Data Rate Selection at SSID Level

Feature history for legacy data rate selection at SSID level

- This table provides release and related information for the feature explained in this module.
- This feature is also available in all the releases subsequent to the one in which they are introduced in, unless noted otherwise.

Table 1: Feature history for legacy data rate selection at SSID level

Feature Name	Release Information	Feature Description
Legacy data rate selection at SSID level	Cisco IOS XE 26.1.1	SSID-level legacy data rate selection enables the customization of legacy 802.11a/b/g speeds for individual WLANs or Virtual APs. This feature enforces a minimum bit rate for each radio, ensuring the AP does not advertise any speeds below that threshold, even if those lower rates are permitted in the general RF profile.

Legacy data rate selection at SSID level

Legacy data rate selection at SSID level is a wireless configuration feature that:

- allows the configuration of 802.11a/b/g (legacy) data rates per WLAN or Virtual AP (VAP)
- specifies the minimum bit rate to be used by each radio for a specific SSID, and
- ensures that the AP does not advertise rates lower than the configured minimum, even if those rates are enabled in the RF profile.

Previously, you managed legacy data rate configurations at the global or RF profile level. This feature provides granular control at the SSID level, which is useful for deployments requiring specific performance thresholds for different user groups or applications.

Bit rate defaults and ranges

The values to configure a legacy date rate in RF profile configuration depends on the frequency band:

- For 2.4 GHz, the default is 1 Mbps. The valid range is 1 to 54 Mbps.
- For 5 GHz, the default is 6 Mbps. The valid range is 6 to 54 Mbps.

Note This configuration does not apply to the 6 GHz radio band.

Guidelines for legacy data rate selection

Requirement: Radio band applicability

Ensure that minimum data rate configurations apply only to the 2.4 GHz and 5 GHz bands. This feature does not support or impact the 6 GHz radio band.

RF profile precedence

The minimum data rate configured at the SSID level acts as a threshold. The AP does not advertise legacy rates lower than this threshold, even if those rates are marked as supported or mandatory in the RF profile.

Mandatory rate alignment

At least one mandatory rate in the RF profile must be higher than the minimum data rate set for the SSID. If no mandatory rate is higher than the SSID minimum data rate, the configuration fails and an error appears.

Configure the minimum data rate (GUI)

Set a minimum legacy bit rate threshold for a specific WLAN to control which data rates the AP advertises.

Use this task to ensure that clients can only connect using data rates above a specific threshold for a SSID. This setting overrides broader RF profile settings.

Before you begin

Make sure you have created and can access the WLAN. Determine the minimum bit rate that meets your use case to improve cell efficiency.

Procedure

Step 1 Choose **Configuration** > **Tags & Profiles** > **WLANs**.

Step 2 Click the **WLAN Name** you want to configure, or click **Add** to create a new one.

Step 3 In the **Edit WLAN** or **Add WLAN** window, click the **Advanced** tab.

Step 4 Locate the **Minimum Data Rates At SSID Level** section.

Step 5 From the **2.4 GHz Data Rate** and **5 GHz Data Rate** drop-down lists, select the desired minimum bit rate.

Step 6 Click **Update & Apply to Device**.

The WLAN is updated with the new minimum data rate thresholds. The APs broadcasting this SSID now advertise legacy rates at or above the minimum values you set.

Configure the minimum data rate (CLI)

Configure the minimum data rate for 2.4 GHz and 5 GHz radios on your WLAN using commands.

Minimum data rate settings control which devices connect to a WLAN and at what speeds. These settings help remove support for slower rates and improve throughput.

Before you begin

Make sure you can access the CLI on your wireless controller. Know your WLAN profile name, SSID, and preferred data rate values for 2.4 GHz and 5 GHz radios.

Procedure

Step 1 Enter the global configuration mode.

Example:

```
Device# configure terminal
```

Step 2 Configure the WLAN network and enter the WLAN profile name.

Example:

```
Device(config)# wlan (default-wlan-profile)
```

You can use up to 32 alphanumeric characters for the WLAN profile name.

Step 3 Create WLAN identifier and enter the SSID (network) name.

Example:

```
Device(config)# wlan (default-wlan-profile) <1-4096> SSID50
```

The valid WLAN identifier range is 1 to 4096. You can use up to 32 alphanumeric characters for the SSID name.

Step 4 Configure 802.11 parameters.

Example:

```
Device(config-wlan)# dot11
```

Step 5 Configure 802.11a and 802.11b parameters and data rates.

Example:

```
Device(config-wlan)# dot11 5ghz data-rate
Device(config-wlan)# dot11 24ghz data-rate
```

Step 6 Configure minimum data rate and set the minimum data rate for 2.4 GHz and 5 GHz radios.

Example:

```
Device(config-wlan)# dot11 24ghz data-rate min RATE_9M
Device(config-wlan)# dot11 5ghz data-rate min RATE_12M
```

The minimum data rate for 2.4 GHz radio is 9 Mbps. The minimum data rate for 5 GHz radio is 12 Mbps.

Step 7 Exit the global configuration mode.

Example:

```
Device(config-wlan)# end
```

Verify RF profile and radio slot status

Use this command to verify if the RF profile is assigned to the radio and to also check the radio slot status.

- **show ap rf-profile summary**

To verify if the RF profile is assigned to the radio and to also check the radio slot status, enter this command from the console:

```
Device# show ap rf-profile summary

Number of RF-profiles: 17
RF Profile Name                  Band     Description                              State
------------------------------------------------------------------------------------------
t                                2.4 GHz                                           Down
test                             2.4 GHz                                           Down
test1                            5 GHz                                             Down
rf-test                          2.4 GHz                                           Down
test_5gh                         5 GHz                                             Down
test_24gh                        2.4 GHz                                           Up
test_5ghz                        5 GHz                                             Up
test_24ghz                       2.4 GHz                                           Up
5ghz-rf-policy                   5 GHz                                             Down
default-rf-profile               2.4 GHz                                           Down
default-rf-profile-6ghz          6 GHz    default rfprofile for 6GHz radio         Up
Low_Client_Density_rf_5gh        5 GHz    pre configured Low Client Density rf     Up
High_Client_Density_rf_5gh       5 GHz    pre configured High Client Density r     Up
Low_Client_Density_rf_24gh       2.4 GHz  pre configured Low Client Density rf     Up
High_Client_Density_rf_24gh      2.4 GHz  pre configured High Client Density r     Up
Typical_Client_Density_rf_5gh    5 GHz    pre configured Typical Density rfpro     Up
Typical_Client_Density_rf_24gh   2.4 GHz  pre configured Typical Client Densit     Up
```

Verify RF profile configuration

Use this command to verify RF profile configuration.

- **show wireless profile radio detailed <profile-name>**

To verify RF profile configuration, enter this command from the console:

```
Device# show wireless profile radio detailed

WORD  radio-profile name

Device# show wireless profile radio detailed default-radio-profile

Radio Profile name                              : default-radio-profile
Description                                     : Preconfigured default radio profile
Beam-Selection                                  : Not configured
Number of antenna to be enabled                 : 0
Mesh Backhaul                                   : Enabled
Mesh Designated Downlink                        : Disabled
```

```
DTIM period                                    : 1

URWB
Role                                         : Not Configured
Channel                                      : Not Configured
Channel Width                                : 20 MHz
AES                                          : Fixed Key
Key Control Rotation Timeout                 : 15
Channel List                                 : Not Configured
Point-to-Multi-Point
RSSI Threshold                               : 0
Auto Scan                                    : Disabled
Cluster ID                                   : CiscoURWB
Tower ID                                     : Not Configured
Packet Retries                                 : 32
Maximum Link Distance (km)                     : 3
Dot11ax Maximum MCS Index                      : MCS9

Wireless Active Testing (WAT) Configuration
WAT Admin State (Radio Selection)              : Disabled
```