CleanAir Commands

config 802.11 cleanair

To enable or disable CleanAir for the 802.11 a or 802.11 b/g network, use the **config 802.11 cleanair** command.

config 802.11 {**a** | **b**} **cleanair** {**alarm** {**air-quality** {**disable** | **enable** | **threshold** *alarm_threshold* } | **device** {**disable** *device_type* | **enable** *device_type* | **reporting** {**disable** | **enable**} | **unclassified** {**disable** | **enable** | **threshold** *alarm_threshold* }} | **device** {**disable** *device_type* | **enable** *device_type* | **reporting** {**disable** | **enable**} | **disable** {**network** | *cisco_ap*} | **enable** {**network** | *cisco_ap*}}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
alarm	Configure 5-GHz cleanair alarms.
air-quality	Configures the 5-GHz air quality alarm.
enable	Enables the CleanAir settings.
disable	Disables the CleanAir settings.
threshold	Configure the 5-GHz air quality alarm threshold.
alarm_threshold	Air quality alarm threshold (1 is bad air quality, and 100 is good air quality).
device	Configures the 5-GHz cleanair interference devices alarm.

device_type	Device types. The device types are as follows: • 802.11-nonstd—Devices using nonstandard Wi-Fi channels. • 802.11-inv—Devices using spectrally inverted Wi-Fi signals. • superag—802.11 SuperAG devices. • all —All interference device types. • cont-tx—Continuous Transmitter. • dect-like—Digital Enhanced Cordless Communication (DECT) like phone. • tdd-tx—TDD Transmitter. • jammer—Jammer. • canopy—Canopy devices. • video—Video cameras. • wimax-mobile—WiMax Mobile. • wimax-fixed—WiMax Fixed.
reporting	Configures the 5-GHz CleanAir interference devices alarm reporting.
unclassified	Configures the 5-GHz air quality alarm on exceeding unclassified category severity.
network	5-GHz Cisco APs.
cisco_ap	Name of the access point to which the command applies.

Command Default

The default CleanAir settings for the 802.11 a or 802.11 b/g network is disabled.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to enable the CleanAir settings on access point ap_24:

```
(Cisco Controller) > config 802.11a cleanair enable ap_24
```

Related Topics

config 802.11 cleanair device, on page 4

config 802.11 cleanair device

To configure CleanAir interference device types, use the **config 802.11 cleanair device** command.

config 802.11 {**a** | **b**} **cleanair device** {**enable** | **disable** | **reporting** {**enable** | **disable**}} *device_type*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables the CleanAir reporting for the interference device type.
disable	Disables the CleanAir reporting for the interference device type.
reporting	Configures CleanAir interference device reporting.
enable	Enables the 5-GHz Cleanair interference devices reporting.
disable	Disables the 5-GHz Cleanair interference devices reporting.
device_type	Interference device type. The device type are as follows: • 802.11-nonstd—Devices using nonstandard WiFi channels. • 802.11-inv—Devices using spectrally inverted WiFi signals. • superag—802.11 SuperAG devices. • all —All interference device types. • cont-tx—Continuous Transmitter. • dect-like—Digital Enhanced Cordless Communication (DECT) like phone. • tdd-tx—TDD Transmitter. • jammer—Jammer. • canopy—Canopy devices. • video—Video cameras. • wimax-mobile—WiMax Mobile. • wimax-fixed—WiMax Fixed.

Command Default

The default setting CleanAir reporting for the interference device type is disabled.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to enable the CleanAir reporting for the device type jammer:

```
(Cisco Controller) > config 802.11a cleanair device enable jammer
```

The following example shows how to disable the CleanAir reporting for the device type video:

```
(Cisco Controller) > config 802.11a cleanair device disable video
```

The following example shows how to enable the CleanAir interference device reporting:

```
(Cisco Controller) > config 802.11a cleanair device reporting enable
```

Related Topics

config 802.11 cleanair, on page 2

config 802.11 cleanair alarm

To configure the triggering of the air quality alarms, use the **config 802.11 cleanair alarm** command.

config 802.11 { **a** | **b** } **cleanair alarm** { **air-quality** { **disable** | **enable** | **threshold** *alarm_threshold* } | **device** { **disable** *device_type* | **enable** *device_type* | **reporting** { **disable** | **enable** } | **unclassified** { **disable** | **enable** | **threshold** *alarm_threshold* } }

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
air-quality	Configures the 5-GHz air quality alarm.
disable	Disables the 5-GHz air quality alarm.
enable	Enables the 5-GHz air quality alarm.
threshold	Configures the 5-GHz air quality alarm threshold.
alarm_threshold	Air quality alarm threshold (1 is bad air quality, and 100 is good air quality).
device	Configures the 5-GHz cleanair interference devices alarm.
all	Configures all the device types at once.
reporting	Configures the 5-GHz CleanAir interference devices alarm reporting.
unclassified	Configures the 5-GHz air quality alarm on exceeding unclassified category severity.

device_type	Device types. The device types are as follows: • 802.11-nonstd—Devices using nonstandard Wi-Fi channels. • 802.11-inv—Devices using spectrally inverted Wi-Fi signals. • superag—802.11 SuperAG devices. • all —All interference device types. • cont-tx—Continuous Transmitter. • dect-like—Digital Enhanced Cordless Communication (DECT) like phone. • tdd-tx—TDD Transmitter. • jammer—Jammer. • canopy—Canopy devices. • video—Video cameras. • wimax-mobile—WiMax Mobile. • wimax-fixed—WiMax Fixed.

Command Default

The default setting for 5-GHz air quality alarm is enabled.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to enable the CleanAir alarm to monitor the air quality:

```
(Cisco Controller) > config 802.11a cleanair alarm air-quality enable
```

The following example shows how to enable the CleanAir alarm for the device type video:

```
(Cisco Controller) > config 802.11a cleanair alarm device enable video
```

The following example shows how to enable alarm reporting for the CleanAir interference devices:

```
(Cisco Controller) > config 802.11a cleanair alarm device reporting enable
```

Related Topics

config 802.11 cleanair, on page 2

config advanced 802.11 channel cleanair-event

To configure CleanAir event driven Radio Resource Management (RRM) parameters for all 802.11 Cisco lightweight access points, use the **config advanced 802.11 channel cleanair-event** command.

config advanced 802.11 {**a** | **b**} **channel cleanair-event** {**enable** | **disable** | **sensitivity** [**low** | **medium** | **high**] | **custom threshold** *threshold_value*}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables the CleanAir event-driven RRM parameters.
disable	Disables the CleanAir event-driven RRM parameters.
sensitivity	Sets the sensitivity for CleanAir event-driven RRM.
low	(Optional) Specifies low sensitivity.
medium	(Optional) Specifies medium sensitivity
high	(Optional) Specifies high sensitivity
custom	Specifies custom sensitivity.
threshold	Specifies the EDRRM AQ threshold value.
threshold_value	Number of custom threshold.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to enable the CleanAir event-driven RRM parameters:

```
(Cisco Controller) > config advanced 802.11 channel cleanair-event enable
```

The following example shows how to configure high sensitivity for CleanAir event-driven RRM:

```
(Cisco Controller) > config advanced 802.11 channel cleanair-event sensitivity high
```

Related Topics

show advanced 802.11 channel
config advanced 802.11 channel update
config 802.11-a

config advanced 802.11 channel pda-prop

To enable or disable propagation of persistent devices, use the **config advanced 802.11 channel pda-prop** command.

config advanced 802.11 {**a** | **b**} **channel pda-prop** {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables the 802.11 network DCA list option for the outdoor access point.
disable	Disables the 802.11 network DCA list option for the outdoor access point.

Command Default

The default 802.11 network DCA list option for the outdoor access point is disabled.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to enable or disable propagation of persistent devices:

```
(Cisco Controller) > config advanced 802.11 channel pda-prop enable
```

Related Topics

config advanced 802.11 channel update

config advanced 802.11 channel update

To have Radio Resource Management (RRM) initiate a channel selection update for all 802.11a Cisco lightweight access points, use the **config advanced 802.11 channel update** command.

config advanced 802.11 {**a** | **b**} **channel update**

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to initiate a channel selection update for all 802.11a network access points:

```
(Cisco Controller) > config advanced 802.11a channel update
```

Related Topics

show advanced 802.11 channel
config advanced 802.11 channel update
config advanced 802.11 channel pda-prop

show 802.11 cleanair

To display the multicast-direct configuration state, use the **show 802.11 cleanair** command.

show 802.11 {**a** | **b** | **h**} **cleanair config**

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
h	Specifies the 802.11h network.
config	Displays the network Cleanair configuration.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to display the 802.11a cleanair configuration:

```
(Cisco Controller) > show 802.11a cleanair
Clean Air Solution..............................  Enabled
Air Quality Settings:
    Air Quality Reporting.......................  Enabled
    Air Quality Reporting Period (min)..........  15
    Air Quality Alarms..........................  Enabled
    Air Quality Alarm Threshold.................  35 Interference Device
 Settings:
    Interference Device Reporting...............  Enabled
    Interference Device Types:
        TDD Transmitter.........................  Disabled
        Jammer..................................  Disabled
        Continuous Transmitter..................  Disabled
        DECT-like Phone.........................  Disabled
        Video Camera............................  Disabled
        WiFi Inverted...........................  Disabled
        WiFi Invalid Channel....................  Disabled
        SuperAG.................................  Disabled
        Radar...................................  Disabled
        Canopy..................................  Disabled
        WiMax Mobile............................  Disabled
        WiMax Fixed.............................  Disabled
Interference Device Alarms...................  Enabled
    Interference Device Types Triggering Alarms:
        TDD Transmitter.........................  Disabled
        Jammer..................................  Disabled
```

```
        Continuous Transmitter.................. Disabled
        DECT-like Phone......................... Disabled
        Video Camera............................ Disabled
        WiFi Inverted........................... Disabled
        WiFi Invalid Channel.................... Disabled
        SuperAG................................. Disabled
        Radar................................... Disabled
        Canopy.................................. Disabled
        WiMax Mobile............................ Disabled
        WiMax Fixed............................. Disabled Additional
Clean Air Settings:
    CleanAir Event-driven RRM State.............. Enabled
    CleanAir Driven RRM Sensitivity.............. Medium
    CleanAir Persistent Devices state............ Disabled
```

Related Topics

config 802.11 cleanair alarm, on page 6
config 802.11 cleanair device, on page 4
show 802.11 cleanair air-quality summary, on page 13
show 802.11 cleanair device type, on page 16
show 802.11 cleanair device ap, on page 15

show 802.11 cleanair air-quality summary

To display the air quality summary information for the 802.11 networks, use the **show 802.11 cleanair air-quality summary** command.

show 802.11 {**a** | **b** | **h**} **cleanair air-quality summary**

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
h	Specifies the 802.11h network.
summary	Displays a summary of 802.11 radio band air quality information.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to display a summary of the air quality information for the 802.11a network:

```
(Cisco Controller) > show 802.11a cleanair air-quality summary
AQ = Air Quality
DFS = Dynamic Frequency Selection
AP Name            Channel  Avg AQ  Min AQ  Interferers  DFS
------------------ -------  ------  ------  -----------  ---
CISCO_AP3500        36   95  70   0
CISCO_AP3500     40   93  75   0
```

Related Topics

config 802.11 cleanair alarm, on page 6
show 802.11 cleanair, on page 11
config 802.11 cleanair device, on page 4
show 802.11 cleanair device type, on page 16
show 802.11 cleanair device ap, on page 15

show 802.11 cleanair air-quality worst

To display the worst air quality information for the 802.11 networks, use the **show 802.11 cleanair air-quality worst** command.

show 802.11 {**a** | **b** | **h**} **cleanair air-quality worst**

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
h	Specifies the 802.11h network.
worst	Displays the worst air quality information for 802.11 networks.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to display worst air quality information for the 802.11a network:

```
(Cisco Controller) > show 802.11 cleanair air-quality worst
AQ = Air Quality
DFS = Dynamic Frequency Selection
AP Name            Channel  Avg AQ  Min AQ  Interferers  DFS
------------------ -------  ------  ------  -----------  ---
CISCO_AP3500       1   83  57   3   5
```

Related Topics

config 802.11 cleanair alarm, on page 6
show 802.11 cleanair, on page 11
config 802.11 cleanair device, on page 4
show 802.11 cleanair device type, on page 16
show 802.11 cleanair device ap, on page 15

show 802.11 cleanair device ap

To display the information of the device access point on the 802.11 radio band, use the **show 802.11 cleanair device ap** command.

show 802.11 {**a** | **b** | **h**} **cleanair device ap** *cisco_ap*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
h	Specifies the 802.11h network.
cisco_ap	Specified access point name.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to display the device access point for the 802.11a network:

```
(Cisco Controller) > show 802.11a cleanair device ap AP_3500
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
--- ------------------ ------ ---------- --------------- ---- ----- ----
 -------------
1   c2:f7:40:00:00:03  0x8001 DECT phone  CISCO_AP3500  1    -43     3
    149,153,157,161
2   c2:f7:40:00:00:51  0x8002 Radar       CISCO_AP3500  1    -81     2
  153,157,161,165
3   c2:f7:40:00:00:03  0x8005 Canopy      CISCO_AP3500  2    -62     2
   153,157,161,165
```

Related Topics

config 802.11 cleanair alarm, on page 6
show 802.11 cleanair, on page 11
config 802.11 cleanair device, on page 4
show 802.11 cleanair device type, on page 16
show 802.11 cleanair air-quality summary, on page 13

show 802.11 cleanair device type

To display the information of all the interferers device type detected by a specific access point on the 802.11 radio band, use the **show 802.11 cleanair device type** command.

show 802.11 {**a** | **b** | **h**} **cleanair device type** *device_type*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
h	Specifies the 802.11h network.
device_type	Interferer device type for a specified radio band. The device type is one of the following: • tdd-tx—Tdd-transmitter device information. • jammer—Jammer device information. • cont-tx—Continuous-transmitter devices information. • dect-like—Dect-like phone devices information. • video—Video devices information. • 802.11-inv—WiFi inverted devices information. • 802.11-nonstd—Nonstandard WiFi devices information. • superag—Superag devices information. • canopy—Canopy devices information. • wimax-mobile—WiMax mobile devices information. • wimax-fixed—WiMax fixed devices information.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to display the information of all the interferers detected by a specified access point for the 802.11a network:

```
(Cisco Controller) > show 802.11a cleanair device type canopy
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
--- ------------------ ------ ---------- --------------- ---- ----- ----
 -------------
1c2:f7:40:00:00:03  0x8005 Canopy          CISCO_AP3500  2    -62      2
     153,157,161,165
```

show advanced 802.11 channel

To display the automatic channel assignment configuration and statistics, use the **show advanced 802.11 channel** command.

show advanced 802.11 {**a** | **b**} **channel**

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to display the automatic channel assignment configuration and statistics:

```
(Cisco Controller) > show advanced 802.11a channel
Automatic Channel Assignment
  Channel Assignment Mode..................... AUTO
  Channel Update Interval..................... 600 seconds [startup]
  Anchor time (Hour of the day)............... 0
  Channel Update Contribution................. SNI.
  Channel Assignment Leader................... 00:1a:6d:dd:1e:40
  Last Run.................................... 129 seconds ago
  DCA Sensitivity Level: ..................... STARTUP (5 dB)
  DCA Minimum Energy Limit.................... -95 dBm
Channel Energy Levels
    Minimum..................................... unknown
    Average..................................... unknown
    Maximum..................................... unknown
  Channel Dwell Times
    Minimum..................................... unknown
    Average..................................... unknown
    Maximum..................................... unknown
  Auto-RF Allowed Channel List...............
36,40,44,48,52,56,60,64,149,
    ............................................ 153,157,161
  Auto-RF Unused Channel List................
100,104,108,112,116,132,136,
    ............................................ 140,165,190,196
  DCA Outdoor AP option....................... Enabled
```

Related Topics

config advanced 802.11 channel add

config advanced 802.11 channel cleanair-event
config advanced 802.11 channel dca anchor-time
config advanced 802.11 channel dca chan-width-11n
config advanced 802.11 channel dca interval

show ap auto-rf

To display the auto-RF settings for a Cisco lightweight access point, use the **show ap auto-rf** command.

show ap auto-rf 802.11{**a** | **b**} *cisco_ap*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
cisco_ap	Cisco lightweight access point name.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to display auto-RF information for an access point:

```
(Cisco Controller) > show ap auto-rf 802.11a AP1
Number Of Slots..................................... 2
AP Name............................................. AP03
MAC Address......................................... 00:0b:85:01:18:b7
  Radio Type........................................ RADIO_TYPE_80211a
  Noise Information
    Noise Profile................................... PASSED
    Channel 36.....................................  -88 dBm
    Channel 40.....................................  -86 dBm
    Channel 44.....................................  -87 dBm
    Channel 48.....................................  -85 dBm
    Channel 52.....................................  -84 dBm
    Channel 56.....................................  -83 dBm
    Channel 60.....................................  -84 dBm
    Channel 64.....................................  -85 dBm
  Interference Information
    Interference Profile............................ PASSED
    Channel 36.....................................  -66 dBm @  1% busy
    Channel 40..................................... -128 dBm @  0% busy
    Channel 44..................................... -128 dBm @  0% busy
    Channel 48..................................... -128 dBm @  0% busy
    Channel 52..................................... -128 dBm @  0% busy
    Channel 56.....................................  -73 dBm @  1% busy
    Channel 60.....................................  -55 dBm @  1% busy
    Channel 64.....................................  -69 dBm @  1% busy
  Rogue Histogram (20/40_ABOVE/40_BELOW)
    Channel 36..................................... 16/ 0/ 0
    Channel 40..................................... 28/ 0/ 0
    Channel 44.....................................  9/ 0/ 0
```

```
    Channel 48.....................................  9/ 0/ 0
    Channel 52.....................................  3/ 0/ 0
    Channel 56.....................................  4/ 0/ 0
    Channel 60.....................................  7/ 1/ 0
    Channel 64.....................................  2/ 0/ 0
  Load Information
    Load Profile.................................. PASSED
    Receive Utilization........................... 0%
    Transmit Utilization.......................... 0%
    Channel Utilization........................... 1%
    Attached Clients.............................. 1 clients
  Coverage Information
    Coverage Profile.............................. PASSED
    Failed Clients................................ 0 clients
  Client Signal Strengths
    RSSI -100 dBm................................. 0 clients
    RSSI  -92 dBm................................. 0 clients
    RSSI  -84 dBm................................. 0 clients
    RSSI  -76 dBm................................. 0 clients
    RSSI  -68 dBm................................. 0 clients
    RSSI  -60 dBm................................. 0 clients
    RSSI  -52 dBm................................. 0 clients
  Client Signal To Noise Ratios
    SNR    0 dBm.................................. 0 clients
    SNR    5 dBm.................................. 0 clients
    SNR   10 dBm.................................. 0 clients
    SNR   15 dBm.................................. 0 clients
    SNR   20 dBm.................................. 0 clients
    SNR   25 dBm.................................. 0 clients
    SNR   30 dBm.................................. 0 clients
    SNR   35 dBm.................................. 0 clients
    SNR   40 dBm.................................. 0 clients
    SNR   45 dBm.................................. 0 clients
  Nearby RADs
    RAD 00:0b:85:01:05:08 slot 0.................  -46 dBm on 10.1.30.170
    RAD 00:0b:85:01:12:65 slot 0.................  -24 dBm on 10.1.30.170
  Channel Assignment Information
    Current Channel Average Energy..............  -86 dBm
    Previous Channel Average Energy..............  -75 dBm
    Channel Change Count........................  109
    Last Channel Change Time..................... Wed Sep 29 12:53e:34
2004
    Recommended Best Channel..................... 44
  RF Parameter Recommendations
    Power Level................................... 1
    RTS/CTS Threshold............................. 2347
    Fragmentation Threshold....................... 2346
    Antenna Pattern............................... 0
```

test cleanair show

To display details of the CleanAir configuration, use the **test cleanair show** command.

test cleanair show {**aq all** | **idr** {**ap** *cisco_ap* | **all**} | **neighbors** *cisco_ap* | **summary** }

Syntax Description

aq all	Displays all air quality information.
idr	Displays the interference devices of the 802.11a/n and 802.11b/g/n radio bands for access points.
ap	Displays the interference devices of the 802.11a/n and 802.11b/g/n radio bands for an access point.
cisco_ap	Name of the Cisco access point
all	Displays the interference devices of the 802.11a/n and 802.11b/g/n radio bands for all access points.
neighbors	Displays the neighbors of an access point.
summary	Displays a summary of the CleanAir configuration.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to display a summary of the CleanAir configuration:

```
(Cisco Controller) > test cleanair show summary
CleanAir system info:
Supported spectrum MMAP number = 500
Supported spectrum LMAP number = 500
Allocated SI entries           = 0 of 500
Allocated IDR cluster entries  = 0 of 10000
Allocated IDR device entries   = 0 of 40000
Virtual device support is enabled
```

The following example shows how to display the interference devices for an access point:

```
(Cisco Controller) > test cleanair show idr ap AP_1240_floor1

Interference devices for AP_1240_floor1
Identified devices on slot 0
Identified devices on slot 1
```