CleanAir Commands

ap dot11 5ghz cleanair

To enable CleanAir for detecting 5-GHz devices, use the **ap dot11 5ghz cleanair** command in global configuration mode.

ap dot11 5ghz cleanair

Command Default Disabled.

Command Modes Global configuration.

Command History

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

Usage Guidelines You must enable this CleanAir command before you configure other CleanAir commands.

This example shows how to enable CleanAir for 5-GHz devices:

```
Switch(config)# ap dot11 5ghz cleanair
```

Related Topics

ap dot11 5ghz cleanair alarm air-quality, on page 2

ap dot11 5ghz cleanair alarm device, on page 3

default ap dot11 5ghz cleanair device, on page 4

ap dot11 5ghz rrm channel cleanair-event, on page 5

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ap dot11 5ghz cleanair alarm air-quality

To configure the alarm when the Air Quality (AQ) reaches the threshold value for the 5-GHz devices, use the **ap dot11 5ghz cleanair alarm air-quality** command. To disable the alarm when the AQ reaches the threshold value for the 5-GHz devices, use the **no** form of this command.

ap dot11 5ghz cleanair alarm air-quality threshold *threshold _value*

Syntax Description		
	threshold *threshold _value*	Configures the threshold value for air quality. The range is from 1 to 100.

Command Default   The default threshold value for AQ is 10.

Command Modes   Global configuration (config).

Command History

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

Usage Guidelines   You must enable CleanAir using the **ap dot11 5ghz cleanair**command before you configure this command.

This example shows how to set the threshold value for the AQ:

```
Switch(config)# ap dot11 5ghz cleanair alarm air-quality threshold 30
```

Related Topics

ap dot11 5ghz cleanair , on page 2

default ap dot11 5ghz cleanair device, on page 4

ap dot11 5ghz cleanair alarm device

To configure the alarm for the 5-GHz interference devices, use the **ap dot11 5ghz cleanair alarm device** command.

ap dot11 5ghz cleanair alarm device {**canopy** | **cont-tx** | **dect-like** | **inv** | **jammer** | **nonstd** | **radar** | **superag** | **tdd-tx** | **video** | **wimax-fixed** | **wimax-mobile**}

Syntax Description		
	canopy	Configures the alarm for canopy interference devices.
	cont-tx	Configures the alarm for continuous transmitters.
	dect-like	Configures the alarm for Digital Enhanced Cordless Communication (DECT)-like phones.
	inv	Configures the alarm for devices using spectrally inverted Wi-Fi signals.
	jammer	Configures the alarm for jammer interference devices.

nonstd	Configures the alarm for devices using nonstandard Wi-Fi channels.
radar	Configures the alarm for radars.
superag	Configures the alarm for 802.11 SuperAG interference devices.
tdd-tx	Configures the alarm for Time Division Duplex (TDD) transmitters.
video	Configures the alarm for video cameras.
wimax-fixed	Configures the alarm for WiMax fixed interference devices.
wimax-mobile	Configures the alarm for WiMax mobile interference devices.

Command Default The alarm for Wi-Fi inverted devices is enabled and for all other interference devices is disabled.

Command Modes Global configuration (config).

Command History

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

Usage Guidelines You must enable CleanAir using the **ap dot11 5ghz cleanair** command before you configure this command.

This example shows how to enable the alarm to notify interferences from a radar device:

```
Switch(config)# ap dot11 5ghz cleanair alarm device radar
```

Related Topics

default ap dot11 5ghz cleanair device

To configure the default state of the alarm for 5-GHz interference devices, use the **default ap dot11 5ghz cleanair device** command in global configuration mode.

default ap dot11 5ghz cleanair device {**canopy** | **cont-tx** | **dect-like** | **inv** | **jammer** | **nonstd** | **radar** | **report** | **superag** | **tdd-tx** | **video** | **wimax-fixed** | **wimax-mobile**}

Syntax Description

canopy	Configures the alarm for canopy interference devices.

cont-tx	Configures the alarm for continuous transmitters.
dect-like	Configures the alarm for Digital Enhanced Cordless Communication (DECT)-like phones.
inv	Configures the alarm for devices using spectrally inverted Wi-Fi signals.
jammer	Configures the alarm for jammer interference devices.
nonstd	Configures the alarm for devices using nonstandard Wi-Fi channels.
radar	Configures the alarm for radars.
report	Enables interference device reports.
superag	Configures the alarm for 802.11 SuperAG interference devices.
tdd-tx	Configures the alarm for Time Division Duplex (TDD) transmitters.
video	Configures the alarm for video cameras.
wimax-fixed	Configures the alarm for WiMax fixed interference devices.
wimax-mobile	Configures the alarm for WiMax mobile interference devices.

Command Default   The alarm for Wi-Fi inverted devices is enabled. The alarm for all other interference devices is disabled.

Command Modes   Global configuration (config).

Command History

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

Usage Guidelines   You must enable CleanAir using the **ap dot11 5ghz cleanair** command before you configure this command.

This example shows how to enable CleanAir to report when a video camera interferes:

```
Switch(config)# default ap dot11 5ghz cleanair device video
```

ap dot11 5ghz rrm channel cleanair-event

To enable Event-Driven RRM (EDRRM) and configure the sensitivity for 5-GHz devices, use the **ap dot11 5ghz rrm channel cleanair-event** command in global configuration mode. To disable EDRRM, use the **no** form of the command.

ap dot11 5ghz rrm channel cleanair-event [sensitivity {high| low| medium}]

no ap dot11 5ghz rrm channel cleanair-event [sensitivity {high| low| medium}]

Syntax Description

sensitivity	(Optional) Configures the EDRRM sensitivity of the CleanAir event.
high	(Optional) Specifies the highest sensitivity to non-Wi–Fi interference as indicated by the air quality (AQ) value.
low	(Optional) Specifies the least sensitivity to non-Wi–Fi interference as indicated by the AQ value.
medium	(Optional) Specifies medium sensitivity to non-Wi–Fi interference as indicated by the AQ value.

Command Default EDRRM is disabled and the EDRRM sensitivity is low.

Command Modes Global configuration (config).

Command History

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

Usage Guidelines You must enable EDRRM using the **ap dot11 5ghz rrm channel cleanair-event** command before you configure the sensitivity.

This example shows how to enable EDRRM and set the EDRRM sensitivity to high:

```
Switch(config)# ap dot11 5ghz rrm channel cleanair-event
Switch(config)# ap dot11 5ghz rrm channel cleanair-event sensitivity high
```

Related Topics

ap dot11 5ghz rrm channel device

To configure persistent non-Wi-Fi device avoidance in the 802.11a channel, use the **ap dot11 5ghz rrm channel device** command in global configuration mode. To disable persistent device avoidance, use the **no** form of this command.

ap dot11 5ghz rrm channel device

no ap dot11 5ghz rrm channel device

Syntax Description   This command has no arguments or keywords.

Command Default   The CleanAir persistent device state is disabled.

Command Modes   Global configuration (config)

Command History

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

Usage Guidelines   CleanAir-capable monitor mode access points collect information about persistent devices on all configured channels and stores the information in the switch. Local and bridge mode access points detect interference devices on the serving channels only.

This example shows how to enable persistent device avoidance on 802.11a devices:

```
Switch(config)# ap dot11 5ghz rrm channel device
```

Related Topics

ap dot11 5ghz cleanair , on page 2

ap dot11 5ghz rrm channel cleanair-event, on page 5

ap dot11 24ghz cleanair

To enable CleanAir for detecting 2.4-GHz devices, use the **ap dot11 24ghz cleanair** command in global configuration mode. To disable CleanAir for detecting 2.4-GHz devices, use the **no** form of this command.

ap dot11 24ghz cleanair

Syntax Description   This command has no arguments or keywords.

Command Default   Disabled.

Command Modes   Global configuration (config).

Command History

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

Usage Guidelines You must enable this CleanAir command before you configure other CleanAir commands.

This example shows how to enable CleanAir for 2.4-GHz devices:

```
Switch(config)# ap dot11 24ghz cleanair
```

Related Topics

ap dot11 24ghz cleanair alarm air-quality

To configure the alarm for the threshold value of Air Quality (AQ) for all 2.4-GHz devices, use the **ap dot11 24ghz cleanair alarm air-quality** command in global configuration mode. To disable the alarm for the threshold value of AQ for all 2.4-GHz devices, use the **no** form of this command.

ap dot11 24ghz cleanair alarm air-quality threshold *threshold_value*

Syntax Description

threshold *threshold_value*	Configures the threshold value for AQ. The range is from 1 to 100.

Command Default The default threshold value for AQ is 10.

Command Modes Global configuration (config)

Command History

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

Usage Guidelines   You must enable CleanAir using the **ap dot11 24ghz cleanair** command before you configure this command.

This example shows how to set the threshold value for the AQ:

```
Switch(config)# ap dot11 24ghz cleanair alarm air-quality threshold 50
```

Related Topics

ap dot11 24ghz cleanair alarm device

To configure the alarm for the 2.4-GHz interference devices, use the **ap dot11 24ghz cleanair alarm device** command in global configuration mode. To disable the alarm for the 2.4-GHz interference devices, use the **no** form of this command.

ap dot11 24ghz cleanairalarm {**device** | **bt-discovery** | **bt-link canopy**| **cont-tx** | **dect-like** | **fh** | **inv** | **jammer** | **mw-oven** | **nonstd** | **superag** | **tdd-tx video** | **wimax-fixed** | **wimax-mobile** | **xbox** | **zigbee**}

Syntax Description

bt-discovery	Configures the alarm for Bluetooth interference devices.
bt-link	Configures the alarm for any Bluetooth link.
canopy	Configures the alarm for canopy interference devices.
cont-tx	Configures the alarm for continuous transmitters.
dect-like	Configures the alarm for Digital Enhanced Cordless Communication (DECT)-like phones.
fh	Configures the alarm for 802.11 frequency hopping (FH) devices.
inv	Configures the alarm for devices using spectrally inverted Wi-Fi signals.
jammer	Configures the alarm for jammer interference devices.
mw-oven	Configures the alarm for microwave ovens.
nonstd	Configures the alarm for devices using nonstandard Wi-Fi channels.
superag	Configures the alarm for 802.11 SuperAG interference devices.
tdd-tx	Configures the alarm for Time Division Duplex (TDD) transmitters.
video	Configures the alarm for video cameras.

wimax-fixed	Configures the alarm for WiMax fixed interference devices.
wimax-mobile	Configures the alarm for WiMax mobile interference devices.
xbox	Configures the alarm for Xbox interference devices.
zigbee	Configures the alarm for 802.15.4 interference devices.

Command Default   The alarm for Wi-Fi inverted devices is enabled. The alarm for all other devices is disabled.

Command Modes   Global configuration (config).

Command History

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

Usage Guidelines   You must enable CleanAir using the **ap dot11 24ghz cleanair** command before you configure this command.

This example shows how to enable the alarm to notify interferences from a Zigbee device:

```
Switch(config)# ap dot11 24ghz cleanair alarm device zigbee
```

Related Topics

default ap dot11 24ghz cleanair device

To configure the default state of report generation for 2.4-GHz interference devices, use the **default ap dot11 24ghz cleanair device** command in global configuration mode.

default ap dot11 24ghz cleanair device {**bt-discovery** | **bt-link** | **canopy** | **cont-tx** | **dect-like** | **fh** | **inv** | **jammer** | **mw-oven** | **nonstd** | **report** | **superag** | **tdd-tx** | **video** | **wimax-fixed** | **wimax-mobile** | **xbox** | **zigbee**}

Syntax Description

bt-discovery	Configures the alarm for Bluetooth interference devices.
bt-link	Configures the alarm for any Bluetooth link.
canopy	Configures the alarm for canopy interference devices.

cont-tx	Configures the alarm for continuous transmitters.
dect-like	Configures the alarm for Digital Enhanced Cordless Communication (DECT)-like phones.
fh	Configures the alarm for 802.11 frequency hopping devices.
inv	Configures the alarm for devices using spectrally inverted Wi-Fi signals.
jammer	Configures the alarm for jammer interference devices.
mw-oven	Configures the alarm for microwave ovens.
nonstd	Configures the alarm for devices using nonstandard Wi-Fi channels.
superag	Configures the alarm for 802.11 SuperAG interference devices.
tdd-tx	Configures the alarm for Time Division Duplex (TDD) transmitters.
video	Configures the alarm for video cameras.
wimax-fixed	Configures the alarm for WiMax fixed interference devices.
wimax-mobile	Configures the alarm for WiMax mobile interference devices.
xbox	Configures the alarm for Xbox interference devices.
zigbee	Configures the alarm for 802.15.4 interference devices.

Command Default The alarm for Wi-Fi inverted devices is enabled. The alarm for all other devices is disabled.

Command Modes Global configuration (config).

Command History

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

Usage Guidelines You must enable CleanAir using the **ap dot11 24ghz cleanair**command before you configure this command.

This example shows how to enable CleanAir to report when a video camera interferes:

```
Switch(config)# default ap dot11 24ghz cleanair device video
```

Related Topics

ap dot11 24ghz rrm channel cleanair-event

To enable Event-Driven RRM (EDRRM) and the sensitivity for 2.4-GHz devices, use the **ap dot11 24ghz rrm channel cleanair-event** command in global configuration mode. To disable EDRRM, use the **no** form of this command.

ap dot11 24ghz rrm channel cleanair-event sensitivity {**high** | **low** | **medium**}

no ap dot11 24ghz rrm channel cleanair-event [**sensitivity**{**high** | **low** | **medium**}]

Syntax Description

sensitivity	(Optional) Configures the EDRRM sensitivity of the CleanAir event.
high	(Optional) Specifies the highest sensitivity to non-Wi–Fi interference as indicated by the air quality (AQ) value.
low	(Optional) Specifies the least sensitivity to non-Wi–Fi interference as indicated by the AQ value.
medium	(Optional) Specifies medium sensitivity to non-Wi–Fi interference as indicated by the AQ value.

Command Default   EDRRM is disabled and the sensitivity is low.

Command Modes   Global configuration (config).

Command History

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

Usage Guidelines   You must enable EDRRM using the **ap dot11 24ghz rrm channel cleanair-event** command before you configure the sensitivity.

This example shows how to enable EDRRM and set the EDRRM sensitivity to low:

```
Switch(config)# ap dot11 24ghz rrm channel cleanair-event
Switch(config)# ap dot11 24ghz rrm channel cleanair-event sensitivity low
```

Related Topics

ap dot11 24ghz rrm channel device

To configure persistent non-Wi-Fi device avoidance in the 802.11b channel, use the **ap dot11 24ghz rrm channel device** command in global configuration mode. To disable persistent device avoidance, use the **no** form of this command.

ap dot11 24ghz rrm channel device

no ap dot11 24ghz rrm channel device

Syntax Description   This command has no arguments or keywords.

Command Default   Persistent device avoidance is disabled.

Command Modes   Global configuration (config).

Command History

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

Usage Guidelines   CleanAir-capable monitor mode access points collect information about persistent devices on all configured channels and stores the information in the switch. Local and bridge mode access points detect interference devices on the serving channels only.

This example shows how to enable persistent device avoidance:

```
Switch(config)# ap dot11 24ghz rrm channel device
```

Related Topics

ap name mode se-connect

To configure the access point for SE-Connect mode, use the **ap name** *ap_name* **mode se-connect** command in privileged exec mode.

ap name *ap_name* **mode se-connect**

Syntax Description

ap_name	Name of the access point.

Command Default   No access point is configured for SE-Connect mode.

Command Modes   Privileged EXEC (#)

Command History

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

Usage Guidelines   The access point will reboot after you change the mode.

SE-connect mode enables a user to connect a Spectrum Expert application running on an external Microsoft Windows XP or Vista PC to a Cisco CleanAir-enabled access point in order to display and analyze detailed spectrum data. The Spectrum Expert application connects directly to the access point, by passing the controller. An access point in SE-Connect mode does not provide any Wi-Fi, RF, or spectrum data to the controller. All CleanAir system functionality is suspended while the AP is in this mode, and no clients are served. This mode is intended for remote troubleshooting only.

This example shows how to change the mode of the access point to SE-Connect:

```
Switch# ap name AS-5508-5-AP3 mode se-connect

Changing the AP's mode will cause the AP to reboot.
Are you sure you want to continue? (y/n)[y]: y
% switch-1:wcm:Cisco AP does not support the seconnect mode
```

default ap dot11 5ghz cleanair device

To configure the default state of the alarm for 5-GHz interference devices, use the **default ap dot11 5ghz cleanair device** command in global configuration mode.

default ap dot11 5ghz cleanair device {**canopy** | **cont-tx** | **dect-like** | **inv** | **jammer** | **nonstd** | **radar** | **report** | **superag** | **tdd-tx** | **video** | **wimax-fixed** | **wimax-mobile**}

Syntax Description

canopy	Configures the alarm for canopy interference devices.
cont-tx	Configures the alarm for continuous transmitters.
dect-like	Configures the alarm for Digital Enhanced Cordless Communication (DECT)-like phones.

inv	Configures the alarm for devices using spectrally inverted Wi-Fi signals.
jammer	Configures the alarm for jammer interference devices.
nonstd	Configures the alarm for devices using nonstandard Wi-Fi channels.
radar	Configures the alarm for radars.
report	Enables interference device reports.
superag	Configures the alarm for 802.11 SuperAG interference devices.
tdd-tx	Configures the alarm for Time Division Duplex (TDD) transmitters.
video	Configures the alarm for video cameras.
wimax-fixed	Configures the alarm for WiMax fixed interference devices.
wimax-mobile	Configures the alarm for WiMax mobile interference devices.

Command Default   The alarm for Wi-Fi inverted devices is enabled. The alarm for all other interference devices is disabled.

Command Modes   Global configuration (config).

Command History

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

Usage Guidelines   You must enable CleanAir using the **ap dot11 5ghz cleanair** command before you configure this command.

This example shows how to enable CleanAir to report when a video camera interferes:

```
Switch(config)# default ap dot11 5ghz cleanair device video
```

default ap dot11 5ghz rrm channel cleanair-event

To configure the default state of Event-Driven radio resource management (EDRRM) and the EDRRM sensitivity for 5-GHz devices, use the **default ap dot11 5ghz rrm channel cleanair-event** command in global configuration mode.

default ap dot11 5ghz rrm channel cleanair-event [**sensitivity** {**high** | **low** | **medium**}]

Syntax Description	sensitivity	(Optional) Configures the EDRRM sensitivity of the CleanAir event.
	high	(Optional) Specifies the highest sensitivity to non-Wi–Fi interference as indicated by the Air Quality (AQ) value.
	low	(Optional) Specifies the least sensitivity to non-Wi–Fi interference as indicated by the AQ value.
	medium	(Optional) Specifies medium sensitivity to non-Wi–Fi interference as indicated by the AQ value.

Command Default EDRRM is disabled and the sensitivity is low.

Command Modes Global configuration (config).

Command History

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

Usage Guidelines You must enable EDRRM before you configure the sensitivity.

This example shows how to set the default EDRRM state and sensitivity:

```
Switch(config)# default ap dot11 5ghz rrm channel cleanair-event
Switch(config)# default ap dot11 5ghz rrm channel cleanair-event sensitivity
```

default ap dot11 5ghz rrm channel device

To configure the default state of the persistent non-Wi-Fi device avoidance in the 802.11a channels, use the **default ap dot11 5ghz rrm channel device** command in global configuration mode.

default ap dot11 5ghz rrm channel device

Syntax Description This command has no arguments or keywords.

Command Default Persistent device state is disabled.

Command Modes Global configuration (config)

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

This example shows how to configure persistent non-Wi-Fi device avoidance in the 802.11a channels:

```
Switch(config)# default ap dot11 5ghz rrm channel device
```

default ap dot11 24ghz cleanair alarm device

To configure the default value of the alarm for 2.4-GHz interference devices, use the **default ap dot11 24ghz cleanair alarm device** command in global configuration mode.

default ap dot11 24ghz cleanair alarm device {**bt-discovery** | **bt-link** | **canopy** | **cont-tx** | **dect-like** | **fh** | **inv** | **jammer** | **mw-oven**| **nonstd** | **superag** | **tdd-tx** | **video** | **wimax-fixed** | **wimax-mobile** | **xbox** | **zigbee**}

Syntax Description		
	bt-discovery	Configures the alarm for Bluetooth interference devices.
	bt-link	Configures the alarm for any Bluetooth link.
	canopy	Configures the alarm for canopy interference devices.
	cont-tx	Configures the alarm for continuous transmitters.
	dect-like	Configures the alarm for Digital Enhanced Cordless Communication (DECT)-like phones.
	fh	Configures the alarm for 802.11 frequency hopping (FH) devices.
	inv	Configures the alarm for devices using spectrally inverted Wi-Fi signals.
	jammer	Configures the alarm for jammer interference devices.
	mw-oven	Configures the alarm for microwave ovens.
	nonstd	Configures the alarm for devices using nonstandard Wi-Fi channels.
	superag	Configures the alarm for 802.11 SuperAG interference devices.
	tdd-tx	Configures the alarm for Time Division Duplex (TDD) transmitters.
	video	Configures the alarm for video cameras.
	wimax-fixed	Configures the alarm for WiMax fixed interference devices.
	wimax-mobile	Configures the alarm for WiMax mobile interference devices.

xbox	Configures the alarm for Xbox interference devices.
zigbee	Configures the alarm for 802.15.4 interference devices.

Command Default

The alarm for Wi-Fi inverted devices is enabled. The alarm for all the other devices is disabled.

Command Modes

Global configuration (config)

Command History

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

Usage Guidelines

You must enable CleanAir using the **ap dot11 24ghz cleanair** command before you configure this command.

This example shows how to configure the default CleanAir 2.4-GHz interference devices alarm:

```
Switch(config)# default ap dot11 24ghz cleanair alarm device inv
```

default ap dot11 24ghz cleanair device

To configure the default state of report generation for 2.4-GHz interference devices, use the **default ap dot11 24ghz cleanair device** command in global configuration mode.

default ap dot11 24ghz cleanair device {**bt-discovery** | **bt-link** | **canopy** | **cont-tx** | **dect-like** | **fh** | **inv** | **jammer** | **mw-oven** | **nonstd** | **report** | **superag** | **tdd-tx** | **video** | **wimax-fixed** | **wimax-mobile** | **xbox** | **zigbee**}

Syntax Description

bt-discovery	Configures the alarm for Bluetooth interference devices.
bt-link	Configures the alarm for any Bluetooth link.
canopy	Configures the alarm for canopy interference devices.
cont-tx	Configures the alarm for continuous transmitters.
dect-like	Configures the alarm for Digital Enhanced Cordless Communication (DECT)-like phones.
fh	Configures the alarm for 802.11 frequency hopping devices.
inv	Configures the alarm for devices using spectrally inverted Wi-Fi signals.

jammer	Configures the alarm for jammer interference devices.
mw-oven	Configures the alarm for microwave ovens.
nonstd	Configures the alarm for devices using nonstandard Wi-Fi channels.
superag	Configures the alarm for 802.11 SuperAG interference devices.
tdd-tx	Configures the alarm for Time Division Duplex (TDD) transmitters.
video	Configures the alarm for video cameras.
wimax-fixed	Configures the alarm for WiMax fixed interference devices.
wimax-mobile	Configures the alarm for WiMax mobile interference devices.
xbox	Configures the alarm for Xbox interference devices.
zigbee	Configures the alarm for 802.15.4 interference devices.

Command Default   The alarm for Wi-Fi inverted devices is enabled. The alarm for all other devices is disabled.

Command Modes   Global configuration (config).

Command History

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

Usage Guidelines   You must enable CleanAir using the **ap dot11 24ghz cleanair**command before you configure this command.

This example shows how to enable CleanAir to report when a video camera interferes:

```
Switch(config)# default ap dot11 24ghz cleanair device video
```

Related Topics

default ap dot11 24ghz rrm channel cleanair-event

To configure the default Event-Driven radio resource management (EDRRM) state and sensitivity for 2.4-GHz devices, use the **default ap dot11 24ghz rrm channel cleanair-event** command in global configuration mode.

default ap dot11 24ghz rrm channel cleanair-event [**sensitivity** {**high** | **low** | **medium**}]

Syntax Description

sensitivity	Configures the EDRRM sensitivity of the CleanAir event.
high	Specifies the highest sensitivity to non-Wi–Fi interference as indicated by the Air Quality (AQ) value.
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.

Command Default   EDRRM is disabled and the sensitivity is low.

Command Modes   Global configuration (config)

Command History

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

This example shows how to enable EDRRM and set the default EDRRM sensitivity:

```
Switch(config)# default ap dot11 24ghz rrm channel cleanair-event
Switch(config)# default ap dot11 24ghz rrm channel cleanair-event sensitivity
```

show ap dot11 5ghz cleanair air-quality summary

To display the CleanAir AQ data for 5-GHz band, use the **show ap dot11 5ghz cleanair air-quality summary** command in user EXEC mode or privileged EXEC mode.

show ap dot11 5ghz cleanair air-quality summary

This command has no arguments or keywords.

Command Modes   User EXEC (>)

Privileged EXEC (#)

Command History

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

This example shows how to display the CleanAir AQ data for 5-GHz band:

```
Switch# show ap dot11 5ghz cleanair air-quality summary

AQ = Air Quality
DFS = Dynamic Frequency Selection

AP Name            Channel   Avg AQ  Min AQ  Interferers  DFS
-----------------------------------------------------------
AP270ca.9b86.4546  1         99      99      0            No
AP2894.0f26.22df   6         98      97      0            No
AP2894.0f58.cc6b   11        99      99      0            No
AP2894.0f39.1040   6         97      97      0            No
AP2894.0f63.c6da   11        99      99      0            No
AP2894.0f58.d013   6         97      97      0            No
```

show ap dot11 5ghz cleanair air-quality worst

To display the worst AQ data for 5-GHz band, use the **show ap dot11 5ghz cleanair air-quality worst** command in user EXEC mode or privileged EXEC mode.

show ap dot11 5ghz cleanair air-quality worst

This command has no arguments or keywords.

Command Modes   User EXEC (>)

Privileged EXEC (#)

Command History

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

This example shows how to display the worst AQ data for 5-GHz band:

```
Switch# show ap dot11 5ghz cleanair air-quality worst

AQ = Air Quality
DFS = Dynamic Frequency Selection

AP Name            Channel   Avg AQ  Min AQ  Interferers  DFS
-----------------------------------------------------------
```

```
                    AP2894.0f39.1040    6         97      97      0             No
```

show ap dot11 5ghz cleanair config

To display the CleanAir configuration for 5-GHz band, use the **show ap dot11 5ghz cleanair config** command.

show ap dot11 5ghz cleanair config

This command has no arguments or keywords.

Command Modes

User EXEC (>)

Privileged EXEC (#)

Command History

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

Usage Guidelines

In Release 3.3SE, you can configure this command on the Mobility Agent (MA).

This example shows how to display the CleanAir configuration for 5-GHz band on the Mobility Controller:

```
Switch# show ap dot11 5ghz cleanair config

CleanAir Solution................................ : Enabled
Air Quality Settings:
    Air Quality Reporting........................ : Enabled
    Air Quality Reporting Period (min)........... : 15
    Air Quality Alarms........................... : Enabled
    Air Quality Alarm Threshold.................. : 1
Interference Device Settings:
    Interference Device Reporting................ : Enabled
        TDD Transmitter.......................... : Enabled
        Jammer................................... : Enabled
        Continuous Transmitter................... : Enabled
        DECT-like Phone.......................... : Enabled
        Video Camera............................. : Enabled
        WiFi Inverted............................ : Enabled
        WiFi Invalid Channel..................... : Enabled
        SuperAG.................................. : Enabled
        Canopy................................... : Enabled
        WiMax Mobile............................. : Enabled
        WiMax Fixed.............................. : Enabled
    Interference Device Types Triggering Alarms:
        TDD Transmitter.......................... : Enabled
        Jammer................................... : Enabled
        Continuous Transmitter................... : Enabled
        DECT-like Phone.......................... : Enabled
        Video Camera............................. : Enabled
        WiFi Inverted............................ : Enabled
        WiFi Invalid Channel..................... : Enabled
        SuperAG.................................. : Enabled
        Canopy................................... : Enabled
        WiMax Mobile............................. : Enabled
        WiMax Fixed.............................. : Enabled
    Interference Device Alarms................... : Enabled
Additional CleanAir Settings:
```

```
        CleanAir Event-driven RRM State.............. : Enabled
        CleanAir Driven RRM Sensitivity.............. : HIGH
        CleanAir Persistent Devices state............ : Enabled
```

This example shows how to display the CleanAir configuration for 5-GHz band on the Mobility Agent:

```
Switch# show ap dot11 5ghz cleanair config

Mobility Controller Link Status.................. : UP
CleanAir Solution................................ : Enabled
Air Quality Settings:
    Air Quality Reporting........................ : Enabled
    Air Quality Reporting Period (min)........... : 15
    Air Quality Alarms........................... : Enabled
    Air Quality Alarm Threshold.................. : 10
Interference Device Settings:
    Interference Device Reporting................ : Enabled
        TDD Transmitter.......................... : Enabled
        Jammer................................... : Enabled
        Continuous Transmitter................... : Enabled
        DECT-like Phone.......................... : Enabled
        Video Camera............................. : Enabled
        WiFi Inverted............................ : Enabled
        WiFi Invalid Channel..................... : Enabled
        SuperAG.................................. : Enabled
        Canopy................................... : Enabled
        WiMax Mobile............................. : Enabled
        WiMax Fixed.............................. : Enabled
    Interference Device Types Triggering Alarms:
        TDD Transmitter.......................... : Disabled
        Jammer................................... : Disabled
        Continuous Transmitter................... : Disabled
        DECT-like Phone.......................... : Disabled
        Video Camera............................. : Disabled
        WiFi Inverted............................ : Enabled
        WiFi Invalid Channel..................... : Enabled
        SuperAG.................................. : Enabled
        Canopy................................... : Disabled
        WiMax Mobile............................. : Disabled
        WiMax Fixed.............................. : Disabled
    Interference Device Alarms................... : Enabled
Additional CleanAir Settings:
    CleanAir Event-driven RRM State.............. : Disabled
    CleanAir Driven RRM Sensitivity.............. : LOW
    CleanAir Persistent Devices state............ : Disabled
```

show ap dot11 5ghz cleanair device type

To display the 5-GHz interference devices, use the **show ap dot11 5ghz cleanair device type** command.

show ap dot11 5ghz cleanair device type {**all** | **canopy** | **cont-tx** | **dect-like** | **inv** | **jammer** | **nonstd** | **persistent** | **superag** | **tdd-tx** | **video** | **wimax-fixed** | **wimax-mobile**}

Syntax Description		
all	Displays all CleanAir interferer devices for 5-GHz band.
canopy	Displays CleanAir interferers of type canopy for 5-GHz band.
cont-tx	Displays CleanAir interferers of type continuous transmitter for 5-GHz band.

dect-like	Displays CleanAir interferers of type Digital Enhanced Cordless Communication (DECT)-like phone for 5-GHz band.
inv	Displays CleanAir interferer devices using spectrally inverted WiFi signals for 5-GHz band.
jammer	Displays CleanAir interferers of type jammer for 5-GHz band.
nonstd	Displays CleanAir interferer devices using non-standard Wi-Fi channels for 5-GHz band.
persistent	Displays CleanAir persistent device interferers for 5-GHz band.
superag	Displays CleanAir interferers of type SuperAG for 5-GHz band.
tdd-tx	Displays CleanAir Time Division Duplex (TDD) transmitters for 5-GHz band.
video	Displays CleanAir interferers of type video camera for 5-GHz band.
winmax-fixed	Displays CleanAir interferers of type WiMax fixed for 5-GHz band.
wimax-mobile	Displays CleanAir interferers of type WiMax mobile for 5-GHz band.

Command Modes   User EXEC (>)

Privileged EXEC (#)

Command History

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

Usage Guidelines   Interference devices are listed only if there is an interference from any 5-GHz devices.

This example shows how to view all the 5-GHz interference devices:

```
Switch# show ap dot11 5ghz cleanair device type all

DC   = Duty Cycle (%)
ISI  = Interference Severity Index (1-Low Interference, 100-High Interference)
RSSI = Received Signal Strength Index (dBm)
DevID = Device ID

No   ClusterID         DevID  Type          AP Name              ISI  RSSI  DC
Channel
---------------------------------------------------------------------------------------
```

show ap dot11 24ghz cleanair air-quality summary

To display the CleanAir AQ data for 2.4-GHz band, use the **show ap dot11 24ghz cleanair air-quality summary** command in user EXEC mode or privileged EXEC mode.

show ap dot11 24ghz cleanair air-quality summary

This command has no arguments or keywords.

Command Modes
User EXEC (>)

Privileged EXEC (#)

Command History

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

This example shows how to display the CleanAir AQ data for 2.4-GHz band:

```
Switch# show ap dot11 24ghz cleanair air-quality summary

AQ = Air Quality
DFS = Dynamic Frequency Selection

AP Name            Channel   Avg AQ  Min AQ  Interferers  DFS
-----------------------------------------------------------------
AP270ca.9b86.4546  1         99      99      0            No
AP2894.0f26.22df   6         98      97      0            No
AP2894.0f58.cc6b   11        99      99      0            No
AP2894.0f39.1040   6         97      97      0            No
AP2894.0f63.c6da   11        99      99      0            No
```

show ap dot11 24ghz cleanair air-quality worst

To display the worst air quality data for 2.4-GHz band, use the **show ap dot11 24ghz cleanair air-quality worst** command in user EXEC mode or privileged EXEC mode.

show ap dot11 24ghz cleanair air-quality worst

This command has no arguments or keywords.

Command Modes
User EXEC (>)

Privileged EXEC (#)

Command History

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

This example shows how to display the worst AQ data for 2.4-GHz band:

```
Switch# show ap dot11 24ghz cleanair air-quality worst

AQ = Air Quality
DFS = Dynamic Frequency Selection

AP Name           Channel  Avg AQ  Min AQ  Interferers  DFS
----------------------------------------------------------
AP2895.0f39.1040  6        97      97      0            No
```

show ap dot11 24ghz cleanair config

To display the CleanAir configuration for 2.4-GHz band, use the **show ap dot11 24ghz cleanair config** command in user EXEC mode or privileged EXEC mode.

show ap dot11 24ghz cleanair config

This command has no arguments or keywords.

Command Modes   User EXEC (>)

Privileged EXEC (#)

Command History

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

Usage Guidelines   In Release 3.3SE, you can configure this command on the Mobility Agent (MA).

This example shows how to display the CleanAir configuration for 2.4-GHz band on the Mobility Controller:

```
Switch# show ap dot11 24ghz cleanair config

CleanAir Solution................................ : Enabled
Air Quality Settings:
    Air Quality Reporting........................ : Enabled
    Air Quality Reporting Period (min)........... : 15
    Air Quality Alarms........................... : Enabled
    Air Quality Alarm Threshold.................. : 1
Interference Device Settings:
    Interference Device Reporting................ : Enabled
        TDD Transmitter.......................... : Enabled
        Jammer................................... : Enabled
        Continuous Transmitter................... : Enabled
        DECT-like Phone.......................... : Enabled
        Video Camera............................. : Enabled
        WiFi Inverted............................ : Enabled
        WiFi Invalid Channel..................... : Enabled
        SuperAG.................................. : Enabled
        Canopy................................... : Enabled
        WiMax Mobile............................. : Enabled
        WiMax Fixed.............................. : Enabled
    Interference Device Types Triggering Alarms:
```

```
                TDD Transmitter........................... : Enabled
                Jammer.................................... : Enabled
                Continuous Transmitter.................... : Enabled
                DECT-like Phone........................... : Enabled
                Video Camera.............................. : Enabled
                WiFi Inverted............................. : Enabled
                WiFi Invalid Channel...................... : Enabled
                SuperAG................................... : Enabled
                Canopy.................................... : Enabled
                WiMax Mobile.............................. : Enabled
                WiMax Fixed............................... : Enabled
        Interference Device Alarms.................... : Enabled
Additional CleanAir Settings:
        CleanAir Event-driven RRM State............... : Enabled
        CleanAir Driven RRM Sensitivity............... : HIGH
        CleanAir Persistent Devices state............. : Enabled
```

This example shows how to display the CleanAir configuration for 2.4-GHz band on the Mobility Agent:

```
Switch# show ap dot11 24ghz cleanair config

Mobility Controller Link Status................... : UP
CleanAir Solution................................. : Enabled
Air Quality Settings:
        Air Quality Reporting......................... : Enabled
        Air Quality Reporting Period (min)............ : 15
        Air Quality Alarms............................ : Enabled
        Air Quality Alarm Threshold................... : 10
Interference Device Settings:
        Interference Device Reporting................. : Enabled
                TDD Transmitter........................... : Enabled
                Jammer.................................... : Enabled
                Continuous Transmitter.................... : Enabled
                DECT-like Phone........................... : Enabled
                Video Camera.............................. : Enabled
                WiFi Inverted............................. : Enabled
                WiFi Invalid Channel...................... : Enabled
                SuperAG................................... : Enabled
                Canopy.................................... : Enabled
                WiMax Mobile.............................. : Enabled
                WiMax Fixed............................... : Enabled
        Interference Device Types Triggering Alarms:
                TDD Transmitter........................... : Disabled
                Jammer.................................... : Disabled
                Continuous Transmitter.................... : Disabled
                DECT-like Phone........................... : Disabled
                Video Camera.............................. : Disabled
                WiFi Inverted............................. : Enabled
                WiFi Invalid Channel...................... : Enabled
                SuperAG................................... : Enabled
                Canopy.................................... : Disabled
                WiMax Mobile.............................. : Disabled
                WiMax Fixed............................... : Disabled
        Interference Device Alarms.................... : Enabled
Additional CleanAir Settings:
        CleanAir Event-driven RRM State............... : Disabled
        CleanAir Driven RRM Sensitivity............... : LOW
        CleanAir Persistent Devices state............. : Disabled
```

show ap dot11 24ghz cleanair summary

To display a summary of 2.4-GHz CleanAir devices, use the **show ap dot11 24ghz cleanair summary** command in user EXEC mode or privileged EXEC mode.

show ap dot11 24ghz cleanair summary

This command has no arguments or keywords.

Command Modes
User EXEC (>)

Privileged EXEC (#)

Command History

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

This is an example of output from the **show ap dot11 24ghz cleanair summary** command:

```
Switch# show ap dot11 24ghz cleanair summary

AP Name               MAC Address        Slot ID  Spectrum Capable  Spectrum Intelligence
    Spectrum Oper State
-----------------------------------------------------------------------------------------------
AP1cdf.0f95.1719      0817.35c7.1a60        0   Disabled          Disabled
    Down
AS-5508-5-AP3         0817.35dd.9f40        0   Disabled          Disabled
    Down
AP270ca.9b86.4546     0c85.259e.c350        0   Enabled           Enabled
    Up
AP2894.0f26.22df      0c85.25ab.cca0        0   Enabled           Enabled
    Up
AP2894.0f58.cc6b      0c85.25c7.b7a0        0   Enabled           Enabled
    Up
AP2894.0f39.1040      0c85.25de.2c10        0   Enabled           Enabled
    Up
AP2894.0f63.c6da      0c85.25de.c8e0        0   Enabled           Enabled
    Up
```