

DNA Spaces Direct Connect Configuration Example

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Introduction

This document describes how to configure Cisco DNA Spaces Direct Connect where WLC connects to DNA spaces directly without going through CMX or DNA Spaces Connector

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Command Line Interface (CLI) or Graphic User Interface (GUI) access to the AireOS wireless controllers
- Cisco DNA Spaces

Components Used

The information in this document is based on these software and hardware versions:

- 5520 Wireless LAN Controller (WLC) version 8.8.120.0
- DNA Spaces Connector version 1.0.188

Configure

Network Diagram



Configurations

To connect the WLC to Cisco DNA Spaces, the WLC must be able to reach Cisco DNA Spaces cloud over HTTPS.

Import the DigiCert CA root certificate into the WLC

If the WLC uses a root certificate not signed by DigiCert CA, one will see the **https: SSL certificate problem: unable to get local issuer certificate** error.

Step 1. Go to the link <https://global-root-ca.chain-demos.digicert.com/info/index.html>, copy the root certificate content to any text editor and save the file with a .cer extension i.e. CertCA.cer

Step 2. Copy the .cer file to a TFTP server which needs to be reachable by the WLC.

Step 3. Log in to the WLC CLI and run these commands:

```
(Cisco Controller) > transfer download datatype cmx-serv-ca-cert
(Cisco Controller) > transfer download mode tftp
(Cisco Controller) > transfer download filename <your_filename>.cer
(Cisco Controller) > transfer download path <path_to_file>
(Cisco Controller) > transfer download serverip <your_tftp_server_ip>
(Cisco Controller) > transfer download start
```

Step 4. Reboot the WLC for the changes to take effect.

Note: if the network deployment contains WLCs in an anchor and foreign setup, you must import the certificate to both WLCs

Add the WLC to Cisco DNA spaces

Step 1: Navigate to **Setup > Wireless Networks > + Get Started**.

Connect your wireless network

Set up needed



Get your wireless network connected with Cisco DNA Spaces

There are multiple options to get connected based on your wireless network deployment.

+ Get started

Step 2. Select **Cisco AireOS/Catalyst**.

What type of wireless network do you have?

Cisco DNA Spaces works with most Cisco wireless networks including Cisco Meraki.

Cisco AireOS/Catalyst

Choose this for Cisco Aironet Access Points with Cisco Wireless LAN Controllers (WLC) or Cisco Connected Mobile Experiences (CMX On-Prem).

Select

Cisco Meraki

Choose this for Cisco Meraki networks with Meraki MR Access Points

Select

Need help? Use this planning guide to decide the best suited option based on your network.

Step 3. Choose **Connect WLC directly**

How do you want to connect to Cisco DNA Spaces?

Via Spaces Connector

Requires you to install Spaces Connector on a virtual machine in order to connect your WLC to Cisco DNA Spaces cloud.

Note: Not compatible with Catalyst 9800 controller

Select

Connect WLC directly

Requires WLC with software version 8.8 MR2 and above or Cisco Catalyst Wireless Controller with software version 16.12.2 and above. Wireless controller needs direct internet connectivity.

Select

Via CMX On-Prem

Configure your CMX On-Prem dashboard to send location updates to Cisco DNA Spaces, either by configuring the Notification URL in the Cisco CMX dashboard or by manually uploading a JSON file that contains your location hierarchy.

Select

Need help? Use this planning guide to decide the best suited option based on your network

Step 4. Click on **Customize Setup**

Prerequisites for WLC Direct Connect

- 1 You must have WLC version 8.3 & above and eWLC 16.10 & above releases
- 2 You must Install WLC Root Certificate

Customize Setup

< Back

Step 5. Click on **View Token** to get the cloud-services URL and cloud-services server ID Token for the WLC

Connect via AireOS WLC Direct Connector

AireOS WLC Direct Connector is an easy way to get your wireless network connected to Cisco DNA Spaces. No need to upgrade Wireless LAN Controllers or reconfigure your wireless network.

- 1 **Install Root Certificate**
You can install the certificate from WLC CLI
[View root certificate](#)
- 2 **Configure Token in WLC**
Configure the token in WLC to establish the connection.

No Controllers added | [View Token](#)
- 3 **Import Controllers into Location Hierarchy**
Once the controllers are connected, you can import them into location hierarchy

No Controllers added | [Import Controllers](#)

Need Help?

Access the below links to view detailed help.

- [View Configuration Steps](#)
- [System Requirements](#)
- [Frequently Asked Questions](#)

Step 6. Log in to the WLC CLI and run these commands:

```
(Cisco Controller) > config cloud-services cmx disable  
(Cisco Controller) > config cloud-services server url https://<Customer>.<Domain> <IP Address>  
(Cisco Controller) > config cloud-services server id_token <Token>
```

```
(Cisco Controller) > config network dns serverip <dns_server_ip>
(Cisco Controller) > config cloud-services cmx enable
```

Import the WLC to Cisco DNA Spaces

Step 1. Navigate to **Setup > Wireless Networks**, and click on **Import Controllers**

Connect your wireless network

Connect via AireOS WLC Direct Connector

AireOS WLC Direct Connector is an easy way to get your wireless network connected to Cisco DNA Spaces. No need to upgrade Wireless LAN Controllers.

1 Install Root Certificate

You can install the certificate from WLC CLI
[View root certificate](#)

2 Configure Token in WLC

Configure the token in WLC to establish the connection.

1

Total controller(s)

[View Token](#)

3 Import Controllers into Location Hierarchy

Once the controllers are connected, you can import them into location hierarchy

No Controllers added

[Import Controllers](#)

Step 2. Choose the location where you want to import controllers and click **Next**. If this is the first time you import a controller, you may see the default location i.e. your Cisco DNA Spaces account Name

Import Controllers



Where do you want to import this Controller

Choose a location that you want to import this controller.

Search Locations

AndresSilva



Step 3. Check the IP address of the WLC you want to add. Then click **Next**.

Select the Controller(s) that you want to import

NOTE: The Controller(s) will be added as a new WLC under "AndresSilva"

		Q
<input checked="" type="checkbox"/>	10.10.30.240	2 Aps

Step 4. Select the locations and click **Finish**.

Note: Cisco DNA Spaces will automatically group the Access Points (APs) based on the prefix of their names and creates networks. If you want to maintain the same grouping, select the networks. If the location is not as per your business location, then uncheck the **Select All** option. If the APs are not grouped, network names are not displayed.

Locations

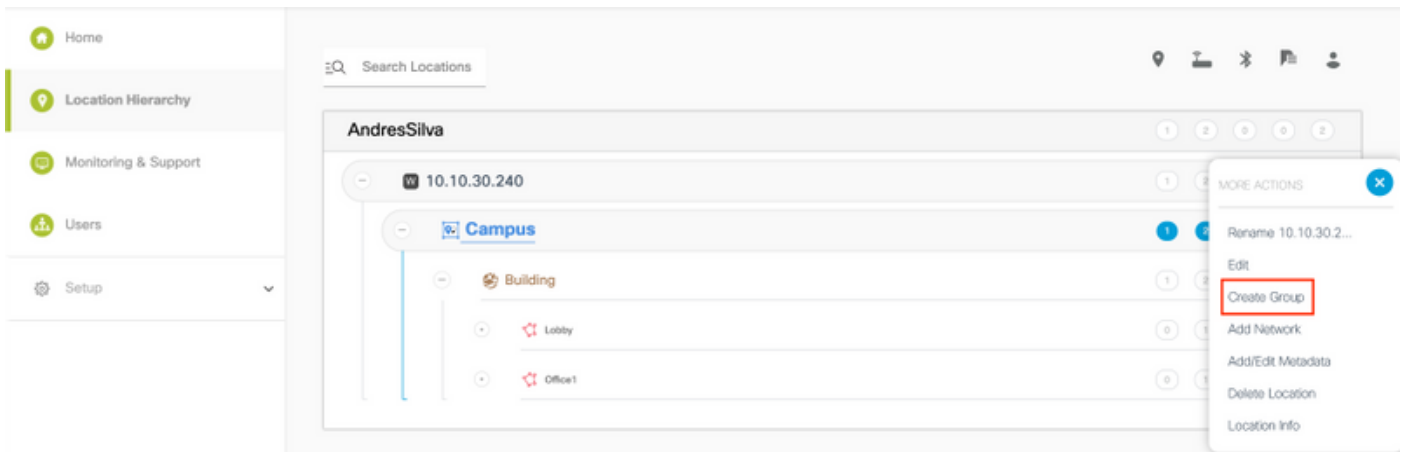
Following are auto discovered locations, select the locations which you wish to add.

No Networks are available

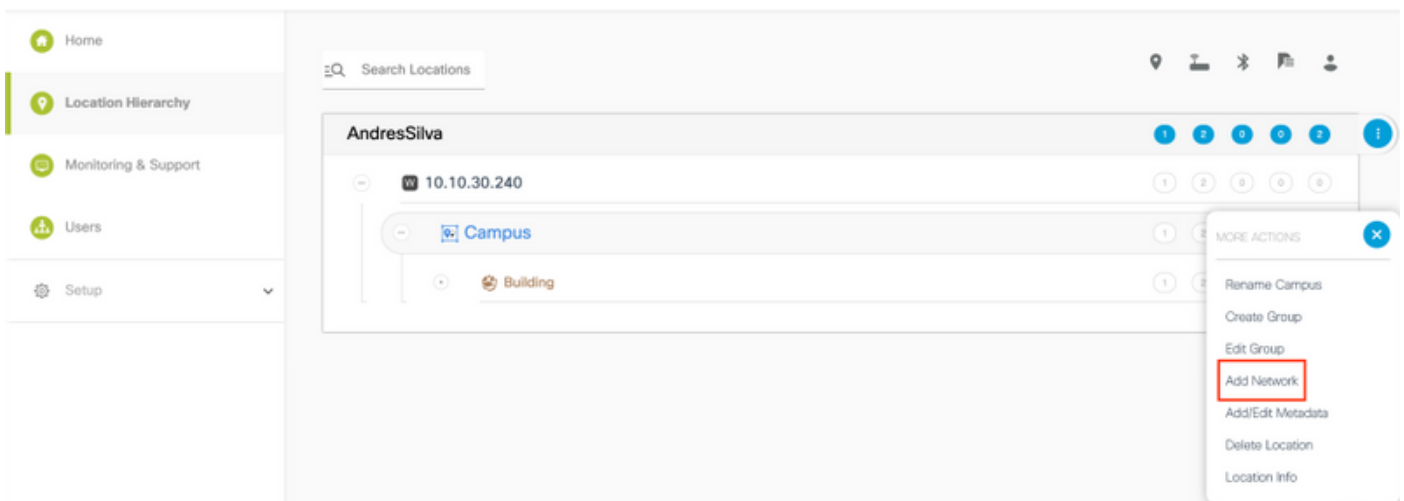
Organize the Location Hierarchy on Cisco DNA Spaces

If a new location hierarchy is desired or if no locations were added in the step 4 of the **Import the WLC to Cisco DNA Spaces** section, you can configure them manually.

Step 1. Navigate to **Location Hierarchy**, hover the mouse on the existing wireless controller and create a group. Groups organize multiple locations or zones based on geolocation, brand or any other type of grouping depending on the business.

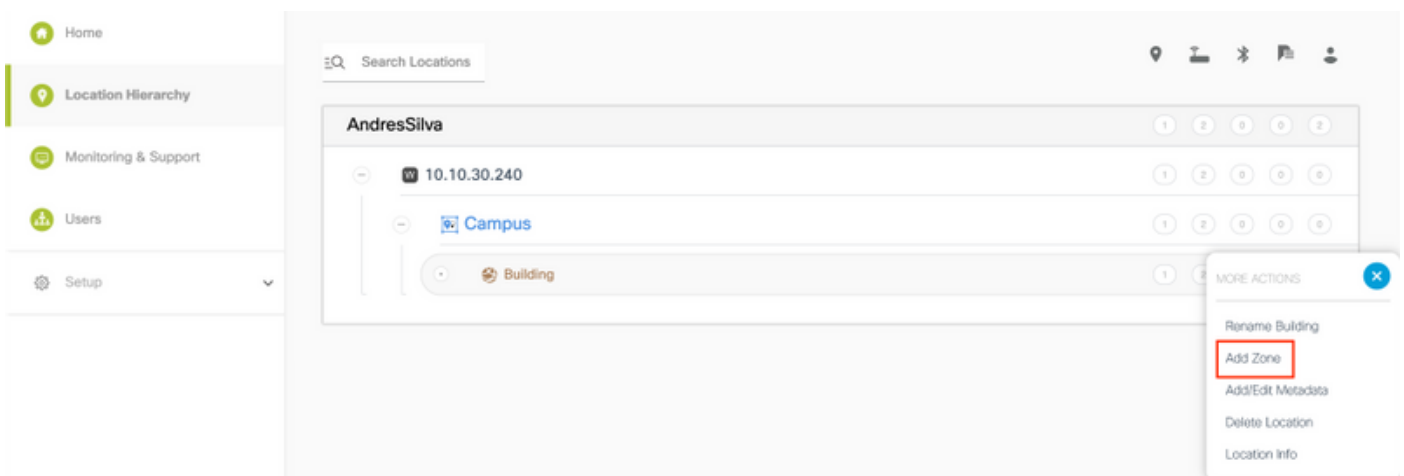


Step 2. Hover the mouse on the Group and select **Add Network**. A network or location is defined in Cisco DNA Spaces as all access points within a physical building consolidated as a Location.



Note: This is the most important node in the Location Hierarchy as business insights and location analytics calculations are generated from here.

Step 3. Hover the mouse on the Network and select **Add Zone**. A zone is a collection of access points within a section of a building/location. It can be defined based on the departments in a physical building or an organization.



Step 4. Configure the **Zone Name** and select the APs for the zone, and click **Add**:

Add Zone

Search icon

X

Lobby

Select Access Points

Network Access Points

- 14-MX-Lobby-1 (00:f2:8b:26:e5:d0)
- 14-MX-Office1-1 (f4:db:e6:34:4d:00)

Add

Repeat steps 3 and 4 as many times as needed.

Verify

To confirm the connectivity status between the WLC and Cisco DNA spaces, run the **show cloud-services cmx summary** command. The result should be as follows:

```
(Cisco Controller) > show cloud-services cmx summary
```

```
CMX Service
```

```
Server ..... https://andressilva.dnaspaces.io
IP Address..... 52.20.144.155
Connectivity..... https: UP
Service Status ..... Active
Last Request Status..... HTTP/1.1 200 OK

Heartbeat Status ..... OK
Payload Compression type ..... gzip
```

Troubleshoot

There is currently no specific troubleshooting information available for this configuration.