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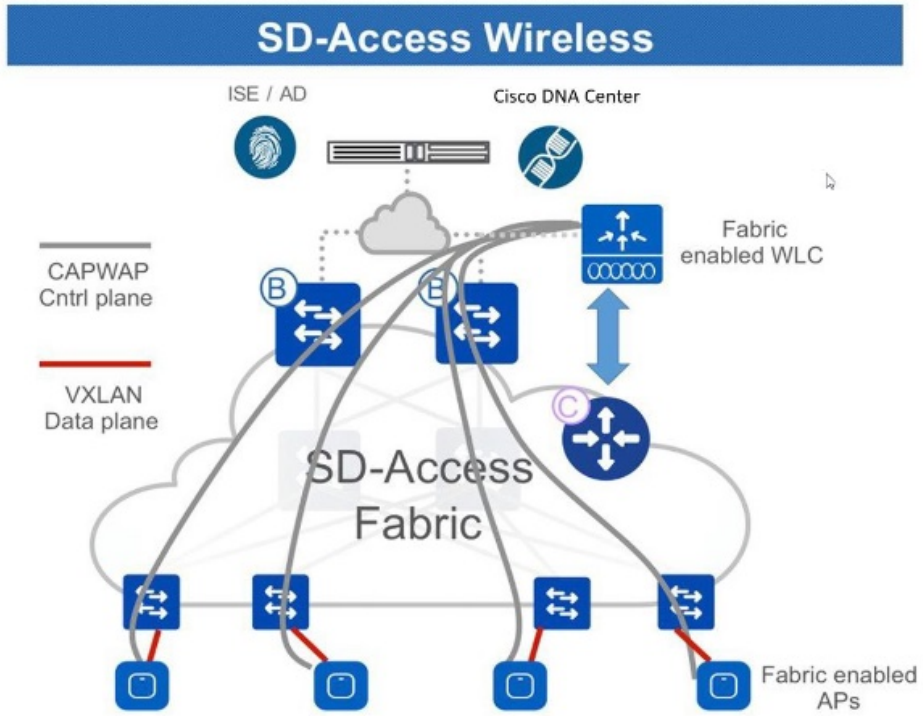
AP Migration from Traditional Wireless to SD-Access Fabric

SD-Access wireless architecture integrates wireless access into the SD-Access fabric to gain all the advantages of the fabric and Cisco DNA Center automation. Over The Top (OTT) wireless architecture involves running a traditional wireless on top of the fabric network.

Figure 1: SD-Access Wireless Architecture



This guide describes how to migrate APs from a traditional wireless or OTT network to Cisco SD-Access fabric network using Cisco DNA Center.

This guide is based on Cisco DNA Center 2.3.3; steps and examples may vary based on your Cisco DNA Center version.

Prerequisites

Ensure the following:

- You have set up a Cisco SD-Access fabric network using Cisco DNA Center.
- The devices involved in the migration are discovered and available in the Cisco DNA Center inventory.

Scenario 1: Migrate APs that are not managed by Cisco DNA Center

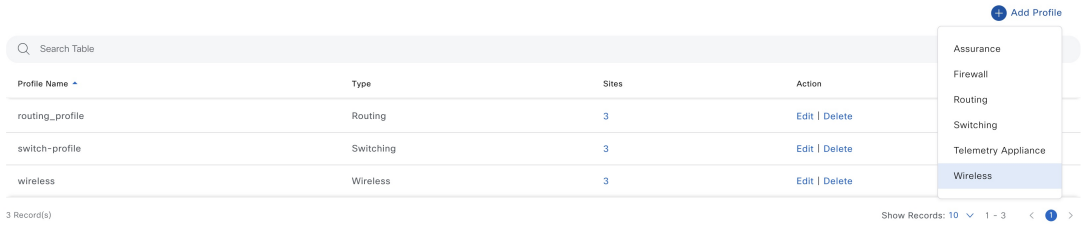
In this scenario, APs belong to a traditional wireless network that is not managed by Cisco DNA Center. Migration involves deploying a new Cisco SD-Access fabric wireless controller using Cisco DNA Center and then migrating the APs to the fabric wireless controller.

Procedure

Step 1 Create a network profile for the fabric network and assign it to the sites to be migrated.

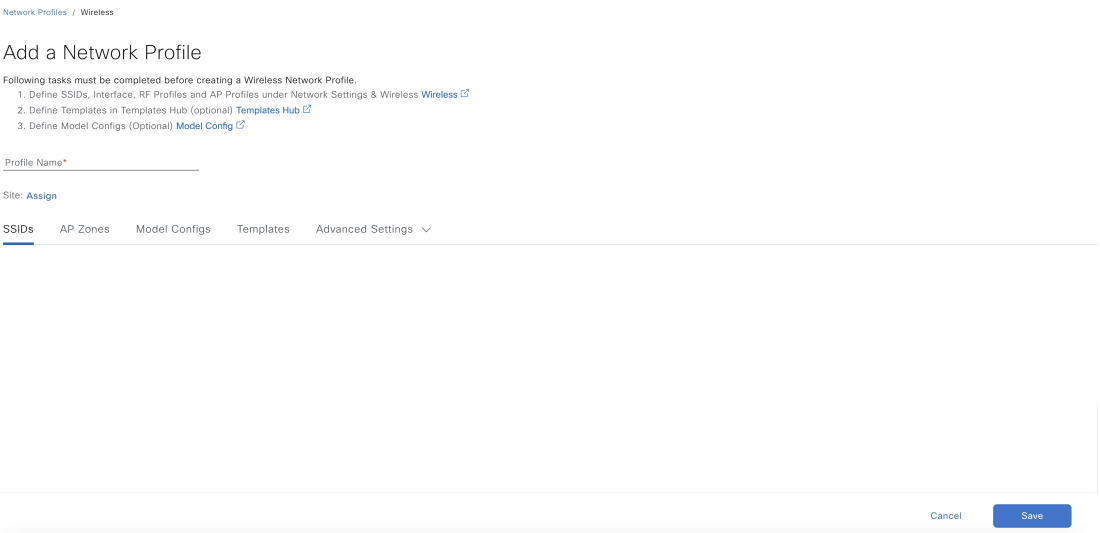
a) In the Cisco DNA Center home page, click the menu icon and choose **Design** > **Network Profiles**.

b) Click **Add Profile** and choose **Wireless**.



c) Enter a valid profile name in the **Profile Name** field.

d) Click **Assign** to assign sites to the profile.



e) Configure the other required details and click **Save**.

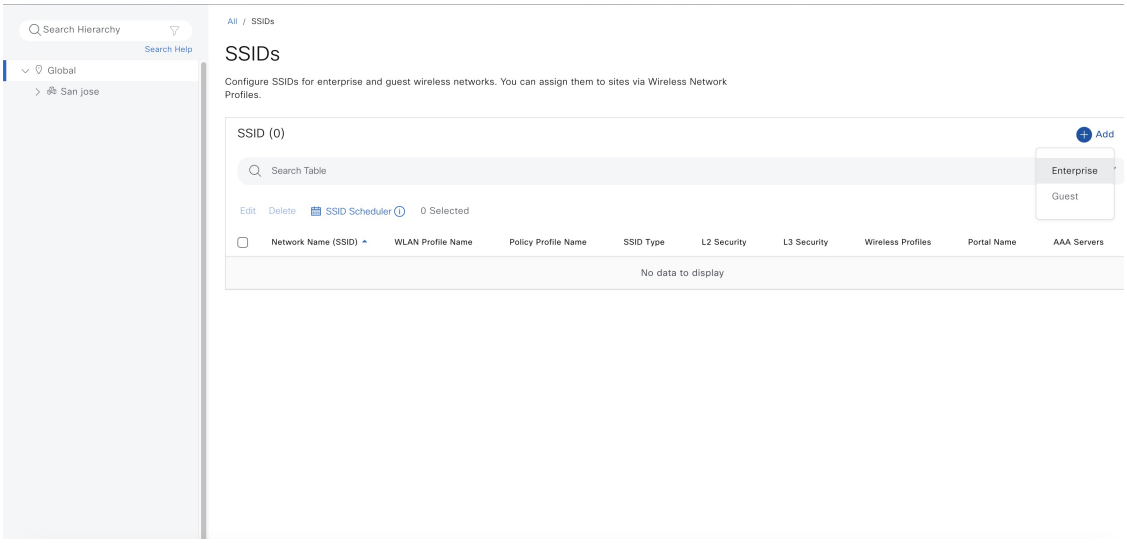
Step 2 Create SSIDs for the wireless fabric network and associate it to the fabric profile.

a) In the Cisco DNA Center home page, click the menu icon and choose **Design** > **Network Settings**.

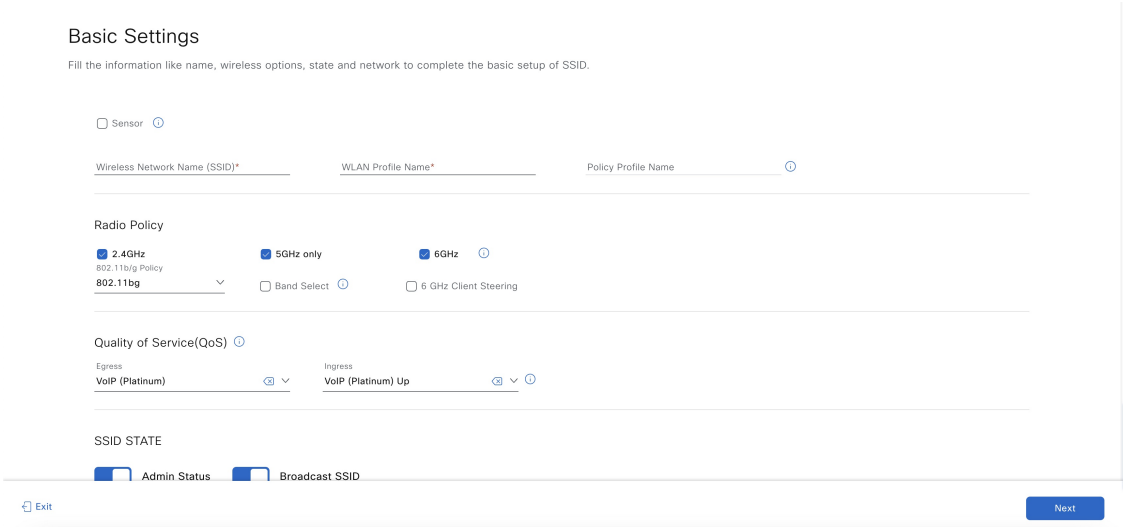
b) Click the **Wireless** tab.

c) From the left hierarchy tree, choose **Global**.

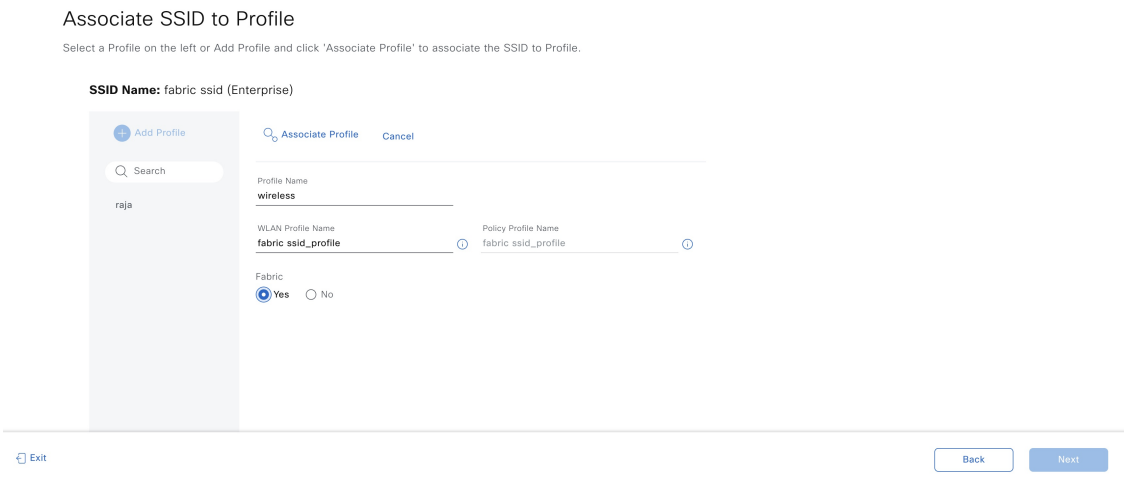
d) In the **SSID** table, click the **Add** icon, and choose **Enterprise**.



e) Configure the required settings.



f) Associate the SSID to the fabric profile.



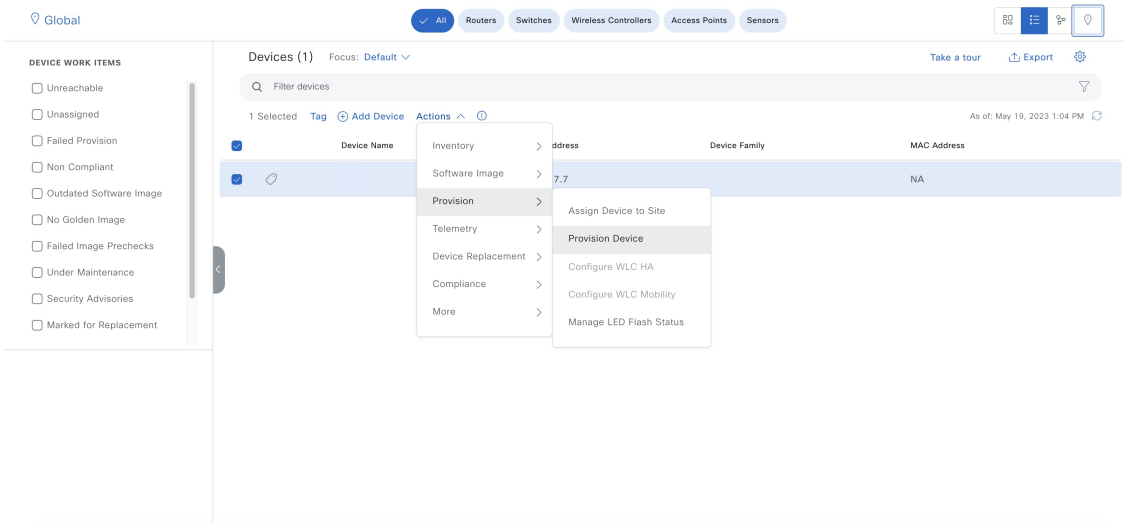
g) Configure the other required details and click **Save**.

Step 3 Provision the wireless controller.

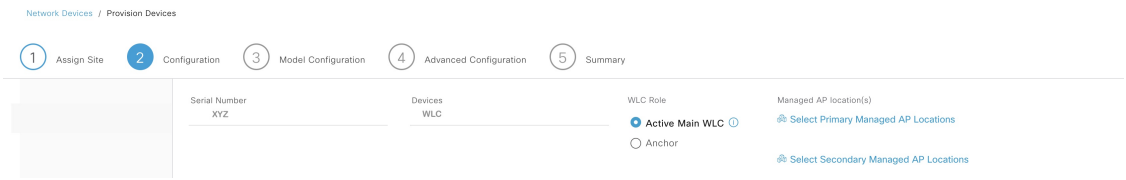
a) In the Cisco DNA Center home page, click the menu icon and choose **Provision** > **Inventory**.

b) Select the wireless controller that you want to provision.

c) From the **Actions** drop-down list, choose **Provision** > **Provision Device**.



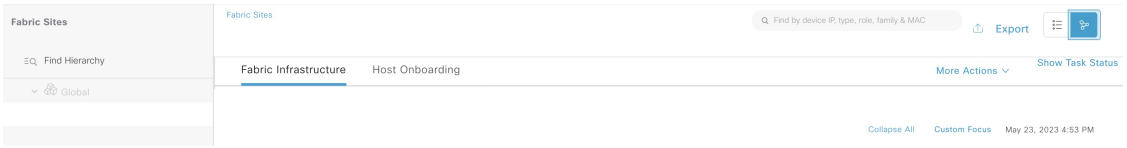
In the **Select Primary Managed AP Locations** option, choose the sites to be migrated.



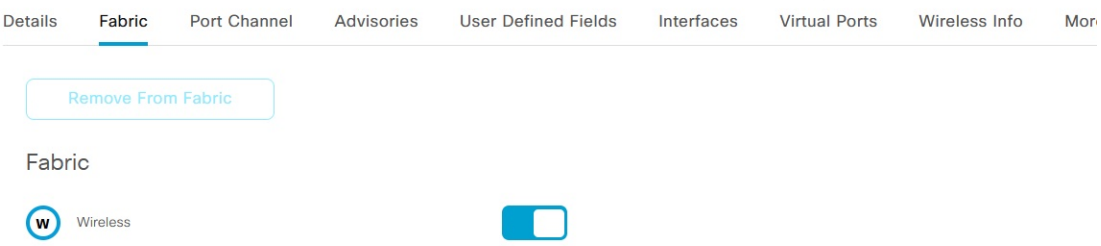
d) Configure the other required settings and click **Deploy**.

Step 4 Add the wireless controller to the fabric network.

a) In the Cisco DNA Center home page, click the menu icon and choose **Provision** > **Fabric Sites**.
b) Select the fabric site.
c) Click the **Fabric Infrastructure** tab.



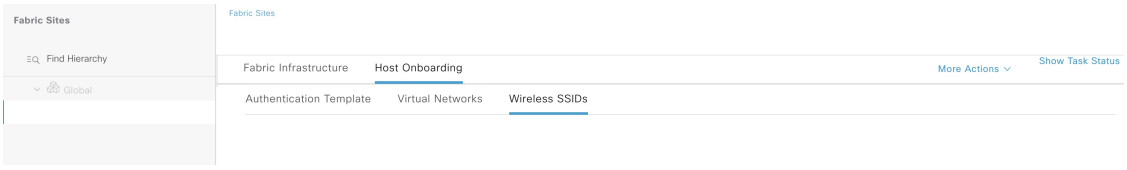
d) Choose the wireless controller that you want to add to the fabric network.
e) In the **Fabric** window, click the **Wireless** toggle button and click **Add**.



The wireless controller is added to the fabric network.

Step 5 Assign an IP pool to the SSID.

a) In the Cisco DNA Center home page, click the menu icon and choose **Provision** > **Fabric Sites**.
b) Select the fabric site.
c) Click the **Wireless SSIDs** tab.



d) Choose the SSID and assign an IP address pool.

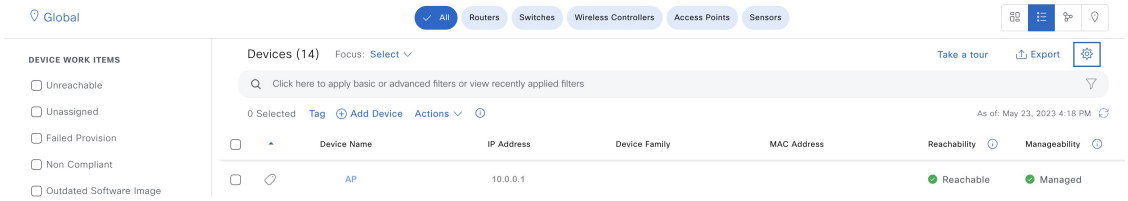
Step 6 On the DHCP server, configure the DHCP Option 43 in the INFRA VN to point to the fabric wireless controller.

Step 7 On the traditional wireless controller GUI, select an AP and perform a factory-reset.

Step 8 Connect the AP to the fabric edge.

The AP gets the IP address from the INFRA VN and joins the fabric wireless controller.

Step 9 Check the Cisco DNA Center inventory to ensure that the AP is reachable and in a managed state. **Resync** the fabric wireless controller, if needed.



Step 10 Provision the AP.

a) In the Cisco DNA Center home page, click the menu icon and choose **Provision** > **Inventory**.

b) Select the AP that you want to provision.

c) From the **Actions** drop-down list, choose **Provision** > **Provision Device**.

d) Configure other required settings and click **Deploy**.

Step 11 Repeat Step 8 through Step 10 to migrate the remaining APs.

What to do next

Ensure that there are access tunnels for all the migrated APs on the fabric edge nodes and the APs are shown as fabric-enabled on the fabric wireless controller.

Ensure that the APs are broadcasting the fabric SSIDs. You can check the SSID status on the AP using the **run show dot11 wlan** command; the SSIDs must be in *up* state.

Scenario 2: Migrate Local Mode APs (managed by Cisco DNA Center)

In this scenario, APs belong to a traditional or OTT wireless controller that is managed by Cisco DNA Center. Migration involves deploying a new Cisco SD-Access fabric wireless controller using Cisco DNA Center and migrating the APs to the fabric wireless controller. This scenario assumes that APs are already part of the INFRA VN and connected to the fabric edge and are in **Local** mode (central switching).

Before you begin

Ensure that APs are connected to the fabric edge nodes.

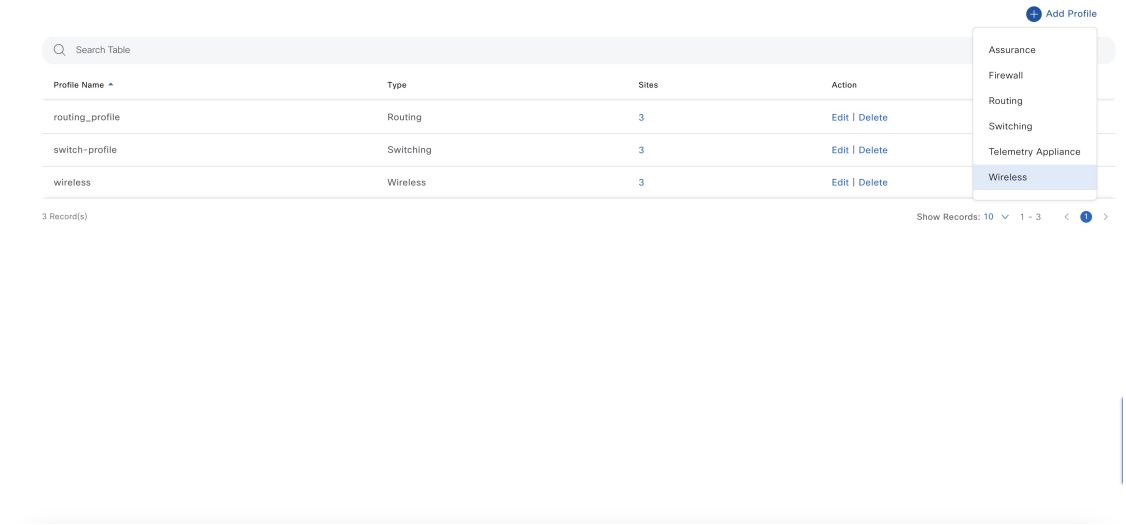
In this scenario, since the traditional or OTT wireless controller is already managing the fabric site, you must create two buildings under the network hierarchy, one for the OTT wireless controller and the other for the fabric wireless controller. For example, *Building 1* for the OTT wireless controller and *Building 2* for the fabric wireless controller. These buildings are used temporarily during the migration process for provisioning the wireless controllers.

Procedure

Step 1 Create a network profile for the fabric network and assign it to the new site (*Building 2*) created for the fabric wireless controller.

a) In the Cisco DNA Center home page, click the menu icon and choose **Design** > **Network Profiles**.

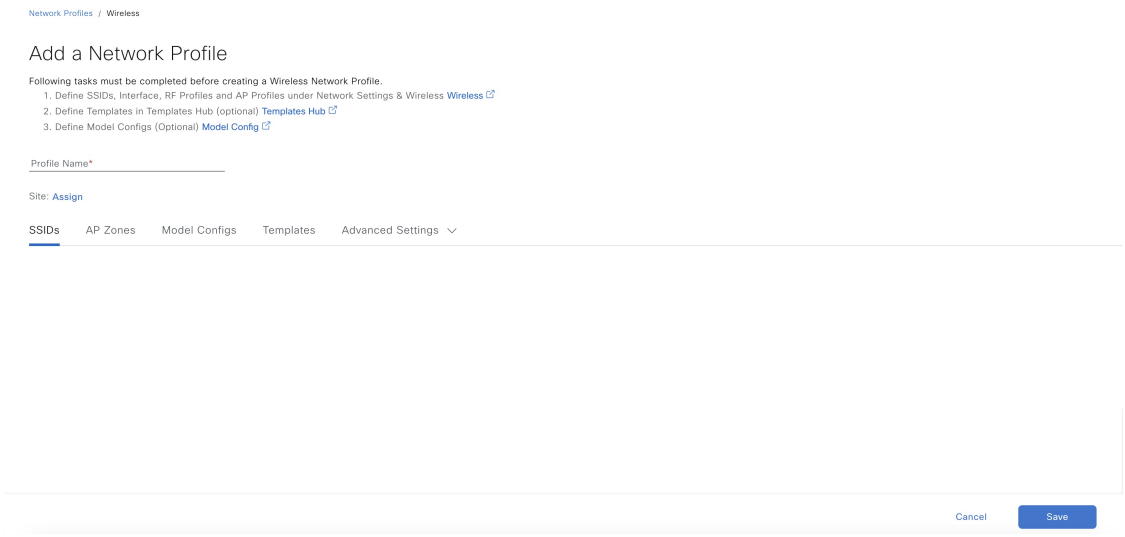
b) Click **Add Profile** and choose **Wireless**.



c) Enter a valid profile name in the **Profile Name** field.

d) Click **Assign** to assign sites to the profile.

Choose the site (*Building 2*) created for the fabric wireless controller.



e) Configure the other required details and click **Save**.

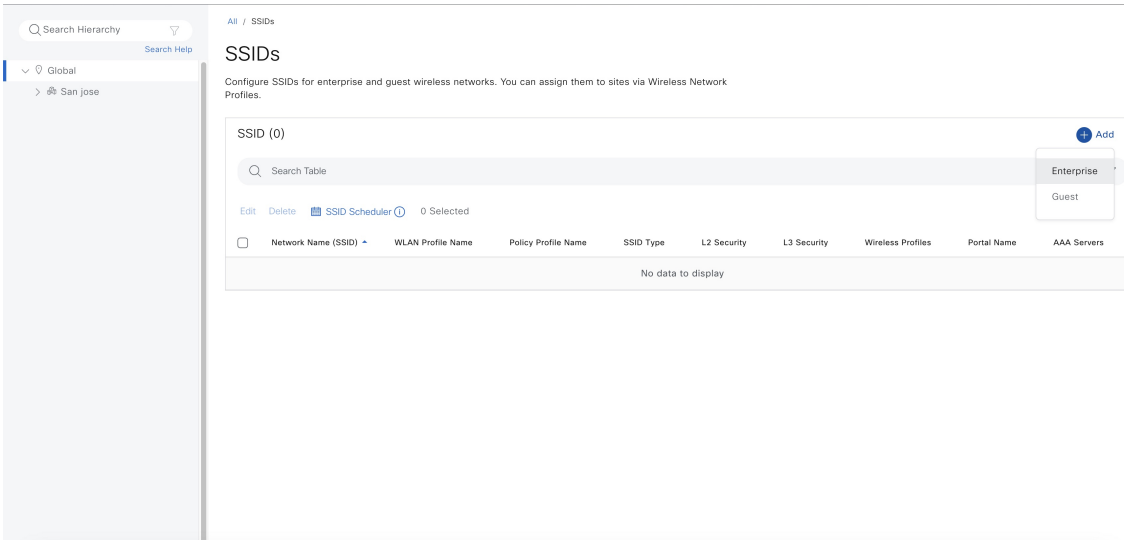
Step 2 Create SSIDs for the wireless fabric network and associate it to the fabric profile.

a) In the Cisco DNA Center home page, click the menu icon and choose **Design** > **Network Settings**.

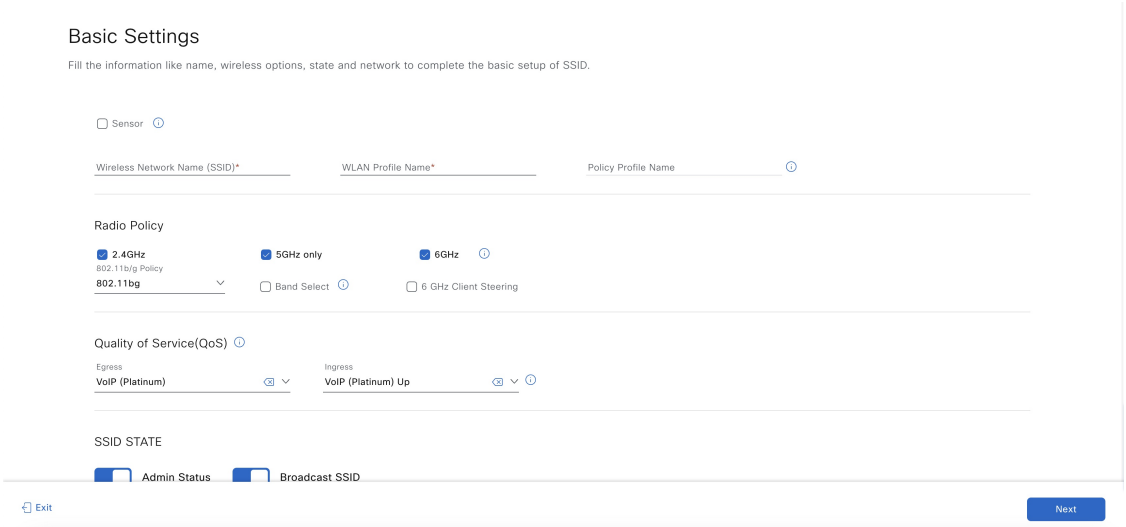
b) Click the **Wireless** tab.

c) From the left hierarchy tree, choose **Global**.

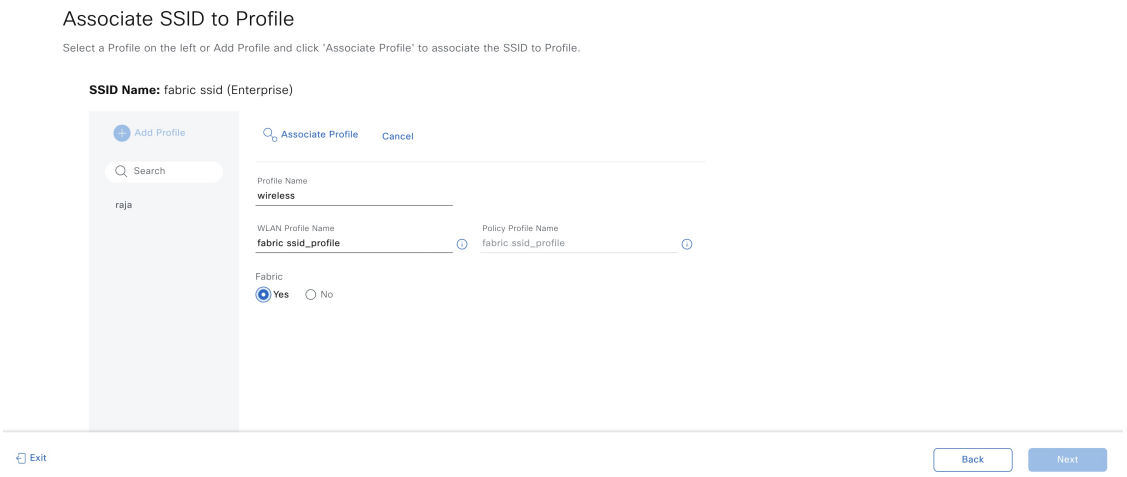
d) In the **SSID** table, click the **Add** icon, and choose **Enterprise**.



e) Configure the required settings.



f) Associate the SSID to the fabric profile.

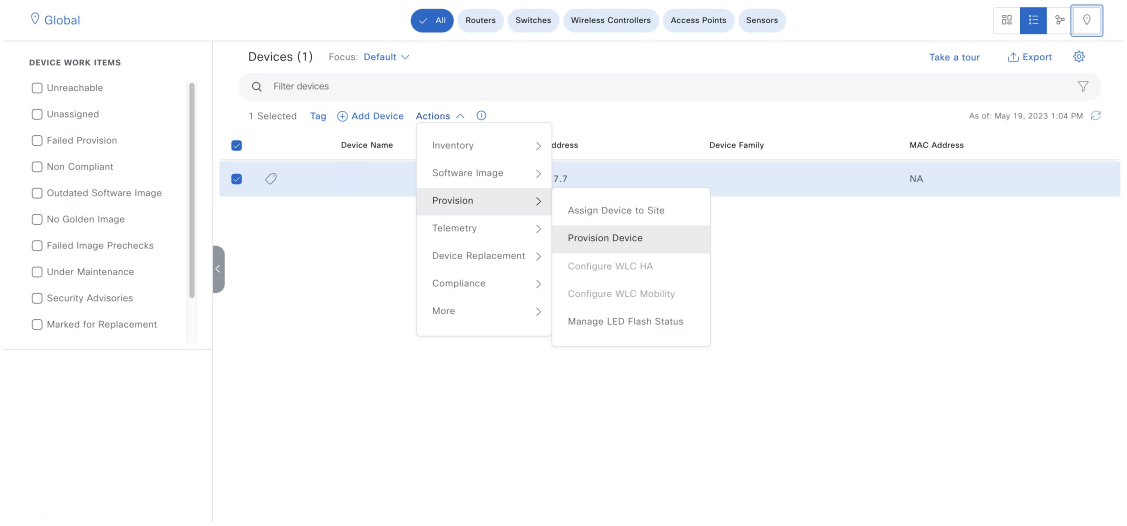


g) Configure the other required details and click **Save**.

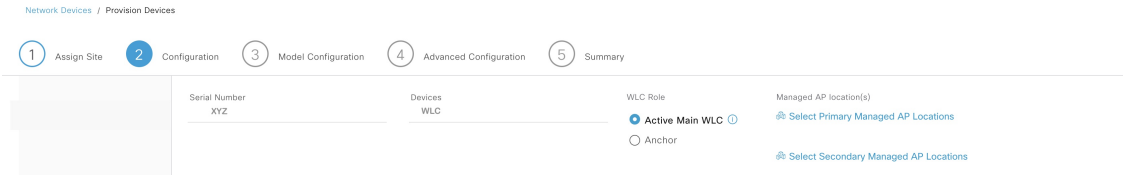
Step 3 Provision the fabric wireless controller.

Note Before provisioning, check if the OTT wireless controller has the new site (*Building 2*) created for the fabric wireless controller under managed locations. If it is, remove the site from the OTT wireless controller and reprovision it before adding the new site (*Building 2*) to the fabric wireless controller.

a) In the Cisco DNA Center home page, click the menu icon and choose **Provision** > **Inventory**.
b) Select the wireless controller that you want to provision.
c) From the **Actions** drop-down list, choose **Provision** > **Provision Device**.



Use the **Select Primary Managed AP Locations** option and choose the new site (*Building 2*) created for the fabric controller.



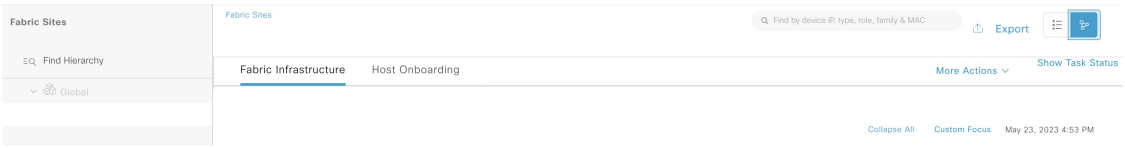
d) Configure the other required settings and click **Deploy**.

Step 4 Add the fabric wireless controller to the fabric network.

a) In the Cisco DNA Center home page, click the menu icon and choose **Provision** > **Fabric Sites**.

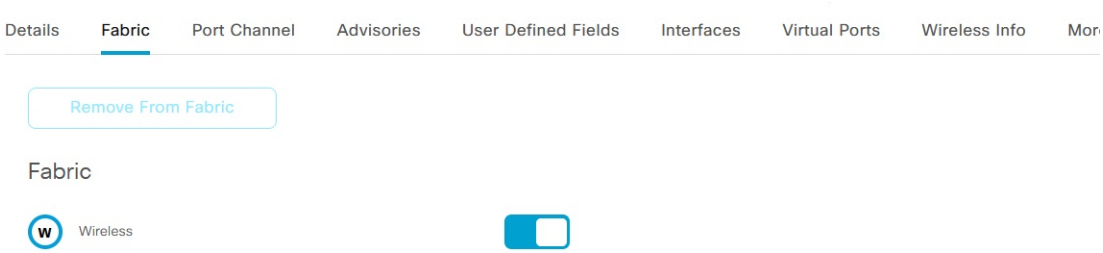
b) Select the fabric site.

c) Click the **Fabric Infrastructure** tab.



d) Choose the wireless controller that you want to add to the fabric network.

e) In the **Fabric** window, click the **Wireless** toggle button and click **Add**.



The wireless controller is added to the fabric network.

Step 5 Assign an IP pool to the SSID.

a) In the Cisco DNA Center home page, click the menu icon and choose **Provision** > **Fabric Sites**.

b) Select the fabric site.

c) Click the **Wireless SSIDs** tab.

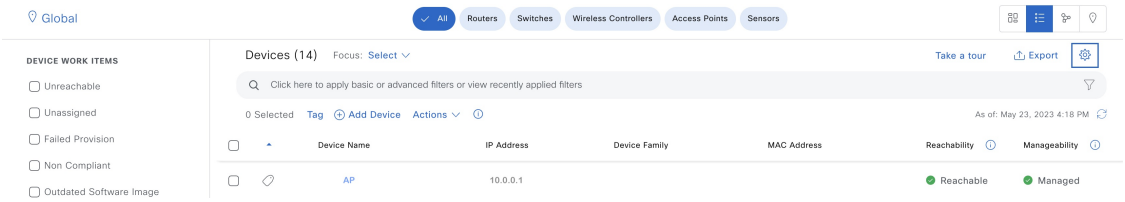
d) Choose the SSID and assign an IP address pool.

Step 6 On the DHCP server, configure the DHCP Option 43 in the INFRA VN to point to the fabric wireless controller.

Step 7 On the wireless controller GUI, select an AP and perform a factory-reset.

The AP reboots, gets the IP address from the INFRA VN, and joins the fabric wireless controller.

Step 8 Check the Cisco DNA Center inventory to ensure that the AP is reachable and in a managed state. **Resync** the fabric wireless controller, if needed.

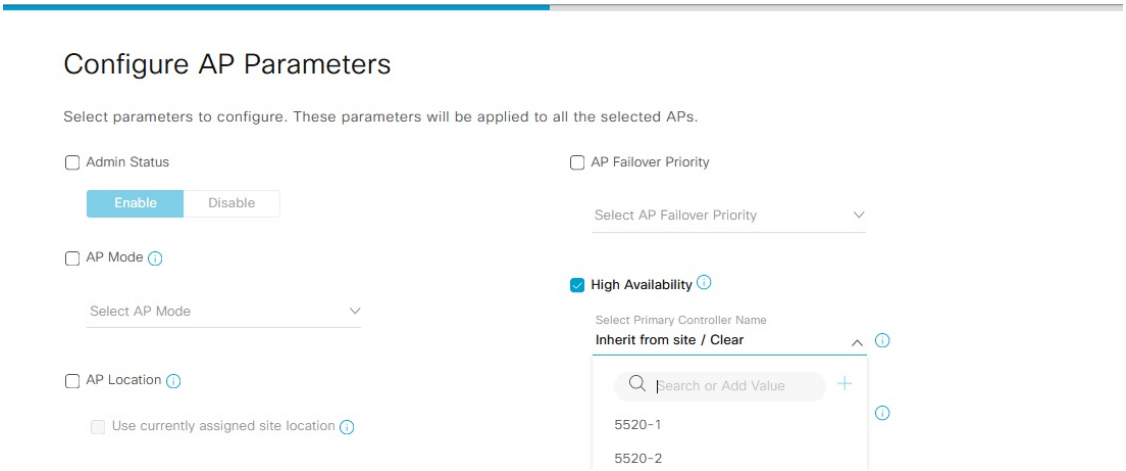


Step 9 Migrate the rest of the APs using the Cisco DNA Center **Configure Access Points** workflow.

a) In the Cisco DNA Center home page, click the menu icon and choose **Workflows** > **Configure Access Points**.

b) Click the **Configure AP And Radio Parameters** radio button and choose the **Configure AP Parameters** option.

c) Configure fabric wireless controller as the primary controller and OTT wireless controller as the secondary controller.



d) Configure the other AP parameters, if needed, and complete the workflow.

Step 10 Log in to the fabric wireless controller GUI and make sure that AP has joined the wireless controller.

Step 11 **Resync** the fabric and OTT wireless controllers on the Cisco DNA Center GUI.

Step 12 Provision the OTT wireless controller by removing the sites to be migrated and assigning the new site (*Building 1*) under managed AP locations.

Step 13 Assign the sites to be migrated in the fabric profile.

Step 14 Provision the fabric wireless controller by adding the sites to be migrated and removing the new site (*Building 2*) from the managed AP locations.

Step 15 Provision the migrated APs.

a) In the Cisco DNA Center home page, click the menu icon and choose **Provision** > **Inventory**.

b) Select the AP that you want to provision.

c) From the **Actions** drop-down list, choose **Provision** > **Provision Device**.

d) Configure the required settings and click **Deploy**.

Ensure that the APs have the correct site tag, RF tag, and policy tag.

Step 16 Use the above procedure for migrating additional sites, if required.

Step 17 After migrating all the sites under the OTT wireless controller, remove the OTT wireless controller from Cisco DNA Center and delete the temporary sites that were created (*Building 1* and *Building 2*).

What to do next

Ensure that there are access tunnels for all the fabric APs on the fabric edge nodes and the APs are shown as fabric-enabled on the fabric wireless controller.

Ensure that the APs are broadcasting the fabric SSIDs. You can check the SSID status on the AP using the **run show dot11 wlan** command; the SSIDs must be in *up* state.

Scenario 3: Migrate Flex Mode APs (managed by Cisco DNA Center)

In this scenario, APs belong to a traditional or OTT wireless controller that is managed by Cisco DNA Center. Migration involves deploying a new Cisco SD-Access fabric wireless controller using Cisco DNA Center and migrating the APs to the fabric wireless controller. This scenario assumes that APs are already part of the INFRA VN and connected to the fabric edge and are in **FlexConnect** mode (local switching).

Before you begin

Ensure that APs are connected to the fabric edge nodes.

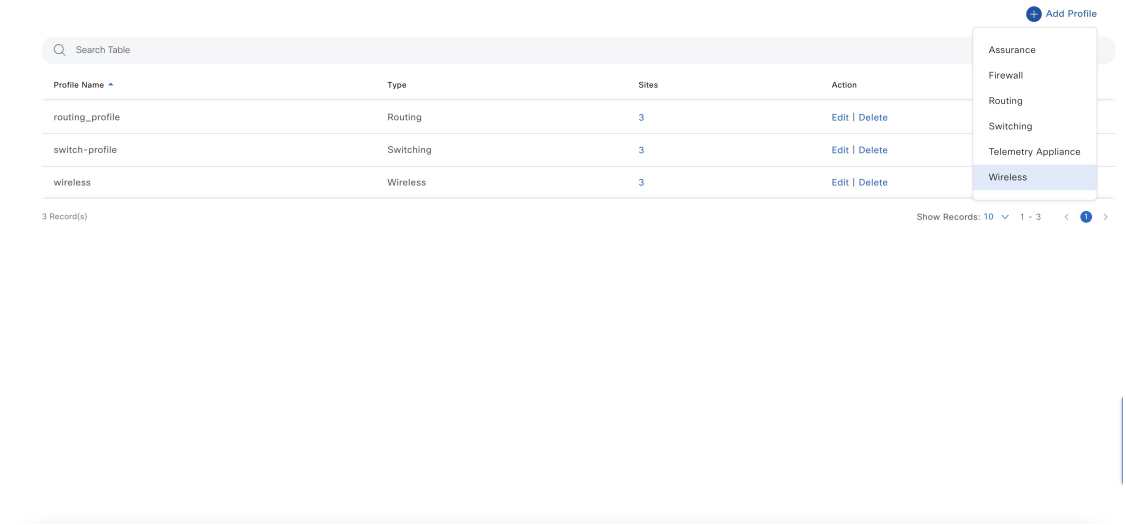
In this scenario, since the traditional or OTT wireless controller is already managing the fabric site, you must create two buildings under the network hierarchy, one for the OTT wireless controller and the other for the fabric wireless controller. For example, *Building 1* for the OTT wireless controller and *Building 2* for the fabric wireless controller. These buildings are used temporarily during the migration process for provisioning the wireless controllers.

Procedure

Step 1 Create a network profile for the fabric network and assign it to the new site (*Building 2*) created for the fabric wireless controller.

a) In the Cisco DNA Center home page, click the menu icon and choose **Design** > **Network Profiles**.

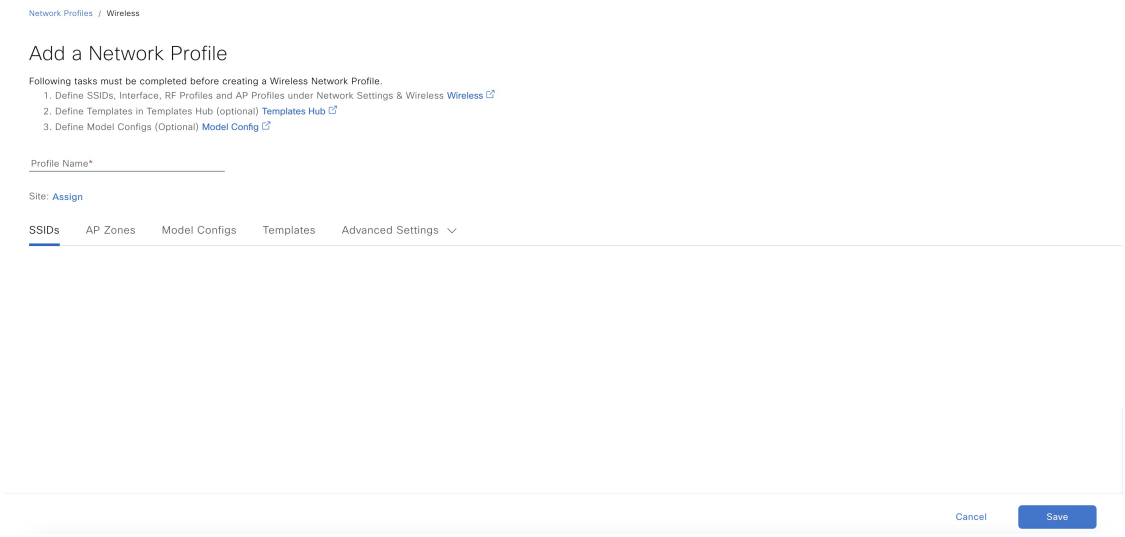
b) Click **Add Profile** and choose **Wireless**.



c) Enter a valid profile name in the **Profile Name** field.

d) Click **Assign** to assign sites to the profile.

Choose the site (*Building 2*) created for the fabric wireless controller.



e) Configure the other required details and click **Save**.

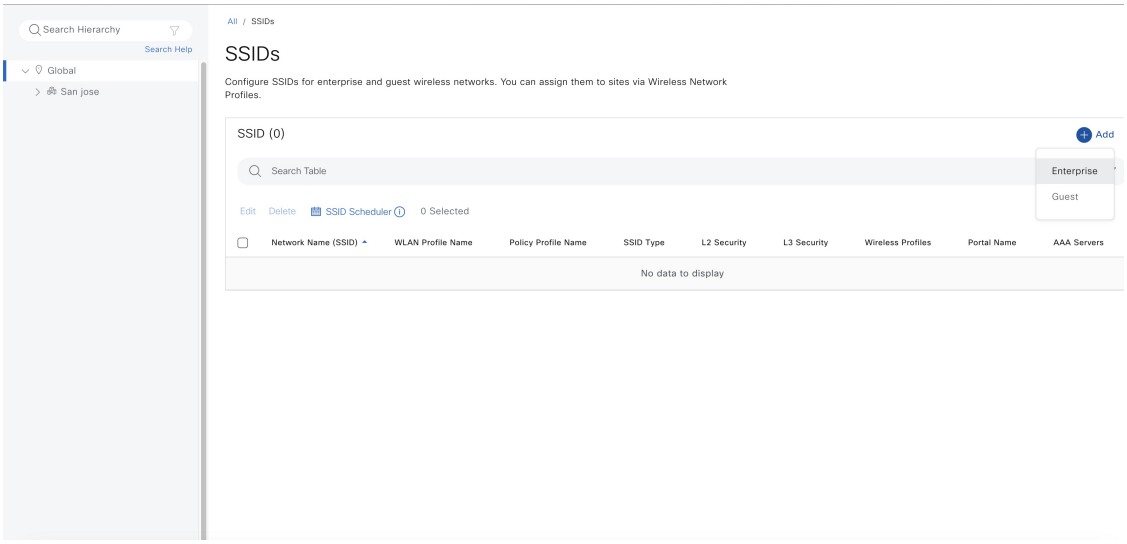
Step 2 Create SSIDs for the wireless fabric network and associate it to the fabric profile.

a) In the Cisco DNA Center home page, click the menu icon and choose **Design** > **Network Settings**.

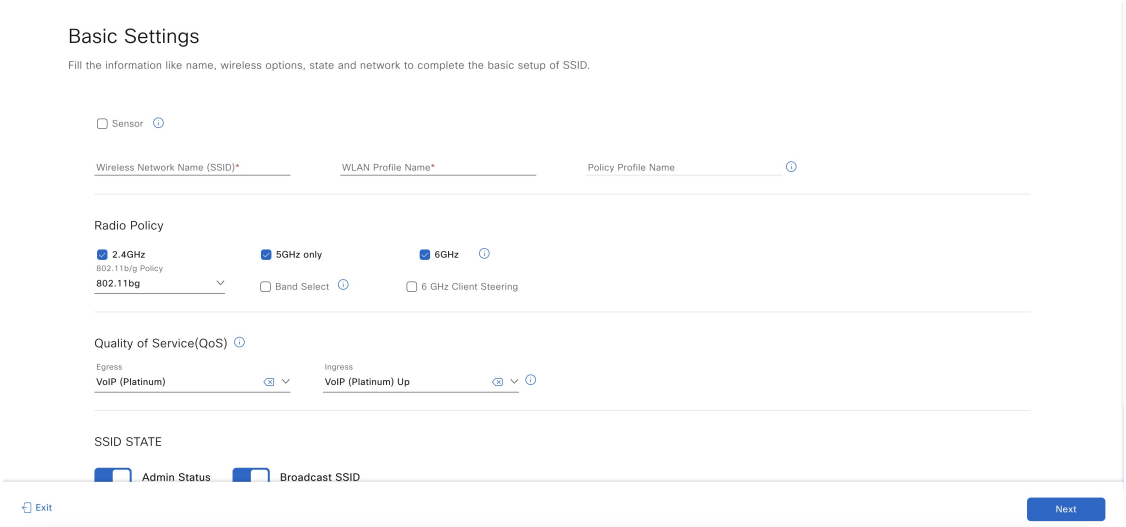
b) Click the **Wireless** tab.

c) From the left hierarchy tree, choose **Global**.

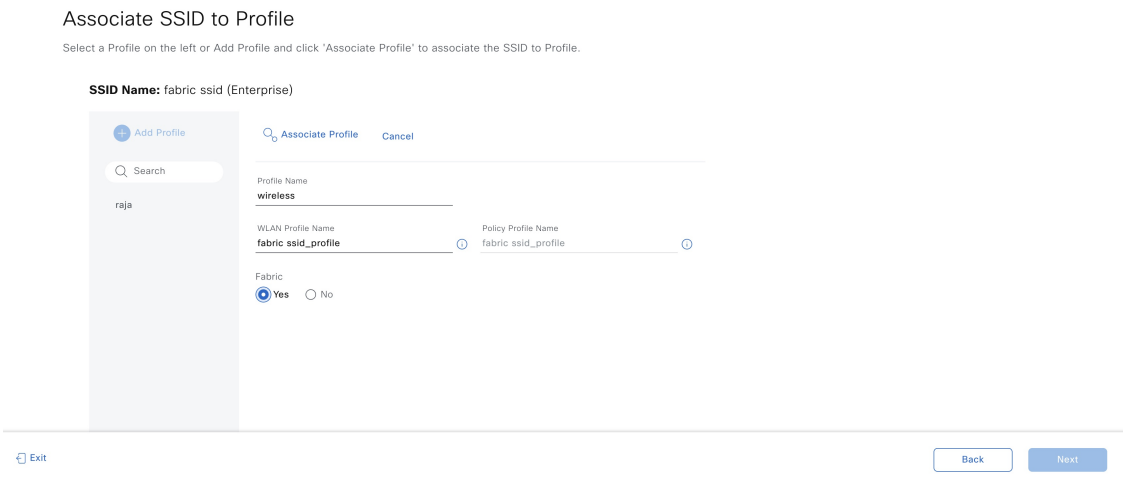
d) In the **SSID** table, click the **Add** icon, and choose **Enterprise**.



e) Configure the required settings.



f) Associate the SSID to the fabric profile.

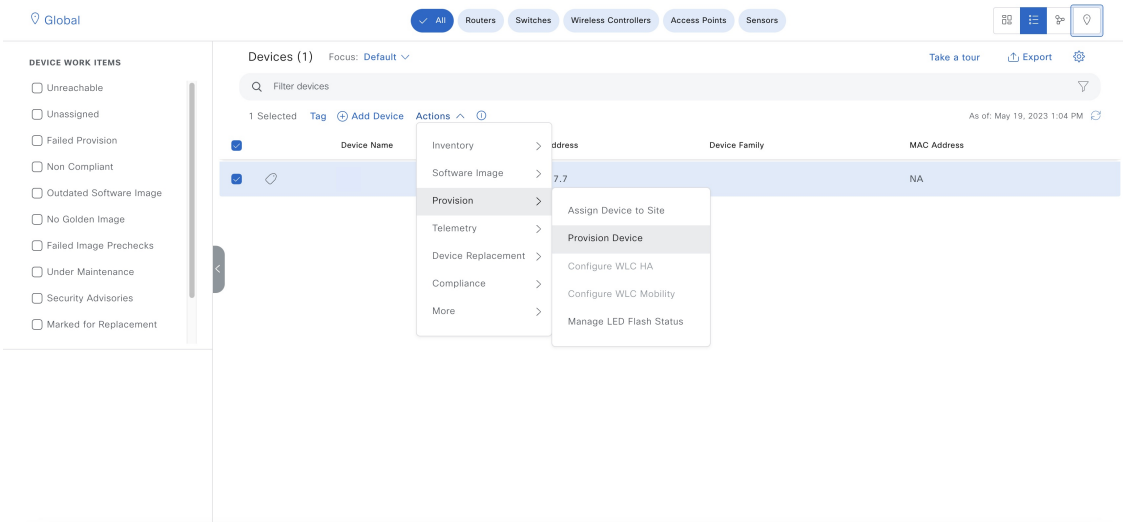


g) Configure the other required details and click **Save**.

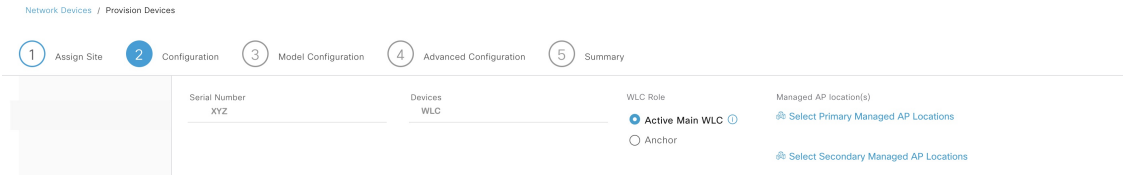
Step 3 Provision the fabric wireless controller.

Note Before provisioning, check if the OTT wireless controller has the new site (*Building 2*) created for the fabric wireless controller under managed locations. If it is, remove the site from the OTT wireless controller and reprovision it before adding the new site (*Building 2*) to the fabric wireless controller.

a) In the Cisco DNA Center home page, click the menu icon and choose **Provision** > **Inventory**.
b) Select the wireless controller that you want to provision.
c) From the **Actions** drop-down list, choose **Provision** > **Provision Device**.



Use the **Select Primary Managed AP Locations** option and choose the new site (*Building 2*) created for the fabric controller.



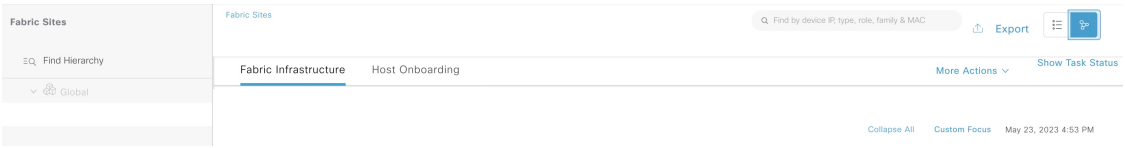
d) Configure the other required settings and click **Deploy**.

Step 4 Add the fabric wireless controller to the fabric network.

a) In the Cisco DNA Center home page, click the menu icon and choose **Provision** > **Fabric Sites**.

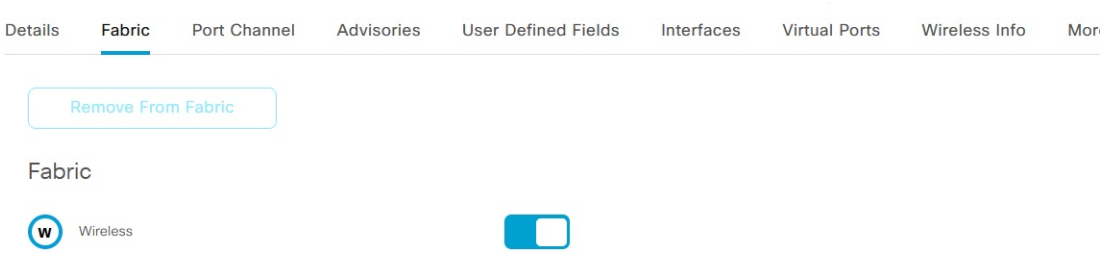
b) Select the fabric site.

c) Click the **Fabric Infrastructure** tab.



d) Choose the wireless controller that you want to add to the fabric network.

e) In the **Fabric** window, click the **Wireless** toggle button and click **Add**.



The wireless controller is added to the fabric network.

Step 5 Assign an IP pool to the SSID.

a) In the Cisco DNA Center home page, click the menu icon and choose **Provision** > **Fabric Sites**.

b) Select the fabric site.

c) Click the **Wireless SSIDs** tab.

d) Choose the SSID and assign an IP address pool.

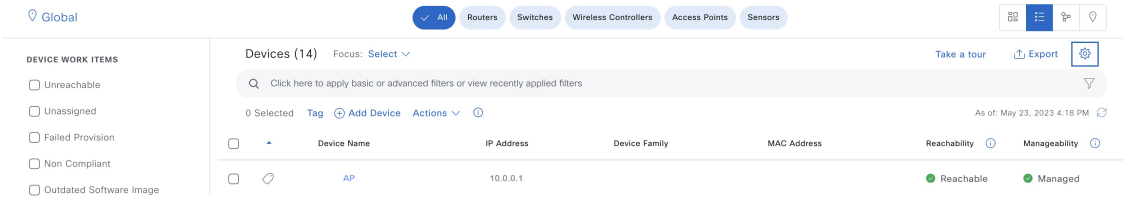
Step 6 On the DHCP server, configure the DHCP Option 43 in the INFRA VN to point to the fabric wireless controller.

Step 7 On the wireless controller GUI, select an AP and perform a factory-reset.

Step 8 Set the AP switchport to default value using the **default int <>** command on the switch.

The AP reboots, gets the IP address from the INFRA VN, and joins the fabric wireless controller.

Step 9 Check the Cisco DNA Center inventory to ensure that the AP is reachable and in a managed state. **Resync** the fabric wireless controller, if needed.

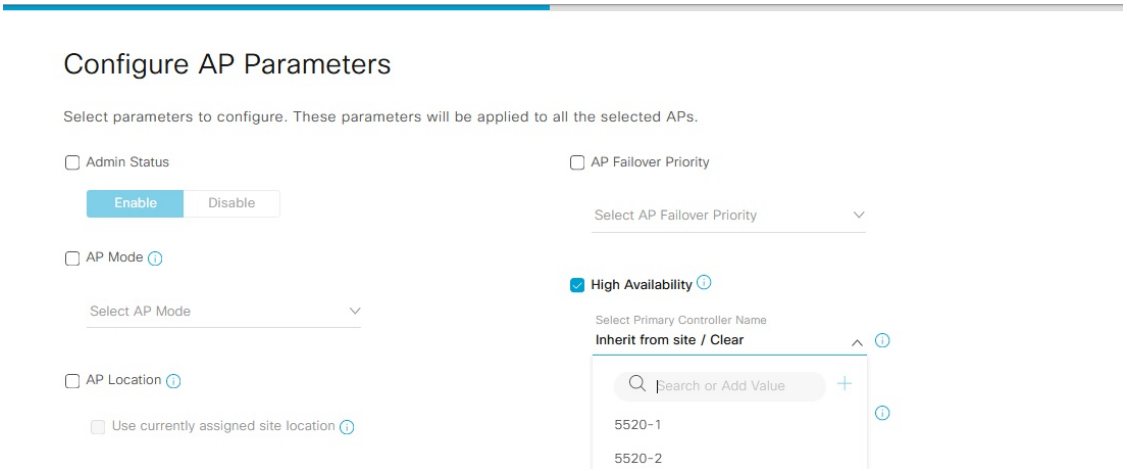


Step 10 Migrate the rest of the APs using the Cisco DNA Center **Configure Access Points** workflow.

a) In the Cisco DNA Center home page, click the menu icon and choose **Workflows** > **Configure Access Points**.

b) Click the **Configure AP And Radio Parameters** radio button and choose the **Configure AP Parameters** option.

c) Configure fabric wireless controller as the primary controller and OTT wireless controller as the secondary controller.



d) Configure the other AP parameters, if needed, and complete the workflow.

Step 11 Set the AP switchports to default values.

For bulk configurations, use Cisco DNA Center templates.

Step 12 Log in to the fabric wireless controller GUI and make sure that AP has joined the wireless controller.

Step 13 **Resync** the fabric and OTT wireless controllers on the Cisco DNA Center GUI.

Step 14 Provision the OTT wireless controller by removing the sites to be migrated and assigning the new site (*Building 1*) under managed AP locations.

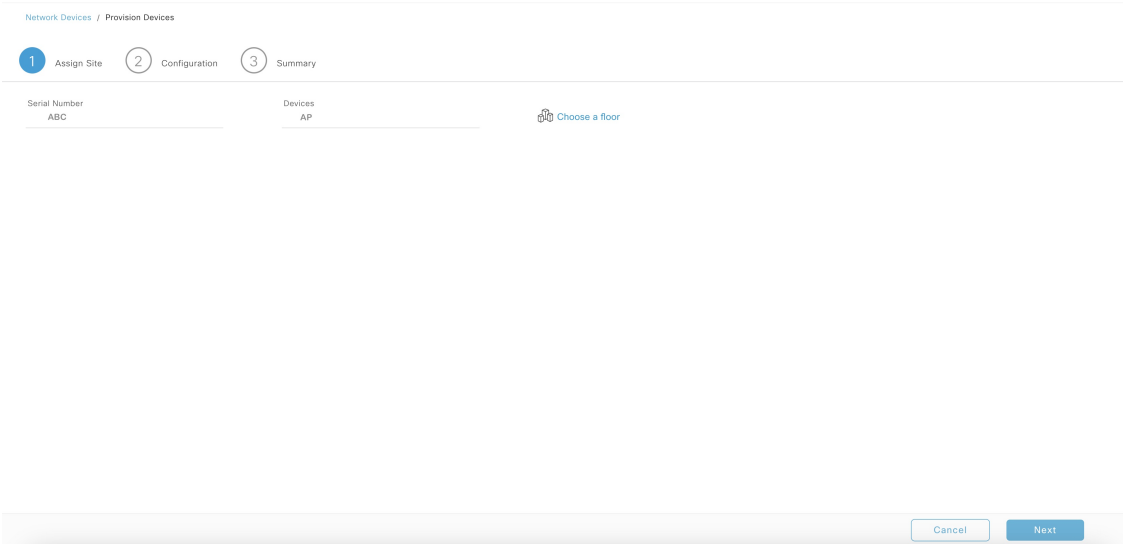
Step 15 Assign the sites to be migrated in the fabric profile.

Step 16 Provision the fabric wireless controller by adding the sites to be migrated and removing the new site (*Building 2*) from the managed AP locations.

Step 17 Provision the migrated APs.

a) In the Cisco DNA Center home page, click the menu icon and choose **Provision** > **Inventory**.

b) Select the AP that you want to provision.
c) From the **Actions** drop-down list, choose **Provision** > **Provision Device**.
d) Choose a floor and configure other required settings.



e) Click **Deploy**.

Ensure that the APs have the correct site tag, RF tag, and policy tag.

Step 18 Use the above procedure for migrating additional sites, if required.

Step 19 After migrating all the sites under the OTT wireless controller, remove the OTT wireless controller from Cisco DNA Center and delete the temporary sites that were created (*Building 1* and *Building 2*).

Step 20 Remove the **VLANS** that are not needed from all the fabric edges.

You can use Cisco DNA Center templates for this task.

What to do next

Ensure that there are access tunnels for all the fabric APs on the fabric edge nodes and the APs are shown as fabric-enabled on the fabric wireless controller.

Ensure that the APs are broadcasting the fabric SSIDs. You can check the SSID status on the AP using the **run show dot11 wlan** command; the SSIDs must be in *up* state.

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