Radio Resource Management Commands

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airtime-fairness dot11 mode (apgroup)

To configure ATF for an AP group, use the **airtime-fairness dot11 mode** command in ap group submode. Use the **no** form of the command to disable ATF for a AP group.

airtime-fairness dot11 {**24ghz** | **5ghz**} **mode** {**enforce-policy** | **monitor**}

no airtime-fairness dot11 {**24ghz** | **5ghz**} **mode** {**enforce-policy** | **monitor**}

Syntax Description

24ghz	Configures 802.11b parameters
5ghz	Configures 802.11a parameters
enforce-policy	Configure airtime-fairness in enforce-policy mode
monitor	Configure airtime-fairness in monitor mode

Command Default

None

Command Modes

config apgroup

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

None

This example shows how to configure ATF for an AP group.

```
Device#configure terminal
Deviceconfig# ap group testap
Deviceconfig-apgroup# airtime-fairness dot11 24ghz mode monitor
```

airtime-fairness dot11 optimization (apgroup)

To configure ATF optimization for an AP group, use the **airtime-fairness dot11 optimization** command. Use the **no** form of the command to disable ATF for a AP group

airtime-fairness dot11 {**24ghz** | **5ghz**} **optimization**

no airtime-fairness dot11 {**24ghz** | **5ghz**} **optimization**

Syntax Description

24ghz	Configures 802.11b parameters
5ghz	Configures 802.11a parameters

Command Default

None

Command Modes

config apgroup

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

None

This example shows how to configure ATF optimization for an AP group.

```
Device#configure terminal
Deviceconfig# ap group testap
Deviceconfig-apgroup# airtime-fairness dot11 24ghz optimization
```

airtime-fairness dot11 policy

To override a globally applied policy on a WLAN AP group, use the **airtime-fairness dot11 policy** command. Use the **no** form of the command to disable applied policy override.

airtime-fairness dot11 {**24ghz** | **5ghz**} **policy** *policy-name*

no airtime-fairness dot11 {**24ghz** | **5ghz**} **policy** *policy-name*

Syntax Description

24ghz	Configures 2.4 GHz airtime-fairness policy
5ghz	Configures 5 GHz airtime-fairness policy
policy-name	name of the airtime-fairness policy to assign

Command Default

None

Command Modes

config wlan apgroup

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

None

This example shows how to override applied policy on a WLAN AP group.

```
Deviceconfig#ap group testapgroup
Device(config-apgroup)# wlan testwlan
Device(config-wlan-apgroup)# airtime-fairness dot11 24ghz policy testpolicy
```

airtime-fairness policy (wlan)

To configure the ATF policy for a WLAN, use the **airtime-fairness policy** command.

airtime-fairness policy *policy-name*

Syntax Description

policy-name	Enter the policy name

Command Default

None

Command Modes

config wlan

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

None

This example shows how to configure the ATF policy for a WLAN.

```
Device#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device(config)#wlan wlan-name
Device(config-wlan)#airtime-fairness policy policy-name
```

ap dot11 rrm

To configure basic and advanced radio resource management settings for 802.11 devices, use the **ap dot11 rrm** command.

ap dot11 {**24ghz** | **5ghz**} **rrm** {**ccx location-measurement** *sec* | **channel** {**cleanair-event** | **dca** | **device** | **foreign** | **load** | **noise** | **outdoor-ap-dca**} | **coverage** {**data fail-percentage** *pct* | **data packet-count** *count* | **data rssi-threshold** *threshold*} | **exception global** *percentage* | **level global** *number* | **voice** {**fail-percentage** *percentage* | **packet-count** *number* | **rssi-threshold** *threshold*}}

Syntax Description

ccx	Configures Advanced (RRM) 802.11 CCX options.
location-measurement	Specifies 802.11 CCX Client Location Measurements in seconds. The range is between 10 and 32400 seconds.
channel	Configure advanced 802.11-channel assignment parameters.
cleanair-event	Configures cleanair event-driven RRM parameters.
dca	Configures 802.11-dynamic channel assignment algorithm parameters.
device	Configures persistent non-WiFi device avoidance in the 802.11-channel assignment.
foreign	Enables foreign AP 802.11-interference avoidance in the channel assignment.
load	Enables Cisco AP 802.11-load avoidance in the channel assignment.
noise	Enables non-802.11-noise avoidance in the channel assignment.
outdoor-ap-dca	Configures 802.11 DCA list option for outdoor AP.
coverage	Configures 802.11 coverage Hole-Detection.

data fail-percentage *pct*	Configures 802.11 coverage failure-rate threshold for uplink data packets. The range is between 1 and 100
data packet-count *count*	Configures 802.11 coverage minimum-failure-count threshold for uplinkdata packets.
data rssi-threshold *threshold*	Configures 802.11 minimum-receive-coverage level for voice packets.
exception global *percentage*	Configures 802.11 Cisco APs coverage-exception level. The range is between 0 and 100 percent.
level global *number*	Configures 802.11 Cisco AP client-minimum-exception level between 1 and 75 clients.
voice	Configures 802.11 coverage Hole-Detection for voice packets.
fail-percentage *percentage*	Configures 802.11 coverage failure rate threshold for uplink voice packets.
packet-count *number*	Configures 802.11 coverage minimum-uplink-failure count threshold for voice packets.
rssi-threshold *threshold*	Configures 802.11 minimum receive coverage level for voice packets.

Command Default

Disabled

Command Modes

Interface configuration

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

This command applies for both 802.11a and 802.11b bands. But the appropriate commands must be chosen for configuring the parameter.

This example shows how to configure various RRM settings.

```
Device#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device(config)#ap dot11 5ghz rrm ?
```

```
ccx             Configure Advanced(RRM) 802.11a CCX options
channel         Configure advanced 802.11a channel assignment parameters
coverage        802.11a Coverage Hole Detection
group-member    Configure members in 802.11a static RF group
group-mode      802.11a RF group selection mode
logging         802.11a event logging
monitor         802.11a statistics monitoring
ndp-type        Neighbor discovery type Protected/Transparent
profile         802.11a performance profile
tpc-threshold   Configures the Tx Power Control Threshold used by RRM for auto
                power assignment
txpower         Configures the 802.11a Tx Power Level
```

ap dot11 rrm ccx

To configure radio resource management CCX options for 2.4 GHz and 5GHz devices, use the **ap dot11 rrm ccx** command.

ap dot11 {**24ghz** | **5ghz**} **rrm ccx location-measurement** *interval*

Syntax Description

location-measurement *interval*	Specifies the CCX client-location measurement interval value. The range is between 10 and 32400 seconds.

Command Default

None.

Command Modes

Interface configuration.

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

None.

This example shows how to set CCX location-measurement interval for a 5-GHz device.

```
Device#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device(config)#ap dot11 5ghz rrm ccx location-measurement 10
```

ap dot11 rrm channel

To enable radio resource management channel for 2.4 GHz and 5GHz devices, use the **ap dot11 rrm channel** command. To disable the radio resource mangement for 2.4 GHz and 5 GHz devices, use the **no** form of the command.

ap dot11 {**24ghz** | **5ghz**} **rrm channel** {**cleanair-event** | **dca** | **device** | **foreign** | **load** | **noise**}
no ap dot11 {**24ghz** | **5ghz**} **rrm channel** {**cleanair-event** | **dca** | **device** | **foreign** | **load** | **noise**}

Syntax Description

cleanair-event	Specifies the cleanair event-driven RRM parameters
dca	Specifies the 802.11 dynamic channel assignment algorithm parameters
device	Specifies the persistent non-WiFi device avoidance in the 802.11-channel assignment.
foreign	Enables foreign AP 802.11-interference avoidance in the channel assignment.
load	Enables Cisco AP 802.11-load avoidance in the channel assignment.
noise	Enables non-802.11-noise avoidance in the channel assignment.

Command Default

None.

Command Modes

Interface configuration.

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

None.

This example shows all the parameters available for **Channel**.

```
Device#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device(config)#ap dot11 24ghz rrm channel ?
  cleanair-event  Configure cleanair event-driven RRM parameters
  dca             Config 802.11b dynamic channel assignment algorithm
                  parameters
  device          Configure persistent non-WiFi device avoidance in the 802.11b
                  channel assignment
  foreign         Configure foreign AP 802.11b interference avoidance in the
                  channel assignment
  load            Configure Cisco AP 802.11b load avoidance in the channel
                  assignment
  noise           Configure 802.11b noise avoidance in the channel assignment
```

ap dot11 24ghz rrm channel cleanair-event rogue-contribution

To configure cleanair event driven Radio Resource Management (RRM) rogue contribution parameters, use the **ap dot11 24ghz rrm channel cleanair-event rogue-contribution** command.

ap dot11 24ghz rrm channel cleanair-event rogue-contribution duty-cycle *threshold-value*

Syntax Description

duty-cycle	Sets event-driven RRM rogue contribution duty cycle.
threshold-value	Custom ED-RRM rogue contribution duty cycle threshold value. Valid value ranges from 1 -99 percent.

Command Default

The rogue contribution duty cycle is not set.

Command History

Release	Modification
16.1	This command was introduced.

Usage Guidelines

This command sets event-driven RRM rogue contribution duty cycle.

Example

This example shows how to configure cleanair event driven RRM rogue contribution parameters:

```
 Cisco Controller(config)# ap dot11 24ghz rrm channel cleanair-event rogue-contribution
duty-cycle 1
```

ap dot11 24ghz or 5ghz rrm channel dca add

To add non-default radio resource management DCA channels to the DCA channel list for 2.4 GHz or 5 GHz devices, use the **ap dot11** {**24ghz** | **5ghz** } **rrm channel dca add** command. To remove a default channel from the DCA list, use the **no** form of the command. The DCA channel list contains standard channels matching your country of operation. For example, a regulatory default channel list contains channels 1, 6, and 11.

ap dot11 [{**24ghz** | **5ghz**}] **rrm channel dca add** *number*
no ap dot11 [{**24ghz** | **5ghz**}] **rrm channel dca add** *number*

Syntax Description

number	DCA channel number.

Command Default

None.

Command Modes

Global configuration

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

None.

This example shows how to add a non-default radio resource management DCA channel to the DCA list for a 2.4 GHz device, using the **ap dot11 24ghz rrm channel dca add 10** command:

```
Device(config)# ap dot11 24ghz rrm channel dca add 10
```

ap dot11 24ghz or 5ghz rrm channel dca remove

To remove a default radio resource management DCA channels from the DCA channel list for 2.4 GHz or 5 GHz devices, use the **ap dot11** {**24ghz** | **5ghz**} **rrm channel dca remove** *number* command. To add a default DCA channel back to the DCA channel list, use the **no** form of the command.

ap dot11 [{**24ghz** | **5ghz**}] **rrm channel dca remove** *number*
no ap dot11 [{**24ghz** | **5ghz**}] **rrm channel dca remove** *number*

Syntax Description

number	Specifies the radio resource management DCA channel.

Command Default

None.

Command Modes

Global configuration.

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

None.

This example shows how to remove default radio resource management DCA channel from the DCA list for a 2.4 GHz device, using the **ap dot11 24ghz rrm channel dca remove** command:

```
Device(config)#ap dot11 24ghz rrm channel dca remove 11
```

ap dot11 5ghz rrm channel dca chan-width-11n

To configure DCA channel width for all 802.11n radios in the 5-GHz band, enter the **ap dot11 5ghz rrm channel dca chan-width-11n** *width* command. To disable DCA channel width for all 802.11n radios in the 5-GHz band, use the **no** form of the command.

ap dot11 5ghzrrm channel dca chan-width-11n {**20** | **40**}
noap dot11 5ghzrrm channel dca chan-width-11n {**20** | **40**}

Syntax Description

chan-width-11n	Specifies DCA channel width for all 802.11n radios in the 5-GHz band.
20	Sets the channel width for 802.11n radios to 20 MHz.
40	Sets the channel width for 802.11n radios to 40 MHz.

Command Default

The default channel width is 20.

Command Modes

Global configuration.

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

None.

This example shows how to set the channel width for the 802.11n radios to 40 MHz, using the **ap dot11 5ghz rrm channel dca chan-width-11n** command:

```
Device(config)#ap dot11 5ghz rrm channel dca chan-width-11n 40
```

ap dot11 rrm coverage

To enable 802.11 coverage hole detection, use the **ap dot11 rrm coverage** command.

ap dot11 {**24ghz** | **5ghz**} **rrm coverage** [{**data** {**fail-percentage** *percentage* | **packet-count** *count* | **rssi-threshold** *threshold*} | **exceptional global** *value* | **level global** *value* | **voice** {**fail-percentage** *percentage* | **packet-count** *packet-count* | **rssi-threshold** *threshold*}}]

Syntax Description

data	Specifies 802.11 coverage hole-detection data packets.
fail-percentage *percentage*	Specifies 802.11 coverage failure-rate threshold for uplink data packets. The range is between 1 and 100
packet-count *count*	Specifies 802.11 coverage minimum-failure-count threshold for uplink data packets.
rssi-threshold *threshold*	Specifies 802.11 minimum-receive-coverage level for voice packets.
exceptional global *value*	Specifies 802.11 Cisco APs coverage-exception level. The range is between 0 and 100 percent.
level global *value*	Specifies 802.11 Cisco AP client-minimum-exception level between 1 and 75 clients.
voice	Specifies 802.11 coverage Hole-Detection for voice packets.
fail-percentage *percentage*	Specifies 802.11 coverage failure rate threshold for uplink voice packets.
packet-count *packet-count*	Specifies 802.11 coverage minimum-uplink-failure count threshold for voice packets.
rssi-threshold *threshold*	Specifies 802.11 minimum receive coverage level for voice packets.

Command Default

None.

Command Modes

Interface configuration.

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

If you enable coverage hole-detection, the device automatically determines, based on data that is received from the access points, whether any access points have clients that are potentially located in areas with poor coverage.

If both the number and percentage of failed packets exceed the values that you entered in the **ap dot11 {24ghz | 5ghz} rrm coverage packet-count** and **ap dot11 {24ghz | 5ghz} rrm coverage fail-percentage** commands for a 5-second period, the client is considered to be in a pre-alarm condition. The device uses this information to distinguish between real and false coverage holes and excludes clients with poor roaming logic. A coverage hole is detected if both the number and percentage of failed clients meet or exceed the values entered in the

ap dot11 {24ghz | 5ghz} rrm coverage level-global and **ap dot11 {24ghz | 5ghz} rrm coverage exceptional-global** commands over a 90-second period. The device determines whether the coverage hole can be corrected and, if appropriate, mitigate the coverage hole by increasing the transmit power level for that specific access point.

This example shows how to set the RSSI-threshold for data in 5-GHz band.

```
Device#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device(config)#ap dot11 5ghz rrm coverage data rssi-threshold -80
```

ap dot11 rrm group-member

To configure members in 802.11 static RF group, use the **ap dot11 rrm group-member** command. To remove the member, use the **no** form of the command.

ap dot11 {**24ghz** | **5ghz**} **rrm group-member** *controller-name controller-ip*
no ap dot11 {**24ghz** | **5ghz**} **rrm group-member** *controller-name controller-ip*

Syntax Description

controller-name	Specifies the name of the controller to be added.
controller-ip	Specifies the IP address of the controller to be added.

Command Default

None.

Command Modes

Interface configuration.

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

None.

This example shows how to add a controller in the 5-GHz automatic-RF group

```
Device#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device(config)#ap dot11 5ghz rrm group-member ABC 10.1.1.1
```

ap dot11 rrm monitor

To monitor the 802.11-band statistics, use the **ap dot11 rrm monitor** command. To disable, use the **no** form of the command.

ap dot11 {**24ghz** | **5ghz**} **rrm monitor** {**channel-list** | {**all** | **country** | **dca**} | **coverage** | **load** | **noise** | **signal**}
no ap dot11 {**24ghz** | **5ghz**} **rrm monitor** {**channel-list** | **coverage** | **load** | **noise** | **signal**}

Syntax Description

channel-list	Sets the 802.11 noise/interference/rogue monitoring channel-list.
all	Specifies to monitor all the channels.
country	Specifies to monitor channels used in configured country code
dca	Specifies to monitor channels used by dynamic channel assignment.
coverage	Specifies 802.11 coverage measurement interval. The range is between 60 and 3600 in seconds
load	Specifies 802.11 load measurement interval. The range is between 60 and 3600 in seconds
noise	Specifies 802.11 noise measurement interval (channel scan interval). The range is between 60 and 3600 in seconds
signal	Specifies 802.11 signal measurement interval (neighbor packet frequency). The range is between 60 and 3600 in seconds

Command Default

None.

Command Modes

Interface Configuration

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

None.

This example shows how to enable monitoring all the 5-GHz band channels.

```
Device#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device(config)#ap dot11 5ghz rrm monitor channel-list all
```

ap dot11 rrm profile

To configure Cisco lightweight access point profile settings on supported 802.11 networks, use the **ap dot11 rrm profile** command.

ap dot11 {**24ghz** | **5ghz**} **rrm profile** {**customize** | **foreign** *value* | **noise** *value* | **throughput** *value* | **utilization** *value*}

Syntax Description

customize	Enables performance profiles.
foreign *value*	Specifies the 802.11 foreign 802.11 interference threshold value. The range is between 0 and 100 percent.
noise *value*	Specifies the 802.11 foreign noise threshold value. The range is between -127 and 0 dBm
throughput *value*	Specifies the 802.11a Cisco AP throughput threshold value. The range is between 1000 and 10000000 bytes per second
utilization *value*	Specifies the 802.11a RF utilization threshold value. The range is between 0 and 100 percent

Command Default

Disabled.

Command Modes

Interface configuration.

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

None.

This example shows how to set the threshold value for the noise parameter.

```
Device#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device(config)#ap dot11 5ghz rrm profile noise -50
```

ap dot11 rrm tpc-threshold

To configure the tx-power control threshold used by RRM for auto power assignment, use the **ap dot11 rrm tpc-threshold** command. To disable, use the **no** form of the command.

ap dot11 {**24ghz** | **5ghz**} **rrm tpc-threshold** *value*
no ap dot11 {**24ghz** | **5ghz**} **rrm tpc-threshold**

Syntax Description

value	Specifies the power value. The range is between -80 and -50.

Command Default

None.

Command Modes

Interface configuration.

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

None.

This example shows how to configure the tx-power control threshold used by RRM for auto power assignment.

```
Device#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device(config)#ap dot11 5ghz rrm tpc-threshold -60
```

ap dot11 rrm txpower

To configure the 802.11 tx-power level, use the **ap dot11 rrm txpower** command. To disable the 802.11 tx-power level, use the **no** form of the command.

ap dot11 {**24ghz** | **5ghz**} **rrm txpower** {**auto** | **max** *powerLevel* | **min** *powerLevel* | **once***power-level*}
noap dot11 {**24ghz** | **5ghz**} **rrm txpower** {**auto** | **max** *powerLevel* | **min** *powerLevel* | **once***power-level*}

Syntax Description

auto	Enables auto-RF.
max *powerLevel*	Configures maximum auto-RF tx power. The range is between -10 to -30.
min *powerLevel*	Configures minimum auto-RF tx power. The range is between -10 to -30.
once	Enables one-time auto-RF.

Command Default

None.

Command Modes

Interface configuration.

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.
Cisco IOS XE 3.3SE	The **no** form of the command is introduced.

Usage Guidelines

None.

This example shows how to enables auto-RF once.

```
Device#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device(config)#ap dot11 5ghz rrm txpower once
```

ap dot11 airtime-fairness mode

To enable AirTime-Fairness in Enforce policy or Monitor mode, use the **ap dot11 airtime-fairness mode** command. To disable Enforce policy or Monitor mode in AirTime Fairness, use the **no** form of the command.

ap dot11 {**24ghz** | **5ghz**}**airtime-fairness mode** {**enforce-policy** | **monitor**}

no ap dot11 {**24ghz** | **5ghz**}**airtime-fairness mode** {**enforce-policy** | **monitor**}

Syntax Description

24ghz	Configures 802.11b parameters
5ghz	Configures 802.11a parameters
enforce-policy	Configure airtime-fairness in enforce-policy mode
monitor	Configure airtime-fairness in monitor mode

Command Default

None

Command Modes

Global Configuration

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

None

This example shows all the parameters available for **AirTime Fairness mode**.

```
Device#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device(config)#ap dot11 24ghz airtime-fairness mode ?
 enforce-policy  Configure airtime-fairness in enforce-policy mode
 monitor         Configure airtime-fairness in monitor mode
```

ap dot11 airtime-fairness policy-name

To create a new Air Time Fairness (ATF) policy, use the **ap dot11 airtime-fairness policy-name** command.

ap dot11 airtime-fairness policy-name *policy-name policy-id*

Syntax Description

policy-name	Enter the ATF policy name.
policy-id	Enter ATF policy ID to create new policy.

Command Default

None

Command Modes

Global Configuration

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

All ATF policies require a policy weight value. To add the policy weight use the **policy weight** command in config-airtime-fairness policy mode. If no policy weight is added, default value of 10 is applied. For more information about adding policy weight, see policy-weight, on page 24.

This example shows .

```
Device#ap dot11 airtime-fairness policy-name testpolicy 12
```

policy-weight

To apply policy weight to an Air Time Fairness (ATF) policy, use the **policy-weight** command.

policy-weight *policy-weight*

Syntax Description

policy-weight	Policy weight for ATF policy. The range is from 5 to 100. Default is 10.

Command Default

None

Command Modes

config-airtime-fairness policy

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

If you do not apply a policy to the WLAN, then the default policy (with ID 0) with the policy weight of 10 is applied automatically. For more information about ATF policy creation, see ap dot11 airtime-fairness policy-name, on page 24.

This example shows how to apply policy weight to an ATF policy.

```
Device#ap dot11 airtime-fairness policy-name testpolicy 12
Device(config-airtime-fairness policy)# policy-weight 35
```

ap name dot11 airtime-fairness mode

To enable Air Time-Fairness in Enforce policy or Monitor mode for a specific AP, use the **ap namedot11 airtime-fairness mode** command. Use **no** form of the command to disable Air Time-Fairness from either of the two modes for a specific AP.

ap name *ap-name* **dot11** {**24ghz** | **5ghz**} **airtime-fairness mode** {**enforce-policy** | **monitor**}

ap name *ap-name* **no dot11** {**24ghz** | **5ghz**} **airtime-fairness mode** {**enforce-policy** | **monitor**}

Syntax Description

ap-name	Enter access point name
24ghz	Configures 802.11b parameters
5ghz	Configures 802.11a parameters
enforce-policy	Configure airtime-fairness in enforce-policy mode
monitor	Configure airtime-fairness in monitor mode

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

None

This example shows how to disable Air Time-Fairness from either enforce-policy or monitor mode for a specific AP.

```
Device# ap name testap no dot11 24ghz airtime-fairness mode
```

ap name dot11 airtime-fairness optimization

To enable ATF optimization for a specific AP, use the **ap name dot11 airtime-fairness optimization** command. Use **no** to disable ATF optimization for a specific AP.

ap name *ap-name* **dot11** {**24ghz** | **5ghz**} **airtime-fairness optimization**

ap name *ap-name* **no dot11** {**24ghz** | **5ghz**} **airtime-fairness optimization**

Syntax Description

ap-name	Enter access point name
24ghz	Configures 802.11b parameters
5ghz	Configures 802.11a parameters

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

This example shows how to enable ATF optimization for a specific AP.

```
Device#ap name doctestap dot11 24ghz airtime-fairness optimization
```

ap name no dot11 airtime-fairness wlan-name policy-name

To disable the ATF policy override on WLAN specific to a WLAN, use the **ap name no dot11 airtime-fairness wlan-name** command.

ap name *ap-name* **no dot11** {**24ghz** | **5ghz**}**airtime-fairness wlan-name** *wlan-name*

Syntax Description

ap-name	Enter access point name
24ghz	Configures 802.11b parameters
5ghz	Configures 802.11a parameters
wlan-name	Configure the airtime-fairness policy for this WLAN under Cisco AP
wlan-name	Enter the wlan profile name

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

None

This example shows how to disable ATF policy override on WLAN specific to a WLAN .

```
Device#ap name testap no dot11 24ghz airtime-fairness wlan-name testwlan
```

ap name dot11 airtime-fairness wlan-name policy

To override the ATF policy on WLAN specific to one AP, use the **ap name dot11 airtime-fairness wlan-name policy-name** command.

ap name *ap-name* **dot11** {**24ghz** | **5ghz**} **airtime-fairness wlan-name** *wlan-name* **policy-name** *policy-name*

Syntax Description

ap-name	Access Point name
24ghz	Configures 802.11b parameters
5ghz	Configures 802.11a parameters
wlan-name	Configure the airtime-fairness policy for this wlan under Cisco
wlan-name	Enter the wlan profile name
policy-name	Configure airtime-fairness policy
policy-name	Enter the airtime-fairness profile name

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

None

This example shows how to override the ATF policy on WLAN specific to one AP.

```
Device# ap name testap dot11 24ghz airtime-fairness wlan-name testwlan policy-name testpolicy
```

no ap dot11 airtime-fairness policy-name

To delete a AirTime Fairness policy, use the **no ap dot11 airtime-fairness policy-name** command.

no ap dot11 airtime-fairness policy-name *policy-name*

Syntax Description

policy-name	Enter the airtime-fairness policy name

Command Default

None

Command Modes

Global configuration

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

None

This example shows how to delete a AirTime Fairness policy.

```
Device#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device# no ap dot11 airtime-fairness policy-name testpol
```

clear wireless airtime-fairness statistics

To clear the wireless airtime-fairness statistics, use the **clear wireless airtime-fairness statistics** command.

clear clear wireless airtime-fairness statistics

Syntax Description

airtime-fairness	Clears the airtime-fairness statistics

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

This example shows how to clear the wireless airtime-fairness statistics.

```
Device#clear wireless airtime-fairness statistics
```

show ap dot11 24ghz

To display the 2.4 GHz RRM parameters, use the **show ap dot11 24ghz** command.

show ap dot11 24ghz {**ccx** | **channel** | **coverage** | **group** | **l2roam** | **logging** | **monitor** | **profile** | **receiver** | **summary** | **txpower**}

Syntax Description

ccx	Displays the 802.11b CCX information for all Cisco APs.
channel	Displays the configuration and statistics of the 802.11b channel assignment.
coverage	Displays the configuration and statistics of the 802.11b coverage.
group	Displays the configuration and statistics of the 802.11b grouping.
l2roam	Displays 802.11b l2roam information.
logging	Displays the configuration and statistics of the 802.11b event logging.
monitor	Displays the configuration and statistics of the 802.11b monitoring.
profile	Displays 802.11b profiling information for all Cisco APs.
receiver	Displays the configuration and statistics of the 802.11b receiver.
summary	Displays the configuration and statistics of the 802.11b Cisco APs.
txpower	Displays the configuration and statistics of the 802.11b transmit power control.

Command Default

None.

Command Modes

Global configuration.

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

None.

This example shows how to display configuration and statistics of the 802.11b coverage.

```
Device#show ap dot11 24ghz coverage

Coverage Hole Detection
  802.11b Coverage Hole Detection Mode            : Enabled
  802.11b Coverage Voice Packet Count             : 100 packet(s)
  802.11b Coverage Voice Packet Percentage        : 50%
  802.11b Coverage Voice RSSI Threshold           : -80 dBm
  802.11b Coverage Data Packet Count              : 50 packet(s)
  802.11b Coverage Data Packet Percentage         : 50%
  802.11b Coverage Data RSSI Threshold            : -80 dBm
```

```
802.11b Global coverage exception level          : 25 %
802.11b Global client minimum exception level    : 3 clients
```

show ap dot11 5ghz

To display the 5GHz RRM parameters, use the **show ap dot11 5ghz** command.

show ap dot11 5ghz {**ccx** | **channel** | **coverage** | **group** | **l2roam** | **logging** | **monitor** | **profile** | **receiver** | **summary** | **txpower**}

Syntax Description

ccx	Displays the 802.11a CCX information for all Cisco APs.
channel	Displays the configuration and statistics of the 802.11a channel assignment.
coverage	Displays the configuration and statistics of the 802.11a coverage.
group	Displays the configuration and statistics of the 802.11a grouping.
l2roam	Displays 802.11a l2roam information.
logging	Displays the configuration and statistics of the 802.11a event logging.
monitor	Displays the configuration and statistics of the 802.11a monitoring.
profile	Displays 802.11a profiling information for all Cisco APs.
receiver	Displays the configuration and statistics of the 802.11a receiver.
summary	Displays the configuration and statistics of the 802.11a Cisco APs.
txpower	Displays the configuration and statistics of the 802.11a transmit power control.

Command Default

None.

Command Modes

Global configuration.

Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

Usage Guidelines

None.

This example shows configuration and statistics of 802.11a channel assignment.

```
Device#show ap dot11 5ghz channel

Automatic Channel Assignment
  Channel Assignment Mode                  : AUTO
  Channel Update Interval                  : 12 Hours
  Anchor time (Hour of the day)            : 20
  Channel Update Contribution              : SNI..
  Channel Assignment Leader                : web (9.9.9.2)
  Last Run                                 : 16534 seconds ago
  DCA Sensitivity Level                    : MEDIUM (15 dB)
  DCA 802.11n Channel Width                : 40 Mhz
```

```
Channel Energy Levels
    Minimum                                 : unknown
    Average                                 : unknown
    Maximum                                 : unknown
Channel Dwell Times
    Minimum                                 : unknown
    Average                                 : unknown
    Maximum                                 : unknown
802.11a 5 GHz Auto-RF Channel List
Allowed Channel List                        : 36,40,44,48,52,56,60,64,149,153,1

              57,161
Unused Channel List                         : 100,104,108,112,116,132,136,140,1

              65
802.11a 4.9 GHz Auto-RF Channel List
Allowed Channel List                        :
Unused Channel List                         : 1,2,3,4,5,6,7,8,9,10,11,12,13,14,

              15,16,17,18,19,20,21,22,23,24,25,26
DCA Outdoor AP option                       : Disabled
```

show ap airtime-fairness (per radio)

To view AP list with Air Time Fairness configuration per radio, use the **show ap airtime-fairness** command.

show ap airtime-fairness

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

This example shows AP list with AirTime-Fairness per radio.

```
Device#show ap airtime-fairness
```

show ap dot11 airtime-fairness (radio bands)

To view AP list with ATF configured radio bands, use the **show ap dot11 airtime-fairness** command.

show ap dot11 {**24ghz** | **5ghz**} **airtime-fairness**

Syntax Description

24ghz	Show 802.11b configuration
5ghz	Show 802.11a configuration

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

None

This example shows how to view AP list with ATF configured radio bands.

```
Device#show ap dot 24ghz airtime-fairness
```

show ap name dot11 airtime-fairness summary

To view the ATF statistics for a specific AP, use the **show ap name dot11 airtime-fairness summary** command.

show ap name *ap-name* **dot11** {**24ghz** | **5ghz**} **airtime-fairness summary**

Syntax Description

ap-name	Display the stats of 24GHz | 5GHz airtime-fairness
24ghz	Show 802.11b configuration
5ghz	Show 802.11a configuration

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

Usage Guidelines

None

This example shows how to view the ATF statistics for a specific AP.

```
Device#show ap ame testap dot11 24ghz airtime-fairness summary
```

show ap airtime-fairness (ap)

To view ATF configuration for a specific AP, use the **show ap airtime-fairness** command.

show ap name*ap-name* **airtime-fairness**

Syntax Description

ap-name	Enter access point name

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

This example shows how to view ATF configuration for a specific AP.

```
Device# show ap name testap airtime-fairness
```

show ap airtime-fairness policy (all)

To view all configured policies, use the **show ap airtime-fairness policy** command.

show ap airtime-fairness policy

Syntax Description

policy	Shows Airtime Fairness policy information

Command Default

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

This example shows all the configured airtime-fairness policies.

```
Device#show ap airtime-fairness policy
Policy ID   Policy Name         Weight
----------------------------------------
23           f                    10
12           asd                  10
13           pol                  10
50           meaw                 45
20           pocy                 10
0            Default              10
```

show ap name dot11 airtime-fairness policy statistics

To view statistics for each ATF policy, use the **show ap name dot11 airtime-fairness policy statistics** command.

show ap name *ap-name* **dot11** {**24ghz** | **5hz**} **airtime-fairness policy** *policy-name* **statistics**

Syntax Description

ap-name	Enter access point name
24ghz	Show 802.11b configuration
5hz	Show 802.11a configuration
policy-name	Enter policy name

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

This example shows how to view statistics for each ATF policy.

```
Device#show ap name testap dot11 24ghz airtime-fairness policy testpolicy statistics
```

show ap airtime-fairness wlan

To view the complete list of configured WLANs with Air Time Fairness policies applied, use the **show ap airtime-fairness wlan** command.

show ap airtime-fairness wlan

Syntax Description

wlan	Display airtime-fairness configuration for all wlans

Command Default

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

This example shows the complete list of configured WLANs and ATF policies applied.

```
Device#show ap airtime-fairness wlan

WLAN ID     Profile Name                        ATF Profile Name         Weight
-------------------------------------------------------------------------------
12          doctestlan                          Default                  10
```

show ap name dot11 airtime-fairness wlan name statistics

To view ATF statistics per WLAN active on specific AP, use the **show ap name dot11 airtime-fairness wlan name statistics** command.

show ap name dot11 {**24ghz** | **5ghz**} **airtime-fairness wlan name** *wlan-name* **statistics**

Syntax Description

name	Display airtime-fairness stats by profile name
wlan-name	Enter WLAN name
statistics	Display the stats of 24GHz | 5GHz airtime-fairness

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

This example shows how to view ATF statistics per WLAN active on specific AP.

```
Device#show ap name testap dot11 24ghz airtime-fairness wlan name testwlan statistics
```

show ap airtime-fairness ap-group

To view ATF configuration for a specific AP group, use the **show ap airtime-fairness ap-group** command.

show ap airtime-fairness ap-group *group-name*

Syntax Description

group-name	Enter AP-group name

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Denali 16.2.1	This command was introduced.

This example shows ATF configuration for a specific AP group .

```
Device#show ap airtime-fairness ap-group ?
Site Description:
Airtime-fairness 2.4GHz Mode:: Disable
Airtime-fairness 2.4GHz Optimization : n/a
Airtime-fairness 5GHz Mode:: Disable
Airtime-fairness 5GHz Optimization : n/a

WLAN ID   WLAN Name                       Interface            ATF Policy(2.4GHz)    ATF
 Policy(5GHz)
--------------------------------------------------------------------------------------------------------
```