

Configure WIM on Cisco Catalyst IR1800 Rugged Series Routers

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Configure WIM on Cisco Catalyst IR1800 Rugged Series Routers

Table 1: Feature History

Feature	Release Information	Description
Configure WIM on Cisco Catalyst IR 1800 Rugged Series Routers	Cisco IOS XE Catalyst SD-WAN Release 17.14.1a Cisco Catalyst SD-WAN Manager Release 20.14.1	Configure and manage the Wi-Fi Interface Module (WIM) on Cisco Catalyst IR1800 Rugged Series Routers using Cisco SD-WAN Manager.

Information about Configuring WIM on Cisco Catalyst IR1800 Rugged Routers

The WIM features a pluggable 802.11ax module with WiFi-6 (802.11ax), 2x2 MIMO, two spatial streams, an extended temperature range, and versatile RF coverage with external RP-SMA antenna connectors, including Flexible Antenna Port feature support. For more information on WIM, see Cisco Wi-Fi Interface Module Overview.

The WIM module supports three modes of operation and they are:

- Control and Provisioning of Wireless Access Points (CAPWAP) mode
- Cisco Embedded Wireless Controllers (EWC) mode
- Work Group Bridge (WGB) mode

Starting from Cisco IOS XE Catalyst SD-WAN Release 17.14.1a, configure WIM on Cisco Catalyst IR1800 Rugged Routers using Cisco SD-WAN Manager in CAPWAP and WGB modes. When you configure the WIM in the CAPWAP mode, an external wireless LAN controller manages the module. The WIM module features two radios. In the WGB mode, set up each radio for either wireless access or WGB uplink. To enable Wireless Access, configure one or both radios to Root AP Mode. For WGB uplink, set up one radio to operate in WGB mode.



Note Configure either or both the radios using the Root AP mode. Only one of the radios can be configured for WGB uplink activity.

Supported Devices for Configuring WIM in Cisco Catalyst IR1800 Rugged Routers

The following Cisco Catalyst IR1800 modules are supported by Cisco SD-WAN Manager for configuring WIM:

- Catalyst IR1821-K9
- Catalyst IR1831-K9
- Catalyst IR1833-K9
- Catalyst IR1835-K9

Prerequisites for Configuring WIM on Cisco Catalyst IR1800 Rugged Routers

Ensure that the Cisco Catalyst IR1800 devices are running Cisco IOS XE Catalyst SD-WAN Release 17.14.1a or later releases.

Restrictions for Configuring WIM on Cisco IR1800 Rugged Routers

- You can't change the login credentials of the WIM using Cisco SD-WAN Manager. For more information see, Default WIM Passwords.

- The Cisco SD-WAN Manager doesn't support changing from the CAPWAP to the WGB mode and the vice-versa. To change modes, see Converting Between Modes.
- You can map a SSID profile to only one radio at a time.

Use Cases for Configuring WIM on Cisco Catalyst IR1800 Rugged Routers

Configure the WIM for different types of WAN connections, such as LTE, MPLS, broadband, or satellite using Cisco SD-WAN Manager and monitor the WIM using real time commands. Configure, manage and deploy both the WIM and WAN connections on Cisco Catalyst IR 1800 Rugged routers using Cisco SD-WAN Manager.

Configure WIM on Cisco Catalyst IR1800 Rugged Routers in CAPWAP Mode

In Cisco SD-WAN Manager, configure WIM on Cisco Catalyst IR1800 Rugged Routers in CAPWAP Mode using the CLI templates. For more information about using CLI templates, see CLI Add-on Feature Templates and CLI Templates.

Note By default, CLI templates execute commands in global config mode.

1. Create a VLAN interface dedicated only to the layer 2 interface:

   ```
   interface Vlan id
   ```

2. Assign the layer 2 interface to the VLAN that you created:

   ```
   interface Wlan-GigabitEthernet0/1/4 switchport access vlan id
   switchport trunk native vlan vlan id
   switchport mode trunk
   ```

3. Create a DHCP pool for the VLAN:

Note Skip this step if you are using an external DHCP server.

```
ip dhcp pool vlan id
network ip subnet ip mask
default-router router ip address
```

The following example shows how to create a VLAN interface:

```
interface Vlan 50,100-200
```

The following example shows how to assign a layer 2 interface to the created VLAN

```
interface Wlan-GigabitEthernet0/1/4 switchport access vlan id
switchport access vlan 50,100-200
switchport trunk native vlan vlan 50,100-200
switchport mode trunk
```

The following example shows how to create a DHCP pool for the VLAN:

```
ip dhcp pool vlan 50,100-200
network 255.255.255.0 255.0.0
default-router 192.0.2.1
```

Configure WIM on Cisco Catalyst IR1800 Rugged Routers in WGB Mode

In Cisco SD-WAN Manager, configure WIM on Cisco Catalyst IR1800 Rugged Routers in WGB Mode using the CLI templates. For more information about using CLI templates, see CLI Add-on Feature Templates and CLI Templates.

Note By default, CLI templates execute commands in global config mode.

1. Enter the wireless-bridge submode:

   wireless-bridge
2. Create a WLAN profile for open authentication:

   ssid-profile *ssid profile name* **ssid** *ssid name* **authentication** *open*
3. Create a WLAN profile for WPA2-PSK authentication:

   ssid-profile *ssid profile name* **ssid** *ssid name* **authentication** *auth-type* **key-management** *wpa2* **secret-key** *secret key word the unencrypted secret key*
4. Assign the WLAN profile to the Wi-Fi radio using the WGB mode:

   dot11Radio *0 or 1* **mode** *wgb* **ssid-profile** *ssid profile name*
5. Assign the WLAN profile to the Wi-Fi radio using the uWGB mode:

   dot11Radio *0 or 1* **mode** *uwgb client_mac* **ssid-profile** *ssid profile name*
6. Assign the WLAN profile to the root-AP mode to serve wireless clients:

   dot11Radio *0 or 1* **mode** *root-ap*
7. Add a VLAN interface:

   dot11Radio *0 or 1* **mode** *root-ap* **wlan** *wlan profile name*
8. Enable the radio:

   dot11Radio *0 or 1 enable*
9. Assign the operating channel for radio in root-AP mode:

   dot11Radio *0 or 1* **channel** *channel-number width*

The following example shows how to configure a clear text password:

```
wireless-bridge
ssid-profile wlan2 ssid secured_ssid authentication psk key-management wpa2 secret-key 0
12345678
dot11Radio 0 mode wgb ssid-profile test-ssid
```

```
dot11Radio 0 mode root-ap
dot11Radio 1 mode root-ap wlan test-wlan
dot11Radio 0 enable
dot11Radio 1 enable
dot11Radio 0 channel 5 10
```

Verify Configuring WIM on Cisco Catalyst IR1800 Rugged Routers

Verify the Status of WIM

The following is a sample output from the **show wireless-bridge status** command:

```
Device# show wireless-bridge status
Module Operating Mode : CAPWAP Mode
Module Status         : Module State Ready
Software Version      : 17.11.0.155
Module Session Status : Login Success
```

Verify the Status of WIM in WGB Mode

The following is a sample output from the **show wireless-bridge wlans** command:

```
Device# show wireless-bridge wlans
wlan  band  oper  vlan  #client  wlan-mode  SSID
 ----  ----  ----  ----  -------  ---------  -----------------
    0    5g    up     0        0     uplink  WGB_uplink
```

Verify the Status of the Connected Clients

The following is a sample output from the **show wireless-bridge clients** command:

```
Device# show wireless-bridge clients
Client-MAC-Addr    band  status        wlan  DeviceType  SSID
-----------------  ----  ------------  ----  ----------  -------------
 40:ED:00:1C:7E:EC  2.4g  Associated      2   wireless    000_aab
40:ED:00:1C:85:3B  2.4g  Associated      2   wireless    000_aab
```

Monitor WIM on Cisco Catalyst IR1800 Rugged Routers Using Cisco SD-WAN Manager

Monitor WLAN Output

1. From the Cisco SD-WAN Manager menu, choose **Monitor** > **Devices** > **Real Time**.
2. In the **Device Options** field, type **`Wireless SSID`** and choose **Wireless SSID** from the drop-down list.

   See the details of the WLAN along with the VLAN ID associated with them.



Note The real-time command **`Wireless SSID`** doesn't show the SSID type.

Monitor Client Details

1. From the Cisco SD-WAN Manager menu, choose **Monitor** > **Devices** > **Real Time**.
2. In the **Device Options** field, type **`Wireless Clients`** and choose **Wireless Clients** from the drop-down list.

   See the details of the clients with their MAC addresses.



Note

- The real-time command **`Wireless Clients`** doesn't show the client types.
- View both the wired and wireless client details using the **`Wireless Clients`** realtime command.