Configure Network Profiles

Network Profiles Overview

Network profiles allow you to configure settings and apply them to a specific site or group of sites. You can create network profiles for various elements in Cisco DNA Center:

Create Network Profiles for Assurance

Creating a network profile for Assurance allows you to configure issue settings and apply them to a site or group of sites independently from the global issues settings. You can enable or disable an issue, and you can change its priority.

Notes:

• In Assurance, synchronization to the network device health score is available only for global issue settings, not custom issue settings. For information, see the Cisco DNA Assurance User Guide.

- Some global issues are not customizable. These issues are not displayed in the list of custom issues for you to modify.

- To display modified issues at the top of the list, sort by **Last Modified**.

- To delete custom settings, you must first unassign all the sites.

Step 1   Click the menu icon (≡) and choose **Design** > **Network Profiles**.

Step 2   Click **+Add Profile** and choose **Assurance**.

Step 3   In the **Profile Name** field, enter a valid profile name and click **Next**.

Cisco DNA Center adds the profile and the **Edit Profile** window appears.

Step 4   Set the **DEVICE TYPE** and **CATEGORY** filters to view the type of issues you want to configure.

Step 5   Click an issue in the **Issue Name** column to open a slide-in pane with the settings.

> **Note**   For some issues, changes made to the settings are shared across multiple device types. In the slide-in pane, Cisco DNA Center displays a caution that indicates the affected device types.

Step 6   To enable or disable whether Cisco DNA Center monitors the issue, click the **Enabled** toggle button.

Step 7   To set the issue priority, click the **Priority** drop-down list and select the priority. The options are:

- **P1**: A critical issue that needs immediate attention and can have a wide impact on network operations.

- **P2**: A major issue that can potentially impact multiple devices or clients.

- **P3**: A minor issue that has a localized or minimal impact.

- **P4**: A warning issue that may not be an immediate problem but addressing it can optimize the network performance.

Step 8   (For certain issues) In the **Trigger Condition** area, you can change the threshold value for when the issue is reported.

Examples of a trigger condition:

```
No Activity on Radio(2.4 GHz) >= 60 minutes.

Memory Utilization of Access Points greater than 90%.
```

Step 9   (Optional) If there are any changes to the settings, you can hover your cursor over **View Default Settings** to display the default settings. Click **Use Default** to restore all the issue settings to the default values.

Step 10   Click **Apply**.

Step 11   (For certain issues) Click **Manage Subscription** to subscribe to external notifications for supported issues when they are triggered.

Step 12   To assign the profile to sites, click **Assign Sites**. Check the check box next to the sites that you want to associate with this profile and click **Save**.

The **Edit Profile** window appears.

> **Note**   You can select a parent node or the individual sites. If you select a parent node, all the children under the parent node are also selected. You can uncheck the check box to deselect a site.

Step 13   Click **Done**.

The newly added profile appears on the **Network Profiles** window.

Create Network Profiles for Firewall

This workflow shows how to:

1. Create custom configurations.

2. Create Firepower Threat Defense (FTD) configurations.

3. View the profile summary.

Step 1 Click the menu icon (☰) and choose **Design** > **Network Profiles**.

Step 2 Click +**Add Profile** and choose **Firewall**.

The **Firewall Type** page appears.

Step 3 To create custom configurations for regular firewalls like Adaptive Security Appliance (ASA) firewalls, do the following:

a) In the **Name** field, enter the profile name.
b) Choose the number of devices from the **Devices** drop-down list.

Note You can choose up to 10 devices per profile.

c) Choose the type of device from the **Device Type** drop-down list.
d) (Optional) From the **Device Tag** drop-down list, choose the device tags.
e) Click **Next**.

The **Custom Configuration** page appears.

f) From the **Template** drop-down list, choose a template.

Note If there are no templates, you must create at least one template in **Tools** > **Template Editor**. For information, see Create Templates.

g) Click **Next**.

The **Summary** page appears. This page summarizes the custom configurations. Based on the selected device type, a hardware recommendation is provided.

h) Click **Save**.

The **Network Profiles** page appears.

i) To assign a site to the network profile, click **Assign Sites**. For more information, see Create a Site in a Network Hierarchy.

Step 4 To create FTD configurations to configure the FTD devices, do the following:

a) In the **Name** field, enter the profile name.
b) From the **Devices** drop-down list, choose the number of devices.

Note You can choose up to 10 devices per profile.

c) To provision an FTD firewall, check the **FTD** check box.

d) From the **Device Type** drop-down list, choose the type of device.

e) (Optional) Choose the device tags from the **Device Tag** drop-down list.

f) Click **Next**.

The **FTD Configuration** page appears.

g) Click the **Routed Mode** or **Transparent Mode** radio button.

h) Click **Next**.

The **Summary** page appears. This page summarizes the FTD configurations. Based on the selected device type, hardware recommendation is provided on this page.

i) Click **Save**.

The **Network Profiles** page appears.

j) To assign a site to the network profile, click **Assign Sites**. For information, see Create a Site in a Network Hierarchy.

Create Network Profiles for Routing

This workflow shows how to:

1. Configure the router WAN.

2. Configure the router LAN.

3. Configure the integrated switch configuration.

4. Create custom configurations.

5. View the profile summary.

Step 1 Click the menu icon (☰) and choose **Design** > **Network Profiles**.

Step 2 Click +**Add Profile** and choose **Routing**.

Step 3 The **Router WAN Configuration** window appears.

• Enter the profile name in the **Name** text box.

• Select the number of **Service Providers** and **Devices** from the drop-down list. Up to three service providers and ten devices are supported per profile.

• Select the **Service Provider Profile** from the drop-down list. For more information, see Configure Service Provider Profiles.

• Select the **Device Type** from the drop-down list.

• Enter a unique string in the **Device Tag** to identify the different devices, or select an existing tag from the drop-down list. Use the device tag if two or more devices are of the same type. If all the devices are of a different type, the device tag is optional. Select the appropriate tag, because your selection is used as part of the matching criteria for Day-0 and Day-N templates applied to the network profile.

- To enable at least one line link for each device to proceed, click **O** and check the check box next to **Connect**. Select the **Line Type** from the drop-down list. Click **OK**.

  If you select multiple service providers, you can select the primary interface as gigabit Ethernet and the secondary as cellular, or both the interfaces as gigabit Ethernet. You can also select the primary interface as cellular and the secondary interface as gigabit Ethernet.

Note	Only Cisco 1100 Series Integrated Services Routers, Cisco 4200 Series Integrated Services Routers, Cisco 4300 Series Integrated Services Routers, and Cisco 4400 Series Integrated Services Routers support the cellular interface.

- Click **Next**.

Step 4 The **Router LAN Configuration** page appears.

- Click the **Configure Connection** radio button and choose L2, L3, or both.

- If you choose **L2**, select the **Type** from the drop-down list and enter the **VLAN ID/Allowed VLAN** and the **Description**.

- If you choose **L3**, select the **Protocol Routing** from the drop-down list and enter the **Protocol Qualifier**.

You can click **Skip** to skip the configuration.

- Click **Next**.

Step 5 The **Integrated Switch Configuration** page appears.

The integrated switch configuration allows you to add new VLANs or retain the previous configuration selected in the router LAN configuration.

- To add one or more new VLANs, click +.

- To delete a VLAN, click **x**.

- Click **Next**.

Note	Switchport Interface support is available only for Cisco 1100 Series and Cisco 4000 series Integrated Services Routers.

Step 6 The **Custom Configuration** page appears.

The custom configurations are optional. You can skip this step and apply the configurations at any time in the Network Profiles page.

If you choose to add custom configurations:

- Click the **Onboarding Template(s)** or **Day-N Templates** tab, as required.

- Choose a template from the drop-down list. The templates are filtered by **Device Type** and **Tag Name**.

- Click **Next**.

Step 7 On the **Summary** page, click **Save**.

This page summarizes the router configurations. Based on the devices and services selected, the hardware recommendation is provided.

Step 8 The **Network Profiles** page appears.

Click **Assign Sites** to assign a site to the network profile. For more information, see Create a Site in a Network Hierarchy.

Create Network Profiles for Switching

You can apply two types of configuration templates to a switching profile:

- Onboarding template
- Day N template

Before you begin

Define the **Onboarding Configuration** template that you want to apply to the devices. Such templates contain basic network configuration commands to onboard a device so that it can be managed on the network. See Create Templates to Automate Device Configuration Changes.

Step 1 Click the menu icon (≡) and choose **Design** > **Network Profiles**.

Step 2 Click +**Add Profile** and choose **Switching**.

Step 3 In the Switching profile window, enter the profile name in the **Profile Name** text box.

Depending on the type of template that you want to create, click **OnBoarding Template(s)** or **Day-N Template(s)**.

- Click +**Add**.

- Select **Switches and Hubs** from the **Device Type** drop-down list.

- Select the **Tag Name** from the drop-down list. This step is optional. If the tag that you selected has already been associated with a template, only that template is available in the Template drop-down list.

- Select the **Device Type** from the drop-down list.

- Select a **Template** from the drop-down list. You can select the Onboarding Configuration template that you have already created.

Step 4 Click **Save**.

The profile that is configured on the switch is applied when the switch is provisioned. Note that you must add the network profile to a site for it to be effective.

Create Network Profile for Cisco DNA Traffic Telemetry Appliance

Before you begin

Define the template that you want to apply to the telemetry appliances. See Create Templates to Automate Device Configuration Changes.

Step 1   Click the menu icon (☰) and choose **Design** > **Network Profiles**.

Step 2   Click +**Add Profile** and choose **Telemetry Appliance**.

Step 3   In the **Telemetry Appliance Type** window, complete the following:

    a)   Enter the profile name in the **Name** text box.

    b)   From the **Devices** drop-down list, choose the number of devices.

    c)   From the **Device Tag** drop-down list, choose an existing device tag defined in Cisco DNA Center or enter a new tag. This step is optional. If the tag that you selected has already been associated with a template, only that template is available in the Template drop-down list.

    d)   Click **Next**.

Step 4   In the **Custom Configuration** window, choose the template. The chosen template will be applied to the device once it is managed in Cisco DNA Center inventory.

Step 5   Click **Next**.

Step 6   In the **Summary** window, click **Save.**

Create Network Profiles for Wireless

Before you begin

Ensure that you have created wireless SSIDs under the **Design** > **Network Settings** > **Wireless** tab.

Step 1   Click the menu icon (☰) and choose **Design** > **Network Profiles**.

Step 2   Click +**Add Profile** and choose **Wireless**.

Step 3   Enter a valid profile name in the **Profile Name** field.

Step 4   To add sites to the profile, click **Assign** and do the following:

    a)   In the **Add Sites to Profile** slide-in pane, check the check box next to the sites that you want to associate with this profile.

       You can select a parent node or the individual sites. If you select a parent site, all the children under the parent node are also selected. Note that you can uncheck the check box to deselect a site.

    b)   Click **Save**.

Step 5   Configure the required settings in the following tabs:

- **SSIDs**: For more information, see Add SSIDs to a Network Profile, on page 8.

- (Optional) **AP Zones**: For more information, see Add AP Zones to a Network Profile, on page 9.

- **Model Configs**: For more information, see Add Model Configurations to a Network Profile, on page 10.

- **Templates**: For more information, see Add Templates to a Network Profile, on page 10.

- (Optional) **Advanced Settings**: For more information, see Add AP Groups, Flex Groups, Site Tags, and Policy Tags to a Network Profile, on page 10.

Step 6   Click **Save** to add the network profile.

Cisco DNA Center displays the new network profile on the **Design** > **Network Profiles** window.

Add SSIDs to a Network Profile

Before you begin

Ensure that you have created wireless SSIDs under the **Design** > **Network Settings** > **Wireless** tab.

Step 1   In the **Add a Network Profile** window, click the **SSID** tab.

Step 2   Click **Add SSID**.

Step 3   From the **SSID** drop-down list, choose the SSID that you have already created.

Step 4   Specify whether the SSID is fabric or nonfabric using the **Yes** or **No** radio buttons.

To create a nonfabric SSID, click **No**, and configure the following parameters:

- To use an interface for traffic switching, click the **Interface** radio button. From the **Interface Name** drop-down list, choose an interface name for the SSID, or click + to create a wireless interface.

- To use a VLAN group for traffic switching, click the **VLAN Group** radio button. From the **VLAN Group Name** drop-down list, choose a VLAN group name for the SSID, or click + to create a VLAN group.

- In the **Do you need Anchor for this SSID?** area, click **Yes** to add an anchor to the SSID. By default, **No** is selected.

- If you have clicked **No**, check the **Flex Connect Local Switching** check box to enable local switching for WLAN.

  If you have chosen to add an anchor to the SSID, you can't enable **Flex Connect Local Switching**.

  If you have enabled **Flex Connect Local Switching** for an SSID, all the APs on the floor where the network profile is mapped, switch to FlexConnect mode.

  The **Flex Group** option is enabled in the **Advanced Settings** tab. For more information, see Add AP Groups, Flex Groups, Site Tags, and Policy Tags to a Network Profile, on page 10.

  When you enable local switching, any FlexConnect AP that advertises this WLAN can locally switch data packets.

- If you have enabled the **Flex Connect Local Switching** check box, enter a value for the VLAN ID in the **Local to VLAN** field.

Step 5 (Optional) To add another SSID, click + and configure its parameters.

Add AP Zones to a Network Profile

An AP zone allows you to associate different SSIDs and RF profiles for a set of APs on the same site. You can use device tags to identify the APs for which you want to apply AP zone. From the **AP Zones** tab, you can create separate AP zones with a subset of SSIDs configured in the network profile for a device tag.

Cisco DNA Center applies the AP zone configurations to APs during AP provisioning.

Note
- Cisco DNA Center doesn't apply AP zone configurations to the APs claimed from the Plug and Play (PnP) process.

- If an AP zone is already provisioned on an AP and you update the AP zone configuration, you must reprovision the wireless controller. Reprovisioning the AP is not necessary.

During AP provisioning:

- Based on the device tag and site of the AP, Cisco DNA Center selects the corresponding AP zone and automatically assigns the RF profile.

- If two AP zones are configured for an AP, you can choose the required AP zone.

- If there are no AP zones for an AP, you can choose the required RF profile.

Before you begin

Ensure that you have created wireless SSIDs under the **Design** > **Network Settings** > **Wireless** tab.

Step 1 In the **Add a Network Profile** window, click the **AP Zones** tab.

Step 2 Click **Add AP Zone**.

Step 3 Enter a name for the AP zone.

Step 4 From the **Device Tags** drop-down list, check the check box next to the device tags that you want to choose.

Step 5 From the **RF Profile** drop-down list, choose an RF profile.

Step 6 From the **SSID** drop-down list, choose the SSIDs.

Step 7 (Optional) To add another AP zone, click + and configure its parameters.

What to do next

To apply the AP zone configuration to an AP:

1. Reprovision the wireless controller. For more information, see Provision a Cisco AireOS Controller and Provision a Cisco Catalyst 9800 Series Wireless Controller.

2. Provision the AP. For more information, see Provision a Cisco AP—Day 1 AP Provisioning.

Add Model Configurations to a Network Profile

You can attach model configuration designs to a network profile.

Step 1   In the **Add a Network Profile** window, click the **Model Configs** tab.

Step 2   Click **Add Model Config**.

Step 3   In the **Add Model Config** slide-in pane, do the following:

    a.   From the **Device Type(s)** drop-down list, choose a device type.

    You can either search for a device name by entering its name in the **Search** field, or expand **Switches and Hubs** or **Wireless Controller** and choose a device type.

    b.   Expand **Wireless** and choose the model configuration designs that you want to attach to this wireless profile.

    c.   From the **Tags** drop-down list under **APPLICABILITY**, choose the applicable tags.

    d.   Click **Add**.

Add Templates to a Network Profile

You can associate a template with a network profile.

Step 1   In the **Add a Network Profile** window, click the **Templates** tab.

Step 2   Click + **Add Template**.

Step 3   In the **Add Template** slide-in pane, do the following:

    a.   From the **Device Type(s)** drop-down list, choose a device type.

    You can either search for a device name by entering its name in the **Search** field, or expand **Wireless Controller** and choose a device type.

    b.   In the **Template** area, choose a template.

    c.   From the **Tags** drop-down list, check the check box for the device tags that you want to choose.

    You can use tags on templates only when you have to push different templates for the same device type based on the device tag.

    d.   Click **Add**.

Add AP Groups, Flex Groups, Site Tags, and Policy Tags to a Network Profile

Cisco DNA Center allows you to add AP groups, flex groups, site tags, and policy tags in a network profile. Preprovisioning the AP groups and flex groups saves time during AP provisioning by eliminating the need to make repetitive configuration changes and ensures consistency across your devices. You can define custom names for AP groups, site tags, and policy tags from the **Advanced Settings** tab.

Note Flex group configuration is available only when the network profile has at least one associated flex-based SSID.

Cisco DNA Center configures and applies the newly added custom names specified in this tab to the APs during Cisco Wireless Controller provisioning. If you don't configure the custom names, Cisco DNA Center uses the auto-generated AP group names and tags for the APs.

Note
- AP group and flex group configuration are applicable to Cisco AireOS Wireless Controller.

- Site tag and policy tag configuration are applicable to Cisco Catalyst 9800 Series Wireless Controller.

  Newly added site tag and policy tag configurations are applied only when you provision the APs. Provisioning the wireless controller alone won't configure the new custom tags on the APs. You must reprovision the wireless controller or the APs if there are any modifications to the tags after provisioning.

  Note the following scenarios while provisioning or reprovisioning the wireless controller and APs:

  - If there are no custom site or policy tags configured on the network profile, then Cisco DNA Center uses the auto-generated tags and configures it on the wireless controller and applies to the APs only during AP provisioning.

  - If there are custom site or policy tags configured on the network profile, then Cisco DNA Center configures the custom tags on the wireless controller and applies to the APs only during AP provisioning.

  - If the wireless controller and AP are already provisioned with auto-generated tags and if you create new custom tags in the network profile, then you must reprovision the wireless controller or the AP to apply the changes.

  - If the wireless controller and AP are already provisioned with custom tags and if you delete the custom tags from the network profile, then you must reprovision the wireless controller or the APs.

    Reprovisioning the wireless controller deletes the custom tag configurations and configures the auto-generated tags on the wireless controller and the associated APs.

    Reprovisioning the APs directly, without reprovisioning the wireless controller, configures the auto-generated tags on the APs but does not delete the custom tag configurations from the wireless controller. The tags are deleted during the next wireless controller reprovisioning.

  - If you've upgraded to Cisco DNA Center with FlexConnect Native VLAN override configured and having site tags that are mapped to the same custom Flex profile for all the floors in a site, then you must reconfigure the network profile with different site tags for each floor or else provisioning may fail.

Before you begin

- Ensure that you have assigned a site (floor) to the network profile.

- To create flex group names, under the **SSIDs** tab, ensure that you have checked the **Flex Connect Local Switching** check box and defined the VLAN ID in the **Local to VLAN** field to mark the nonfabric SSID as a flex-based SSID. For more information, see Add SSIDs to a Network Profile, on page 8.

If you have enabled **Flex Connect Local Switching** for an SSID, all the APs on the floor where the network profile is mapped, switch to FlexConnect mode.

Step 1   In the **Add a Network Profile** window, click the **Advanced Settings** tab.

Step 2   To create an AP group in the network profile, expand **AP Group** and click **Create AP Group**.

In the **Create an AP Group** window, do the following:

a) In the **AP Group Name** field, enter the AP group name.
b) From the **AP Zone** drop-down list, choose an AP zone.

To broadcast all the SSIDs associated with the network profile, choose **Not Applicable**.

> **Note**   This drop-down list is enabled if you have added AP zones to the network profile in the **AP Zones** tab. For more information, see Add AP Zones to a Network Profile, on page 9.

If you choose an AP zone, the RF profile is inherited from the AP zone configuration.

c) From the **RF Profile** drop-down list, choose an RF profile.

> **Note**   This drop-down list is disabled if you choose an AP zone from the **AP Zone** drop-down list.

d) In the **Select Sites** area, you can either search for a site by entering its name, or expand **Global** to choose a site.
e) Click **Save**.

Step 3   To create a flex group in the network profile, expand **Flex Group** and click **Create Flex Group**.

In the **Create Flex Group** window, do the following:

a) In the **Flex Group Name** field, enter the flex group name.
b) In the **Select Sites** area, you can either search for a site by entering its name, or expand **Global** to choose a site.
c) Click **Save**.

Step 4   To create a site tag in the network profile, expand **Site Tag** and click **Create Site Tag**.

In the **Create a Site Tag** window, do the following:

a) In the **Site Tag Name** field, enter the site tag name.
b) In the **Flex Profile Name** name field, enter the flex profile name.

> **Note**   To enable the **Flex Profile Name** name field, check the **Flex Connect Local Switching** check box in the **Edit Network Profile** window.

c) In the **Select Sites** area, you can either search for a site by entering its name, or expand **Global** to choose a site.
d) Click **Save**.

Step 5   To create a policy tag in the network profile, expand **Policy Tag** and click **Create Policy Tag**.

In the **Create Policy Tag** window, do the following:

a) In the **Policy Tag Name** field, enter the policy tag name.
b) From the **AP Zone** drop-down list, choose an AP zone.
c) In the **Select Sites** area, you can either search for a site by entering its name, or expand **Global** to choose a site.
d) Click **Save**.