Design Model Configuration

Introduction to Model Config Editor

Model Config allows you to define advanced customizations of the Cisco Validated Designs (CVDs) that are encapsulated within the provisioning applications. Model Configs are a set of model-based, discoverable, and customizable configuration capabilities, which you can deploy on your network devices with high-level service intent and device-specific CLI templates.

The Model Configs feature simplifies network provision by extracting complex device configurations and facilitating customizable network configurations using an intuitive GUI instead of device-specific CLIs. A common design is deployed to various device hardware platforms and software types in a uniform way. During deployments, the Cisco DNA Center infrastructure automatically validates and translates extracted designs to device-specific CLI commands.

To provision model config design, do the following:

1. Create a new model config design using the **Model Config Editor** window (menu icon > **Tools** > **Model Config Editor**).

2. Apply the model config design to different network profiles.

3. Using the provision workflow, apply the model config design that is specified in network profiles to a network device.

Supported Model Config Design Types

Cisco DNA Center supports the following wireless Model Config design types:

- AAA Radius attributes configuration
- Advanced SSID configuration
- CleanAir configuration
- Event driven RRM configuration
- Flex configuration
- Dot11ax configuration
- Global IPv6 configuration
- Multicast configuration
- RRM FRA configuration
- RRM general configuration

Discover and Create Designs from a Legacy Device

Instead of manually creating designs using the Model Config Editor, you can use the Discover Model Configs feature to discover the existing model config designs available on legacy devices and use them as a template to create new designs.

Step 1 Click the menu icon (≡) and choose **Tools** > **Model Config Editor**.

Step 2 Click the **Discovery** tab.

A list of discovered devices that are available in the **Inventory** window appears.

Step 3 Click the radio button next to the device name and click **Discover Model Configs**.

Step 4 In the right pane, expand **Wireless** and choose a model config design type.

The configuration available for the selected model config type appears. For example, if you choose **CleanAir Configuration** under **Wireless**, the available configuration for the CleanAir appears.

Step 5 Click the radio button next to the configuration that you want to use as a template to create a new design, and click **Create Design**.

Step 6 In the window that appears, make the necessary changes and click **Save**.

Create a Model Config Design for AAA RADIUS Attributes

Use the **AAA Radius Attributes Configuration** model config to define the Called-station-id parameter value for Cisco AireOS Controllers and Cisco Catalyst 9800 Series Wireless Controllers.

The **Default AAA_Radius_Attributes_Configuration** defines the called-station ID as **ap-macaddress-ssid**. You cannot edit or delete this default model config. However, you can create a custom model config for your specific network design.

This procedure describes how to create a new AAA Radius Attributes Configuration model config.

Before you begin

You should have discovered the devices in your network using the **Discovery** feature so that the discovered devices are listed in the **Inventory** window.

Step 1   Click the menu icon (≡) and choose **Tools** > **Model Config Editor**.

Step 2   In the left pane, you can either search for a model config by entering its name in the **Search** field, or by expanding **Wireless** and choosing **AAA Radius Attributes Configuration**.

Step 3   In the **Design Instances** window, click **Add**.

The **Add Called-station-id** slide-in pane appears.

Step 4   In the **Design Name** field, enter a name for the model config design.

Step 5   From the **Called-station-id** drop-down list, choose an attribute value.

Step 6   Click **Save**.

The new design instance appears in the **Design Instances** window.

Step 7   (Optional) To edit a design, check the check box next to the design name that you want to edit, and click **Edit**. Make the changes and click **Save**.

Step 8   Attach the created config design to a network profile so that it can be deployed on a wireless controller. Click the menu icon (≡) and choose **Design** > **Network Profiles**.

For more information, see Create Network Profiles for Wireless.

Step 9   Provision the model config design specified in the network profile to network devices. Click the menu icon (≡) and choose **Provision** > **Network Devices** > **Inventory**.

For more information, see Provision a Cisco AireOS Controller or Provision a Cisco Catalyst 9800 Series Wireless Controller.

Create a Model Config Design for Advanced SSID

A WLAN associates an SSID to an interface or an interface group. The WLAN is configured with security, quality of service (QoS), radio policies, and other wireless network parameters. You can configure up to 512 WLANs for each wireless controller.

Use the advanced service set identifier (SSID) model config to configure the advanced SSID parameters on devices.

Before you begin

You must discover the devices in your network using the **Discovery** feature so that the discovered devices are listed in the **Inventory** window.

Step 1   Click the menu icon (≡) and choose **Tools** > **Model Config Editor**.

Step 2   In the left pane, you can either search for a model config by entering its name in the **Search** field, or expand **Wireless** and choose **Advanced SSID Configuration**.

Step 3   In the **Design Instances** pane, check the **Default Advanced SSID Design** check box to use the default advanced SSID design.

         Note   You can't edit or delete the Default Advanced SSID Design.

Step 4   In the **Design Instances** pane, click **Add Design**.

Step 5   In the **Design Name** field of the **Add Advanced SSID Configuration** window, enter a name for the model config.

Step 6   To lock all the properties in the design, click **Lock all**. To lock a specific property, click the corresponding lock icon next to the property.

Step 7   In the **General** tab, click the **Peer-to-Peer Blocking** drop-down list and choose an option for peer-to-peer blocking.

         Peer-to-peer blocking is applied to individual WLANs. Each client inherits the peer-to-peer blocking setting of the WLAN to which it's associated. Peer-to-peer blocking enables you to have more control over how traffic is directed.

- **DISABLE**: Disables peer-to-peer blocking and forwards traffic locally within the wireless controller whenever possible.

- **DROP**: Causes the wireless controller to discard the client packets.

- **FORWARD UP**: Causes the client packets to be forwarded on an upstream VLAN. The device above the wireless controller decides what action to take regarding the packets. The device can either be a router or a Layer 3 switch.

- **ALLOW PVT GROUP**: Applicable to preshared key (PSK) clients only. Traffic is forwarded based on the associated identity PSK (IPSK) tags for the source and destination client devices.

Step 8   Click the **Passive Client Enable** toggle button to enable the Passive Client feature.

         Passive clients are wireless devices, such as scales and printers, that are configured with a static IP address. These clients do not transmit any IP information (such as IP address, subnet mask, and gateway information) when they associate with an access point. As a result, when passive clients are used, the wireless controller never knows the IP address unless they use DHCP.

Step 9   Click the **Assisted Roaming Prediction Optimization** toggle button to configure an assisted roaming prediction list for a WLAN.

Step 10   Click the **Neighbor List Dual Band** toggle button to configure a neighbor list on a dual radio band.

Step 11   Click the **Network Admission Control (NAC-SNMP)** toggle button to enable SNMP NAC support on the WLAN.

Step 12   Click the **Network Admission Control (NAC-Radius)** toggle button to enable RADIUS NAC support on the WLAN.

Step 13   From the **DHCP Required** drop-down list, choose **Yes** or **No** to pass the DHCP request before going into the RUN state (a state where the client can pass traffic through the wireless controller).

Step 14   Expand **DHCP Server** and enter the IP address of the DHCP server in the **IP Address** field.

Step 15   Click the **FlexConnect Local Authentication** toggle button to enable FlexConnect local authentication.

Step 16   Click the **802.11ax Status** toggle button to enable 802.11ax configuration parameters.

Step 17 Click the **Aironet IE** toggle button to enable support for Aironet IE on this SSID.

Step 18 Click the **Load Balance Enable** toggle button to enable the load balancing feature.

Step 19 In the **DTIM Period 5GHz Band (In Beacon Intervals) [1-255]** field, enter a value for the 5GHz radio.

The valid range is from 1 through 255. The default value is 1 (to transmit broadcast and multicast frames after every beacon).

If the beacon period of the 802.11 network is 100 ms and the DTIM value is set to 1, the access point transmits buffered broadcast and multicast frames for 10 times every second. If the beacon period is 100 ms and the DTIM value is set to 2, the access point transmits buffered broadcast and multicast frames for five times every second. Either of these settings are suitable for applications, including Voice Over IP (VoIP), that expect frequent broadcast and multicast frames.

However, the DTIM value can be set as high as 255 (to transmit broadcast and multicast frames after every 255th beacon).

Step 20 In the **DTIM Period 2.4GHz Band (In Beacon Intervals) [1-255]** field, enter a value for the 2.4GHz radio. The valid range is from 1 through 255. The default value is 1 (transmit broadcast and multicast frames after every beacon).

Step 21 Set the time in milliseconds in the **Scan Defer Time [0-60000msecs]** field.

The valid values are between 0 and 60000 milliseconds; the default value is 100 milliseconds. If you sent the time to 0, the scan deferral does not happen. The scan defer time is common for all priorities on the same WLAN and the scan is deferred if a packet is transmitted or received in any one of the defer priorities.

Step 22 In the **Max Clients Per WLAN** field, enter the maximum number of clients that are allowed to join the WLAN.

The valid range is between 0 and 10000.

Step 23 In the **Max Clients Per AP Radio Per WLAN [0-200]** field, enter the maximum number of clients that are allowed to join the WLAN per AP.

The valid range is between 0 and 200.

Step 24 In the **Max Clients Per AP Radio Per WLAN [0-400]** field, enter the maximum number of client connections that are allowed per AP.

The valid range is between 0 and 400.

Step 25 From the **WMM Policy** drop-down list, choose the WMM policy as **Allowed**, **Disabled**, or **Required**.

By default, the WMM policy is Allowed.

Step 26 In the **NAS ID** field, enter the network access server identifier.

Step 27 Click **Client Data Rates** to configure the following client data rate limits per client by entering values in the respective fields:

- Average Downstream Data Rate Per Client (kbps)

- Burst Downstream Data Rate Per Client (kbps)

- Average Downstream Real-Time Rate Per Client (kbps)

- Burst Downstream Real-Time Rate Per Client (kbps)

- Average Upstream Data Rate Per Client (kbps)

- Burst Upstream Data Rate Per Client (kbps)

- Average Upstream Real-Time Rate Per Client (kbps)

• Burst Upstream Real-Time Rate Per Client (kbps)

Step 28   Click the **SSID Data Rates** to configure the following SSID data rate limits per SSID by entering values in the respective fields:

   • Average Upstream Data Rate Per SSID (kbps)

   • Burst Upstream Data Rate Per SSID (kbps)

   • Average Upstream Real-Time Rate Per SSID (kbps)

   • Burst Upstream Real-Time Rate Per SSID (kbps)

   • Average Downstream Data Rate Per SSID (kbps)

   • Burst Downstream Data Rate Per SSID (kbps)

   • Average Downstream Real-Time Rate Per SSID (kbps)

   • Burst Downstream Real-Time Rate Per SSID (kbps)

Note   To lock all the properties in the design, click **Lock all**. To lock a specific property, click the lock symbol next to that property.

Step 29   Hover your cursor over **More** and click **802.11ax Configuration** to configure the 802.11ax BSS configuration parameters. You can use the toggle button to enable or disable the following parameters:

   • BSS Target Wake Up Time

   • Downlink OFDMA

   • Uplink OFDMA

   • Downlink MU-MIMO

   • Uplink MU-MIMO

Note   These parameters apply only to 2.4-GHz and 5-GHz radio bands. You can configure 802.11ax parameters for the 6-GHz radio band under the **Wireless Radio Frequency Profile** section in the **Design** > **Network Settings** > **Wireless** window.

Step 30   Click **Save**.

The created design instance is displayed in the **Design Instances** window under the **Advanced SSID Configuration - Model Configs** area.

Step 31   To edit a design, check the check box next to the design name that you want to edit, and click **Edit**. Make the changes and click **Save**.

Step 32   Attach the created config design to a network profile so that it can be deployed on the wireless controller. Click the menu icon (≡) and choose **Design** > **Network Profiles**.

For more information, see Create Network Profiles for Wireless.

Step 33   Provision the model config design specified in the network profile to network devices. Click the menu icon (≡) and choose **Provision** > **Network Devices** > **Inventory**.

For more information, see Provision a Cisco AireOS Controller.

Create a Design for Cisco CleanAir

CleanAir is a spectrum intelligence solution designed to proactively manage the challenges of a shared wireless spectrum. It allows you to see all the users of the shared spectrum (both native devices and foreign interferers). It also enables you or your network to act on this information. For example, you can manually remove the interfering device, or the system can automatically steer the channel away from the interference. CleanAir provides spectrum management and Radio Frequency (RF) visibility.

Before you begin

You should have discovered the devices in your network using the **Discovery** functionality so that the discovered devices are listed in the **Inventory** window.

Step 1   Click the menu icon (≡) and choose **Tools** > **Model Config Editor**.

Step 2   In the left pane, you can either search for a model config capability by entering its name in the **Search Capability** field, or by expanding the **Wireless** Model Configs and choosing **CleanAir Configuration**.

Step 3   In the **Design Instances** pane, check the **Default CleanAir 802.11a Design** or **Default CleanAir 802.11b Design** check box to use the default CleanAir design.

> **Note**   You cannot edit and delete the **Default CleanAir 802.11a Design** or **Default CleanAir 802.11b Design**.

Step 4   In the **Design Instances** window, click **Add**.

The **Add CleanAir Configuration** window is displayed.

Step 5   In the **Design Name** field, enter a name for the design.

Step 6   From the **Radio Band** drop-down list, choose **2.4 GHz** or **5 GHz**.

Step 7   Click the **CleanAir Enable** toggle button to enable the CleanAir functionality on the 2.4-GHz or 5-GHz radio band.

If the **CleanAir Enable** toggle button is enabled, click it to prevent the Cisco Wireless Controller from detecting spectrum interference.

Step 8   Click the **CleanAir Device Reporting Enable** toggle button to enable the CleanAir system to report detected sources of interference, if any.

If the **CleanAir Device Reporting Enable** toggle button is enabled, click it to prevent the Cisco Wireless Controller from reporting interferers.

Step 9   Click the **Persistent Device Propagation** toggle button to enable propagation of information about persistent devices that can be detected by CleanAir.

Persistent device propagation enables you to propagate information about persistent devices to the neighboring APs that are connected to the same Cisco Wireless Controller. Persistent interferers are present at the location, and interfere with WLAN operations even if they are not detectable at all times.

Step 10   Expand **Enable Interferers Features** and check the check box next to the source of interference that needs to be detected and reported by the CleanAir system:

- Ble Beacon

- Bluetooth Paging Inquiry

- Bluetooth SCO ACL

- Generic Dect

- Generic TDD

- Generic Waveform

- Jammer

- Microwave Oven

- Motorola Canopy

- SI FHSs

- Spectrum 802.11 FH

- Spectrum 802.11 Non STD Channel

- Spectrum 802.11 Spec Inverted

- Spectrum 802.11 Super AG SuperAG

- Spectrum 802.15.4

- Video

- Wimax Fixed

- Wimax Mobile

- Xbox

Step 11   In the **CleanAir Description** field, enter a description.

Step 12   Click **Apply**.
The created design instance appears in the **Design Instances** window under the **CleanAir Configuration - Model Configs** area.

Step 13   To edit a design, check the check box next to the design name that you want to edit, and click **Edit**. Make the changes and click **Save**.

Step 14   Attach the created config design to a network profile so that it can be deployed on the wireless controller. Click the menu icon (≡) and choose **Design** > **Network Profiles**.

For more information, see Create Network Profiles for Wireless.

Step 15   Provision the model config design specified in the network profile to network devices. Click the menu icon (≡) and choose **Provision** > **Network Devices** > **Inventory**.

For more information, see Provision a Cisco AireOS Controller.

Create a Model Config Design for Dot11ax Configuration

The Cisco DNA Center Dot11ax Model Config feature configures Dot11ax parameters on devices.

Dot11ax configuration involves the 802.11ax wireless specifications standard, also known as High Efficiency (HE) Wireless. Dot11ax is a dual-band technology that uses 2.4-GHz, 5-GHz, and 6-GHz bands. You can configure Dot11ax configuration parameters only on Wi-Fi 6-supported Cisco Catalyst 9100 Series Access Points.

Note BSS color is used to identify an overlapping basic service set (OBSS). BSS configs are pushed on Wi-Fi 6-supported access points only. The Cisco Catalyst 9100 Series Access Points are the next-generation Wi-Fi 802.11ax access points, and ideal for high-density, high-definition applications.

Before you begin

You must discover the devices in your network using the **Discovery** feature so that the discovered devices are listed in the **Inventory** window.

Step 1 Click the menu icon (☰) and choose **Tools** > **Model Config Editor**.

Step 2 In the left pane, you can either search for a model config by entering its name in the **Search** field, or by expanding **Wireless** and choosing **Dot11ax Configuration**.

Step 3 In the **Design Instances** window, to use the default DOT11ax designs, check the check box next to the required default designs:

- **Default Dot11ax 6-GHz Design**
- **Default Dot11ax 802.11a Design**
- **Default Dot11ax 802.11b Design**

Note You can't edit or delete the default Dot11ax designs.

Step 4 Click **Add Design**.

The **Add Dot11ax Configuration** window opens.

Step 5 In the **Design Name** field, enter a name for the model config design.

Step 6 Click the **BSS Color** toggle button to enable the BSS color functionality. The default value is disabled.

BSS color functionality is supported on:

- Cisco AireOS Wireless Controllers that run Cisco AireOS Release 8.10 and later

- Cisco Wireless Controllers that run Cisco IOS XE Release 17.1 and later

Step 7 Click the **Target Wakeup Time** toggle button to enable the target wake-up time. The default value is disabled.

Target wake-up time is supported on:

- Cisco AireOS Wireless Controllers that run Cisco AireOS Release 8.10 and later

- Cisco Wireless Controllers that run Cisco IOS XE Release 17.1 and later

Step 8   Click the **Target Wakeup Time Broadcast** toggle button to enable the target wake-up time broadcast. The default value is disabled.

Target wake-up time broadcast is supported on:

- Cisco AireOS Wireless Controllers that run Cisco AireOS Release 8.10 and later

- Cisco Wireless Controllers that run Cisco IOS XE Release 17.3.1 and later

Step 9   Click the **Multiple BSSID** toggle button to enable the multiple basic service set identifier (BSSID) functionality. The default value is disabled.

Multiple BSSID is supported only on Cisco Wireless Controllers that run Cisco IOS XE Release 17.7.1 and later.

Note   This toggle button is available only when you choose the **6 GHz** radio band.

Step 10   From the **Radio Band** drop-down list, choose 2.4-GHz, 5-GHz, or 6-GHz radio band. The default value is disabled.

Step 11   Click the **OBSS PD** toggle button to enable the Overlapping BSS Packet Detect (OBSS-PD) functionality.

OBSS-PD is supported only on Cisco Wireless Controllers that run Cisco IOS XE Release 17.4 and later.

Note   This toggle button is not available for the **6 GHz** radio band.

Step 12   In the **Non-SRG OBSS PD Max Threshold (dbm)** field, enter a value for the non-Spatial Reuse Group (SRG) OBSS-PD maximum threshold, in dBm. The default value is -62 dBm.

Non-SRG OBSS-PD is supported only on Cisco Wireless Controllers that run Cisco IOS XE Release 17.4 and later.

Note   This toggle button is not available for the **6 GHz** radio band.

Step 13   (Optional) To lock all the properties in the design, click **Lock all**. To lock a specific property, click the corresponding lock symbol next to each property.

A property that is locked in the design can't be changed during the device provisioning.

Step 14   Click **Save**.

The created design instance is displayed in the **Design Instances** window under the **Dot11ax Configuration – Model Configs** area.

Step 15   To edit a design, check the check box next to the design name that you want to edit, and click **Edit**. Make the changes and click **Save**.

Step 16   Attach the created model config design to a network profile so that it can be deployed on the access points. Click the menu icon (☰) and choose **Design** > **Network Profiles**. For more information, see Create Network Profiles for Wireless.

Step 17   Provision the model config design specified in the network profile to network devices. Click the menu icon (☰) and choose **Provision** > **Network Devices** > **Inventory**. For more information, see Provision a Cisco AireOS Controller.

Create a Model Config Design for Event-Driven RRM

The event-driven RRM model config feature configures event-driven RRM parameters for 2.4-GHz, 5-GHz, and 6-GHz radios.

Before you begin

You should have discovered the devices in your network using the **Discovery** feature so that the discovered devices are listed in the **Inventory** window.

Step 1 Click the menu icon (☰) and choose **Tools** > **Model Config Editor**.

Step 2 In the left pane, you can either search for a model config by entering its name in the **Search** field, or expand **Wireless** and choose **Event Driven RRM Configuration**.

Step 3 In the **Design Instances** pane, check the **Default Event Driven 2.4GHz Design** or **Default Event Driven 5 GHz Design** check box to use the default advanced SSID design.

> **Note** You cannot edit or delete the Default Event Driven RRM Design.

Step 4 In the **Design Instances** pane, click **Add Design**.

The **Add Event Driven RRM Configuration** slide-in window appears.

Step 5 In the **Design Name** field, enter a name for the model config.

Step 6 From the **Radio Band** drop-down list, select the radio band: **2.4GHz**, **5GHz**, or **6GHz**.

> **Note** The 6-GHZ radio band is not supported on Cisco AireOS Wireless Controllers.
>
> Cisco Catalyst 9800 Series Wireless Controller version 17.6 and later support the 6-GHz radio band.

Step 7 Click the **Event Driven RRM** toggle button to run RRM when CleanAir-enabled AP detects a significant level of interference.

Step 8 From the **Sensitivity Threshold** drop-down list, choose the sensitivity threshold level at which you want the RRM to be triggered from the following options.

When the interference for the AP rises above the threshold level, RRM initiates a local dynamic channel assignment (DCA) run and changes the channel of the affected AP radio, if possible, to improve network performance.

- **Low**: Specifies the least sensitivity to non-Wi-Fi interference as indicated by the AQ value.

- **Medium**: Specifies medium sensitivity to non-Wi-Fi interference as indicated by the AQ value.

- **High**: Specifies the most sensitivity to non-Wi-Fi interference as indicated by the AQ value.

- **Custom**: Specifies custom sensitivity to non-Wi-Fi interference as indicated by the AQ value. If you choose this option, you must specify a custom value in the **Custom Threshold [1-99]** field.

Step 9 Click **Save**.

The created design instance appears in the **Design Instances** window under the **Event Driven RRM Configuration - Model Configs** area.

Step 10 To edit a design, check the check box next to the design name that you want to edit, and click **Edit**. Make the changes and click **Save**.

Step 11 Attach the created config design to a network profile so that it can be deployed on the wireless controller. Click the menu icon (☰) and choose **Design** > **Network Profiles**.

For more information, see Create Network Profiles for Wireless.

Step 12   Provision the model config design specified in the network profile to network devices. Click the menu icon (≡) and choose **Provision** > **Network Devices** > **Inventory**.

For more information, see Provision a Cisco AireOS Controller.

Create a Design for Flex Configuration

Use the flex model config feature to configure the FlexConnect configuration on devices.

Before you begin

Using the Discovery feature, discover the devices in your network so that the discovered devices are listed in the Inventory window.

Step 1   Click the menu icon (≡) and choose **Tools** > **Model Config Editor**.

Step 2   In the left pane, you can either search for a model config capability by entering its name in the **Search Capability** field, or by expanding the **Wireless** Model Configs and choosing **Flex Configuration**.

Step 3   In the **Design Instances** pane, check the **Default Flex Configuration** check box to use the default FlexConnect design.

Note   You cannot edit and delete the **Default Flex Configuration** design.

Step 4   In the **Design Instances** window, click **Add**.

The **Add CleanAir Configuration** window is displayed.

Step 5   In the **Design Name** field, enter a name for the design.

Step 6   From the **Radio Band** drop-down list, choose **2.4 GHz** or **5 GHz**.

Step 7   Click the **CleanAir Enable** toggle button to enable the CleanAir functionality on the 2.4-GHz or 5-GHz radio band.

If the **CleanAir Enable** toggle button is enabled, click it to prevent the Cisco Wireless Controller from detecting spectrum interference.

Step 8   Click the **CleanAir Device Reporting Enable** toggle button to enable the CleanAir system to report detected sources of interference, if any.

If the **CleanAir Device Reporting Enable** toggle button is enabled, click it to prevent the Cisco Wireless Controller from reporting interferers.

Step 9   Click the **Persistent Device Propagation** toggle button to enable propagation of information about persistent devices that can be detected by CleanAir.

Persistent device propagation enables you to propagate information about persistent devices to the neighboring APs that are connected to the same Cisco Wireless Controller. Persistent interferers are present at the location, and interfere with WLAN operations even if they are not detectable at all times.

Step 10   Expand **Enable Interferers Features** and check the check box next to the source of interference that needs to be detected and reported by the CleanAir system:

　　　　• Ble Beacon

- Bluetooth Paging Inquiry

- Bluetooth SCO ACL

- Generic Dect

- Generic TDD

- Generic Waveform

- Jammer

- Microwave Oven

- Motorola Canopy

- SI FHSs

- Spectrum 802.11 FH

- Spectrum 802.11 Non STD Channel

- Spectrum 802.11 Spec Inverted

- Spectrum 802.11 Super AG SuperAG

- Spectrum 802.15.4

- Video

- Wimax Fixed

- Wimax Mobile

- Xbox

Step 11 In the **CleanAir Description** field, enter a description.

Step 12 Click **Apply**.
The created design instance appears in the **Design Instances** window under the **CleanAir Configuration - Model Configs** area.

Step 13 To edit a design, check the check box next to the design name that you want to edit, and click **Edit**. Make the changes and click **Save**.

Step 14 Attach the created config design to a network profile so that it can be deployed on the wireless controller. Click the menu icon (≡) and choose **Design** > **Network Profiles**.

For more information, see Create Network Profiles for Wireless.

Step 15 Provision the model config design specified in the network profile to network devices. Click the menu icon (≡) and choose **Provision** > **Network Devices** > **Inventory**.

For more information, see Provision a Cisco AireOS Controller.

Create a Design for Global IPv6

Before you begin

You should have discovered the devices in your network using the **Discovery** feature so that the discovered devices are listed in the **Inventory** window.

Step 1 Click the menu icon (☰) and choose **Tools** > **Model Config Editor**.

Step 2 In the left pane, you can either search for a model config by entering its name in the **Search Capability** field, or expand **Wireless** and choose **Global IPV6 Configuration**.

Step 3 In the **Design Instances** pane, check the **Default Global IPv6 Design** check box to use the default global IPV6 design.

Note You cannot edit or delete the **Default Global IPv6 Design**.

Step 4 In the **Design Instances** window, click **Add Design**.

The **Add Global IPV6 Configuration** window appears.

Step 5 In the **Design Name** field, enter a name for the model config.

Step 6 Click the **Global IPV6 Config** toggle button to enable IPv6 globally on devices.

Step 7 Click **Apply**.

The created design instance appears in the **Design Instances** window under the **Global IPV6 Configuration - Model Config** area.

Step 8 To edit a design, check the check box next to the design name that you want to edit, and click **Edit**. Make the changes and click **Save**.

Step 9 Attach the created config design to a network profile so that it can be deployed on the wireless controller. Click the menu icon (☰) and choose **Design** > **Network Profiles**.

For more information, see Create Network Profiles for Wireless.

Step 10 Provision the model config design specified in the network profile to network devices. Click the menu icon (☰) and choose **Provision** > **Network Devices** > **Inventory**.

For more information, see Provision a Cisco AireOS Controller.

Create a Model Config Design for Multicast

Use the multicast model config feature to configure multicast parameters on devices.

If your network supports packet multicasting, you can configure the multicast method that the Cisco Wireless Controller uses. The wireless controller performs multicasting in one of these modes:

- Unicast mode: In this mode, the wireless controller unicasts every multicast packet to every access point associated to the wireless controller. This mode is not very efficient, but is required on networks that do not support multicasting.

- Multicast mode: In this mode, the wireless controller sends multicast packets to a CAPWAP multicast group. This method reduces the overhead on the wireless controller processor and shifts the work of packet replication to your network. This method is more efficient than the unicast method.

Before you begin

You should have discovered the devices in your network using the **Discovery** feature so that the discovered devices are listed in the **Inventory** window.

Step 1	Click the menu icon (☰) and choose **Tools** > **Model Config Editor**.
Step 2	In the left pane, you can either search for a model config by entering its name in the **Search Capability** field, or by expanding **Wireless** and choosing **Multicast Configuration**.
Step 3	In the **Design Instances** pane, check the **Default Multicast Design** check box to use the default multicast design.
	Note You cannot edit or delete the **Default Multicast Design**.
Step 4	In the **Design Instances** window, click **Add Design**.
	The **Add Multicast Configuration** window appears.
Step 5	In the **Design Name** field, enter a name for the model config design.
Step 6	Click the **Enable Global Multicast Mode** toggle button to configure sending multicast packets. The default value is disabled.
Step 7	From the **AP Multicast Mode** drop-down list, choose **UNICAST** or **MULTICAST**.
	• Choose **UNICAST** to configure the wireless controller to use the unicast method to broadcast packets.
	• Choose **MULTICAST** to configure the wireless controller to use the multicast method to broadcast packets to a CAPWAP multicast group.
Step 8	Expand **IPV4 Multicast Group Address** and enter the IPv4 multicast address in the **IP Address** field.
Step 9	Expand **IPV6 Multicast Group Address** and enter the IPv6 multicast address in the **IP Address** field.
Step 10	Click **Apply**.
	The created design instance appears in the **Design Instances** window under the **Multicast - Model Config** area.
Step 11	To edit a design, check the check box next to the design name that you want to edit, and click **Edit**. Make the changes and click **Save**.
Step 12	Attach the created config design to a network profile so that it can be deployed on the wireless controller. Click the menu icon (☰) and choose **Design** > **Network Profiles**.
	For more information, see Create Network Profiles for Wireless.
Step 13	Provision the model config design specified in the network profile to network devices. Click the menu icon (☰) and choose **Provision** > **Network Devices** > **Inventory**.
	For more information, see Provision a Cisco AireOS Controller.

Create a Model Config Design for RRM FRA Parameters

The **RRM FRA Configuration** model configuration design configures the Flexible Radio Assignment (FRA) parameters for Radio Resource Management (RRM) for 2.4-5 GHz and 5-6 GHz radio bands.

Before you begin

You must discover the devices in your network using the **Discovery** feature so that the discovered devices are listed in the **Inventory** window.

Step 1 Click the menu icon (≡) and choose **Tools** > **Model Config Editor**.

Step 2 In the left pane, you can either search for a model configuration by entering its name in the **Search** field, or expand **Wireless** and choose **RRM FRA Configuration**.

Step 3 In the **Design Instances** window, check the corresponding default FRA design check box to use the default design:

- **Default FRA 2.4-5GHz Design**

- **Default FRA 5-6GHz Design**

Note
- You can't edit or delete the default FRA designs.

- The 6-GHz radio band is not supported in Cisco AireOS Wireless Controllers.

- The Cisco Catalyst 9800 Series Wireless Controllers that run Cisco IOS XE Release 17.6 and later support the 6-GHz radio band.

Step 4 In the **Design Instances** pane, click **Add**.

Step 5 In the **Add Flexible Radio Assignment (FRA) Configuration** slide-in pane, enter a name for the model configuration.

Step 6 (Optional) To lock all the properties in the design, click **Lock all**. To lock a specific property, click the corresponding lock icon next to each property.

A property that is locked in the design can't be changed during device provisioning.

Step 7 From the **Radio Band** drop-down list, choose a radio band.

Step 8 Click the **FRA Freeze** toggle button to enable the FRA freeze functionality. This functionality is disabled by default.

Cisco Wireless Controllers that run Cisco IOS XE Release 17.6.1 and later support this functionality.

Note This toggle button is available only for the **2.4-5 GHz** radio band.

Step 9 Click the **FRA Status** toggle button to enable the FRA status functionality. This functionality is enabled by default.

Step 10 From the **FRA Interval** drop-down list, choose an FRA interval.

Step 11 From the **FRA Sensitivity** drop-down list, choose an FRA sensitivity value.

This parameter sets the FRA coverage overlap sensitivity.

Note This drop-down list is available only for the **2.4-5 GHz** radio band.

Step 12 Click **Save**.

The created design instance is displayed in the **Design Instances** window in the **RRM FRA Configuration – Model Configs** area.

Step 13 (Optional) To edit a design, check the check box next to the design name that you want to edit, and click **Edit**. Make the changes and click **Save**.

Step 14 Attach the created model configuration design to a network profile so that it can be deployed on the access points. Click the menu icon (☰) and choose **Design** > **Network Profiles**. For more information, see Create Network Profiles for Wireless.

Step 15 Provision the model configuration design specified in the network profile to network devices. Click the menu icon (☰) and choose **Provision** > **Network Devices** > **Inventory**. For more information, see Provision a Cisco AireOS Controller and Provision a Cisco Catalyst 9800 Series Wireless Controller.

Create a Model Config Design for RRM General Parameters

The Radio Resource Management (RRM) general configuration model config feature configures the RRM general parameters for 2.4-GHz, 5-GHz, and 6-GHz radios.

Before you begin

You should have discovered the devices in your network using the **Discovery** feature so that the discovered devices are listed in the **Inventory** window.

Step 1 Click the menu icon (☰) and choose **Tools** > **Model Config Editor**.

Step 2 In the left pane, you can either search for a model config by entering its name in the **Search** field, or expand **Wireless** and choose **RRM General Configuration**.

Step 3 The **Design Instances** pane shows the following default RRM general configuration designs. You can check the respective default **RRM General Design** check box to use the default design.

You cannot edit or delete the Default RRM General Design.

- Default RRM General 2.4 GHz Design

- Default RRM General 5 GHz Design

- Default RRM General 6 GHz Design

Note The 6-GHz radio band is not supported on Cisco AireOS Wireless Controllers.

Note Cisco Catalyst 9800 Series Wireless Controller 17.6 and later releases support the 6-GHz radio band.

Step 4 In the **Design Instances** pane, click **Add Design**.

The **Add RRM General Configuration** slide-in window appears.

Step 5 To lock all the properties in the design, click **Lock all**. To lock a specific property, click the lock symbol next to that property.

Step 6 In the **Design Name** field, enter a name for the model config.

Step 7 In the **Radio Band** tab, choose the radio band from the **Radio Band** drop-down list: 2.4 GHz, 5 GHz, or 6 GHz.

Step 8   In the **Threshold** tab, set the throughput threshold value for the radio band selected in the Throughput Threshold (1000-10000000 Bps) field.

Step 9   In the **Monitoring** tab, configure the monitoring channels and neighbor discover type.

- From the **Monitoring Channels** drop-down list, choose one of the following options to specify the set of channels that the AP uses for RRM scanning. By default, the monitoring channel is set to Country.

  - **All**: RRM channel scanning occurs on all channels supported by the selected radio, which includes channels not allowed in the country of operation.

  - **Country**: RRM channel scanning occurs only on the data channels in the country of operation. This is the default value.

  - **DCA**: RRM channel scanning occurs only on the channel set used by the DCA algorithm.

- From the **Neighbor Discover Type** drop-down list, choose the neighbor discovery type. By default, the mode is set to Transparent.

  - **Transparent**: Sets the neighbor discover type to transparent. Packets are sent as is.

  - **Protected**: Sets the neighbor discover type to protected. Packets are encrypted.

Step 10   In the **Coverage** tab, click the **Global Coverage Hole Detection Enabled** toggle button to enable coverage hole detection. By default, this value is selected.

If you enable coverage hole detection, the Cisco Wireless Controller automatically determines, based on data received from the APs, if any APs have clients that are potentially located in areas with poor coverage.

Step 11   Click **Save**.

The created design instance appears in the **Design Instances** window under the **RRM General Configuration - Model Configs** area.

Step 12   To edit a design, check the check box next to the design name that you want to edit, and click **Edit**. Make the changes and click **Save**.

Step 13   Attach the created config design to a network profile so that it can be deployed on the wireless controller. Click the menu icon (≡) and choose **Design** > **Network Profiles**.

For more information, see Create Network Profiles for Wireless.

Step 14   Provision the model config design specified in the network profile to network devices. Click the menu icon (≡) and choose **Provision** > **Network Devices** > **Inventory**.

For more information, see Provision a Cisco AireOS Controller.