



CLI Commands

The Cisco Wireless LAN solution command-line interface (CLI) enables operators to connect an ASCII console to the Cisco Wireless LAN Controller and configure the controller and its associated access points. This section describes the Cisco CleanAir commands and contains the following sections:

- [show Commands, page 1](#)
- [config Commands, page 10](#)
- [test Commands, page 19](#)

show Commands

This section lists the **show** commands to display information about the CleanAir configurations on the controller.

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.

Examples

This example shows how to display the 802.11a cleanair configuration:

```
> 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 Commands

config 802.11 cleanair alarm
config 802.11 cleanair device
config 802.11 cleanair air-quality summary
config 802.11 cleanair device ap
config 802.11 cleanair device type

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.

Examples

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

```
> 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 Commands

config 802.11 cleanair alarm
config 802.11 cleanair device
config 802.11 cleanair
config 802.11 cleanair device ap
config 802.11 cleanair device type

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.

Examples

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

```
> 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 Commands

config 802.11 cleanair alarm
config 802.11 cleanair device
config 802.11 cleanair
config 802.11 cleanair device ap
config 802.11 cleanair device type

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.
<i>cisco_ap</i>	Specified access point name.

Command Default

None.

Examples

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

```
> 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 Commands

config 802.11 cleanair alarm
config 802.11 cleanair device
config 802.11 cleanair
config 802.11 cleanair device air-quality summary
config 802.11 cleanair device type

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.
<i>device_type</i>	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.

Examples

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

```
> 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.

Examples

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

```
> 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 Commands

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
config advanced 802.11 channel dca sensitivity
config advanced 802.11 channel foreign
config advanced 802.11 channel load

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.
<i>cisco_ap</i>	Cisco lightweight access point name.

Command Default

None.

Examples

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

```
> 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

```

config Commands

This section explains the **config** commands to configure CleanAir on the controller.

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.
<i>alarm_threshold</i>	Air quality alarm threshold (1 is bad air quality, and 100 is good air quality).
device	Configures the 5-GHz cleanair interference devices alarm.

<i>device_type</i>	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.
<i>network</i>	5-GHz Cisco APs.
<i>cisco_ap</i>	Name of the access point to which the command applies.

Command Default Disabled.

Examples This example shows how to enable the CleanAir settings on access point ap_24:

```
> config 802.11a cleanair enable ap_24
```

Related Commands config 802.11 cleanair device

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.
<i>device_type</i>	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 Disabled.

Examples This example shows how to enable the CleanAir reporting for the device type jammer:

```
> config 802.11a cleanair device enable jammer
```

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

```
> config 802.11a cleanair device disable video
```

This example shows how to enable the CleanAir interference device reporting:

```
> config 802.11a cleanair device reporting enable
```

Related Commands config 802.11 cleanair

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.
<i>alarm_threshold</i>	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.

<i>device_type</i>	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.
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Command Default Enabled.

Examples This example shows how to enable the CleanAir alarm to monitor the air quality:

```
> config 802.11a cleanair alarm air-quality enable
```

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

```
> config 802.11a cleanair alarm device enable video
```

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

```
> config 802.11a cleanair alarm device reporting enable
```

Related Commands `config 802.11 cleanair`

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.
<i>threshold_value</i>	Number of custom threshold.

Command Default

None.

Examples

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

```
> config advanced 802.11 channel cleanair-event enable
```

This example shows how to set the high sensitivity for CleanAir event-driven RRM:

```
> config advanced 802.11 channel cleanair-event sensitivity high
```

Related Commands

show advanced 802.11a channel

config advanced 802.11b channel update

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

Disabled.

Examples

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

```
> config advanced 802.11 channel pda-prop enable
```

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.

Examples

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

```
> config advanced 802.11a channel update
```

Related Commands

show advanced 802.11a channel
config advanced 802.11b channel update

test Commands

This section lists the **test** commands for CleanAir.

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.
<i>cisco_ap</i>	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.

Examples

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

```
> 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
```

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

```
> test cleanair show idr ap AP_1240_floor1

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