Configure a WLAN for Voice with the 8821 on Catalyst 9800 WLC

Contents

Introduction

This document describes how to configure a 9800 Wireless LAN Controller (WLC) for a voice deployment using Cisco 8821 handsets.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Catalyst Wireless 9800 configuration model
- FlexConnect
- 802.11r
- Call Admission Control (CAC)

Components Used

The information in this document is based on a 9800L v17.6.1

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure

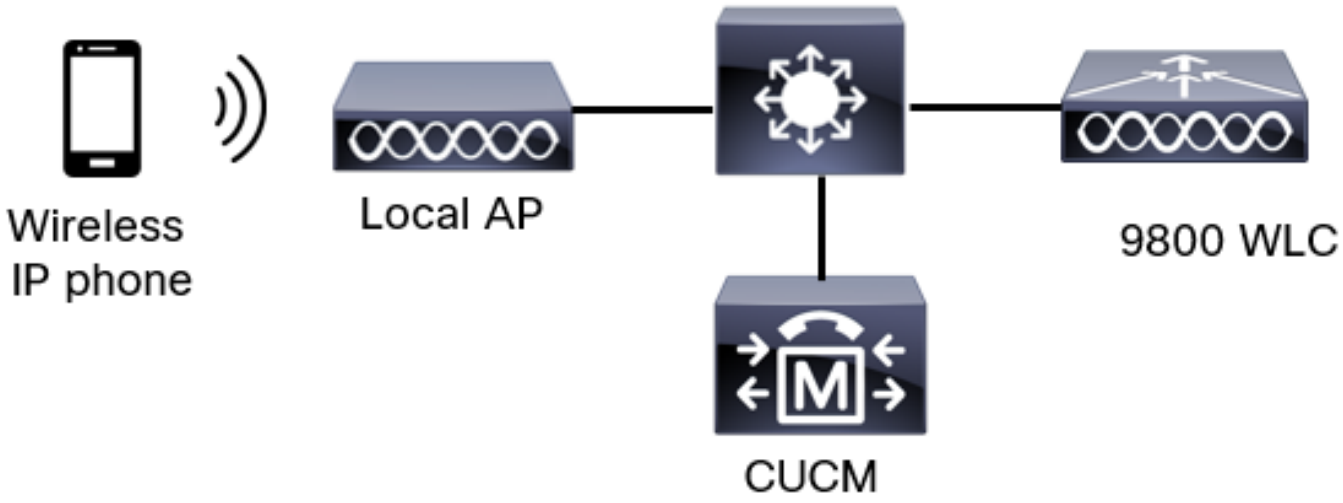
that you understand the potential impact of any command.

The document does not cover SIP CAC as it is not supported on the 9800 after version 17.3.1

Configure an SSID

Option a : Central Switching

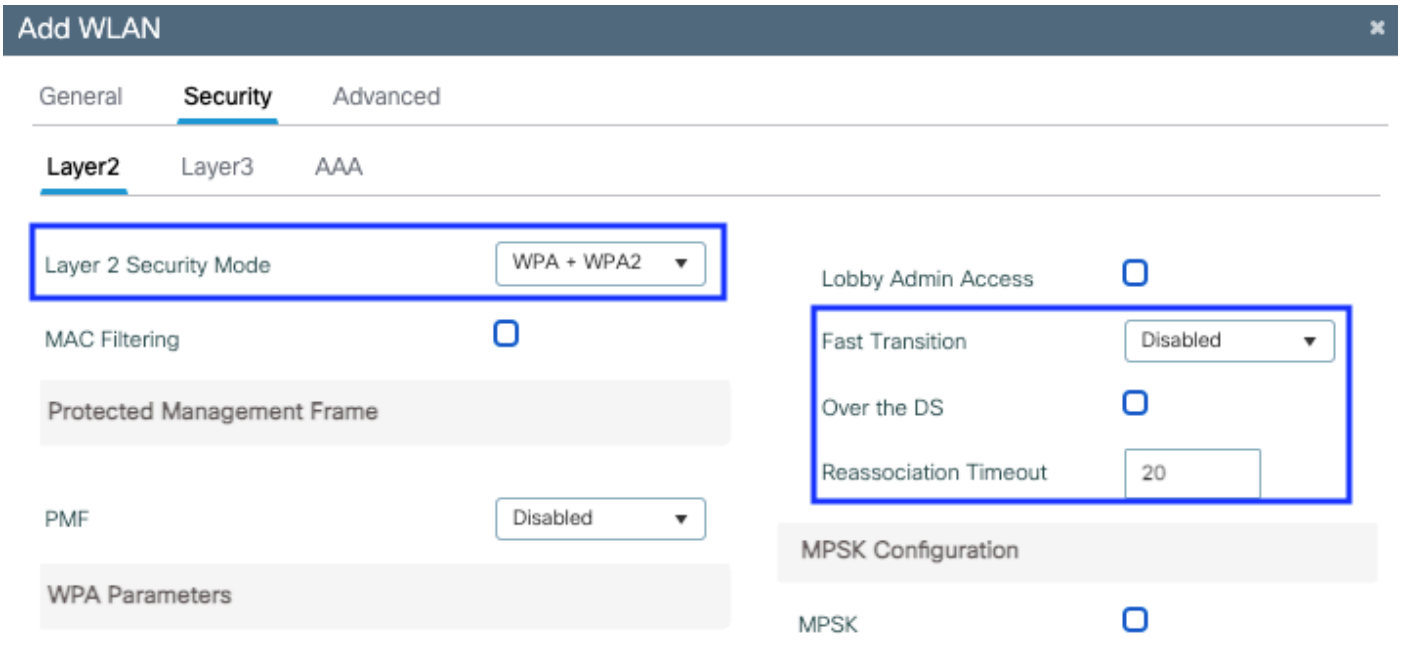
Central Switching Network Diagram



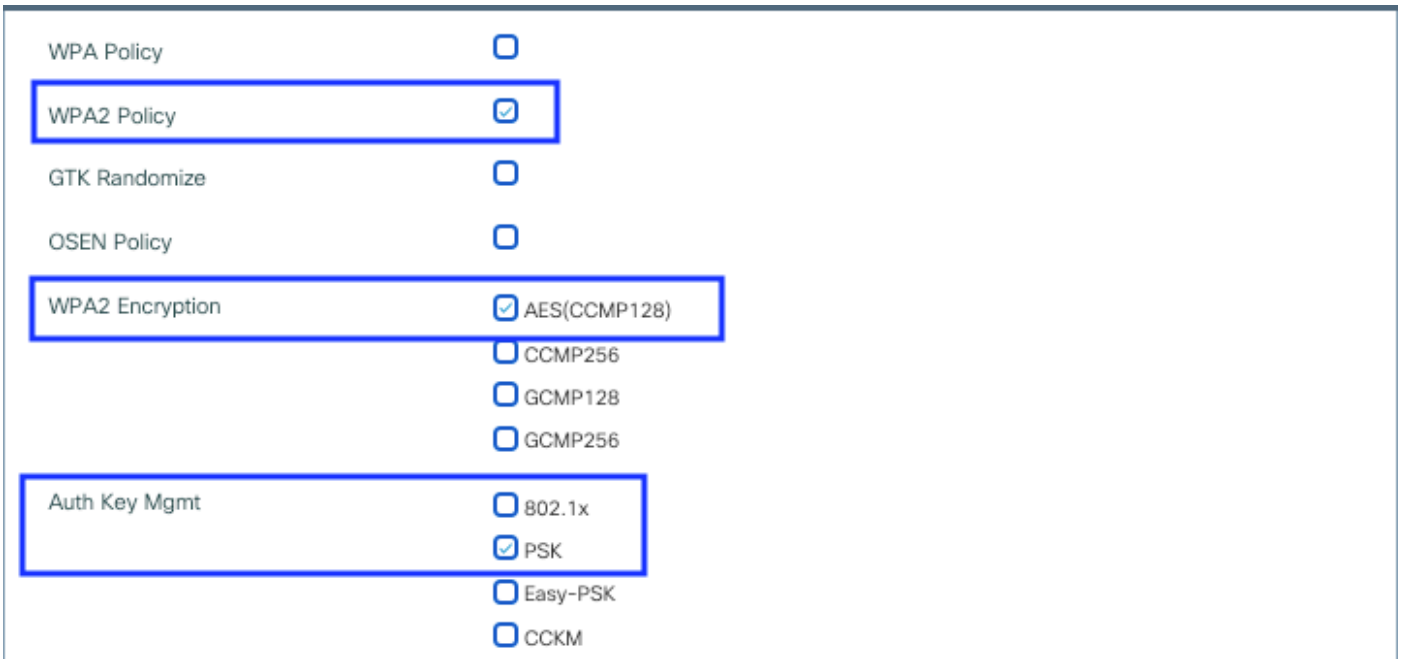
Central Switching : Tags and Profiles

In this document, the configuration of all tags and profiles is done with the use of the **Advanced Wireless Setup** as all tags and profiles can be configured on the same menu.

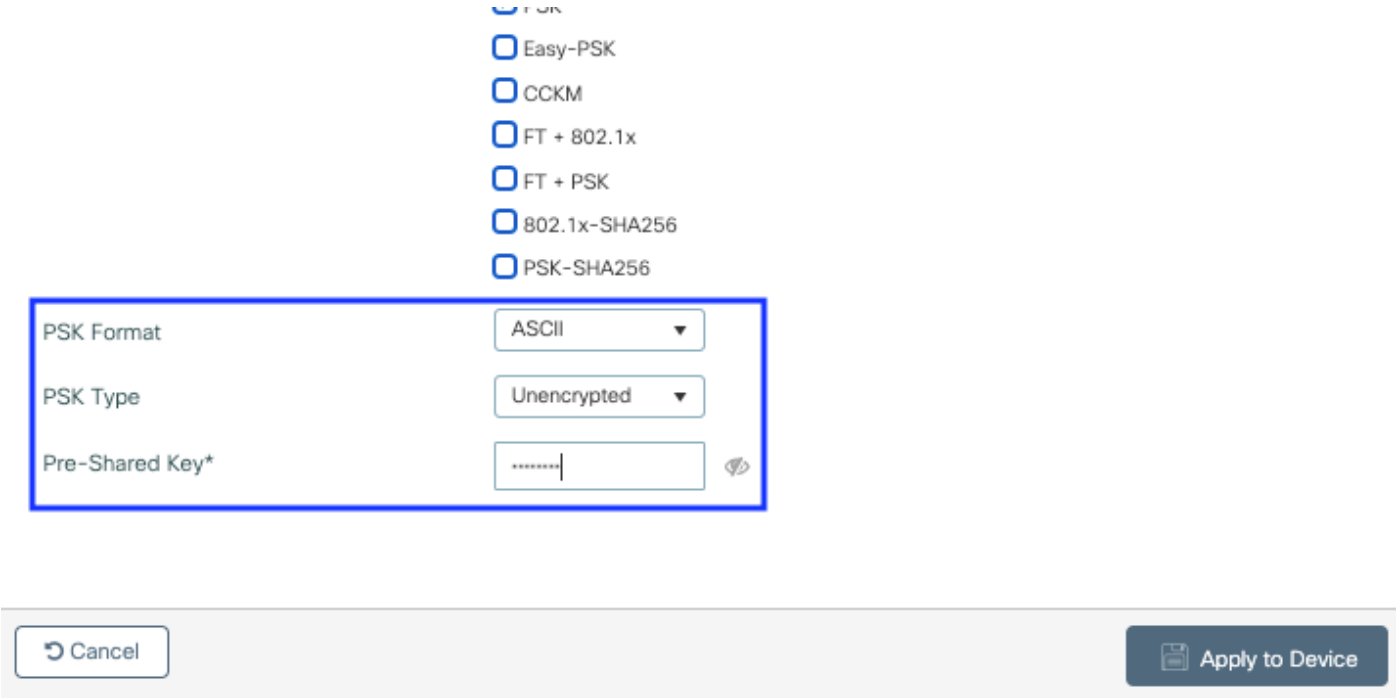
Step 1. Navigate to **Configuration > Wireless Setup > Advanced > Start Now > WLAN Profile** and click **+Add** in order to create a new WLAN. Configure the SSID, Profile Name, WLAN ID, and the status of the WLAN. Then, navigate to **Security > Layer 2** and configure the settings. This example uses simple PSK and therefore does not require configuring FT. If you configure 802.1X, enable FT.



Voice SSID security settings part 1



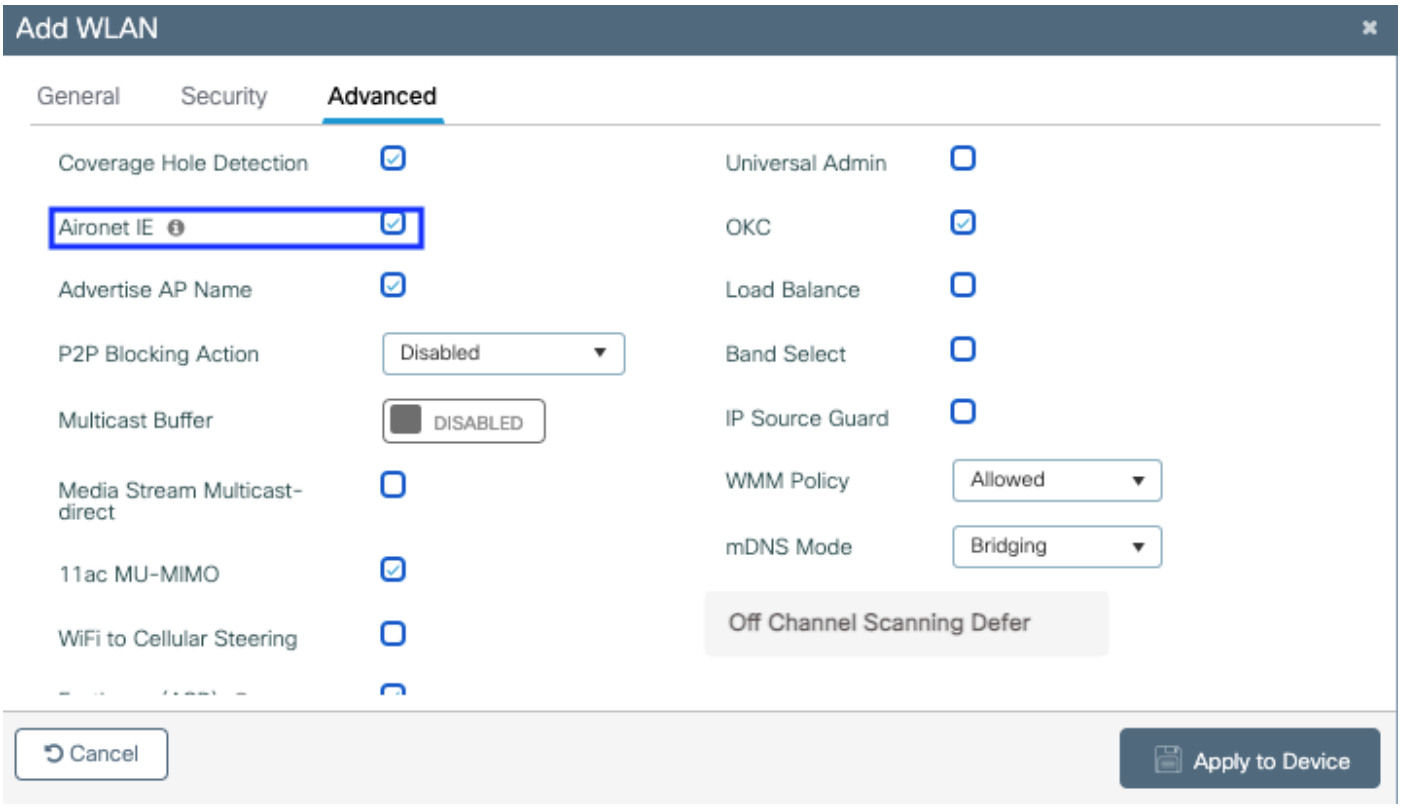
Voice SSID security settings part 2



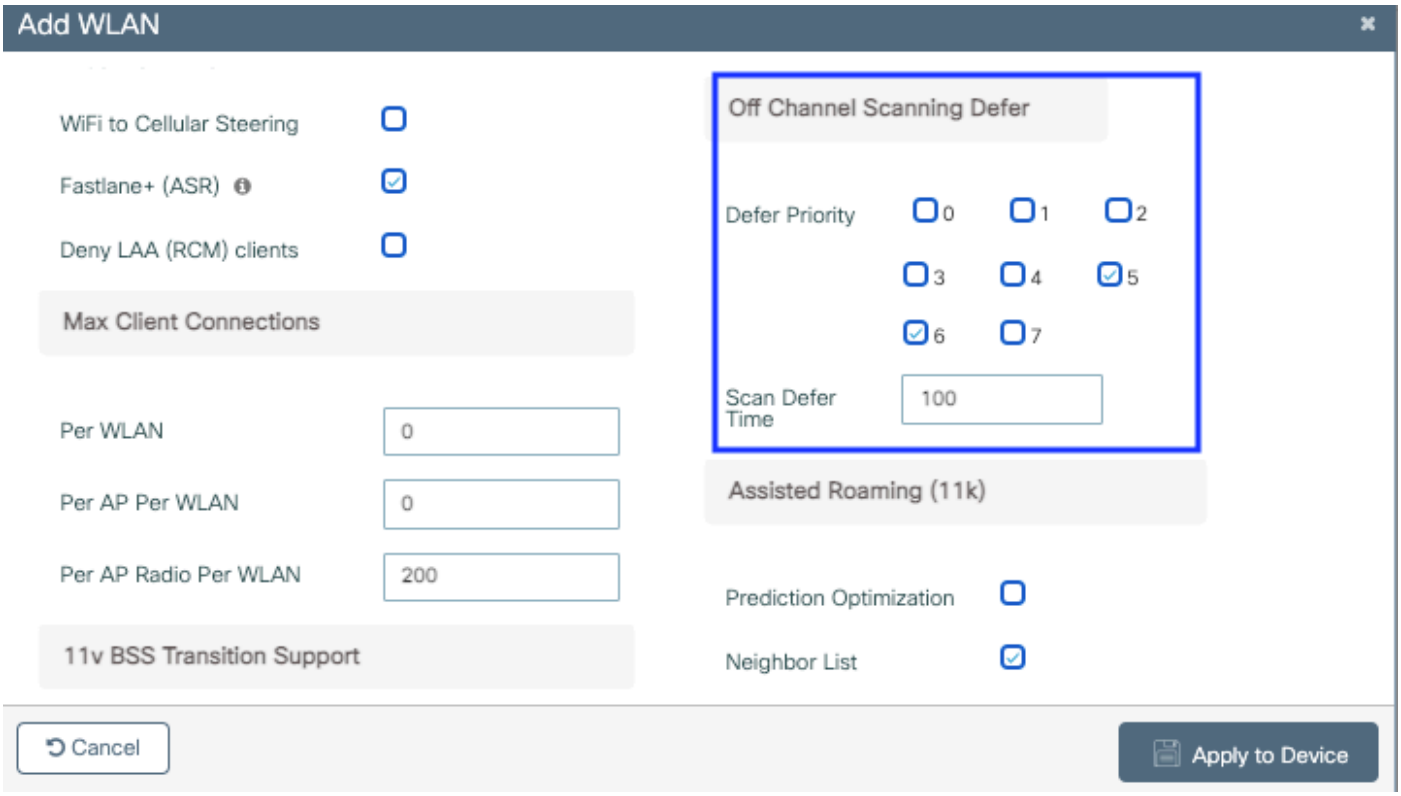
Voice SSID security settings part 3

Note: With a PSK SSID it is not necessary to enable FT as the handshake during roaming is short. When configuring 802.1X WPA Enteprise, it is advised to enable FT+802.1X as AKM and enable Fast Transition but keep "Over the DS" as disabled. You can also configure FT+PSK but this examples uses regular PSK for simplicity's sake.

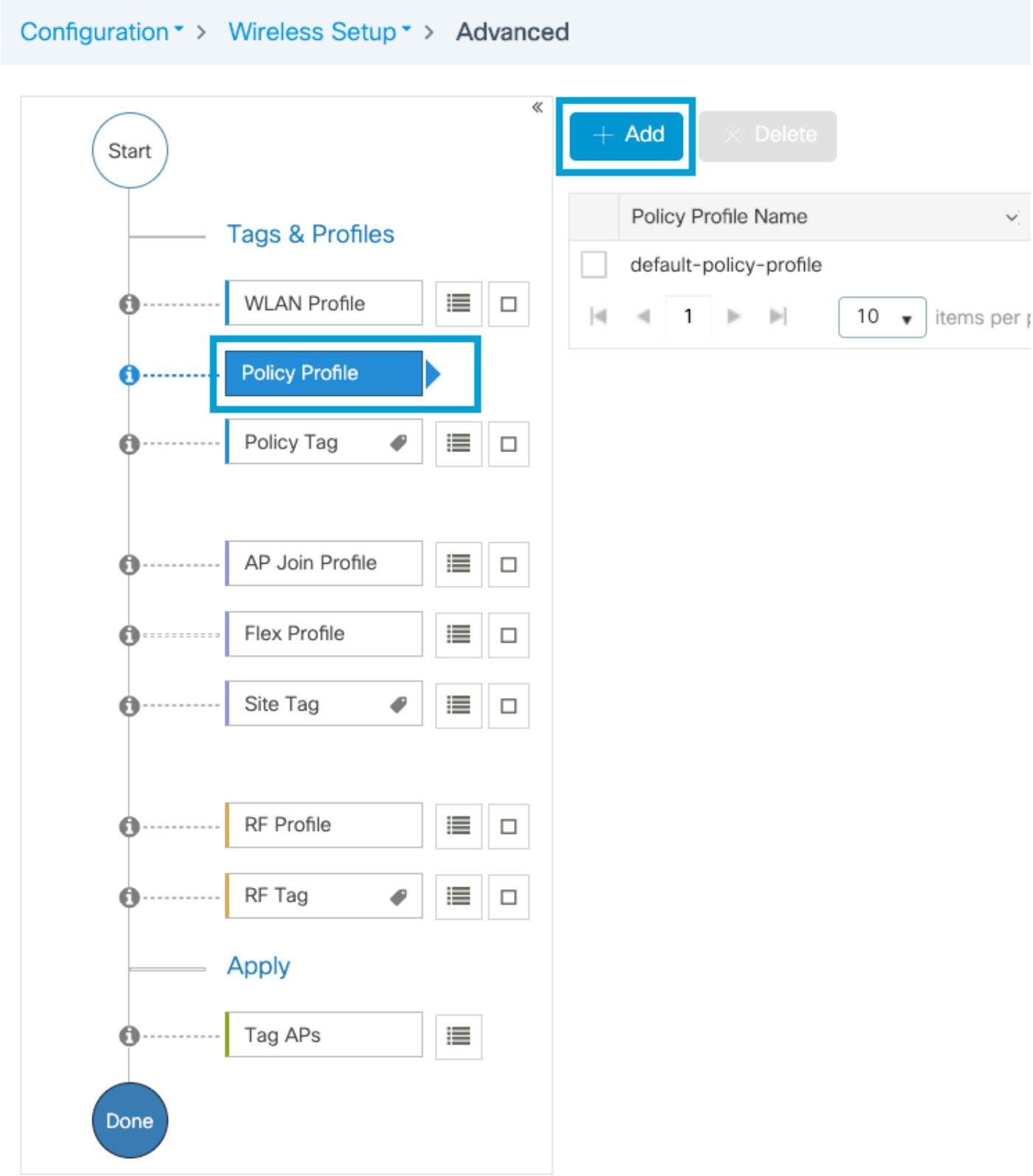
Step 2. Navigate to the **Advanced** tab and enable Aironet IE. Make sure Load balance and band select are disabled:



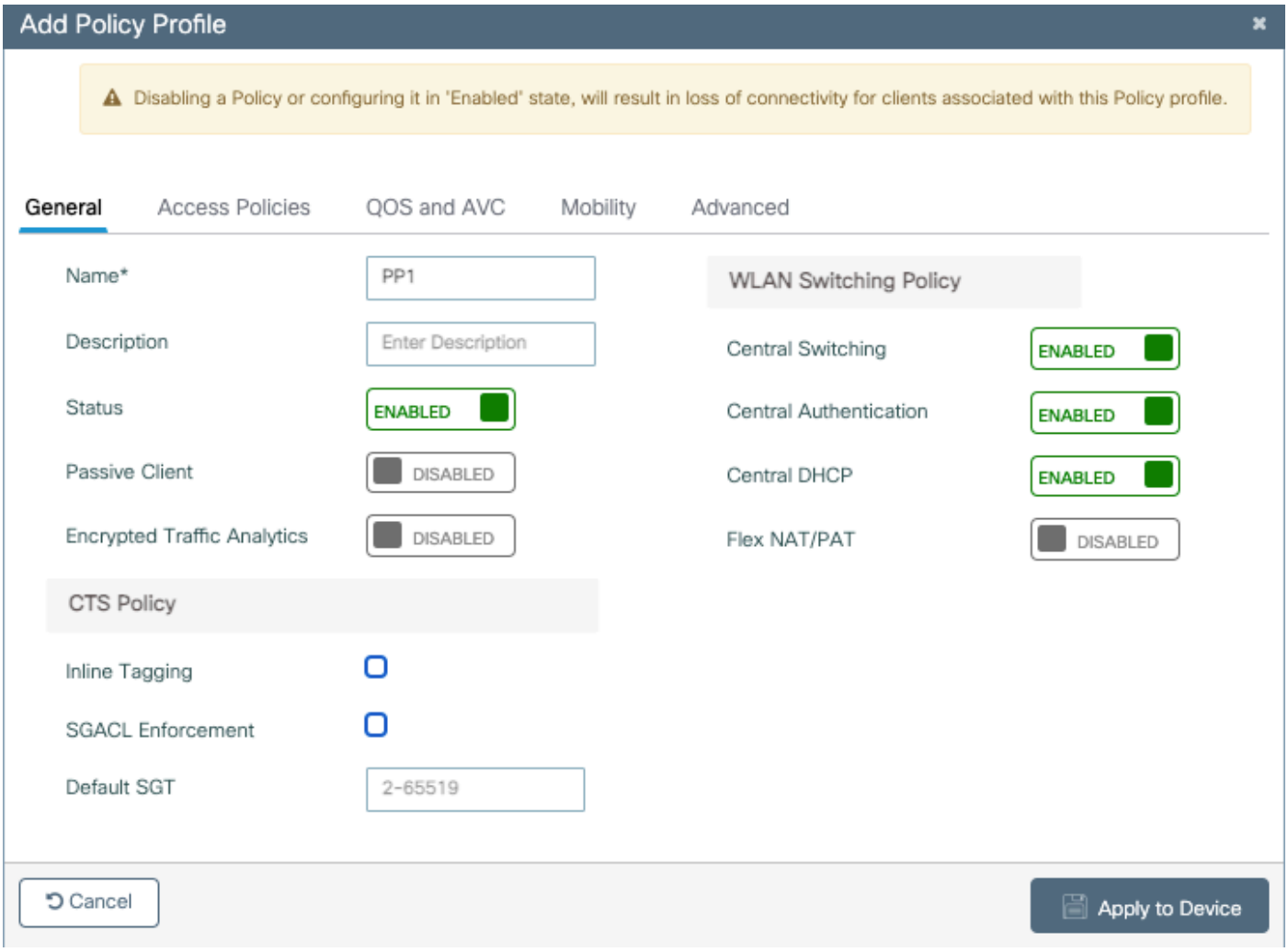
In the same page, make sure the off channel scan defer is enabled for priorities 5,6 and 7. This prevents the AP from going off-channel for 100ms after a frame with those UP priorities (basically a voice frame) was received.



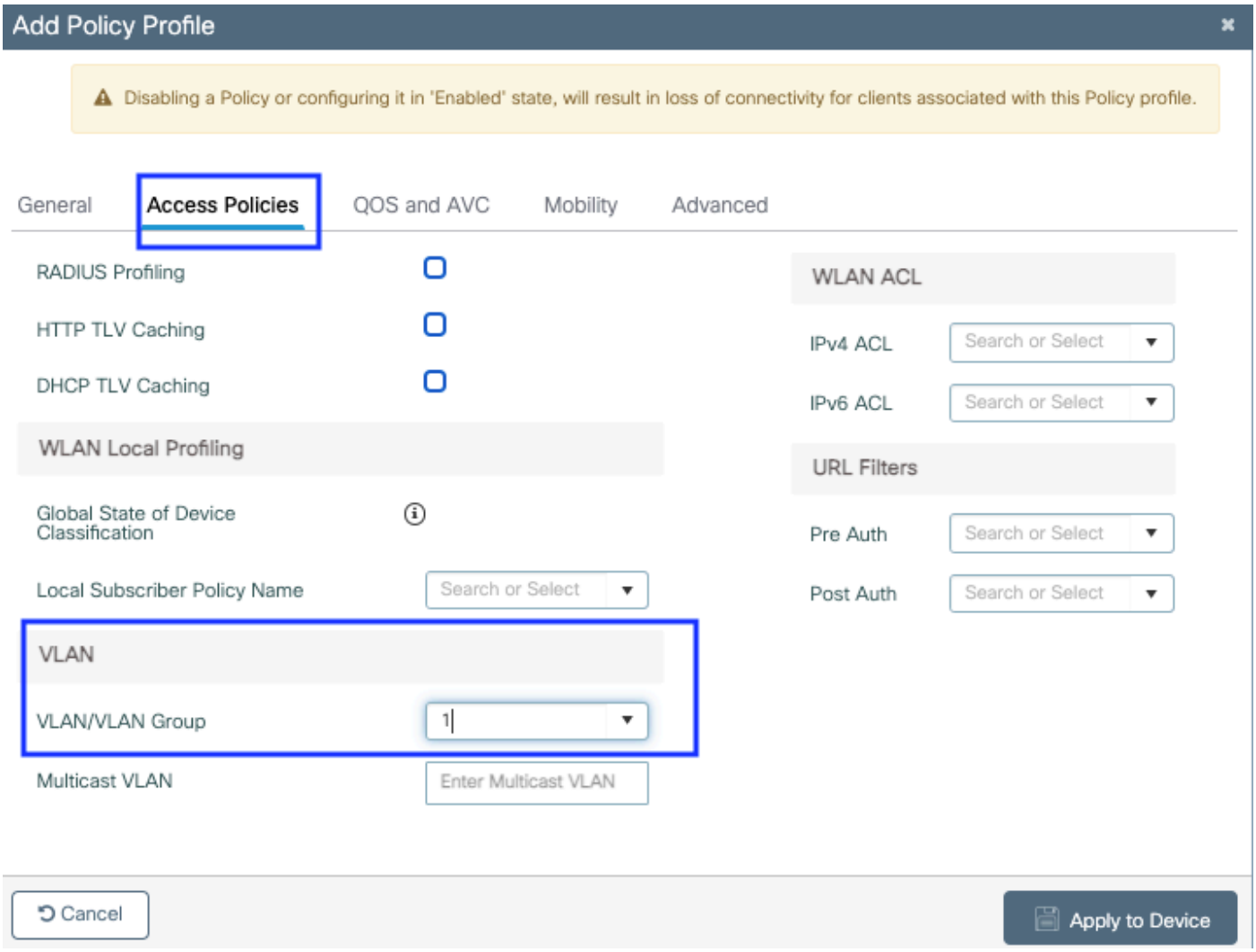
Step 3. Select **Policy Profile** and click **Add:**



Configure the Policy Profile name, set the Status as Enabled, and keep Central Switching, Authentication, DHCP and association (after 17.6, the central association checkbox disappears) enabled:

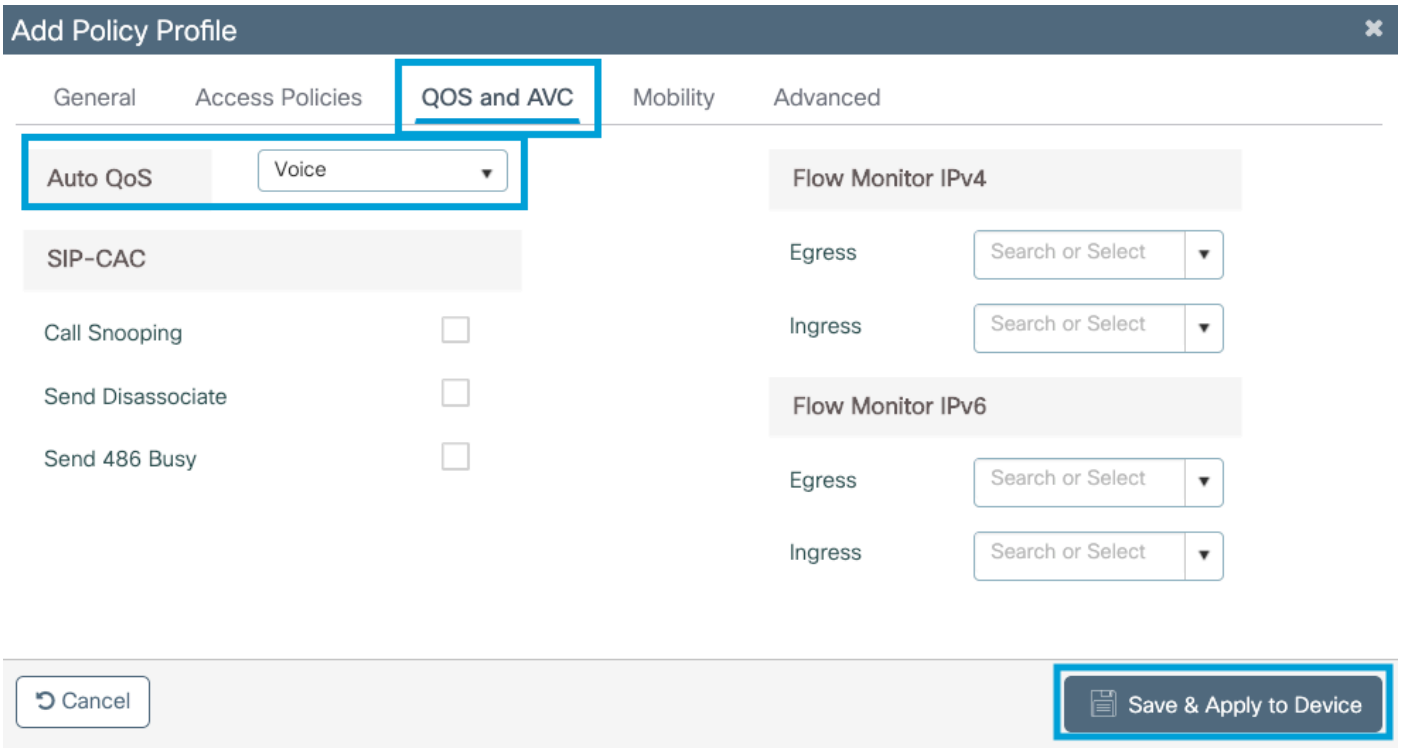


Click on **Access Policies** and configure the VLAN the wireless client will be assigned to when connecting to the SSID **Voice:**

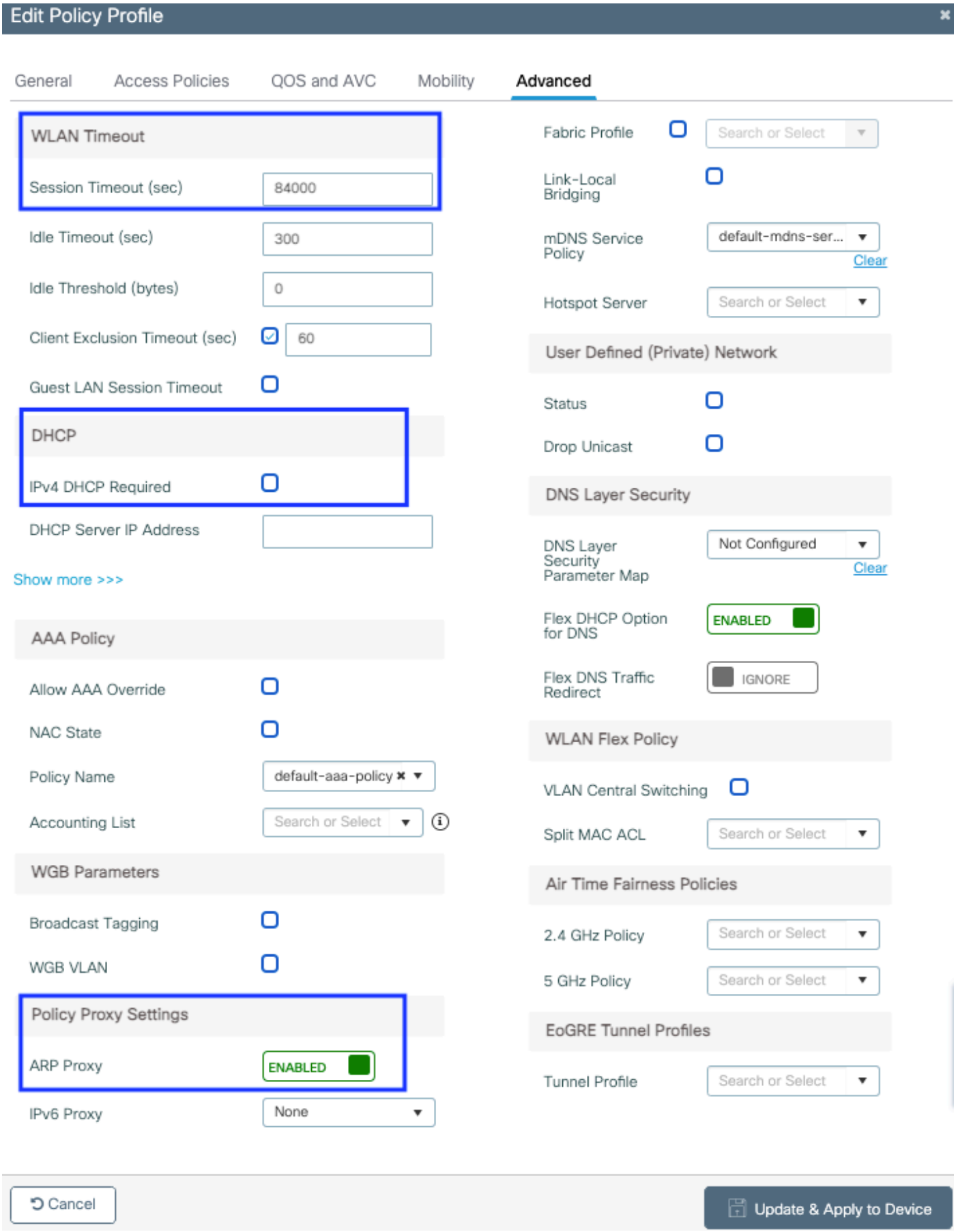


Policy profile access policies settings page

Click on **QoS and AVC,** and configure the **Auto QoS** parameter as **Voice.** Click **Save & Apply to Device**.



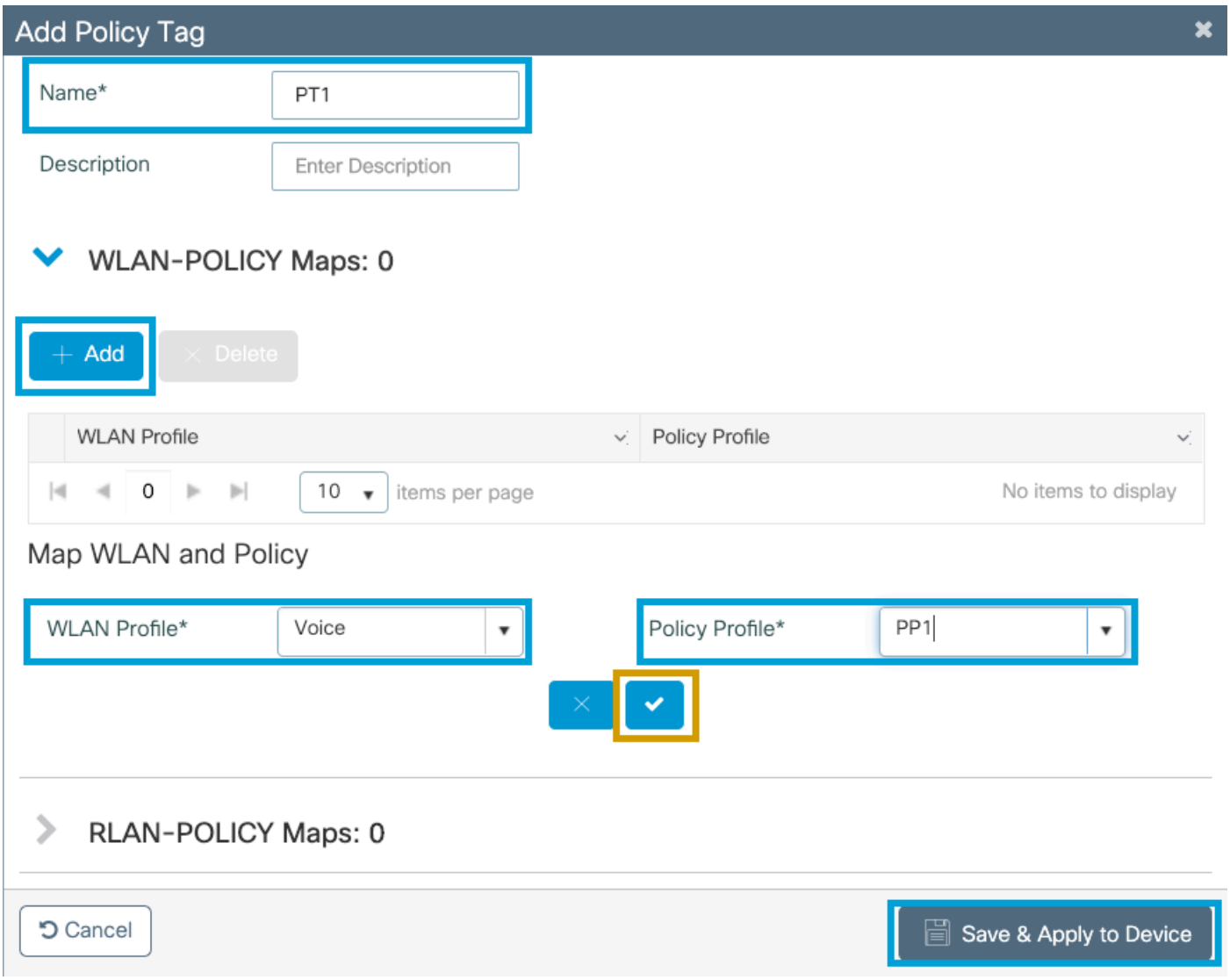
Click on **Advanced,** set the session timeout to 84000, make sure that IPv4 DHCP required is disabled and enable ARP proxy.



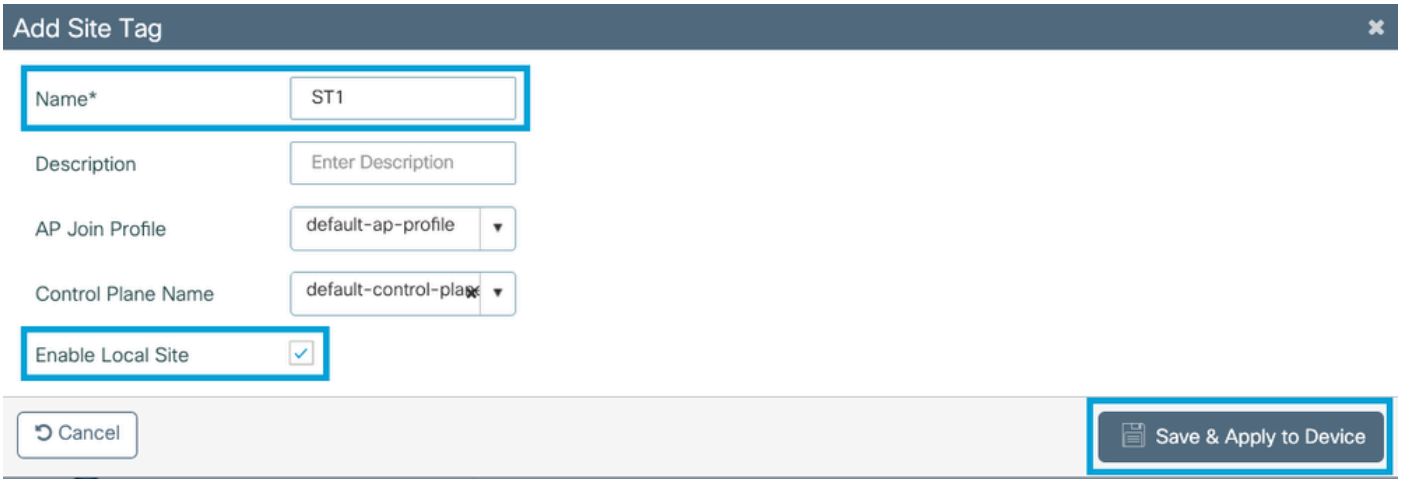
Policy profile advanced settings page

Step 4. Select **Policy Tag** and click **Add.** Configure the Policy Tag name. Under **WLAN-Policy Maps** click on **+Add.** Select the **WLAN Profile** and **Policy Profile** from the drop-down menus, click the check for the

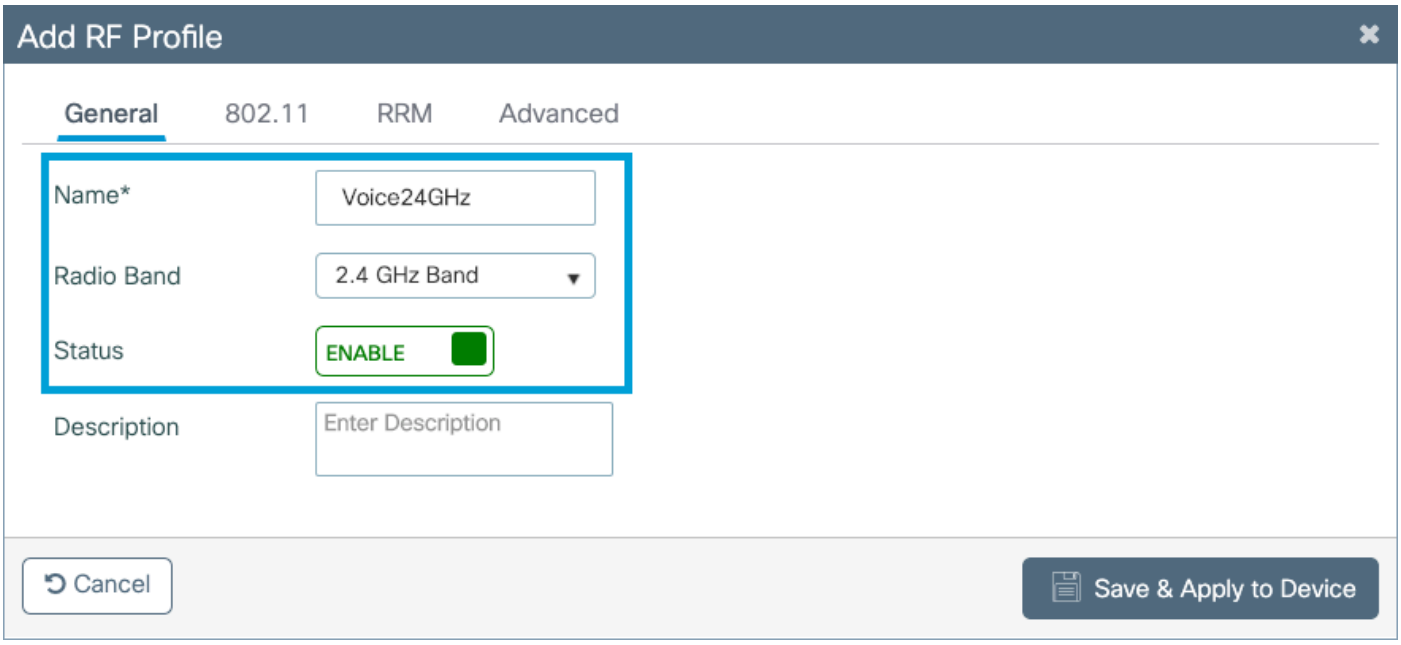
map to be configured. Then, click **Save & Apply to Device.**



Step 5. Select **Site Tag** and click **Add.** Check the **Enable Local Site** box for the APs to operate in **Local Mode.** Then, click **Save & Apply to Device:**

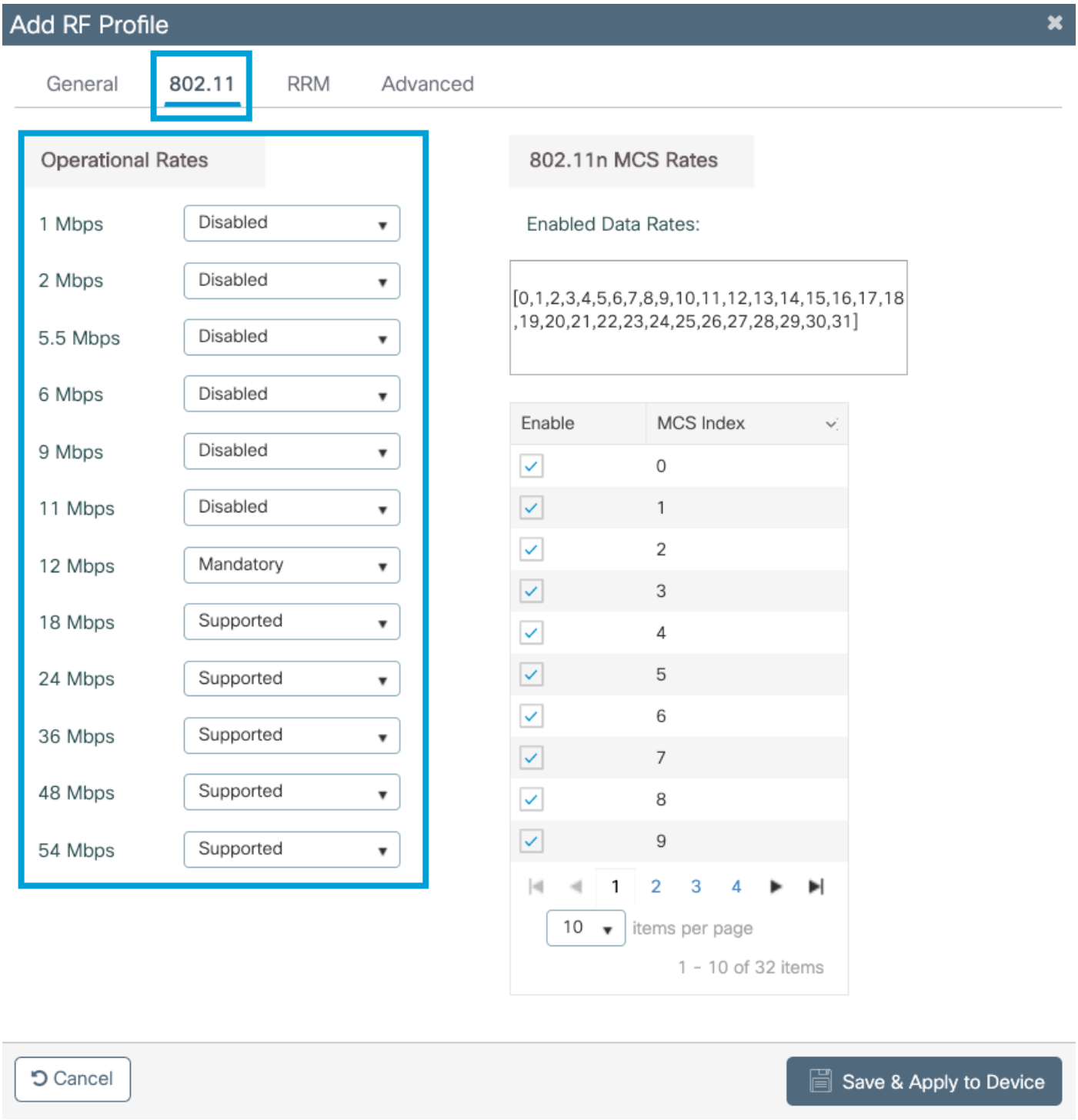


Step 6. Select **RF Profile** and click **Add.** Configure an RF Profile per band.

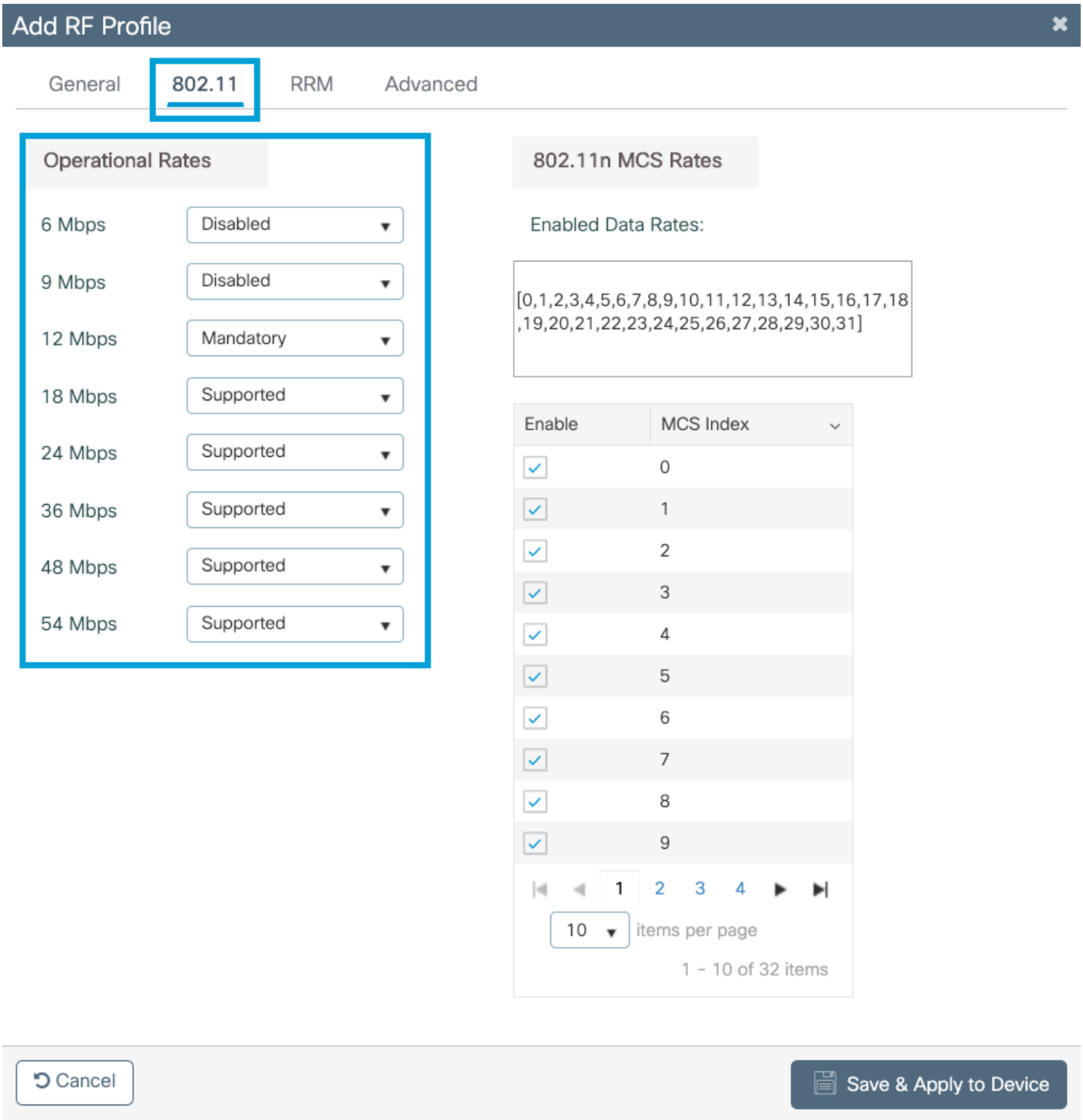


Navigate to the **802.11** menu. Disable all rates under 12Mbps, set 12Mbps as the mandatory rate, and 18 Mbps and higher as supported on both bands.

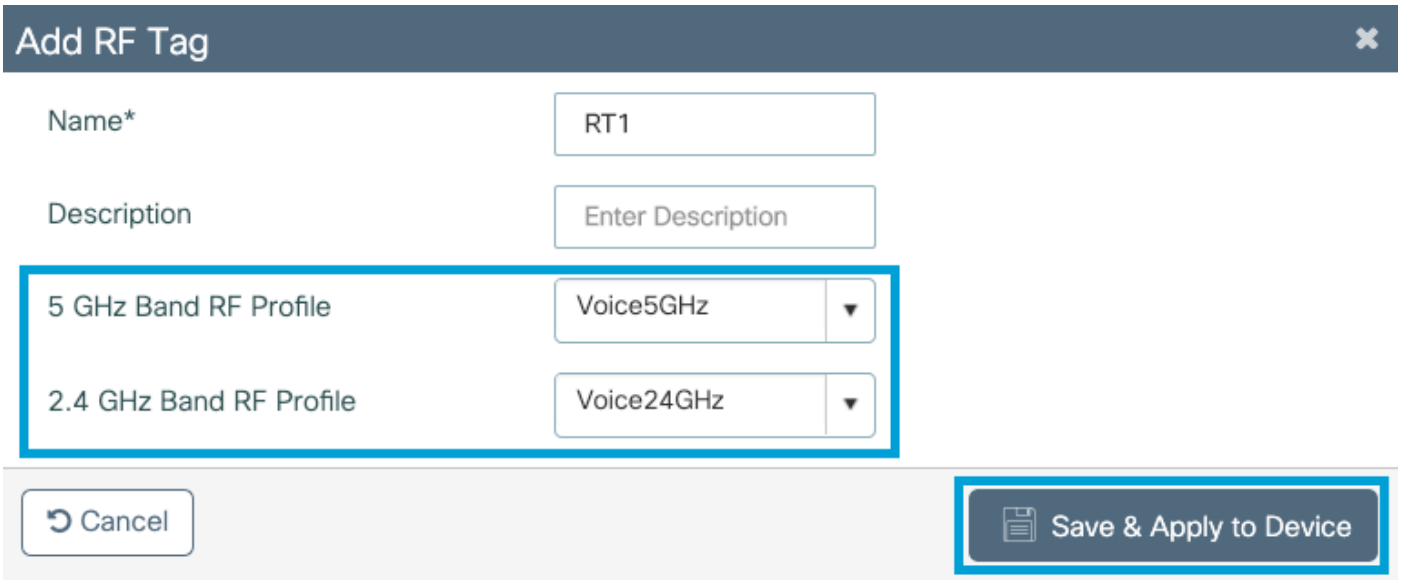
2.4 GHz data rates:



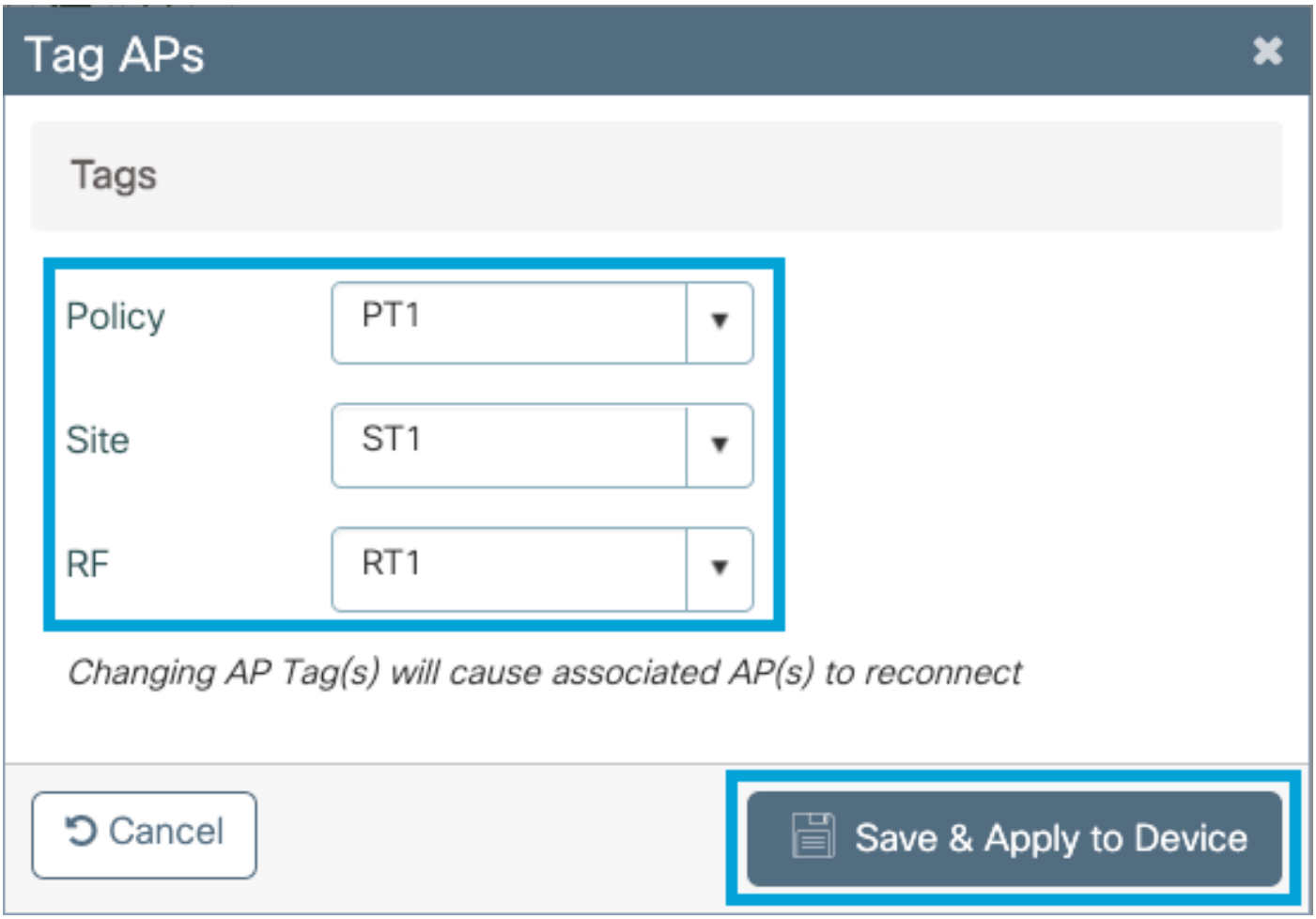
5 GHz data rates:



Step 7. Select **RF** Tag and click **Add.** Select the RF Profiles created in step 5 of this section. Then, click **Save & Apply to Device.**



Step 8. Select **Tag APs**, choose the APs and add the Policy, Site and RF tag previously created. Then, click **Save & Apply to Device.**



Central Switching : Command Line Interface (CLI)

From the CLI run these commands:

<#root>

//////// WLAN Configuration

```
wlan Voice 1 Voice
 ccx aironet-iesupport
 no security ft adaptive
 security wpa psk set-key ascii 0 Cisco123
 no security wpa akm dot1x
 security wpa akm psk
 no shutdown
```

//////// Policy Profile Configuration

```
wireless profile policy PP1
 autoqos mode voice
 ipv4 arp-proxy
 service-policy input platinum-up
 service-policy output platinum
 session-timeout 84000
 vlan 1
 no shutdown
```

//////// Policy Tag Configuration

```
wireless tag policy PT1
 wlan Voice policy PP1
```

////////

Site Tag Configuration

```
wireless tag site ST1
 local-site
```

//////// 2.4 GHz RF Profile Configuration

```
ap dot11 24ghz rf-profile Voice24GHz
 rate RATE_11M disable
 rate RATE_12M mandatory
 rate RATE_1M disable
 rate RATE_2M disable
 rate RATE_5_5M disable
 rate RATE_6M disable
 rate RATE_9M disable
 no shutdown
```

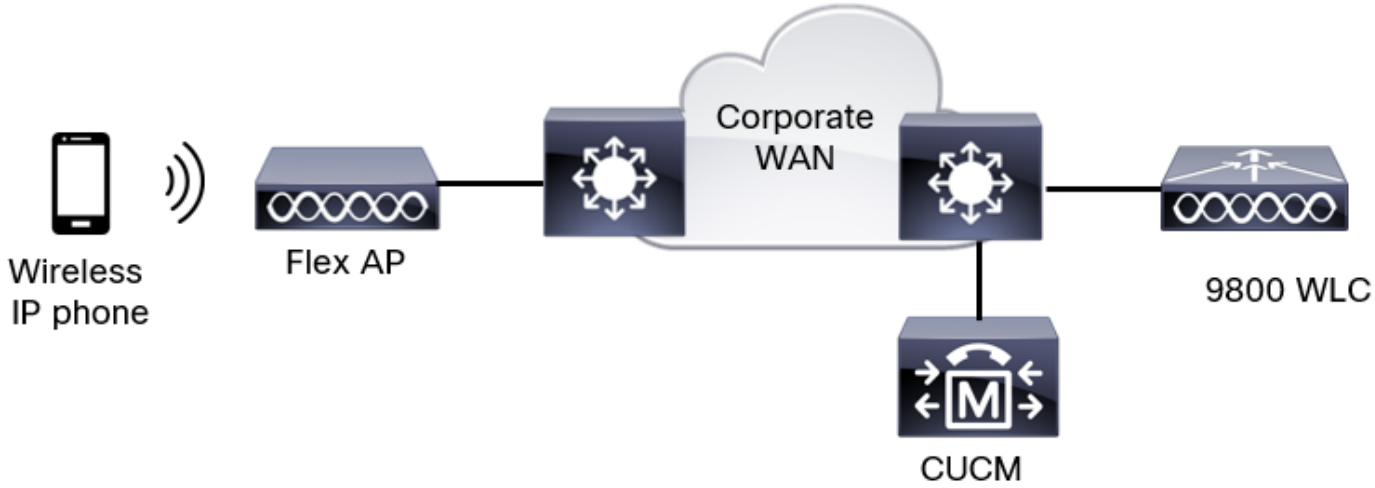
//////// 5 GHz RF Profile Configuration

```
ap dot11 5ghz rf-profile Voice5GHz
 rate RATE_24M supported
 rate RATE_6M disable
 rate RATE_9M disable
 no shutdown
```

```
//////// RF Tag Configuration


wireless tag rf RT1
 24ghz-rf-policy Voice24GHz
 5ghz-rf-policy Voice5GHz


//////// AP Configuration


ap a023.9f86.52c0
 policy-tag PT1
 rf-tag RT1
 site-tag ST1
```

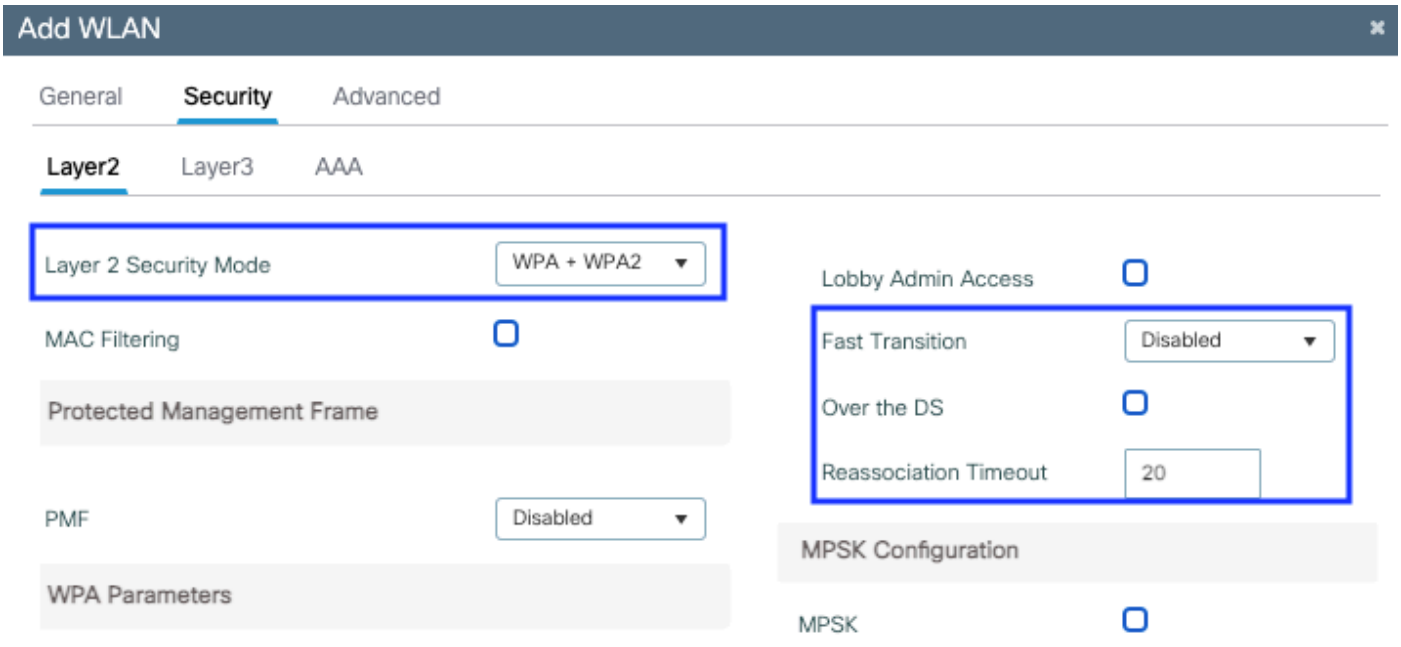
Option b: FlexConnect Local Switching

Flexconnect Local Switching Network Diagram

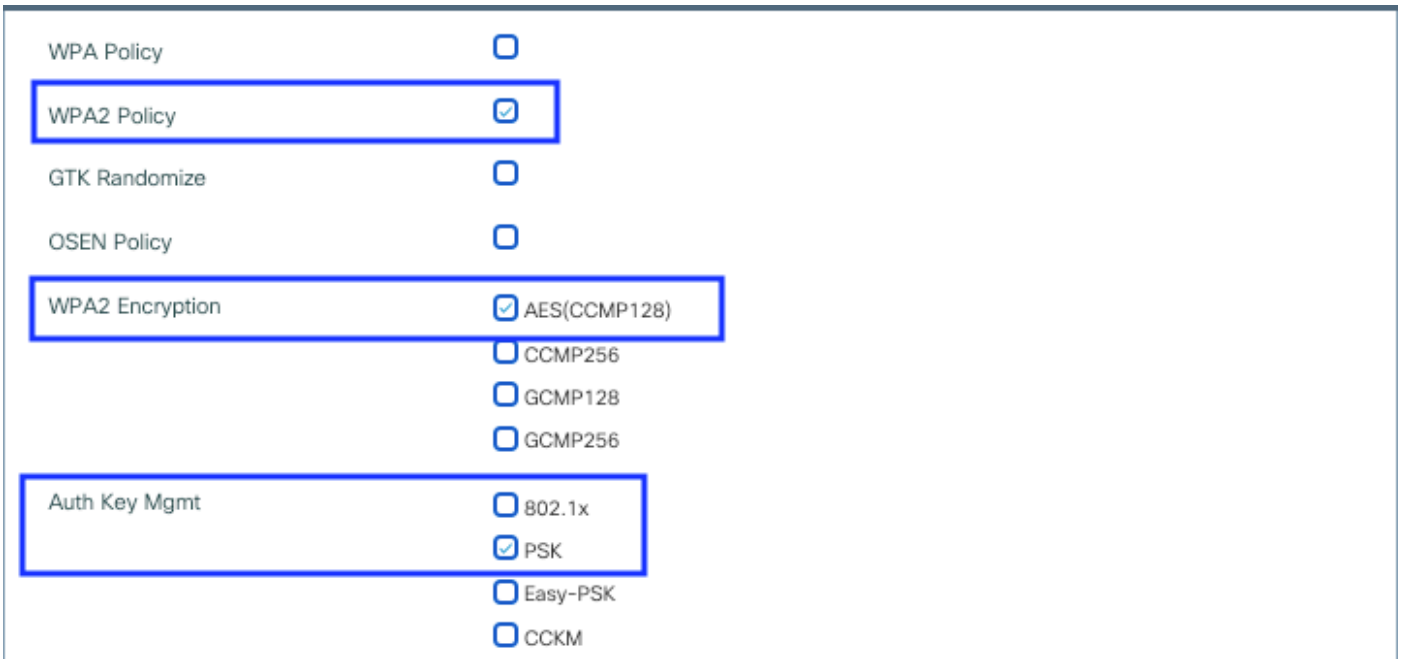


Flexconnect Local Switching Tags and Profiles

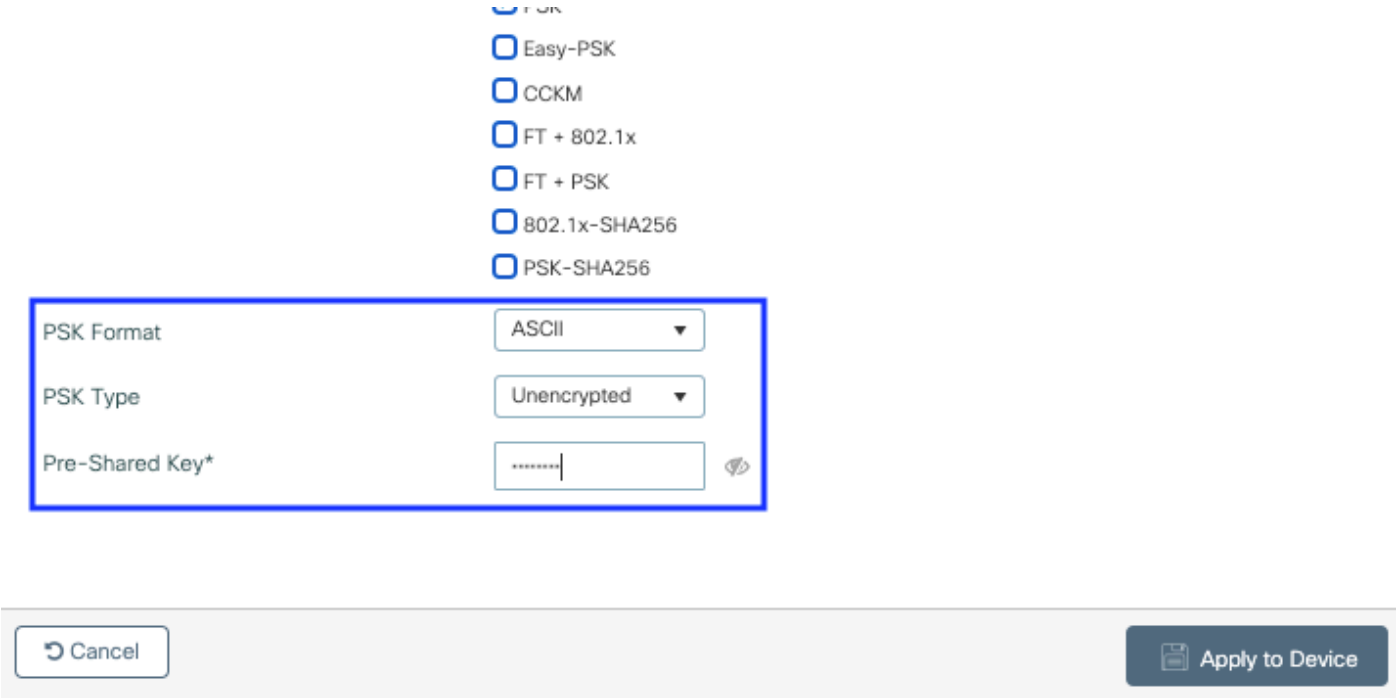
Step 1. Navigate to **Configuration > Wireless Setup > Advanced > Start Now > WLAN Profile** and click **+Add** in order to create a new WLAN. Configure the SSID, Profile Name, WLAN ID, and the status of the WLAN. Then, navigate to **Security > Layer 2** and configure the settings:



Voice SSID security settings part 1



Voice SSID security settings part 2



Voice SSID security settings part 3

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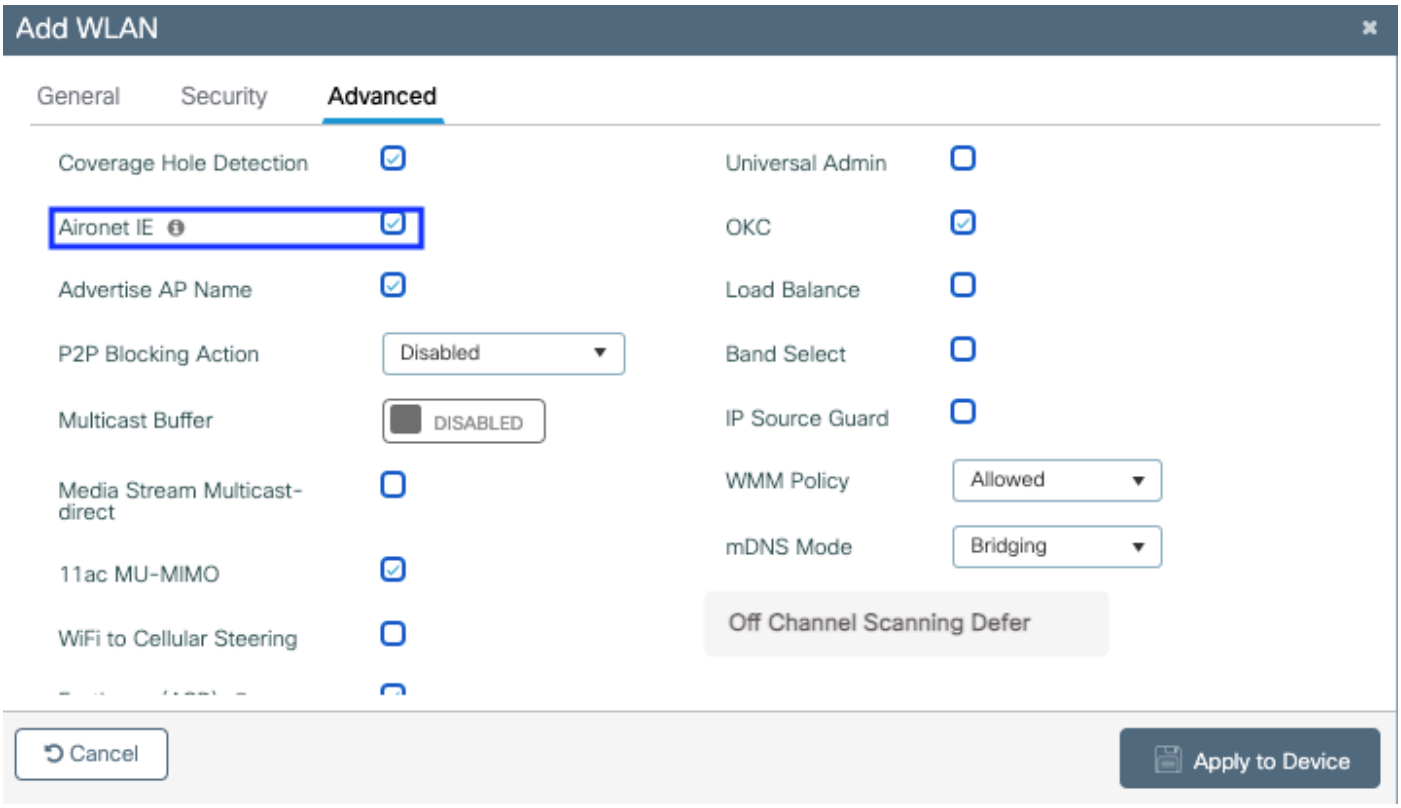
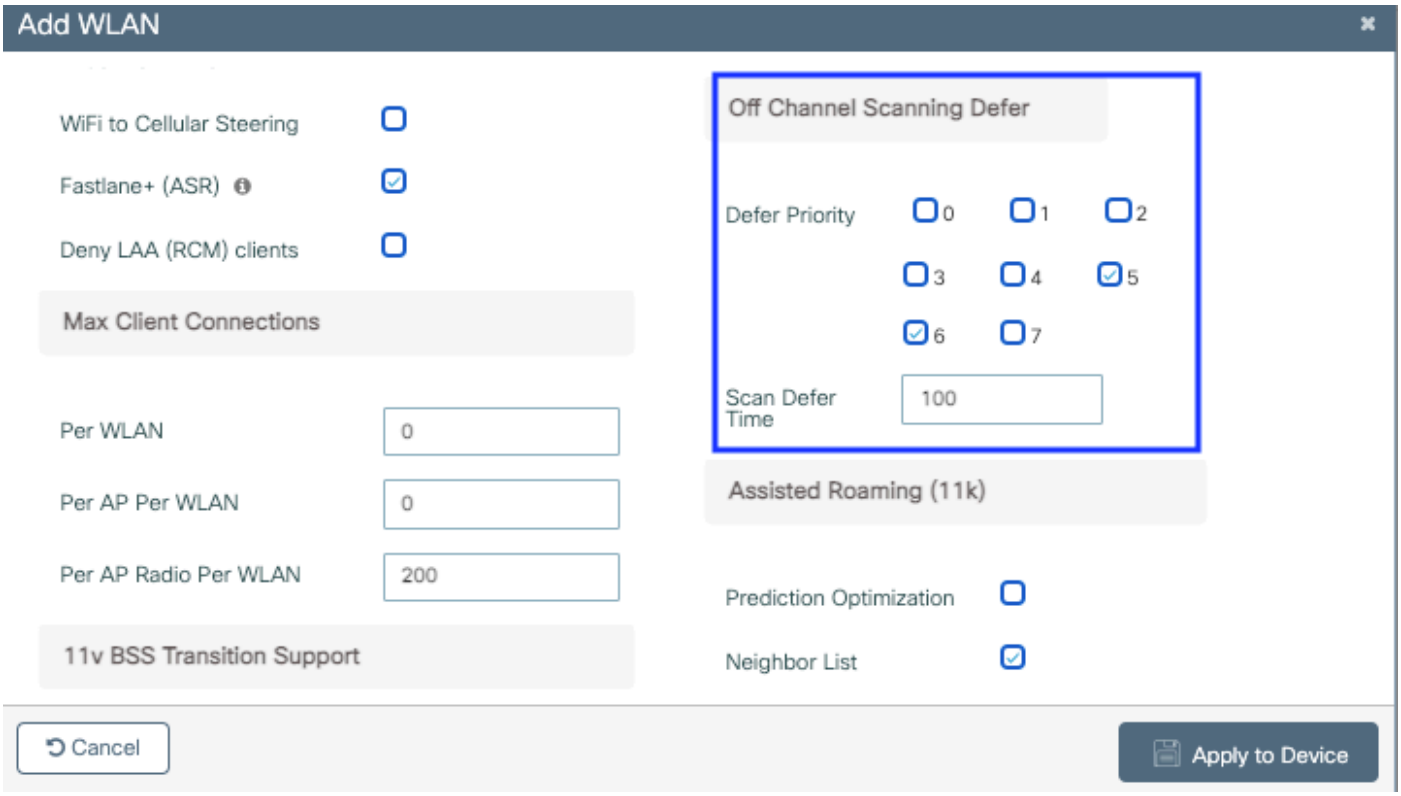
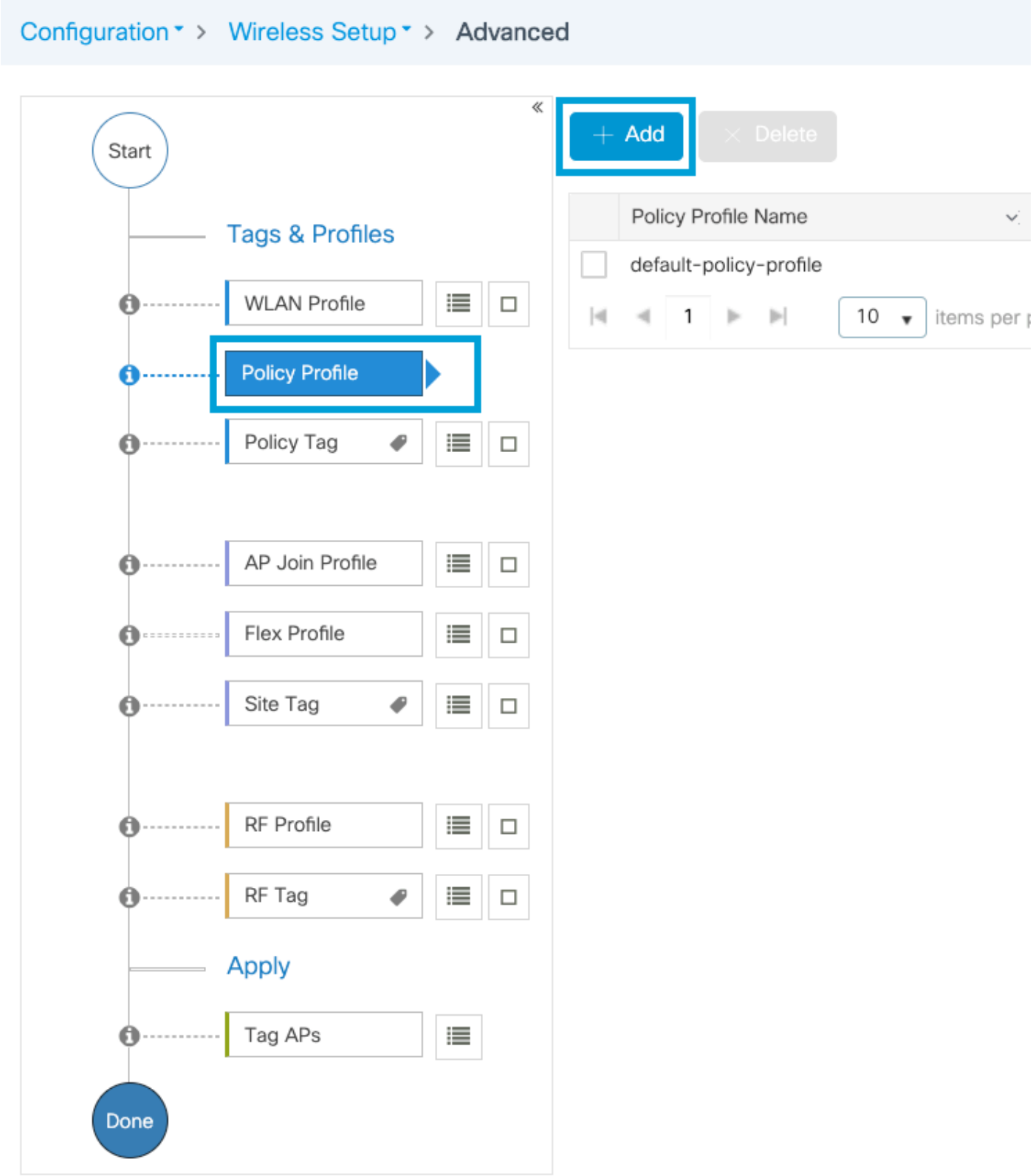
Step 2. Navigate to the **Advanced** tab and enable Aironet IE. Make sure Load balance and band select are disabled:



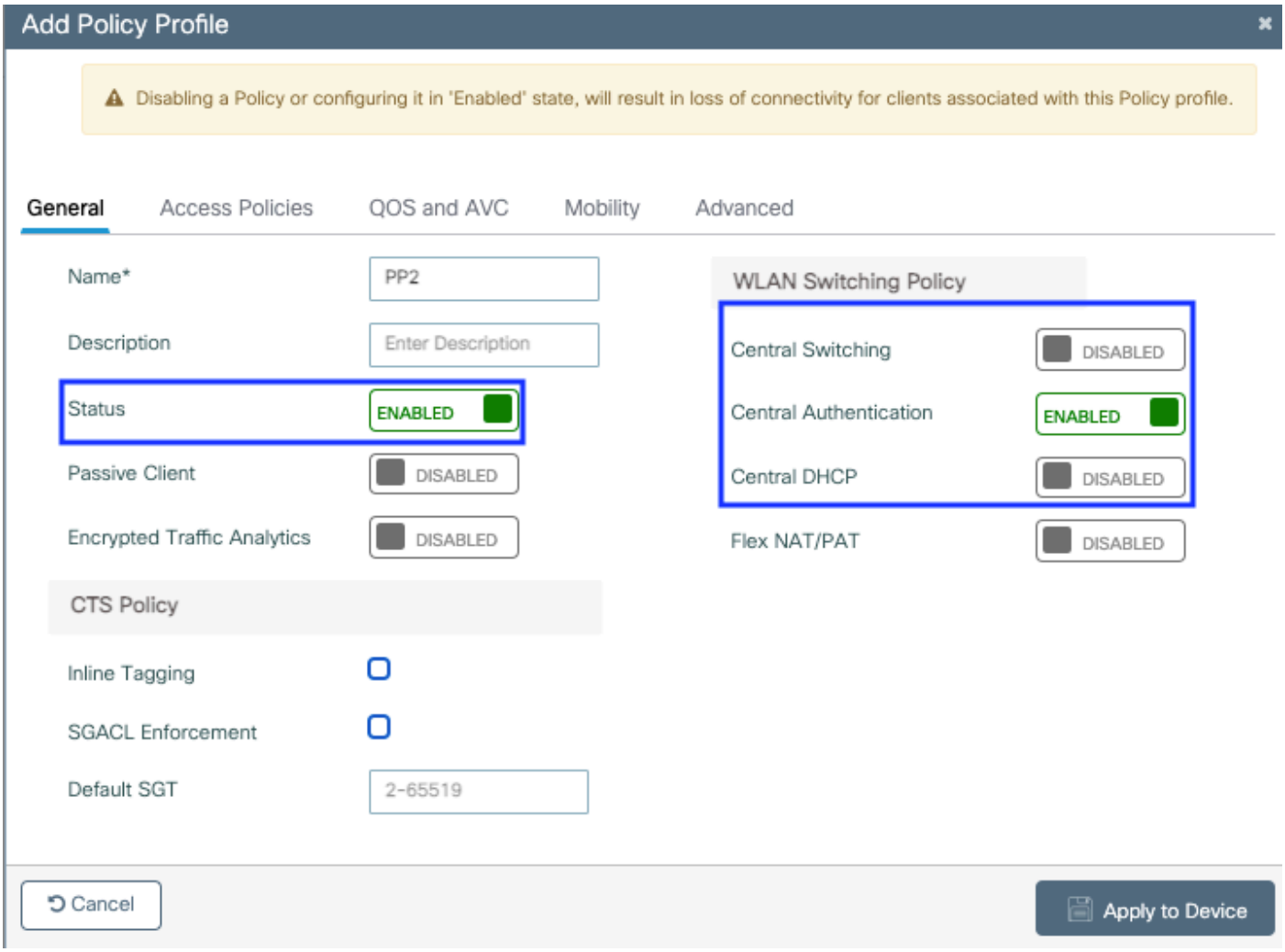
In the same page, make sure the off channel scan defer is enabled for priorities 5,6 and 7. This prevents the AP from going off-channel for 100ms after a frame with those UP priorities (basically a voice frame) was received.



Step 3. Select **Policy Profile** and click **Add:**



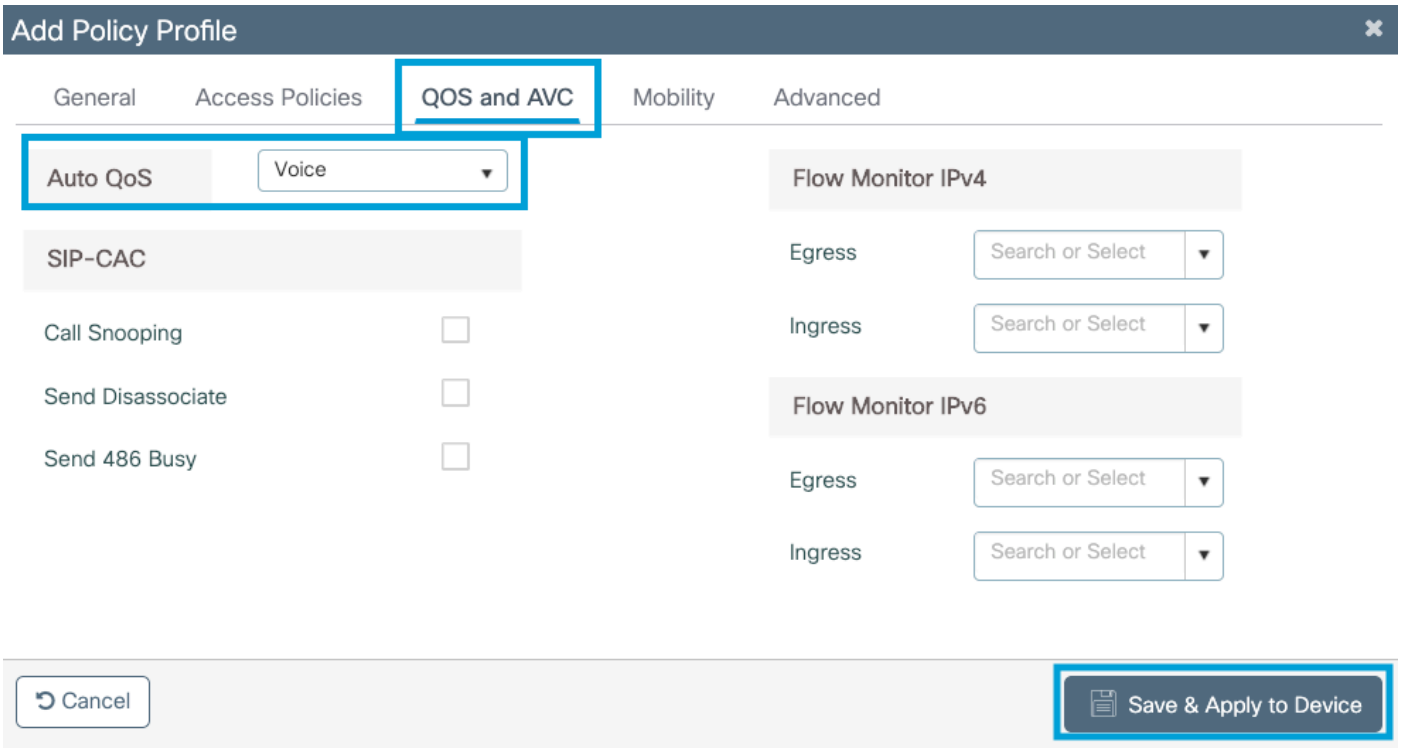
Configure the Policy Profile name, set the Status as Enabled, disable Central Switching and Central DHCP. For a PSK SSID, the authentication could be moved to local to give the access point the role of verifying the PSK. In case of 802.1X, you typically want the WLC to keep performing the 802.1X authentications.



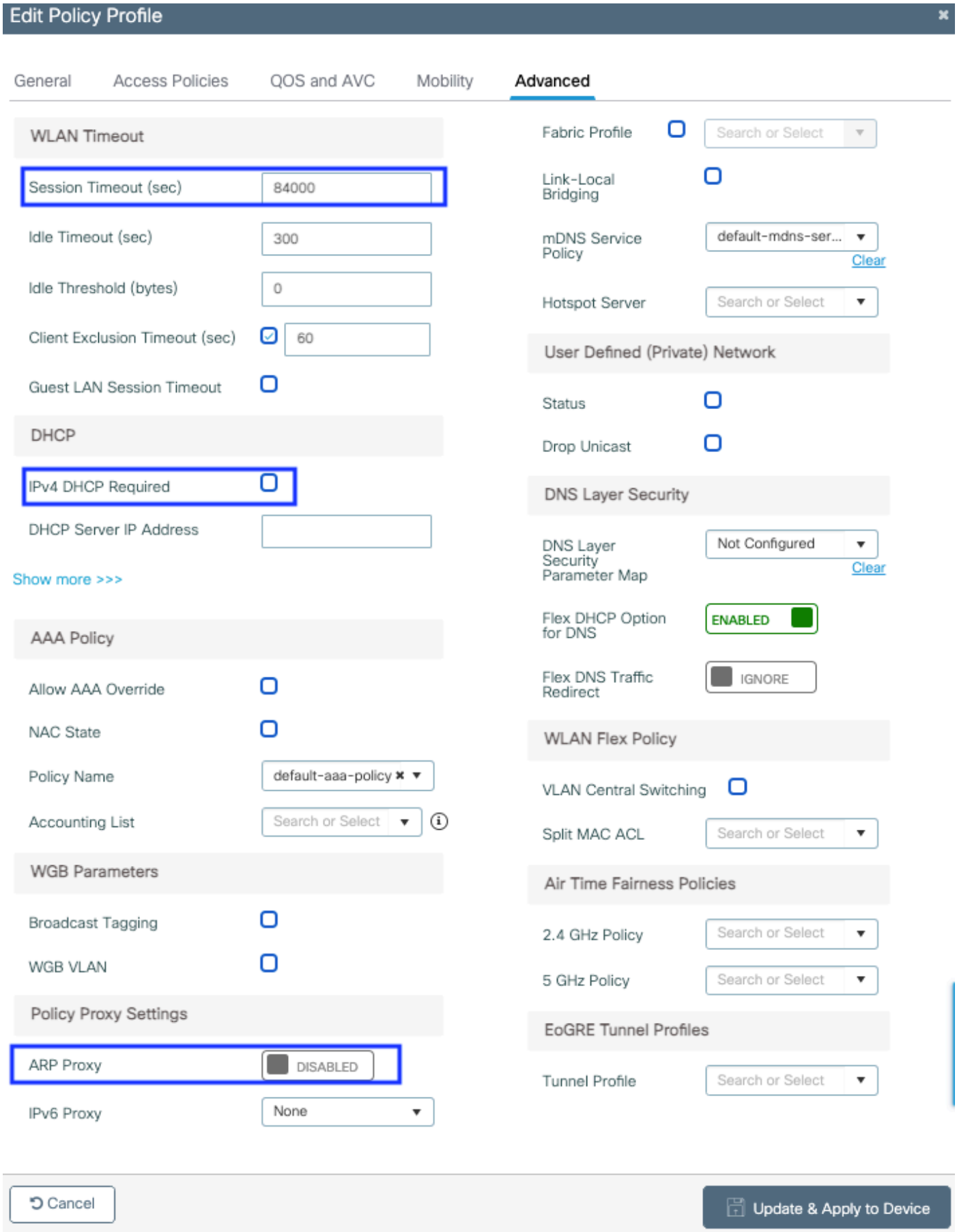
Flex Local switching policy profile configuration

Navigate to the **Access Policies** tab to assign the VLAN to which the wireless clients are assigned when they connect to this WLAN by default. You can either select one VLAN name from the drop-down or manually type a VLAN ID.

Click on **QoS and AVC,** and configure the **Auto QoS** parameter as **Voice.** Click **Save & Apply to Device**.



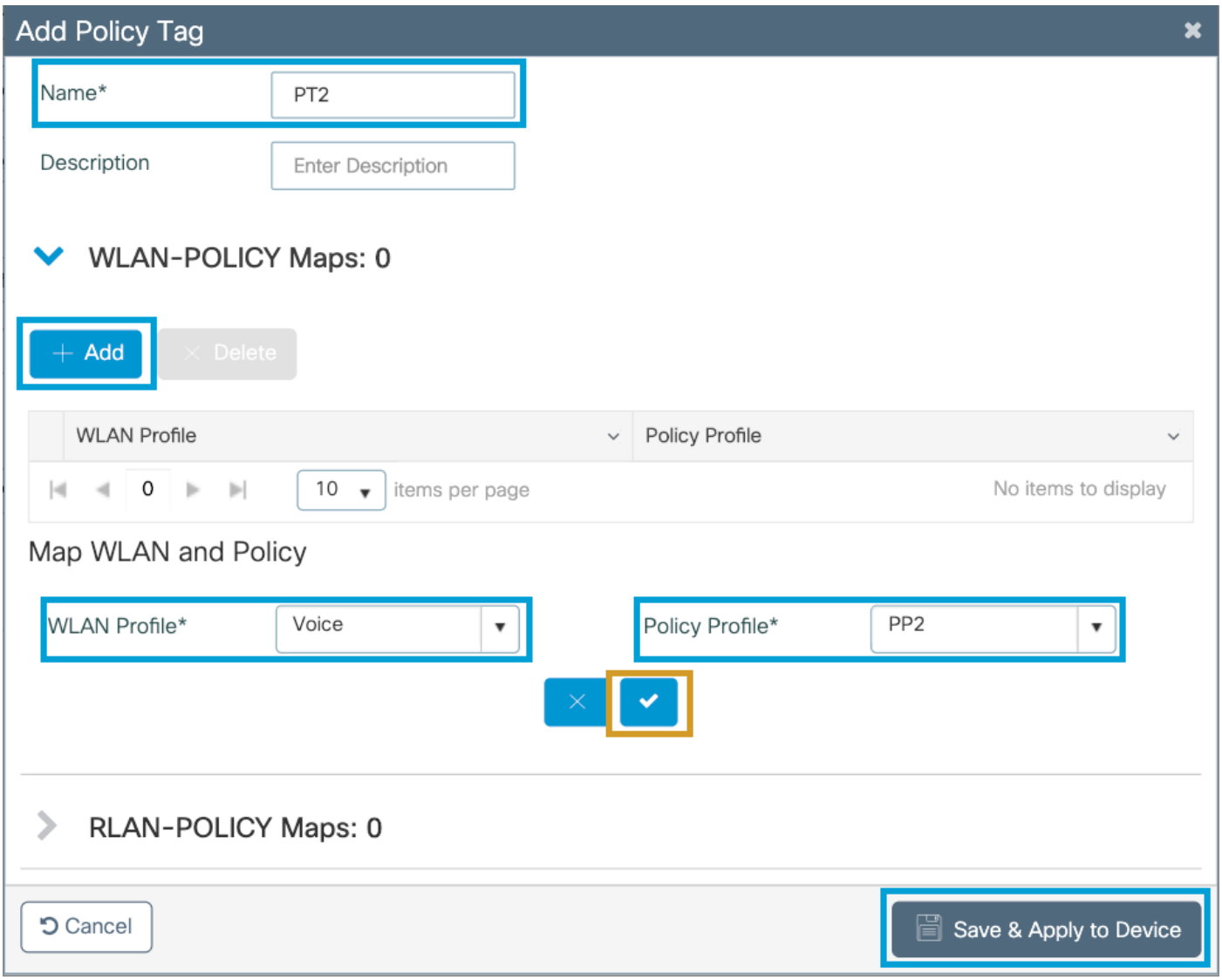
Click on **Advanced,** set the session timeout to 84000, make sure that IPv4 DHCP required is disabled and disable ARP proxy.



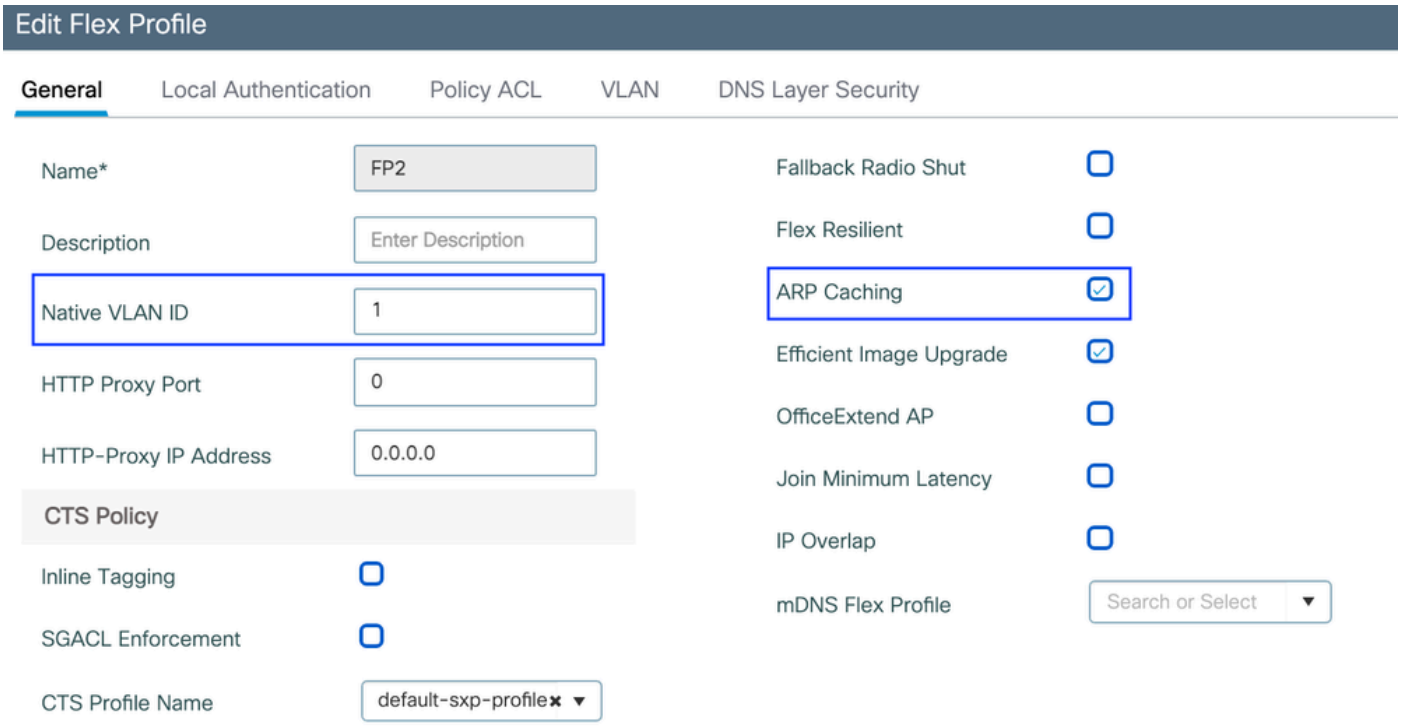
Advanced settings of the flex policy profile

Step 4. Select **Policy Tag** and click **Add.** Configure the Policy Tag name. Under **WLAN-Policy Maps** click on **+Add.** Select the **WLAN Profile** and **Policy Profile** from the drop-down menus, and click the check for

the map to be configured. Then, click **Save & Apply to Device.**



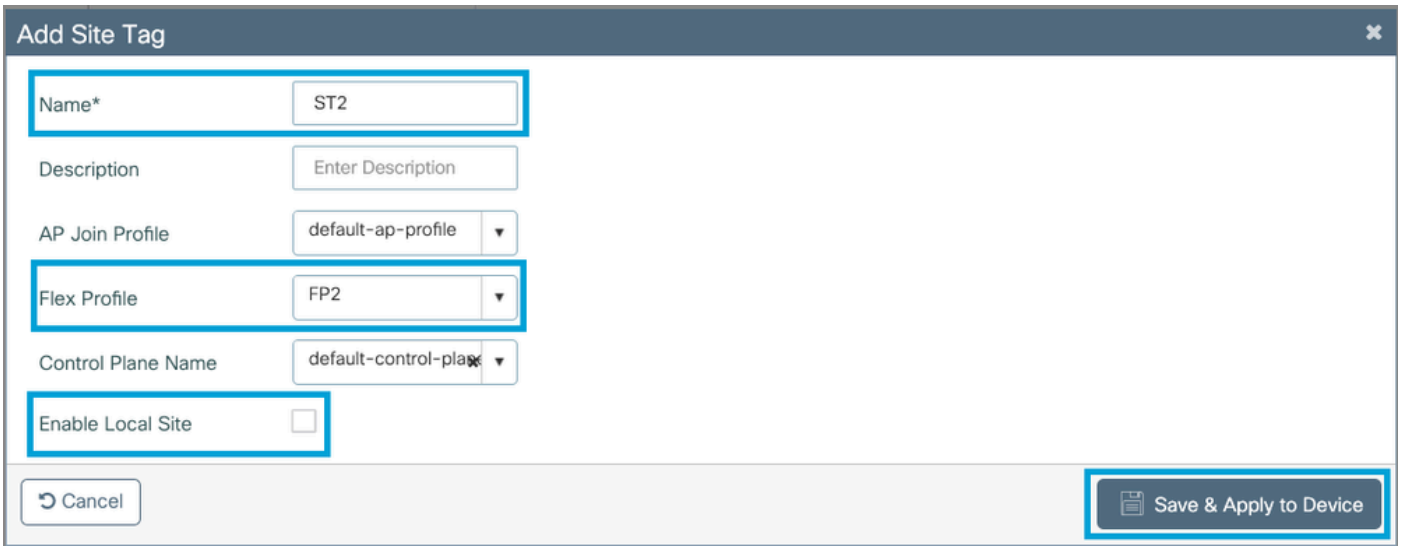
Step 5. Click on **Flex Profile** and click **Add.** Configure the Flex Profile name, the Native VLAN ID and Enable ARP Caching:



Flex profile policy settings

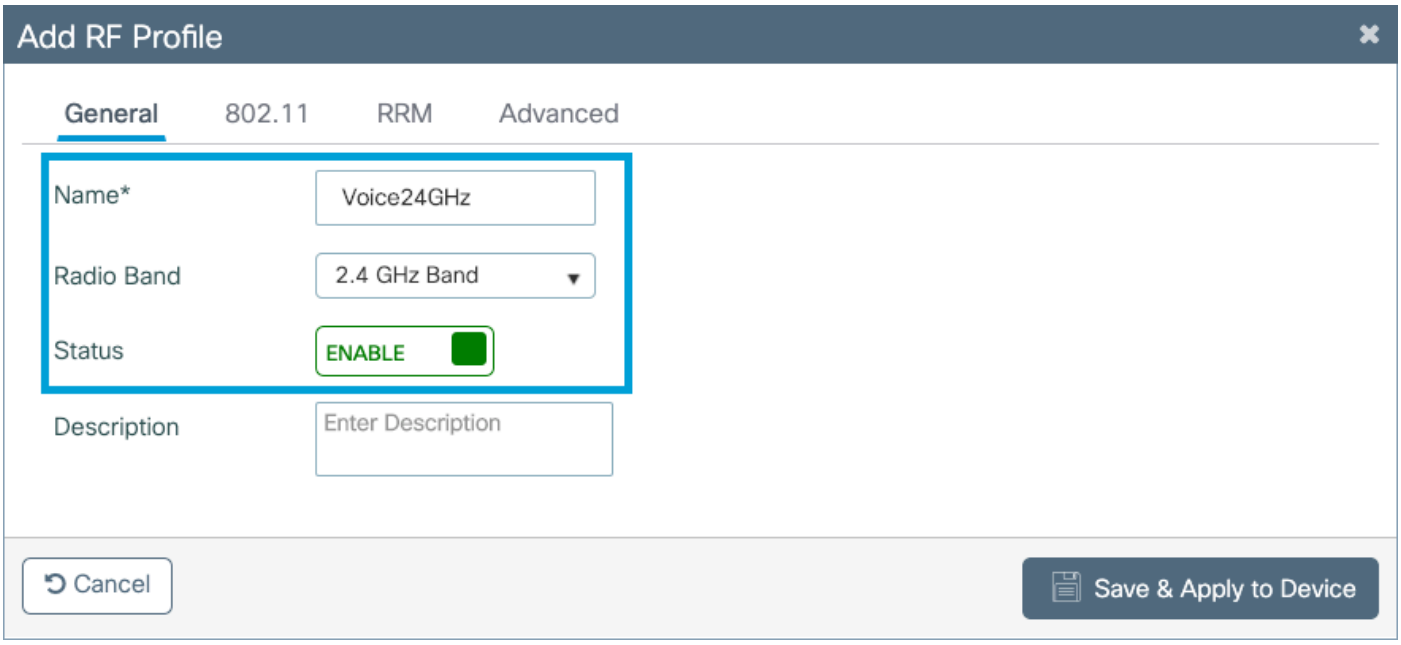
Note: Native VLAN ID refers to the Native VLAN configured in the switchiport the APs, associated with this Flex Profile, is connected to.

Step 6. Select **Site Tag** and click **Add.** Configure the Site Tag name, uncheck the **Enable Local Site** option and add the Flex Profile. Then, click **Save & Apply to Device**.



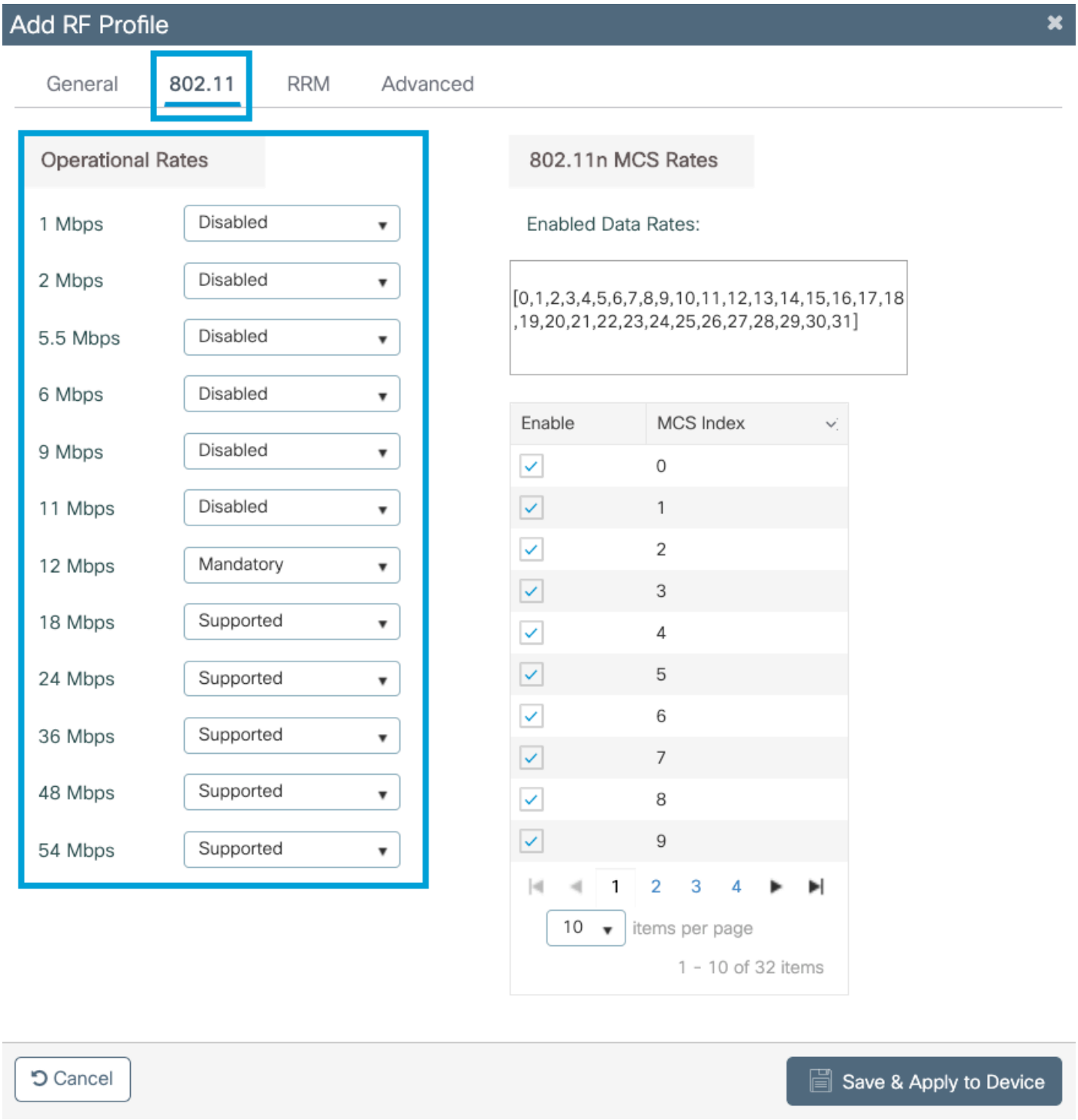
Note: As Enable Local Site is disabled, the APs assigned to this Site Tag will be automatically configured as FlexConnect APs.

Step 7. Select **RF Profile** and click **Add.** Configure an RF Profile per band.

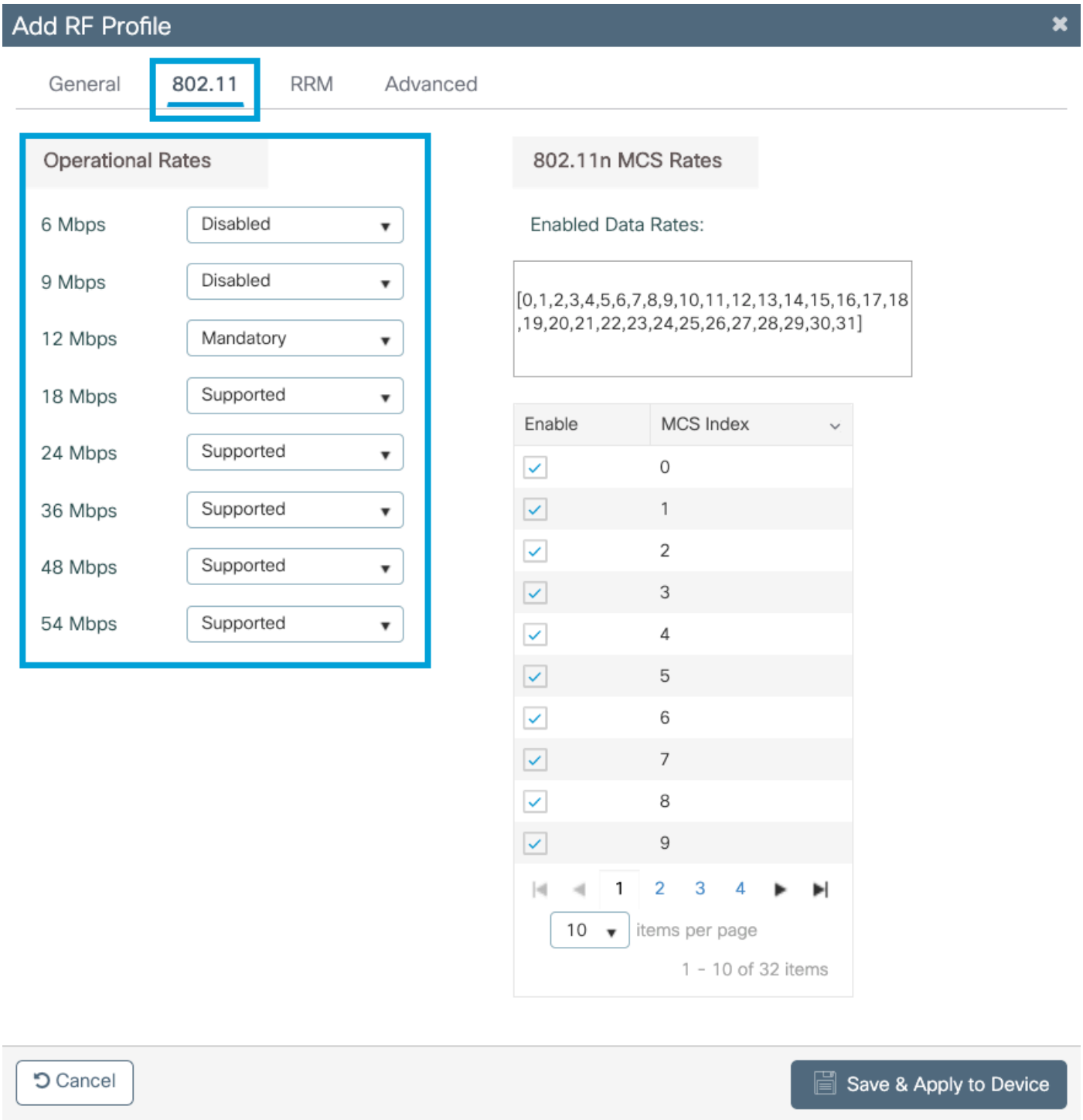


Navigate to the **802.11** menu. Disable all rates under 12Mbps, set 12Mbps as the mandatory rate and 18 Mbps and higher as supported on both bands.

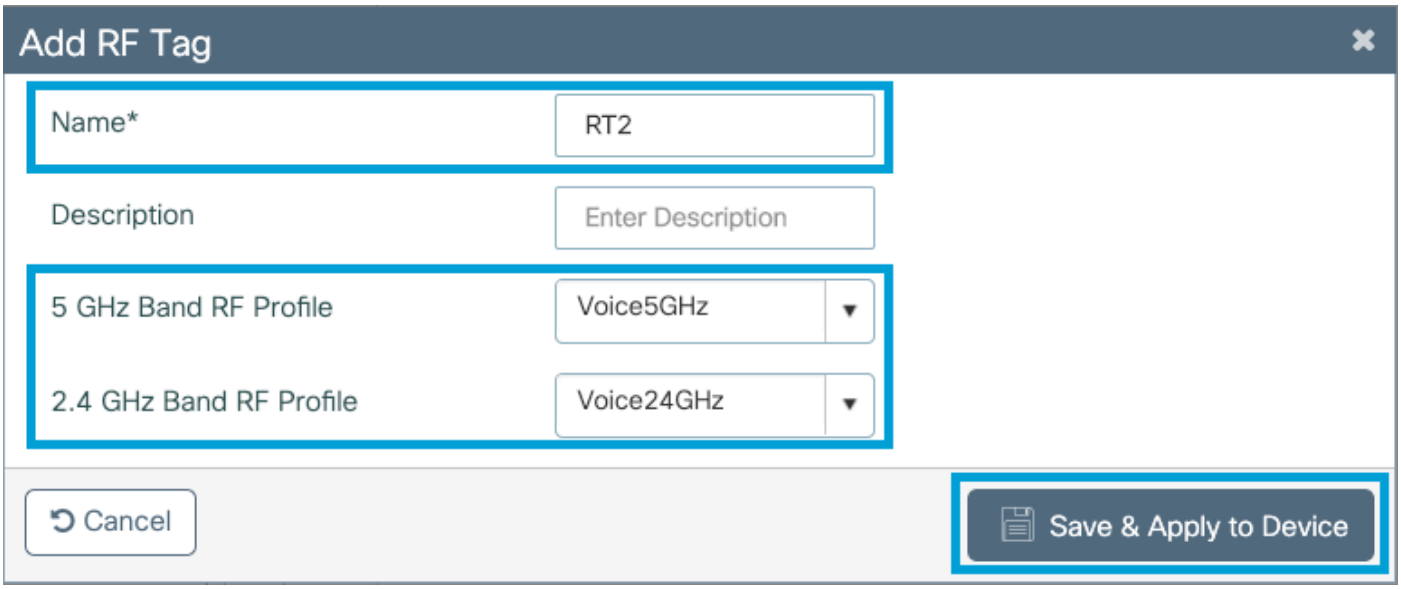
2.4 GHz data rates:



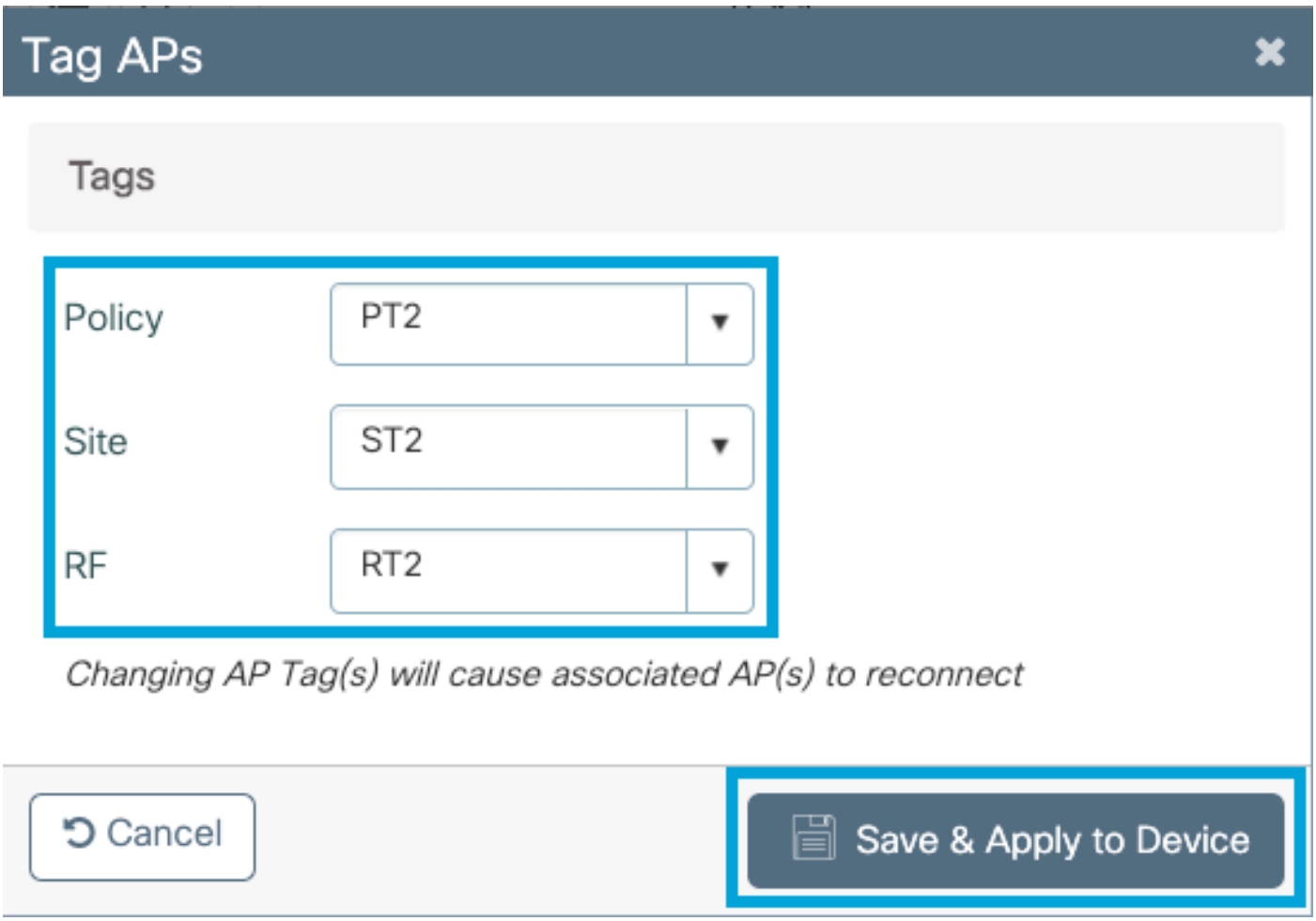
5 GHz data rates:



Step 8. Select **RF** Tag and click **Add.** Configure the RF Profiles created in Step 6. of this section. Then, click **Save & Apply to Device.**



Step 9. Select **Tag APs**, choose the APs and add the Policy, Site and RF tag previously created. Then, click **Save & Apply to Device.**



The AP will restart its CAPWAP tunnel and join back the 9800 WLC. Navigate to **Configuration** > **Wireless** > **Access Points** and confirm the AP mode is **Flex:**

AP Name	Total Slots	AP Model	Base Radio MAC	AP Mode	Admin Status	Operation Status	Policy Tag	Site Tag	RF Tag	Tag Source	Location	Country
AP2802I-21	2	AIR-AP2802I-B-K9	a023.9f86.52c0	Flex	Enabled	Registered	PT2	ST2	RT2	Static	default location	US

Flexconnect Local Switching Command Line Interface (CLI)

From the CLI run these commands:

<#root>

```
//////// WLAN Configuration


wlan Voice 1 Voice
 ccx aironet-iesupport
 no security ft adaptive
 security wpa psk set-key ascii 0 Cisco123
 no security wpa akm dot1x
 security wpa akm psk
 no shutdown


//////// Policy Profile Configuration


wireless profile policy PP2
 do wireless autoqos policy-profile PP2 mode voice
 service-policy input platinum-up
 service-policy output platinum
 vlan 2672
 no shutdown


//////// Policy Tag Configuration


wireless tag policy PT2
 wlan Voice policy PP2


//////// Flex Profile Configuration


wireless profile flex FP2
 arp-caching
 vlan-name 1
 native-vlan-id 1


////////



Site Tag Configuration


wireless tag site ST2
 no local-site
 flex-profie FP2


//////// 2.4 GHz RF Profile Configuration


ap dot11 24ghz rf-profile Voice24GHz
 rate RATE_11M disable
 rate RATE_12M mandatory
```

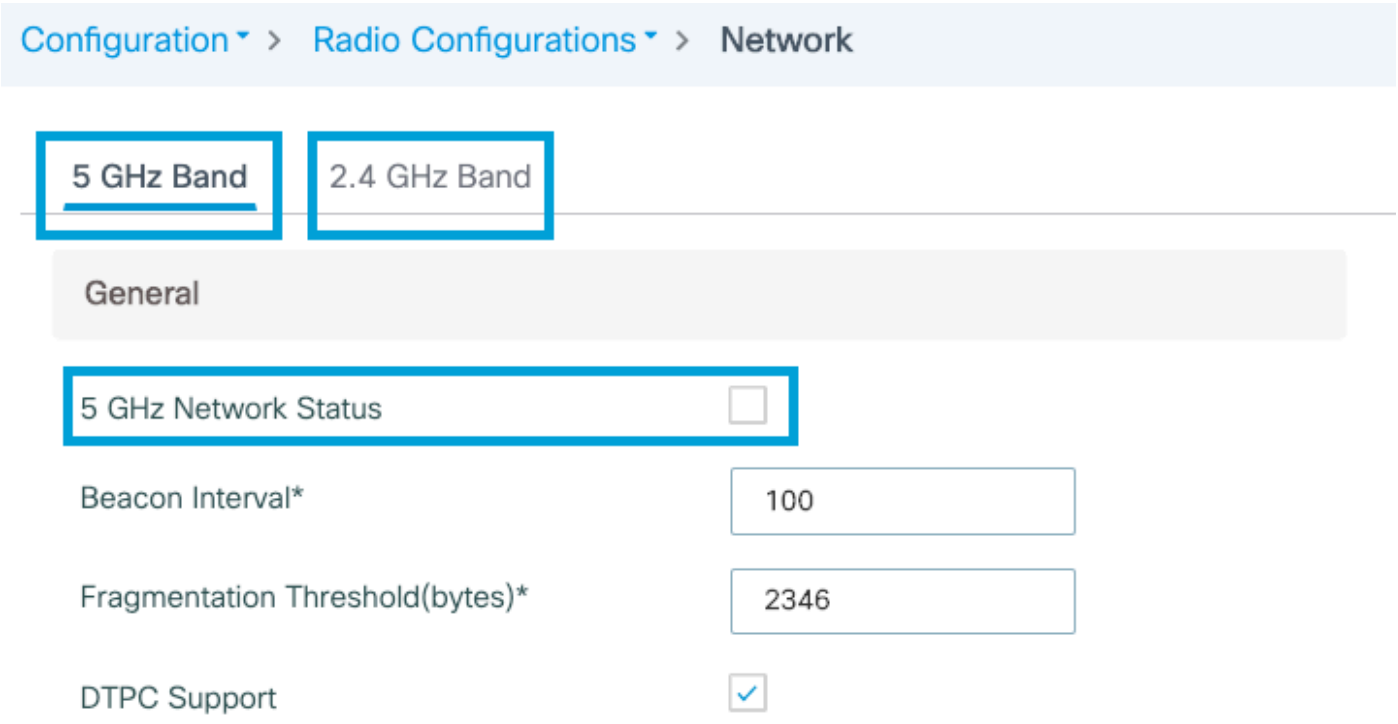
```
 rate RATE_1M disable
 rate RATE_2M disable
 rate RATE_5_5M disable
 rate RATE_6M disable
 rate RATE_9M disable
 no shutdown


//////// 5 GHz RF Profile Configuration


ap dot11 5ghz rf-profile Voice5GHz
 rate RATE_24M supported
 rate RATE_6M disable
 rate RATE_9M disable
 no shutdown


//////// RF Tag Configuration


wireless tag rf RT2
 24ghz-rf-policy Voice24GHz
 5ghz-rf-policy Voice5GHz


//////// AP Configuration


ap a023.9f86.52c0
 policy-tag PT2
 rf-tag RT2
 site-tag ST2
```

Configure Media Parameters

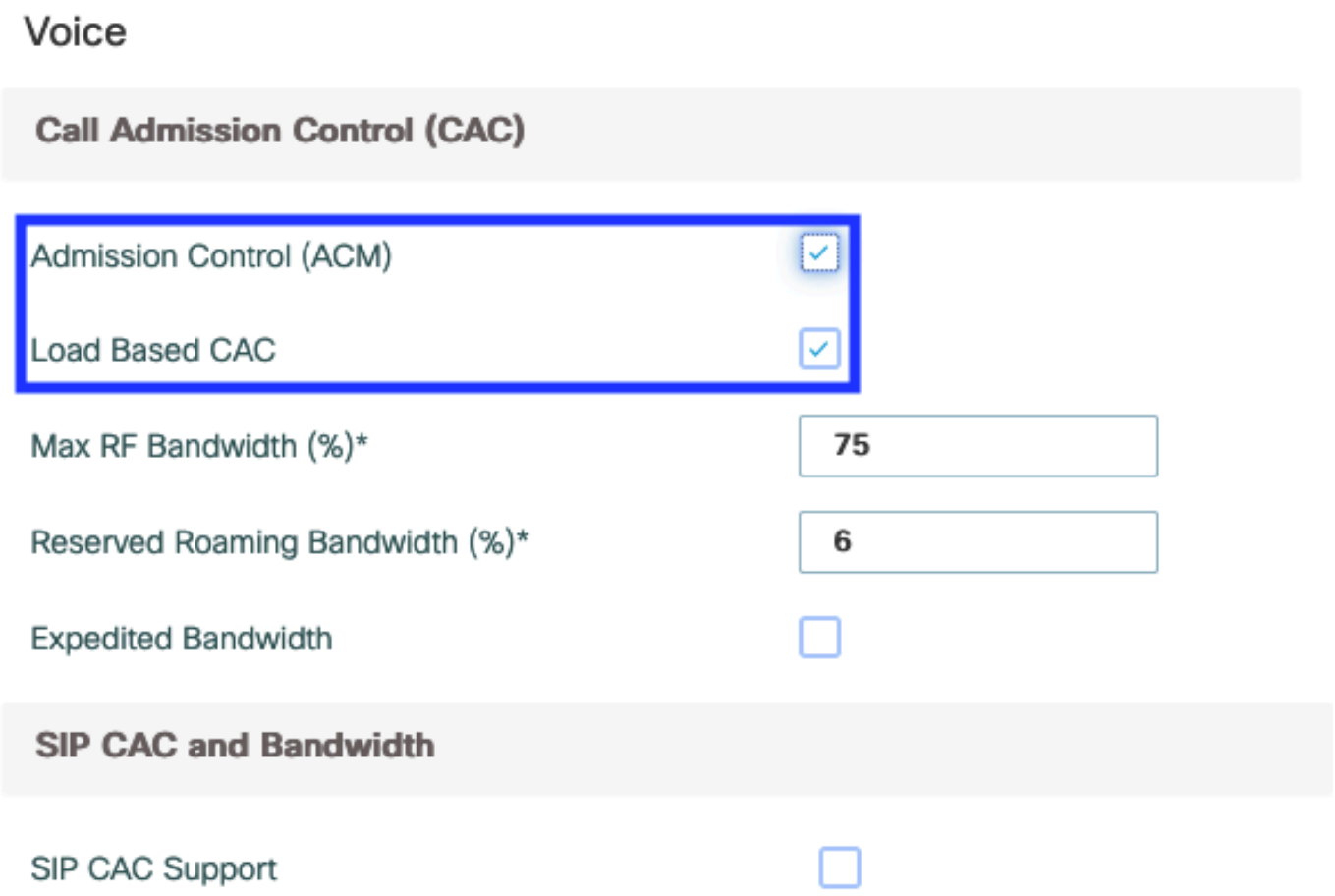
GUI Configuration

Step 1. Navigate to **Configuration > Radio Configuration > Network.** Disable both 5 GHz and 2.4 Ghz band, and click **Apply.**

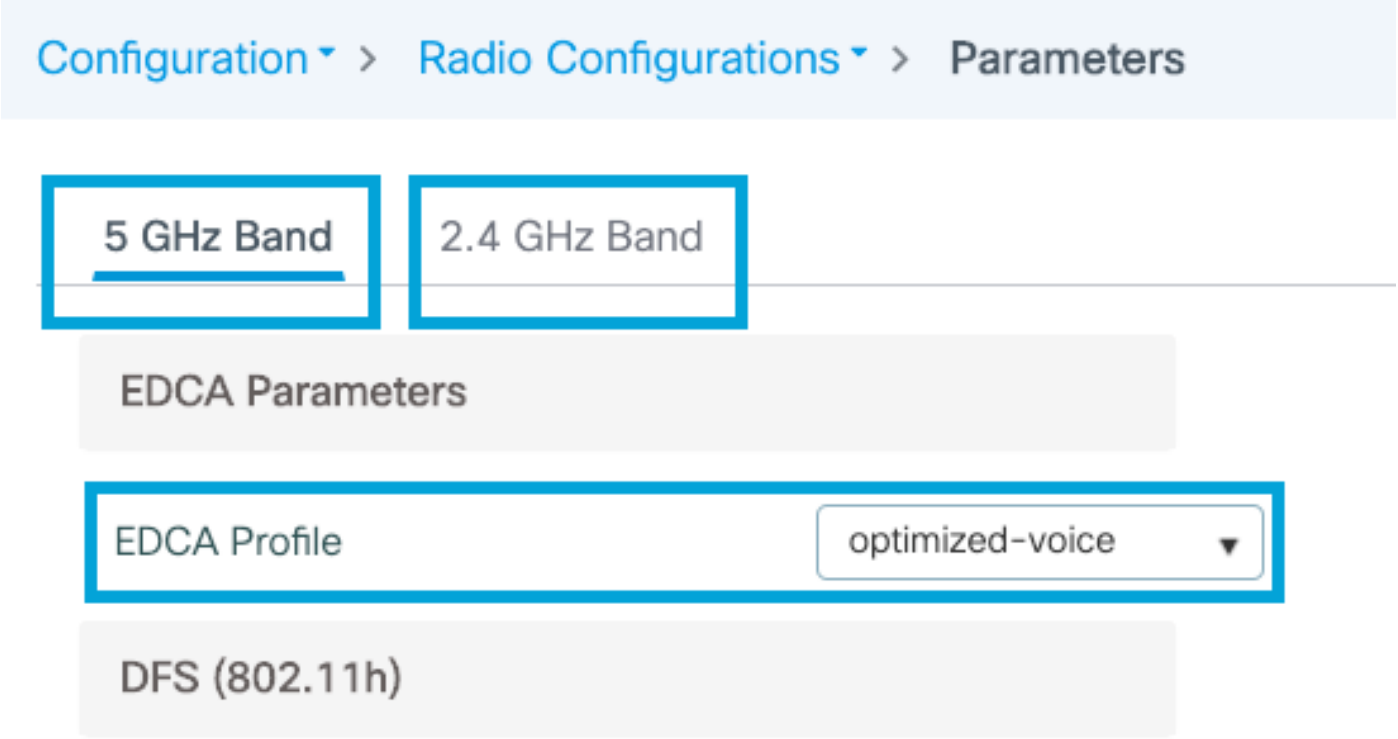
Pay attention that this will temporarily disable all your 5ghz wifi networks ! Only run this when you are in a maintenance window



Step 2. Navigate to **Configuration** > **Radio Configuration** > **Media Parameters.** Enable Admission Control and Load Based Call Admission Control (CAC) on both 2.4 GHz and 5 GHz band, and click **Apply**:



Step 3. Navigate to **Configuration** > **Radio Configurations** > **Parameters.** Configure the EDCA Profile as **optimized-voice** on both bands, and click **Apply.**



Step 4. Navigate to **Configuration** > **Radio Configuration** > **Network.** Enable both 5 GHz and 2.4 Ghz band, and click **Apply.**

Command Line Interface (CLI)

From CLI run these commands:

```
Andressi_9800(config)#ap dot11 24ghz shutdown
Andressi_9800(config)#ap dot11 5ghz shutdown

Andressi_9800(config)#dot11 24ghz cac voice acm

Andressi_9800(config)#dot11 5ghz cac voice acm

Andressi_9800(config)#ap dot11 24ghz edca-parameters optimized-voice
Andressi_9800(config)#ap dot11 5ghz edca-parameters optimized-voice

Andressi_9800(config)#no ap dot11 24ghz shutdown
Andressi_9800(config)#no ap dot11 5ghz shutdown
```

Verify

You can use these commands to verify the current configuration:

```
# show wlan { summary | id | name | all }
# show run wlan
# show run aaa
# show aaa servers
```

```
# show ap config general
# show ap name <ap-name> config general
# show ap tag summary
# show ap name <AP-name> tag detail
# show wlan { summary | id | name | all }
# show wireless tag policy detailed <policy-tag-name>
# show wireless profile policy detailed <policy-profile-name>
```

To review the CAC statistics and call-controll metrics, run these commands:

```
#show ap name AP2802I-21 dot11 5ghz voice stats
#show ap name <ap-name> dot11 5ghz call-control metrics
```

Troubleshoot

Conditional Debugging and Radio Active Tracing

The Radio Active (RA) trace provides debug level traces for all processes that interact with the specified condition (client mac address in this case). In order to enable conditional debugging, execute these steps. We focus on the output that the 9800 WLC provides during a call.

Step 1. Ensure there are no debug conditions are enabled.

```
# clear platform condition all
```

Step 2. Enable the debug condition for the wireless client mac address that you want to monitor. This command start to monitor the provided mac address for 30 minutes (1800 seconds). You can optionally increase this time to up to 2085978494 seconds.

```
# debug wireless mac <8821-MAC-address> {monitor-time <seconds>}
```

Note: In order to monitor more than one client at a time, run debug wireless mac <aaaa.bbbb.cccc> command per mac address.

Note: You do not see the output of the client activity on terminal session, as everything is buffered internally to be viewed later.

Step 3. Establish a call from the 8821 Cisco IP phone.

Step 4. Stop the debugs when the call is completed or if the issue is reproduced before the default or configured monitor time is up.

```
# no debug wireless mac <8821-MAC-address>
```

Once the monitor-time has elapsed or the debug wireless has been stopped, the 9800 WLC generates a local file with the name:

ra_trace_MAC_aaaabbbbcccc_HHMMSS.XXX_timezone_DayWeek_Month_Day_year.log

Step 5. Collect the file of the mac address activity. You can either copy the ra trace .log to an external server or display the output directly on the screen. Check the name of the RA traces file

```
# dir bootflash: | inc ra_trace
```

Copy the file to an external server:

```
# copy bootflash:ra_trace_MAC_aaaabbbbcccc_HHMMSS.XXX_timezone_DayWeek_Month_Day_year.log tftp://a.b.c.
```

Display the content:

```
# more bootflash:ra_trace_MAC_aaaabbbbcccc_HHMMSS.XXX_timezone_DayWeek_Month_Day_year.log
```

Step 6. Remove the debug conditions.

```
# clear platform condition all
```

Note: Ensure that you always remove the debug conditions after a troubleshooting session.

In the output of the RA trace, the Traffic Specification (TSPEC) negotiation takes place, this will determine if the 8821 is allowed mark its traffic with a User Pririty of 6 and if the call can be established or not. To negotiate the use of queue 6, the 8821 sends and Action Packet requesting for permission.

```
2019/08/25 18:53:54.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 Got act
2019/08/25 18:53:54.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 Receive
2019/08/25 18:53:54.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 Got LBC
2019/08/25 18:53:54.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 ADD TS
up = 6, tid = 6, upsd = 1, medium_time = 653, TSRSIE: No
2019/08/25 18:53:54.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 U-APSD
```

In a packet capture:

```
▶ IEEE 802.11 Action, Flags: ........C
▼ IEEE 802.11 wireless LAN
  ▼ Fixed parameters
      Category code: Management Notification (17)
      Action code: Setup request (0x0000)
      Dialog token: 0x2a
      Status code: Admission accepted (0x0000)
  ▼ Tagged parameters (84 bytes)
    ▼ Tag: Vendor Specific: Microsoft Corp.: WMM/WME: TSPEC Element
        Tag Number: Vendor Specific (221)
        Tag length: 61
        OUI: 00:50:f2 (Microsoft Corp.)
        Vendor Specific OUI Type: 2
        Type: WMM/WME (0x02)
        WME Subtype: TSPEC Element (2)
        WME Version: 1
      ▼ TS Info: 0x0034ec
          .... .... .... .... ...0 110. = TID: 6
          .... .... .... .... .11. .... = Direction: Bidirectional link (3)
          .... .... .... .1.. .... .... = PSB: U-APSD (1)
          .... .... ..11 0... .... .... = UP: Voice (6)
          0000 0000 00.. ..00 1... ...0 = Reserved: 0x000080
```

The WLC determines if there is enough bandwidth to allocate the call or not, and if so, it sends an Action Frame accepting the TSPEC negotiation:

```
2019/08/25 18:53:54.510 {wncd_x_R0-0}{1}: [auth-mgr] [18106]: (info): [0000.0000.0000:unknown] Session
2019/08/25 18:53:54.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): Calls in progress increment
2019/08/25 18:53:54.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): allocating voice bw for cli
2019/08/25 18:53:54.511 {wncd_x_R0-0}{1}: [ewlc-qos-client] [18106]: (info): MAC: 0027.902a.ab24
Call Accepted for tspec client
2019/08/25 18:53:54.511 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (ERR): MAC: 0027.902a.ab24 TCLAS Se
2019/08/25 18:53:54.511 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): Recommended rate 6500kbps:M
2019/08/25 18:53:54.511 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): Recommended rate 13000kbps:
2019/08/25 18:53:54.511 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): Recommended rate 26000kbps:
2019/08/25 18:53:54.511 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 Sending
2019/08/25 18:53:54.511 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 Build A
2019/08/25 18:53:54.511 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: a023.9f86.52c0 send qo
```

In a packet capture:

```
▶ IEEE 802.11 Action, Flags: ........C
▼ IEEE 802.11 wireless LAN
  ▼ Fixed parameters
      Category code: Management Notification (17)
      Action code: Setup response (0x0001)
      Dialog token: 0x2a
      Status code: Admission accepted (0x0000)
  ▼ Tagged parameters (119 bytes)
    ▼ Tag: Vendor Specific: Microsoft Corp.: WMM/WME: TSPEC Element
        Tag Number: Vendor Specific (221)
        Tag length: 61
        OUI: 00:50:f2 (Microsoft Corp.)
        Vendor Specific OUI Type: 2
        Type: WMM/WME (0x02)
        WME Subtype: TSPEC Element (2)
        WME Version: 1
      ▼ TS Info: 0x0034ec
          .... .... .... .... ...0 110. = TID: 6
          .... .... .... .... .11. .... = Direction: Bidirectional link (3)
          .... .... .... .1.. .... .... = PSB: U-APSD (1)
          .... .... ..11 0... .... .... = UP: Voice (6)
          0000 0000 00.. ..00 1... ...0 = Reserved: 0x000080
```

After that, the call is established through SIP with the call manager and RTP traffic is forwarded.

Time	Source	Destination	Transmitter address	Receiver address	Protocol	Info
16:11:41.860804	172.16.78.64	172.16.56.109	00:27:90:2a:ab:24	a0:23:9f:86:52:cf	SIP/SDP	Request: INVITE sip:181@172.16.56.109;user=phone |
16:11:41.864384	172.16.56.109	172.16.78.64	a0:23:9f:86:52:cf	00:27:90:2a:ab:24	SIP	Status: 100 Trying |
16:11:42.529759	172.16.56.109	172.16.78.64	a0:23:9f:86:52:cf	00:27:90:2a:ab:24	SIP	Status: 180 Ringing |
16:11:47.581067	172.16.56.109	172.16.78.64	a0:23:9f:86:52:cf	00:27:90:2a:ab:24	SIP/SDP	Status: 200 OK |
16:11:47.594494	172.16.78.64	172.16.56.109	00:27:90:2a:ab:24	a0:23:9f:86:52:cf	SIP	Request: ACK sip:181@172.16.56.109:5060;transport=tcp |

RTP packets:

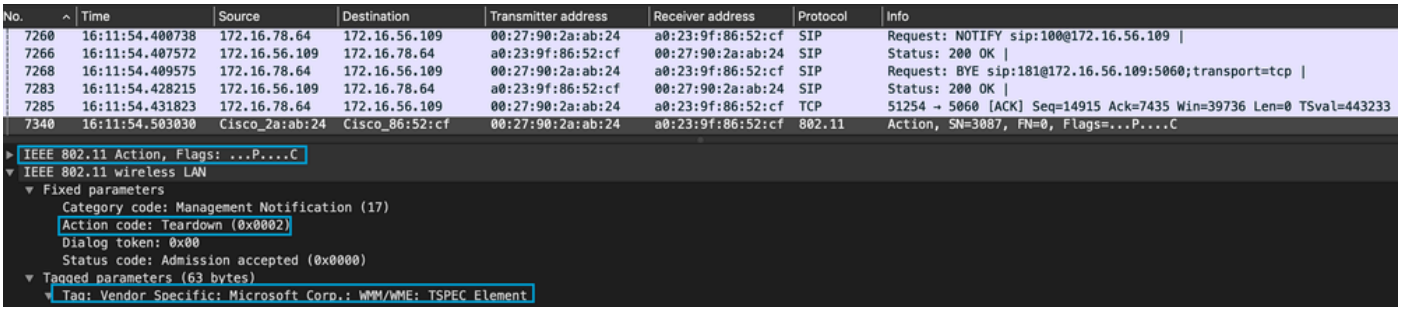
16:11:47.700968	172.16.78.65	172.16.78.64	00:eb:d5:db:00:d6	a0:23:9f:86:52:cf	RTP
16:11:47.701470	172.16.78.65	172.16.78.64	a0:23:9f:86:52:cf	00:27:90:2a:ab:24	RTP
16:11:47.717783	172.16.78.65	172.16.78.64	00:eb:d5:db:00:d6	a0:23:9f:86:52:cf	RTP
16:11:47.718528	172.16.78.65	172.16.78.64	a0:23:9f:86:52:cf	00:27:90:2a:ab:24	RTP
16:11:47.730826	172.16.78.65	172.16.78.64	00:eb:d5:db:00:d6	a0:23:9f:86:52:cf	RTP
16:11:47.731395	172.16.78.65	172.16.78.64	a0:23:9f:86:52:cf	00:27:90:2a:ab:24	RTP
16:11:47.751602	172.16.78.65	172.16.78.64	00:eb:d5:db:00:d6	a0:23:9f:86:52:cf	RTP
16:11:47.752316	172.16.78.65	172.16.78.64	a0:23:9f:86:52:cf	00:27:90:2a:ab:24	RTP
16:11:47.766859	172.16.78.64	172.16.78.65	00:27:90:2a:ab:24	a0:23:9f:86:52:cf	RTP
16:11:47.776488	172.16.78.65	172.16.78.64	00:eb:d5:db:00:d6	a0:23:9f:86:52:cf	RTP

Then, the 8821 informs the call manager that the call is terminated, and it notifies the WLC that is no longer using queue 6 by sending another Action Frame:

```
2019/08/25 18:54:08.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 Got act
2019/08/25 18:54:08.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 Receive
2019/08/25 18:54:08.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 DEL TS
2019/08/25 18:54:08.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 Call Te
2019/08/25 18:54:08.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 Calls i
2019/08/25 18:54:08.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: 0027.902a.ab24 Build D
```

```
2019/08/25 18:54:08.510 {wncd_x_R0-0}{1}: [ewlc-qos-voice] [18106]: (info): MAC: a023.9f86.52c0 send qo
```

SIP termination and Action Frame:



No.	Time	Source	Destination	Transmitter address	Receiver address	Protocol	Info
7260	16:11:54.400738	172.16.78.64	172.16.56.109	00:27:90:2a:ab:24	a0:23:9f:86:52:cf	SIP	Request: NOTIFY sip:100@172.16.56.109 |
7266	16:11:54.407572	172.16.56.109	172.16.78.64	a0:23:9f:86:52:cf	00:27:90:2a:ab:24	SIP	Status: 200 OK |
7268	16:11:54.409575	172.16.78.64	172.16.56.109	00:27:90:2a:ab:24	a0:23:9f:86:52:cf	SIP	Request: BYE sip:181@172.16.56.109:5060;transport=tcp |
7283	16:11:54.428215	172.16.56.109	172.16.78.64	a0:23:9f:86:52:cf	00:27:90:2a:ab:24	SIP	Status: 200 OK |
7285	16:11:54.431823	172.16.78.64	172.16.56.109	00:27:90:2a:ab:24	a0:23:9f:86:52:cf	TCP	51254 → 5060 [ACK] Seq=14915 Ack=7435 Win=39736 Len=0 TSval=443233
7340	16:11:54.503030	Cisco_2a:ab:24	Cisco_86:52:cf	00:27:90:2a:ab:24	a0:23:9f:86:52:cf	802.11	Action, SN=3087, FN=0, Flags=...P....C

```
▸ IEEE 802.11 Action, Flags: ...P....C
▾ IEEE 802.11 wireless LAN
  ▾ Fixed parameters
      Category code: Management Notification (17)
      Action code: Teardown (0x0002)
      Dialog token: 0x00
      Status code: Admission accepted (0x0000)
  ▾ Tagged parameters (63 bytes)
    ▾ Tag: Vendor Specific: Microsoft Corp.: WMM/WME: TSPEC Element
```