired option from those listed below by clicking the corresponding radio button:

- **I do not have preferred credentials**

Note If you have selected **Accept only your users** in the **Access Policy** section, this option will be disabled.

- **I have preferred credentials, which I want to use:** If you choose this option, you must select a domain from the list of domains that are displayed or click **Add a Custom Domain**.

- f) Click **Next**.

The **SSID Details** window is displayed.

Step 2

Configure an SSID.

- a) In the **SSID Details** section, enter the SSID name in the corresponding field. This is the SSID that will be broadcast for OpenRoaming.

Note If the name that you enter is an existing SSID, ensure that the SSID name is an exact match of what is in the network.

- b) (Optional) In the **Advanced** section, you can choose among the following options by clicking the corresponding radio button:

- **Default Status:** Choose between **Enable** or **Disable** by clicking the corresponding radio button. The default option is **Enable**.
- **Fast Transition (802.11r):** Choose between **Adaptive**, **Enable** or **Disable** by clicking the corresponding radio button. The default option is **Adaptive**.

The **Create an OpenRoaming Profile** configuration wizard is displayed.

- c) Click **Next**.

The **Carrier Offload** window is displayed.

Step 3 (Optional) Configure carrier offload.

You can leverage your Wi-Fi network to provide voice and data services to mobile carrier subscribers on your Wi-Fi network. This configuration is optional.

Before you configure carrier offload, ensure that the following prerequisites are in place:

- You must have an existing relationship with a mobile carrier or service provider.
 - You must have configured the settlement provider with the mobile carrier or service provider.
- a) Use the **Allow Carrier Offload** knob to enable the **Carrier Offload** settings.
- A table listing the various carriers, along with their corresponding details such as the **Offloading Partner**, **Static Routing**, **Realms**, and **MNC/MCC** settings, is displayed.
- b) Based on your existing relationships with various carriers, you can either select from the carriers that are available in the table or click **Add Custom Carrier** to add carriers of your choice.
- Note** If you have not configured a carrier, or if you click **Add Custom Carrier**, you must visit the **DNA Spaces Partner App Center** to first activate the offloading partner. Contact your carrier offloading partner for specific information that has to be entered in the custom fields.
- c) Click **Next**.
- The **Review Your Configuration** window is displayed.

Step 4 Review and confirm the OpenRoaming profile configuration.



After you have configured the access policy, SSID, and the optional carrier offload, you can review your OpenRoaming profile configuration and modify it if required before saving these settings.

- a) In the **Review Your Configuration** window, verify the settings and do one of the following:
- Note** By default, the OpenRoaming profile name is the same as the SSID name. You can choose to retain the OpenRoaming profile name as the SSID name or modify the profile name.
- If you are satisfied with the configuration, proceed with [4.b, on page 4](#).
 - If you have to make changes, click the **Edit** link next to the section whose configuration has to be modified and make changes. Continue to click **Next** until you arrive at the **Review Your Configuration** window. On successful modification of the OpenRoaming Profile configuration, proceed with [4.b, on page 4](#).
- b) Click **Done** to complete the creation of the OpenRoaming profile.
- A success message appears briefly, and a confirmation window is displayed.



What to do next

If you want to continue the OpenRoaming configuration, click **Continue OR Setup** or close the configuration wizard.

Edit an OpenRoaming Profile

- Step 1** On the **OpenRoaming** window, choose  > **Setup**.
The **OpenRoaming Setup** window is displayed.
- Step 2** In the **OpenRoaming Profiles** section, in the **Action** column, click the settings  icon corresponding to the profile that you want to update.
- Note** To view the existing configuration for a profile, click the profile name. A window displaying the configuration details for the selected OpenRoaming profile is displayed.
- Step 3** Click **Edit Profile**.
The **Edit OpenRoaming Profile** configuration wizard is displayed.
- Step 4** Make changes and click **Next**.
- Step 5** Follow the prompts till the **Review Your Configuration** window is displayed.
A summary of the OpenRoaming profile modifications you made is displayed.
- Step 6** Review the updates and do one of the following:
- If you are satisfied with the updates, go to [Step 7, on page 5](#).
 - If you have to make further changes, click the **Edit** link next to the section whose configuration has to be modified and make changes. Continue to click **Next** until you arrive at the **Review Your Configuration** window. To confirm and save the updated OpenRoaming profile configuration, go to [Step 7, on page 5](#).
- Step 7** Click **Done**.
A success message is displayed briefly followed by a confirmation window.
-

Delete an OpenRoaming Profile

- Step 1** On the **OpenRoaming** window, choose  > **Setup**.
The **OpenRoaming Setup** window is displayed.
- Step 2** In the **OpenRoaming Profiles** section, in the **Action** column, click the settings  icon corresponding to the profile you want to delete.
- Step 3** Click **Delete Profile**.
The **Delete OpenRoaming Profile** configuration wizard is displayed.
- Step 4** Click **Done**.
A success message appears briefly, and a confirmation window is displayed.
-

Enable a Hotspot on the Cisco Spaces Connector

When you add a hotspot on the Cisco Spaces Connector, it leads to the installation of a new docker. You can enable a hotspot on the Cisco Spaces Connector either during the initial configuration of the connector or later using the procedure outlined here. For information on configuring a connector, go to the [Cisco Spaces Connector Configuration Guide](#).

If you have already configured a connector, you can see it listed in the **Hotspot-enabled Connectors** section on the **OpenRoaming Setup** window.



Note You can upgrade the hotspot to the latest version from the **Hotspot** tab in the Cisco Spaces Connector GUI. The upgrade link appears only if a new version is available for upgrade.

Cisco DNA Spaces Connector	
Connector Hotspot	
Hotspot Download Logs Restart Hotspot	
Username:	dnasadmin
Tenant ID:	10747
IP Address:	192.168.40.229
Netmask:	255.255.255.0
Domain:	cisco.com
NTP Status:	address= 10.66.141.50 status=active (running) since=Wed 2021-04-21 17:59:48 UTC
Cloud Reachable:	True
Connector Name:	ORTest
Docker Version:	v2.2.10 Update Version to v2.2.12
Hostname:	DNASPACES
MAC Address:	00:0c:29:3e:83:0f
Gateway:	192.168.40.1
DNS Server:	8.8.8.8
Server Time:	Wed Dec 15 2021 23:26:13 GMT+0530 (India Standard Time)
Proxy Status:	Proxy is not configured
Proxy:	---
AAA Status:	AAA=Disabled
Version:	ova-2.3.478

Depending on your wireless network, follow the corresponding procedure to enable a hotspot on a Cisco Spaces Connector after it has been created:

- [Enable a Hotspot on the Cisco Spaces Connector \(Cisco AireOS or Cisco Catalyst Network\)](#), on page 6
- [Enable a Hotspot on the Cisco Spaces Connector \(Cisco Meraki network\)](#), on page 9

Enable a Hotspot on the Cisco Spaces Connector (Cisco AireOS or Cisco Catalyst Network)

Step 1 In the **OpenRoaming** window, click **Set Up OpenRoaming** or choose > **Setup**.

Note If you have completed the OpenRoaming Profile configuration, click **Continue OR Setup** in the configuration wizard to proceed.

The **OpenRoaming Setup** window is displayed.

A list of all the Cisco Spaces Connectors, along with their status is displayed in the **Hotspot-enabled Connectors** section.

Step 2 Under the **AireOS/Catalyst** tab, click the **Enable Hotspot for Connector(s)** link.

The **OpenRoaming - Add Hotspot** window is displayed.

Step 3 Select the Cisco Spaces Connector for which you want to enable the hotspot and click **Continue**.

A token is generated, and a **Hotspot created successfully** message is displayed. This token is used by the Cisco Spaces Connector to download the hotspot connector container.

Step 4 Under **Token Generated**, click **Copy**.

Paste this token in the **Configure Token** window of the Cisco Spaces Connector GUI. Note that a token can only be used once for a single Cisco Spaces connector.


If a token is used more than once, the hotspot-enabled connector will not work. If the connectors are in active-active mode and share a connector token, you will need different hotspot tokens for each connector.

Step 5 Click **Close**.

Step 6 Refresh the **OpenRoaming Setup** window.

The new hotspot-enabled connector is now displayed in the listing in the **Hotspot-enabled Connectors** section.

View Connector Details (Cisco AireOS or Catalyst Network)

Step 1 On the **OpenRoaming** window, click **Set Up OpenRoaming** or  > **Setup**.

The **OpenRoaming Setup** window is displayed.


A list of all Cisco Spaces Connectors with their status is displayed in the **Hotspot-enabled Connectors** section.

Step 2 Under the **AireOS/Catalyst** tab, click a Connector name.

The **Connector Details** window with details of the Connector's configuration is displayed.


Step 3 Close the window and return to the **OpenRoaming Setup** window.

View Hotspot Token for a Cisco Spaces Connector (Cisco AireOS or Catalyst network)

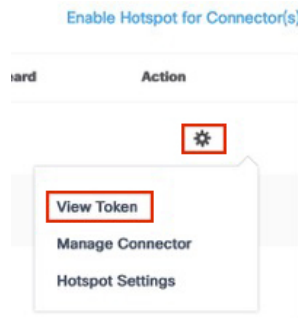
Step 1 On the **OpenRoaming** window, click **Set Up OpenRoaming** or choose  > **Setup**.

The **OpenRoaming Setup** window is displayed.

A list of all Connectors, along with their status, is displayed in the **Hotspot-enabled Connectors** section.

Step 2 Under the **AireOS/Catalyst** tab, click the settings  icon in the **Action** column corresponding to the connector you want to update.


Step 3 Click **View Token**.



The **OpenRoaming – View Token** window is displayed.


Step 4 Click **Copy** to use the token for a Connector setup.

Step 5 In the Cisco Spaces Connector GUI, paste this token in the **Configure Token** window.


Note After the token is saved, the hotspot information is downloaded to the Connector. After you refresh the window, you will find a **Hotspot** tab next to the **Connector** tab. In the **Hotspot** tab, verify the status of the hotspot-enabled Connector. If the status is **Running** , it indicates that the OpenRoaming hotspot has been successfully enabled for the Cisco Spaces Connector.

Step 6 Click **Close** to return to the **OpenRoaming Setup** window.

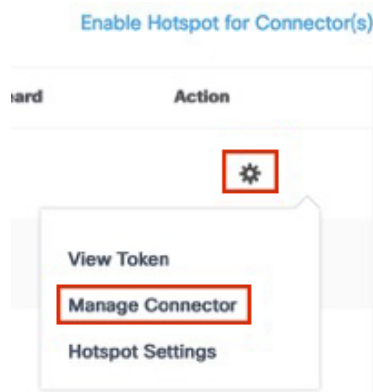
Manage Connector (Cisco AireOS or Cisco Catalyst Network)

Step 1 On the **OpenRoaming** window, click **Set Up OpenRoaming** or  > **Setup**.

The **OpenRoaming Setup** window is displayed. A list of all Connectors, along with their status, is displayed in the **Hotspot-enabled Connectors** section.

Step 2 Under the **AireOS/Catalyst** tab, click the settings  icon in the **Action** column corresponding to the connector you want to update.

Step 3 Click **Manage Connector**.



The **Manage Connector** window is displayed.


Step 4 Choose an action from the following options:

- Restart connector
- Upload logs to cloud
- Enable connector debug mode
- Enable Hotspot debug mode
- Automatically keep this connector up to date

Step 5 Close the window and return to the **OpenRoaming Setup** window.

Enable a Hotspot on the Cisco Spaces Connector (Cisco Meraki network)

Before you begin

Step 1 In the **OpenRoaming** window, click **Set Up OpenRoaming** or  > **Setup**.

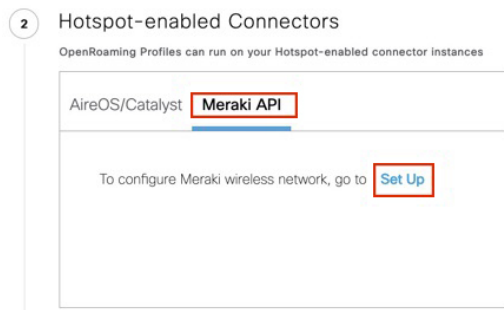
Note If you have completed the OpenRoaming profile configuration, click **Continue OR Setup** in the configuration wizard to proceed.

The **OpenRoaming Setup** window is displayed.

A list of all the Cisco Spaces Connectors, along with their status is displayed in the **Hotspot-enabled Connectors** section.

Step 2 Under the **Meraki API** tab, click the **Set Up** link.

For information on configuring your Cisco Meraki setup, see the [Cisco Spaces Configuration Guide](#).



Step 3 Select the Cisco Spaces Connector for which you want to enable the hotspot.

Step 4 If you have a Meraki connector, click the **Meraki API** tab.

The **Configure OpenRoaming for Meraki** configuration wizard is displayed.

Step 5 Click **Next**.

Step 6 Choose the organization from the drop-down list.

A list of Meraki networks for the selected organization is displayed.

Step 7 Choose the Meraki network for which you want to configure OpenRoaming.

Step 8 Choose the OpenRoaming profile that you would like to apply for the selected Meraki networks.

Step 9 Click **Configure** to complete configuration.

A success message is displayed. Refresh the **OpenRoaming Setup** page.

A message is displayed under the **Meraki API** tab confirming your Cisco Meraki account is connected.

Configure Network Controller


Depending on your wireless network, follow the corresponding procedure to associate an OpenRoaming profile with the controller and configure the network:

- [Configure Cisco AireOS or Cisco Catalyst Network, on page 10](#)
- [Configure Cisco Meraki Network, on page 11](#)

Configure Cisco AireOS or Cisco Catalyst Network

Before you begin

Before you configure the Cisco AireOS or Cisco Catalyst wireless network, you must configure the SSID and AAA policy.

Step 1 In the **OpenRoaming** window, click **Set Up OpenRoaming** or choose  > **Setup**.

The **OpenRoaming Setup** page is displayed.

Note If you have completed the OpenRoaming Profile configuration, click **Continue OR Setup** in the configuration wizard to proceed.

In the **Network configuration** section, under the **AireOS/Catalyst controllers** tab, a list of all the Cisco AireOS and Cisco Catalyst series controllers appears with details such as the Controller status and associated Connectors.

Step 2 Under **Network configuration > AireOS/Catalyst controllers**, in the **Action** column, click the settings  icon corresponding to the controller you want to configure.

The **Configure Controller** window is displayed.

Step 3 Under **Generate Configuration**, select the OpenRoaming profile from the drop-down list.

If a non-default policy profile or policy tag is used, you must copy only the Access Network Query Protocol (ANQP) server settings and apply it to the wireless policy profile. Ensure that the policy tag uses the WLAN configured for OpenRoaming, and is mapped to the configured wireless policy profile.

Step 4 Paste the selected OpenRoaming profile configuration in the Cisco AireOS or Catalyst controller CLI.

Note Only CLI-based configuration is supported.

Step 5 Click **Continue**.
A **Controller configured with profile successfully** message is displayed.

Step 6 Choose the controller type between **AireOS** and **Catalyst 9800**.

- Step 7** In the **WLAN ID** field, enter a WLAN ID if your existing network is based on a Cisco AireOS Controller. Specify the WLAN name if it is based on a Cisco Catalyst Controller.
- Step 8** Click **Close**.
The **OpenRoaming Setup** window is displayed.

Configure Cisco Meraki Network

Before you begin


To use OpenRoaming on your Cisco Meraki network through Cisco Spaces, your network must meet the following prerequisites:

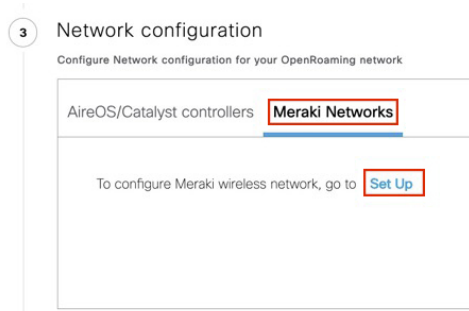
- All access points in the Cisco Meraki network need to be on R28.x or later versions of the Cisco Meraki firmware.
- There needs to be at least one unconfigured SSID and it should be disabled.
- Contact the Cisco Meraki support team to activate OpenRoaming on your network.



Note

- If you do not meet one or more of the above prerequisites, you can manually activate OpenRoaming on your Meraki network by installing a Cisco Spaces Connector. For more information, see the [Cisco Spaces Setup Guide for OpenRoaming](#).
- Configuration of Cisco Meraki networks that use templates is not supported.

- Step 1** In the **OpenRoaming** window, click **Set Up OpenRoaming** or choose  > **Setup**.
The **OpenRoaming Setup** window is displayed.
- Step 2** In the **Network configuration** section, click the **Meraki Networks** tab.
- Step 3** Click **Set Up**.
The **Configure OpenRoaming for Meraki** window is displayed.



- Note** For information on configuring a Cisco Meraki network, go to the [Cisco Spaces Configuration Guide](#).

- Step 4** Choose an organization from the drop-down list.

Step 5 Click **Next**.

Step 6 Choose the Cisco Meraki networks for which you want to enable OpenRoaming.

Note You can select multiple networks from the list.

Step 7 Click **Next**.

Step 8 From the drop-down list, select the OpenRoaming profile that needs to be applied on the Cisco Meraki network.

Step 9 Click **Next**.

Step 10 Review the **Configuration Summary**.

If you would like to make any changes, click **Back** to navigate to the previous windows.

Step 11 Click **Configure** to complete configuration of the OpenRoaming profile on the chosen Cisco Meraki networks. The **OpenRoaming Setup** page appears with a success message. Under the **Meraki Networks** tab, a confirmation message is displayed along with the count of Cisco Meraki networks configured with OpenRoaming profiles.

Edit Cisco Meraki Network

Step 1 In the **OpenRoaming** window, click **Set Up OpenRoaming** or choose  > **Setup**.

The **OpenRoaming Setup** window is displayed.

Note Click **OpenRoaming Activation Status** to view the status of the configured Cisco Meraki networks.

Step 2 In the **Network configuration** section, click the **Meraki Networks** tab.

Step 3 Click the SSID corresponding to the Cisco Meraki network that you would like to update.

The **Edit Configuration** window is displayed.

Step 4 Click **Update** after making the needed updates.

The **OpenRoaming Setup** window is displayed with a success message.

Test Your OpenRoaming Network

You can test your OpenRoaming network configuration through the following methods:


Procedure

- **Cloud/Social:** To use this method, download the OpenRoaming mobile app from the iOS App Store or Google Play Store to your mobile device.
- **Device Manufacturer:** Use this method to test your OpenRoaming network natively on a Samsung or Google mobile device.
- **Other Methods:** In addition to the above two methods, you can also test your OpenRoaming network using the following two options:

- **Carrier Offload:** If you have set up a Carrier Offload solution, a mobile phone from the supported carrier will automatically get attached to your OpenRoaming network.
- **Cisco Spaces SDK:** If you have integrated your brand's mobile app with Cisco Spaces SDK, a mobile phone with your mobile app will automatically get attached to your OpenRoaming network.

For more information about Cisco Spaces SDK, see <https://developer.cisco.com/docs/dna-spaces-sdk/>. Log in using your Cisco credentials, if prompted.

View OpenRoaming Reports

To view your OpenRoaming reports, click  > **Home**.

The following reports are available in the **OpenRoaming** dashboard:

- **Unique Devices**
 - **Devices by IDP**
 - **Devices by Manufacturer**
 - **Data Usage**
 - **Average Visit Duration**
 - **Data Consumed per User**
 - **Connections per Day**
 - **Connections per Hour**
-

Related Documents

For more information about OpenRoaming in a Cisco Spaces setup, see the following documents:

- [Cisco Spaces OpenRoaming Setup Guide](#)
- [Cisco Spaces Connector Configuration Guide](#)
- [Cisco Spaces Configuration Guide](#)

For all Cisco Spaces documentation, see:

<https://www.cisco.com/c/en/us/support/wireless/dna-spaces/series.html>

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