Config Commands

- Config 802.11-a Commands, on page 3
- Configure 802.11b Commands, on page 6
- Configure 802.11h Commands, on page 8
- Configure 802.11 11n Support Commands, on page 10
- Configure 802.11 Antenna Commands, on page 16
- Configure 802.11 CleanAir Commands, on page 19
- Configure 802.11 CAC Commands, on page 24
- Config 802.11 Commands, on page 48
- Configure Advanced 802.11 Commands, on page 62
- Configure Access Point Commands, on page 113
- Configure Band-Select Commands, on page 169
- Configure Client Commands, on page 172
- Configure Guest-LAN Commands, on page 185
- Configure IPv6 Commands, on page 192
- Configure Interface Group Commands, on page 198
- Configure Macfilter Commands, on page 199
- Config Remote LAN Commands, on page 204
- Configure Memory Monitor Commands, on page 214
- Configure Mesh Commands, on page 216
- Configure Management-User Commands, on page 233
- Configure Mobility Commands, on page 236
- Configure Message Log Level Commands, on page 243
- Configure Media-Stream Commands, on page 246
- Configure Net User Commands, on page 253
- Configure Network Commands, on page 263
- Configure Port Commands, on page 286
- Configure PMIPv6 Commands, on page 292
- Configure QoS Commands, on page 299
- Configure RADIUS Account Commands, on page 308
- Configure RADIUS Authentication Server Commands, on page 317
- Configure Redundancy Commands, on page 334
- Configure RF-Profile commands, on page 339
- Configure Rogue Commands, on page 350

- Configure SNMP Commands, on page 370
- Configure Spanning Tree Protocol Commands, on page 379
- Configure TACACS Commands, on page 385
- Configure Trap Flag Commands, on page 391
- Configure Watchlist Commands, on page 400
- Configure Wireless LAN Commands, on page 402
- Configure Wireless LAN HotSpot Commands, on page 444
- Configure Wireless LAN Mobile Concierge Commands, on page 456
- Configure Wireless LAN Proxy Mobility IPv6 (PMIPv6) Commands, on page 463
- Configure WPS Commands, on page 465
- Other Config Commands, on page 476

Config 802.11-a Commands

config 802.11-a

To enable or disable the 4.9-GHz and 5.8-GHz public safety channels on an access point, use the **config 802.11-a** command.

config {**802.11-a49** | **802.11-a58**} {**enable** | **disable**} *cisco_ap*

Syntax Description

802.11-a49	Specifies the 4.9-GHz public safety channel.
802.11-a58	Specifies the 5.8-GHz public safety channel.
enable	Enables the use of this frequency on the designated access point.
disable	Disables the use of this frequency on the designated access point.
cisco_ap	Name of the access point to which the command applies.

Command Default

The default 4.9-GHz and 5.8-GHz public safety channels on an 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 the 4.9-GHz public safety channel on ap_24 access point:

```
(Cisco Controller) > config 802.11-a
```

config 802.11-a antenna extAntGain

To configure the external antenna gain for the 4.9-GHz and 5.8-GHz public safety channels on an access point, use the **config 802.11-a antenna extAntGain** commands.

config {**802.11-a49** | **802.11-a58**} **antenna extAntGain** *ant_gain cisco_ap* {**global** | *channel_no*}

Syntax Description

802.11-a49	Specifies the 4.9-GHz public safety channel.
802.11-a58	Specifies the 5.8-GHz public safety channel.
ant_gain	Value in .5-dBi units (for instance, 2.5 dBi = 5).

cisco_ap	Name of the access point to which the command applies.
global	Specifies the antenna gain value to all channels.
channel_no	Antenna gain value for a specific channel.

Command Default

Channel properties are disabled.

Command History

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

Usage Guidelines

Before you enter the **config 802.11-a antenna extAntGain** command, disable the 802.11 Cisco radio with the **config 802.11-a disable** command.

After you configure the external antenna gain, use the **config 802.11-a enable** command to reenable the 802.11 Cisco radio.

The following example shows how to configure an 802.11-a49 external antenna gain of 10 dBi for AP1:

```
(Cisco Controller) >config 802.11-a antenna extAntGain 10 AP1
```

config 802.11-a channel ap

To configure the channel properties for the 4.9-GHz and 5.8-GHz public safety channels on an access point, use the **config 802.11-a channel ap** command.

config {**802.11-a49** | **802.11-a58**} **channel ap** *cisco_ap* {**global** | *channel_no*}

Syntax Description

802.11-a49	Specifies the 4.9-GHz public safety channel.
802.11-a58	Specifies the 5.8-GHz public safety channel.
cisco_ap	Name of the access point to which the command applies.
global	Enables the Dynamic Channel Assignment (DCA) on all 4.9-GHz and 5.8-GHz subband radios.
channel_no	Custom channel for a specific mesh access point. The range is 1 through 26, inclusive, for a 4.9-GHz band and 149 through 165, inclusive, for a 5.8-GHz band.

Command Default

Channel properties are 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 set the channel properties:

```
(Cisco Controller) >config 802.11-a channel ap
```

config 802.11-a txpower ap

To configure the transmission power properties for the 4.9-GHz and 5.8-GHz public safety channels on an access point, use the **config 802.11-a txpower ap** command.

config {**802.11-a49** | **802.11-a58**} **txpower ap** *cisco_ap* {**global** | *power_level*}

Syntax Description

802.11-a49	Specifies the 4.9-GHz public safety channel.
802.11-a58	Specifies the 5.8-GHz public safety channel.
txpower	Configures transmission power properties.
ap	Configures access point channel settings.
cisco_ap	Name of the access point to which the command applies.
global	Applies the transmission power value to all channels.
power_level	Transmission power value to the designated mesh access point. The range is from 1 to 5.

Command Default

The default transmission power properties for the 4.9-GHz and 5.8-GHz public safety channels on an 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 configure an 802.11-a49 transmission power level of 4 for AP1:

```
(Cisco Controller) >config 802.11-a txpower ap 4 AP1
```

Configure 802.11b Commands

Use the **config 802.11b** commands to configure settings specifically for an 802.11b/g network.

config 802.11b 11gSupport

To enable or disable the Cisco wireless LAN solution 802.11g network, use the **config 802.11b 11gSupport** command.

config 802.11b 11gSupport {**enable** | **disable**}

Syntax Description

enable	Enables the 802.11g network.
disable	Disables the 802.11g network.

Command Default

The default network for Cisco wireless LAN solution 802.11g is enabled.

Command History

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

Usage Guidelines

Before you enter the **config 802.11b 11gSupport** {**enable** | **disable**} command, disable the 802.11 Cisco radio with the **config 802.11 disable** command.

After you configure the support for the 802.11g network, use the **config 802.11 enable** command to enable the 802.11 radio.

Note To disable an 802.11a, 802.11b and/or 802.11g network for an individual wireless LAN, use the **config wlan radio** command.

The following example shows how to enable the 802.11g network:

```
(Cisco Controller) > config 802.11b 11gSupport enable
Changing the 11gSupport will cause all the APs to reboot when you enable
 802.11b network.
Are you sure you want to continue? (y/n) n
11gSupport not changed!
```

config 802.11b preamble

To change the 802.11b preamble as defined in subclause 18.2.2.2 to **long** (slower, but more reliable) or **short** (faster, but less reliable), use the **config 802.11b preamble** command.

config 802.11b preamble {**long** | **short**}

Syntax Description

long	Specifies the long 802.11b preamble.
short	Specifies the short 802.11b preamble.

Command Default

The default 802.11b preamble value is short.

Command History

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

Usage Guidelines

Note You must reboot the Cisco Wireless LAN Controller (reset system) with save to implement this command.

This parameter must be set to **long** to optimize this Cisco wireless LAN controller for some clients, including SpectraLink NetLink telephones.

This command can be used any time that the CLI interface is active.

The following example shows how to change the 802.11b preamble to short:

```
(Cisco Controller) >config 802.11b preamble short
(Cisco Controller) >(reset system with save)
```

Configure 802.11h Commands

Use the **config 802.11h** commands to configure settings specifically for an 802.11h network.

config 802.11h channelswitch

To configure an 802.11h channel switch announcement, use the **config 802.11h channelswitch** command.

config 802.11h channelswitch {**enable** {**loud** | **quiet**} | **disable**}

Syntax Description

enable	Enables the 802.11h channel switch announcement.
loud	Enables the 802.11h channel switch announcement in the loud mode. The 802.11h-enabled clients can send packets while switching channel.
quiet	Enables 802.11h-enabled clients to stop transmitting packets immediately because the AP has detected radar and client devices should also quit transmitting to reduce interference.
disable	Disables the 802.11h channel switch announcement.

Command Default None

Command History

Release	Modification
7.6	• This command was introduced in a release earlier than Release 7.6. • The **loud** and **quiet** parameters were introduced.

The following example shows how to disable an 802.11h switch announcement:

```
(Cisco Controller) >config 802.11h channelswitch disable
```

config 802.11h powerconstraint

To configure the 802.11h power constraint value, use the **config 802.11h powerconstraint** command.

config 802.11h powerconstraint *value*

Syntax Description

value	802.11h power constraint value.

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 configure the 802.11h power constraint to 5:

```
(Cisco Controller) >config 802.11h powerconstraint 5
```

config 802.11h setchannel

To configure a new channel using 802.11h channel announcement, use the **config 802.11h setchannel** command.

config 802.11h setchannel *cisco_ap*

Syntax Description

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 configure a new channel using the 802.11h channel:

```
(Cisco Controller) >config 802.11h setchannel ap02
```

Configure 802.11 11n Support Commands

Use the **config 802.11 11nsupport** commands to configure settings for an 802.11n network.

config 802.11 11nsupport

To enable 802.11n support on the network, use the **config 802.11 11nsupport** command.

config 802.11 {**a** | **b**} **11nsupport** {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network settings.
b	Specifies the 802.11b/g network settings.
enable	Enables the 802.11n support.
disable	Disables the 802.11n support.

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 802.11n support on an 802.11a network:

```
(Cisco Controller) >config 802.11a 11nsupport enable
```

config 802.11 11nsupport a-mpdu tx priority

To specify the aggregation method used for 802.11n packets, use the **config 802.11 11nsupport a-mpdu tx priority** command.

config 802.11 {**a** | **b**} **11nsupport a-mpdu tx priority** {**0-7** | **all**} {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
0-7	Specifies the aggregated MAC protocol data unit priority level between 0 through 7.
all	Configures all of the priority levels at once.
enable	Specifies the traffic associated with the priority level uses A-MPDU transmission.
disable	Specifies the traffic associated with the priority level uses A-MSDU transmission.

Command Default

Priority 0 is enabled.

Usage Guidelines

Aggregation is the process of grouping packet data frames together rather than transmitting them separately. Two aggregation methods are available: Aggregated MAC Protocol Data Unit (A-MPDU) and Aggregated MAC Service Data Unit (A-MSDU). A-MPDU is performed in the software whereas A-MSDU is performed in the hardware.

Aggregated MAC Protocol Data Unit priority levels assigned per traffic type are as follows:

- 1—Background
- 2—Spare
- 0—Best effort
- 3—Excellent effort
- 4—Controlled load
- 5—Video, less than 100-ms latency and jitter
- 6—Voice, less than 10-ms latency and jitter
- 7—Network control
- all—Configure all of the priority levels at once.

Note Configure the priority levels to match the aggregation method used by the clients.

Command History

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

The following example shows how to configure all the priority levels at once so that the traffic associated with the priority level uses A-MSDU transmission:

```
(Cisco Controller) >config 802.11a 11nsupport a-mpdu tx priority all enable
```

config 802.11 11nsupport a-mpdu tx scheduler

To configure the 802.11n-5 GHz A-MPDU transmit aggregation scheduler, use the **config 802.11 11nsupport a-mpdu tx scheduler** command.

config 802.11 {**a** | **b**} **11nsupport a-mpdu tx scheduler** {**enable** | **disable** | **timeout rt** *timeout-value*}

Syntax Description

enable	Enables the 802.11n-5 GHz A-MPDU transmit aggregation scheduler.
disable	Disables the 802.11n-5 GHz A-MPDU transmit aggregation scheduler.
timeout rt	Configures the A-MPDU transmit aggregation scheduler realtime traffic timeout.

timeout-value	Timeout value in milliseconds. The valid range is between 1 millisecond to 1000 milliseconds.

Command Default None

Usage Guidelines Ensure that the 802.11 network is disabled before you enter this command.

Command History

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

The following example shows how to configure the A-MPDU transmit aggregation scheduler realtime traffic timeout of 100 milliseconds:

```
(Cisco Controller) >config 802.11 11nsupport a-mpdu tx scheduler timeout rt 100
```

config 802.11 11nsupport antenna

To configure an access point to use a specific antenna, use the **config 802.11 11nsupport antenna** command.

config 802.11 {**a** | **b**} **11nsupport antenna** *cisco_ap* {**A** | **B** | **C** | **D**} {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a/n network.
b	Specifies the 802.11b/g/n network.
cisco_ap	Access point.
A/B/C/D	Specifies an antenna port.
enable	Enables the configuration.
disable	Disables the configuration.

Command Default None

Usage Guidelines Cisco Catalyst 9120AXE, 9120AXP, and Cisco Catalyst 9130AXE access points should have at least two antennas configured if you want to disable this configuration.

Command History

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

The following example shows how to configure transmission to a single antenna for legacy orthogonal frequency-division multiplexing:

```
(Cisco Controller) >config 802.11 11nsupport antenna AP1 C enable
```

config 802.11 11nsupport guard-interval

To configure the guard interval, use the **config 802.11 11nsupport guard-interval** command.

config 802.11 {**a** | **b**} **11nsupport guard-interval** {**any** | **long**}

Syntax Description

any	Enables either a short or a long guard interval.
long	Enables only a long guard interval.

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 configure a long guard interval:

```
(Cisco Controller) >config 802.11 11nsupport guard-interval long
```

config 802.11 11nsupport mcs tx

To specify the modulation and coding scheme (MCS) rates at which data can be transmitted between the access point and the client, use the **config 802.11 11nsupport mcs tx** command.

config 802.11{**a** | **b**} **11nsupport mcs tx** {**0-15**} {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
11nsupport	Specifies support for 802.11n devices.

mcs tx	Specifies the modulation and coding scheme data rates as follows: • 0 (7 Mbps) • 1 (14 Mbps) • 2 (21 Mbps) • 3 (29 Mbps) • 4 (43 Mbps) • 5 (58 Mbps) • 6 (65 Mbps) • 7 (72 Mbps) • 8 (14 Mbps) • 9 (29 Mbps) • 10 (43 Mbps) • 11 (58 Mbps) • 12 (87 Mbps) • 13 (116 Mbps) • 14 (130 Mbps) • 15 (144 Mbps)
enable	Enables this configuration.
disable	Disables this 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 specify MCS rates:

```
(Cisco Controller) >config 802.11a 11nsupport mcs tx 5 enable
```

config 802.11 11nsupport rifs

To configure the Reduced Interframe Space (RIFS) between data frames and its acknowledgment, use the **config 802.11 11nsupport rifs** command.

config 802.11 {**a** | **b**} **11nsupport rifs** {**enable** | **disable**}

Syntax Description

enable	Enables RIFS for the 802.11 network.
disable	Disables RIFS for the 802.11 network.

Command Default

None

Command History

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

This example shows how to enable RIFS:

```
(Cisco Controller) >config 802.11a 11nsupport rifs enable
```

Configure 802.11 Antenna Commands

Use the config 802.11 antenna commands to configure radio antenna settings for Cisco lightweight access points on different 802.11 networks.

config 802.11 antenna diversity

To configure the diversity option for 802.11 antennas, use the **config 802.11 antenna diversity** command.

config 802.11 {**a** | **b**} **antenna diversity** {**enable** | **sideA** | **sideB**} *cisco_ap*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables the diversity.
sideA	Specifies the diversity between the internal antennas and an external antenna connected to the Cisco lightweight access point left port.
sideB	Specifies the diversity between the internal antennas and an external antenna connected to the Cisco lightweight access point right port.
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 enable antenna diversity for AP01 on an 802.11b network:

```
(Cisco Controller) >config 802.11a antenna diversity enable AP01
```

The following example shows how to enable diversity for AP01 on an 802.11a network, using an external antenna connected to the Cisco lightweight access point left port (sideA):

```
(Cisco Controller) >config 802.11a antenna diversity sideA AP01
```

config 802.11 antenna extAntGain

To configure external antenna gain for an 802.11 network, use the **config 802.11 antenna extAntGain** command.

config 802.11 {**a** | **b**} **antenna extAntGain** *antenna_gain cisco_ap*

Syntax Description

a	Specifies the 802.11a network.

b	Specifies the 802.11b/g network.
antenna_gain	Antenna gain in 0.5 dBm units (for example, 2.5 dBm = 5).
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.

Usage Guidelines

Before you enter the **config 802.11 antenna extAntGain** command, disable the 802.11 Cisco radio with the **config 802.11 disable** command.

After you configure the external antenna gain, use the **config 802.11 enable** command to enable the 802.11 Cisco radio.

The following example shows how to configure an *802.11a* external antenna gain of *0.5 dBm* for *AP1*:

```
(Cisco Controller) >config 802.11 antenna extAntGain 1 AP1
```

config 802.11 antenna mode

To configure the Cisco lightweight access point to use one internal antenna for an 802.11 sectorized 180-degree coverage pattern or both internal antennas for an 802.11 360-degree omnidirectional pattern, use the **config 802.11 antenna mode** command.

config 802.11 {**a** | **b**} **antenna mode** {**omni** | **sectorA** | **sectorB**} *cisco_ap*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
omni	Specifies to use both internal antennas.
sectorA	Specifies to use only the side A internal antenna.
sectorB	Specifies to use only the side B internal antenna.
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 configure access point AP01 antennas for a 360-degree omnidirectional pattern on an 802.11b network:

```
(Cisco Controller) >config 802.11 antenna mode omni AP01
```

config 802.11 antenna selection

To select the internal or external antenna selection for a Cisco lightweight access point on an 802.11 network, use the **config 802.11 antenna selection** command.

config 802.11 {**a** | **b**} **antenna selection** {**internal** | **external**} *cisco_ap*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
internal	Specifies the internal antenna.
external	Specifies the external antenna.
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 configure access point AP02 on an 802.11b network to use the internal antenna:

```
(Cisco Controller) >config 802.11a antenna selection internal AP02
```

Configure 802.11 CleanAir Commands

Use the **config 802.11 cleanair** commands to configure cleanair settings on different 802.11 networks.

config 802.11 chan_width

To configure the channel width for a particular access point, use the **config 802.11 chan_width** command.

config 802.11 {**a** | **b**} **chan_width** *cisco_ap* {**20** | **40** | **80** | **160** | **best**}

Syntax Description

a	Configures the 802.11a radio on slot 1 and 802.11ac/ax radio on slot 2.
b	Specifies the 802.11b/g radio.
cisco_ap	Access point.
20	Allows the radio to communicate using only 20-MHz channels. Choose this option for legacy 802.11a radios, 20-MHz 802.11n radios, or 40-MHz 802.11n radios that you want to operate using only 20-MHz channels.
40	Allows 40-MHz 802.11n radios to communicate using two adjacent 20-MHz channels bonded together.
80	Allows 80-MHz 802.11ac/ax radios to communicate using two adjacent 40-MHz channels bonded together.
160	Allows 160-MHz 802.11ac/ax radios to communicate.
best	In this mode, the device selects the optimum bandwidth channel.

Command Default

The default channel width is 20.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.3	This command was enhanced in this release with the inclusion of 160 MHz and best channel bandwidth modes.
8.9	This command was enhanced to support 802.11ax.

Usage Guidelines

This parameter can be configured only if the primary channel is statically assigned.

Caution We recommend that you do not configure 40-MHz channels in the 2.4-GHz radio band because severe co-channel interference can occur.

Statically configuring an access point's radio for 20-MHz or 40-MHz mode overrides the globally configured DCA channel width setting (configured by using the **config advanced 802.11 channel dca chan-width** command). If you change the static configuration back to global on the access point radio, the global DCA configuration overrides the channel width configuration that the access point was previously using.

The following example shows how to configure the channel width for access point AP01 on an 802.11 network using 40-MHz channels:

```
(Cisco Controller) >config 802.11a chan_width AP01 40
```

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
```

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
```

Configure 802.11 CAC Commands

Use the **config 802.11 cac** commands to configure Call Admission Control (CAC) protocol settings.

config 802.11 cac defaults

To configure the default Call Admission Control (CAC) parameters for the 802.11a and 802.11b/g network, use the **config 802.11 cac defaults** command.

config 802.11 {**a** | **b**} **cac defaults**

Syntax Description

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

Usage Guidelines

CAC commands for video applications on the 802.11a or 802.11b/g network require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Gold.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config command.**
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** command.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Command History

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

This example shows how to configure the default CAC parameters for the 802.11a network:

```
(Cisco Controller) > config 802.11 cac defaults
```

Related Commands

show cac voice stats

show cac voice summary

show cac video stats

show cac video summary

config 802.11 cac video tspec-inactivity-timeout

config 802.11 cac video max-bandwidth

config 802.11 cac video acm

config 802.11 cac video sip

config 802.11 cac video roam-bandwidth

config 802.11 cac load-based

config 802.11 cac media-stream

config 802.11 cac multimedia

config 802.11 cac video cac-method

debug cac

config 802.11 cac video acm

To enable or disable video Call Admission Control (CAC) for the 802.11a or 802.11b/g network, use the **config 802.11 cac video acm** command.

config 802.11 {**a** | **b**} **cac video acm** {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables video CAC settings.
disable	Disables video CAC settings.

Command Default

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

Usage Guidelines

CAC commands require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11** {**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config** command.
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11** {**a** | **b**} **cac voice acm enable**, or **config 802.11** {**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

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 video CAC for the 802.11a network:

```
(Cisco Controller) > config 802.11 cac video acm enable
```

The following example shows how to disable the video CAC for the 802.11b network:

```
(Cisco Controller) > config 802.11 cac video acm disable
```

Related Commands

config 802.11 cac video max-bandwidth

config 802.11 cac video roam-bandwidth

config 802.11 cac video tspec-inactivity-timeout

config 802.11 cac video cac-method

To configure the Call Admission Control (CAC) method for video applications on the 802.11a or 802.11b/g network, use the **config 802.11 cac video cac-method** command.

config 802.11 {**a** | **b**} **cac video cac-method** {**static** | **load-based**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
static	Enables the static CAC method for video applications on the 802.11a or 802.11b/g network. Static or bandwidth-based CAC enables the client to specify how much bandwidth or shared medium time is required to accept a new video request and in turn enables the access point to determine whether it is capable of accommodating the request.
load-based	Enables the load-based CAC method for video applications on the 802.11a or 802.11b/g network. Load-based or dynamic CAC incorporates a measurement scheme that takes into account the bandwidth consumed by all traffic types from itself, from co-channel access points, and by collocated channel interference. Load-based CAC also covers the additional bandwidth consumption results from PHY and channel impairment. The access point admits a new call only if the channel has enough unused bandwidth to support that call. Load-based CAC is not supported if SIP-CAC is enabled.

Command Default

Static.

Usage Guidelines

CAC commands for video applications on the 802.11a or 802.11b/g network require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Gold.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11{a | b} disable network** command.
- Save the new configuration by entering the **save config** command.
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11{a | b} cac voice acm enable** or **config 802.11{a | b} cac video acm enable** command.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Video CAC consists of two parts: Unicast Video-CAC and MC2UC CAC. If you need only Unicast Video-CAC, you must configure only static mode. If you need only MC2UC CAC, you must configure Static or Load-based CAC. Load-based CAC is not supported if SIP-CAC is enabled.

Command History

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

This example shows how to enable the static CAC method for video applications on the 802.11a network:

```
(Cisco Controller) > config 802.11 cac video cac-method static
```

Related Commands

show cac voice stats

show cac voice summary

show cac video stats

show cac video summary

config 802.11 cac video tspec-inactivity-timeout

config 802.11 cac video max-bandwidth

config 802.11 cac video acm

config 802.11 cac video sip

config 802.11 cac video roam-bandwidth

config 802.11 cac load-based

config 802.11 cac defaults

config 802.11 cac media-stream

config 802.11 cac multimedia

debug cac

config 802.11 cac video load-based

To enable or disable load-based Call Admission Control (CAC) for video applications on the 802.11a or 802.11b/g network, use the **config 802.11 cac video load-based** command.

config 802.11 {**a** | **b**} **cac video load-based** {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables load-based CAC for video applications on the 802.11a or 802.11b/g network. Load-based or dynamic CAC incorporates a measurement scheme that takes into account the bandwidth consumed by all traffic types from itself, from co-channel access points, and by collocated channel interference. Load-based CAC also covers the additional bandwidth consumption results from PHY and channel impairment. The access point admits a new call only if the channel has enough unused bandwidth to support that call.
disable	Disables load-based CAC method for video applications on the 802.11a or 802.11b/g network.

Command Default

Disabled.

Usage Guidelines

CAC commands for video applications on the 802.11a or 802.11b/g network require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Gold.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config command.**
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** command.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Video CAC consists of two parts: Unicast Video-CAC and MC2UC CAC. If you need only Unicast Video-CAC, you must configure only static mode. If you need only MC2UC CAC, you must configure Static or Load-based CAC. Load-based CAC is not supported if SIP-CAC is enabled.

Note Load-based CAC is not supported if SIP-CAC is enabled.

Command History

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

This example shows how to enable load-based CAC method for video applications on the 802.11a network:

```
(Cisco Controller) > config 802.11 cac video load-based enable
```

Related Commands

show cac voice stats

show cac voice summary

show cac video stats

show cac video summary

config 802.11 cac video tspec-inactivity-timeout

config 802.11 cac video max-bandwidth

config 802.11 cac video acm

config 802.11 cac video sip

config 802.11 cac video roam-bandwidth

config 802.11 cac load-based

config 802.11 cac defaults

config 802.11 cac media-stream

config 802.11 cac multimedia

config 802.11 cac video cac-method

debug cac

config 802.11 cac video max-bandwidth

To set the percentage of the maximum bandwidth allocated to clients for video applications on the 802.11a or 802.11b/g network, use the **config 802.11 cac video max-bandwidth** command.

config 802.11 {**a** | **b**} **cac video max-bandwidth** *bandwidth*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
bandwidth	Bandwidth percentage value from 5 to 85%.

Command Default

The default maximum bandwidth allocated to clients for video applications on the 802.11a or 802.11b/g network is 0%.

Usage Guidelines

The maximum radio frequency (RF) bandwidth cannot exceed 85% for voice and video. Once the client reaches the value specified, the access point rejects new calls on this network.

Note If this parameter is set to zero (0), the controller assumes that you do not want to allocate any bandwidth and allows all bandwidth requests.

Call Admission Control (CAC) commands require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config command.**
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable**, or **config 802.11**{**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Command History

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

The following example shows how to specify the percentage of the maximum allocated bandwidth for video applications on the selected radio band:

```
(Cisco Controller) > config 802.11 cac video max-bandwidth 50
```

Related Commands

config 802.11 cac video acm

config 802.11 cac video roam-bandwidth

config 802.11 cac voice stream-size

config 802.11 cac voice roam-bandwidth

config 802.11 cac media-stream

To configure media stream Call Admission Control (CAC) voice and video quality parameters for 802.11a and 802.11b networks, use the **config 802.11 cac media-stream** command.

config 802.11 {**a** | **b**} **cac media-stream multicast-direct** {**max-retry-percent** *retry-percentage* | **min-client-rate** *dot11-rate*}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
multicast-direct	Configures CAC parameters for multicast-direct media streams.

max-retry-percent	Configures the percentage of maximum retries that are allowed for multicast-direct media streams.
retry-percentage	Percentage of maximum retries that are allowed for multicast-direct media streams.
min-client-rate	Configures the minimum transmission data rate to the client for multicast-direct media streams.
dot11-rate	Minimum transmission data rate to the client for multicast-direct media streams. Rate in kbps at which the client can operate. If the transmission data rate is below this rate, either the video will not start or the client may be classified as a bad client. The bad client video can be demoted for better effort QoS or subject to denial. The available data rates are 6000, 9000, 12000, 18000, 24000, 36000, 48000, 54000, and 11n rates.

Command Default

The default value for the maximum retry percent is 80. If it exceeds 80, either the video will not start or the client might be classified as a bad client. The bad client video will be demoted for better effort QoS or is subject to denial.

Usage Guidelines

CAC commands for video applications on the 802.11a or 802.11b/g network require that the WLAN you are planning to modify is configured for Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Gold.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11{a | b} disable network** command.
- Save the new configuration by entering the **save config** command.
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11{a | b} cac voice acm enable** or **config 802.11{a | b} cac video acm enable** command.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Command History

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

The following example shows how to configure the maximum retry percent for multicast-direct media streams as 90 on a 802.11a network:

```
(Cisco Controller) > config 802.11 cac media-stream multicast-direct max-retry-percent 90
```

Related Commands

show cac voice stats

show cac voice summary

show cac video stats

show cac video summary

config 802.11 cac video tspec-inactivity-timeout

config 802.11 cac video max-bandwidth

config 802.11 cac video acm

config 802.11 cac video sip

config 802.11 cac video roam-bandwidth

config 802.11 cac load-based

config 802.11 cac defaults

config 802.11 cac multimedia

debug cac

config 802.11 cac multimedia

To configure the CAC media voice and video quality parameters for 802.11a and 802.11b networks, use the **config 802.11 cac multimedia** command.

config 802.11 {**a** | **b**} **cac multimedia max-bandwidth** *bandwidth*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
max-bandwidth	Configures the percentage of maximum bandwidth allocated to Wi-Fi Multimedia (WMM) clients for voice and video applications on the 802.11a or 802.11b/g network.
bandwidth	Percentage of the maximum bandwidth allocated to WMM clients for voice and video applications on the 802.11a or 802.11b/g network. Once the client reaches the specified value, the access point rejects new calls on this radio band. The range is from 5 to 85%.

Command Default

The default maximum bandwidth allocated to Wi-Fi Multimedia (WMM) clients for voice and video applications on the 802.11a or 802.11b/g network is 85%.

Usage Guidelines

Call Admission Control (CAC) commands for video applications on the 802.11a or 802.11b/g network require that the WLAN you are planning to modify is configured for Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Gold.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.

- Disable the radio network you want to configure by entering the **config 802.11{a | b} disable network** command.
- Save the new configuration by entering the **save config** command.
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11{a | b} cac voice acm enable** or **config 802.11{a | b} cac video acm enable** command.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Command History

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

The following example shows how to configure the percentage of the maximum bandwidth allocated to WMM clients for voice and video applications on the 802.11a network:

```
(Cisco Controller) > config 802.11 cac multimedia max-bandwidth 80
```

Related Commands

show cac voice stats

show cac voice summary

show cac video stats

show cac video summary

config 802.11 cac video tspec-inactivity-timeout

config 802.11 cac video max-bandwidth

config 802.11 cac video acm

config 802.11 cac video sip

config 802.11 cac video roam-bandwidth

config 802.11 cac load-based

config 802.11 cac defaults

debug cac

config 802.11 cac voice roam-bandwidth

To configure the percentage of the Call Admission Control (CAC) maximum allocated bandwidth reserved for roaming voice clients on the 802.11a or 802.11b/g network, use the **config 802.11 cac voice roam-bandwidth** command.

config 802.11{a | b} cac voice roam-bandwidth *bandwidth*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
bandwidth	Bandwidth percentage value from 0 to 85%.

Command Default The default CAC maximum allocated bandwidth reserved for roaming voice clients on the 802.11a or 802.11b/g network is 85%.

Usage Guidelines The maximum radio frequency (RF) bandwidth cannot exceed 85% for voice and video. The controller reserves the specified bandwidth from the maximum allocated bandwidth for roaming voice clients.

Note If this parameter is set to zero (0), the controller assumes you do not want to allocate any bandwidth and therefore allows all bandwidth requests.

CAC commands require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config command.**
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Command History

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

The following example shows how to configure the percentage of the maximum allocated bandwidth reserved for roaming voice clients on the selected radio band:

```
(Cisco Controller) > config 802.11 cac voice roam-bandwidth 10
```

Related Commands

config 802.11 cac voice acm

config 802.11cac voice max-bandwidth

config 802.11 cac voice stream-size

config 802.11 cac video sip

To enable or disable video Call Admission Control (CAC) for nontraffic specifications (TSPEC) SIP clients using video applications on the 802.11a or 802.11b/g network, use the **config 802.11 cac video sip** command.

config 802.11 {**a** | **b**} **cac video sip** {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.

b	Specifies the 802.11b/g network.
enable	Enables video CAC for non-TSPEC SIP clients using video applications on the 802.11a or 802.11b/g network. When you enable video CAC for non-TSPEC SIP clients, you can use applications like Facetime and CIUS video calls.
disable	Disables video CAC for non-TSPEC SIP clients using video applications on the 802.11a or 802.11b/g network.

Command Default

None

Usage Guidelines

CAC commands for video applications on the 802.11a or 802.11b/g network require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Gold.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11** {**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config command.**
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** command.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.
- Enable call snooping on the WLAN on which the SIP client is present by entering the **config wlan call-snoop enable** *wlan_id* command.

The following example shows how to enable video CAC for non-TSPEC SIP clients using video applications on the 802.11a network:

```
(Cisco Controller) > config 802.11 cac video sip enable
```

Related Commands

config 802.11 cac video tspec-inactivity-timeout

config 802.11 cac video max-bandwidth

config 802.11 cac video acm

config 802.11 cac video cac-method

config 802.11 cac video load-based

config 802.11 cac video roam-bandwidth

config 802.11 cac video tspec-inactivity-timeout

To process or ignore the Call Admission Control (CAC) Wi-Fi Multimedia (WMM) traffic specifications (TSPEC) inactivity timeout received from an access point, use the **config 802.11 cac video tspec-inactivity-timeout** command.

config 802.11{**a** | **b**} **cac video tspec-inactivity-timeout** {**enable** | **ignore**}

Syntax Description

a	Specifies the 802.11a network.
ab	Specifies the 802.11b/g network.
enable	Processes the TSPEC inactivity timeout messages.
ignore	Ignores the TSPEC inactivity timeout messages.

Command Default

The default CAC WMM TSPEC inactivity timeout received from an access point is disabled (ignore).

Usage Guidelines

CAC commands require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config command.**
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

This example shows how to process the response to TSPEC inactivity timeout messages received from an access point:

```
(Cisco Controller) > config 802.11a cac video tspec-inactivity-timeout enable
```

This example shows how to ignore the response to TSPEC inactivity timeout messages received from an access point:

```
(Cisco Controller) > config 802.11a cac video tspec-inactivity-timeout ignore
```

Related Commands

config 802.11 cac video acm

config 802.11 cac video max-bandwidth

config 802.11 cac video roam-bandwidth

config 802.11 cac voice acm

To enable or disable bandwidth-based voice Call Admission Control (CAC) for the 802.11a or 802.11b/g network, use the **config 802.11 cac voice acm** command.

config 802.11{**a** | **b**} **cac voice acm** {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables the bandwidth-based CAC.
disable	Disables the bandwidth-based CAC.

Command Default

The default bandwidth-based voice CAC for the 802.11a or 802.11b/g network id disabled.

Usage Guidelines

CAC commands require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config command.**
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

This example shows how to enable the bandwidth-based CAC:

```
(Cisco Controller) > config 802.11c cac voice acm enable
```

This example shows how to disable the bandwidth-based CAC:

```
(Cisco Controller) > config 802.11b cac voice acm disable
```

Related Commands

config 802.11 cac video acm

config 802.11 cac voice max-bandwidth

To set the percentage of the maximum bandwidth allocated to clients for voice applications on the 802.11a or 802.11b/g network, use the **config 802.11 cac voice max-bandwidth** command.

config 802.11{**a** | **b**} **cac voice max-bandwidth** *bandwidth*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
bandwidth	Bandwidth percentage value from 5 to 85%.

Command Default

The default maximum bandwidth allocated to clients for voice applications on the 802.11a or 802.11b/g network is 0%.

Usage Guidelines

The maximum radio frequency (RF) bandwidth cannot exceed 85% for voice and video. Once the client reaches the value specified, the access point rejects new calls on this network.

CAC commands require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config command.**
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Command History

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

The following example shows how to specify the percentage of the maximum allocated bandwidth for voice applications on the selected radio band:

```
(Cisco Controller) > config 802.11a cac voice max-bandwidth 50
```

Related Commands

config 802.11 cac voice roam-bandwidth

config 802.11 cac voice stream-size

config 802.11 exp-bwreq

config 802.11 tsm

config wlan save

show wlan

show wlan summary

config 802.11 cac voice tspec-inactivity-timeout

config 802.11 cac voice load-based

config 802.11 cac video acm

config 802.11 cac voice roam-bandwidth

To configure the percentage of the Call Admission Control (CAC) maximum allocated bandwidth reserved for roaming voice clients on the 802.11a or 802.11b/g network, use the **config 802.11 cac voice roam-bandwidth** command.

config 802.11{**a** | **b**} **cac voice roam-bandwidth** *bandwidth*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
bandwidth	Bandwidth percentage value from 0 to 85%.

Command Default

The default CAC maximum allocated bandwidth reserved for roaming voice clients on the 802.11a or 802.11b/g network is 85%.

Usage Guidelines

The maximum radio frequency (RF) bandwidth cannot exceed 85% for voice and video. The controller reserves the specified bandwidth from the maximum allocated bandwidth for roaming voice clients.

Note If this parameter is set to zero (0), the controller assumes you do not want to allocate any bandwidth and therefore allows all bandwidth requests.

CAC commands require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config command.**
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Command History

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

The following example shows how to configure the percentage of the maximum allocated bandwidth reserved for roaming voice clients on the selected radio band:

```
(Cisco Controller) > config 802.11 cac voice roam-bandwidth 10
```

Related Commands

config 802.11 cac voice acm

config 802.11cac voice max-bandwidth

config 802.11 cac voice stream-size

config 802.11 cac voice tspec-inactivity-timeout

To process or ignore the Wi-Fi Multimedia (WMM) traffic specifications (TSPEC) inactivity timeout received from an access point, use the **config 802.11 cac voice tspec-inactivity-timeout** command.

config 802.11{**a** | **b**} **cac voice tspec-inactivity-timeout** {**enable** | **ignore**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Processes the TSPEC inactivity timeout messages.
ignore	Ignores the TSPEC inactivity timeout messages.

Command Default

The default WMM TSPEC inactivity timeout received from an access point is disabled (ignore).

Usage Guidelines

Call Admission Control (CAC) commands require that the WLAN you are planning to modify is configured for Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config** command.
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

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 voice TSPEC inactivity timeout messages received from an access point:

```
(Cisco Controller) > config 802.11 cac voice tspec-inactivity-timeout enable
```

Related Commands

config 802.11 cac voice load-based

config 802.11 cac voice roam-bandwidth

config 802.11 cac voice acm

config 802.11cac voice max-bandwidth

config 802.11 cac voice stream-size

config 802.11 cac voice load-based

To enable or disable load-based Call Admission Control (CAC) for the 802.11a or 802.11b/g network, use the **config 802.11 cac voice load-based** command.

config 802.11 {**a** | **b**} **cac voice load-based** {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables load-based CAC.
disable	Disables load-based CAC.

Command Default

The default load-based CAC for the 802.11a or 802.11b/g network is disabled.

Usage Guidelines

CAC commands require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id command*.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config command.**
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

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 voice load-based CAC parameters:

```
(Cisco Controller) > config 802.11a cac voice load-based enable
```

The following example shows how to disable the voice load-based CAC parameters:

```
(Cisco Controller) > config 802.11a cac voice load-based disable
```

Related Commands

config 802.11 cac voice tspec-inactivity-timeout

config 802.11 cac video max-bandwidth

config 802.11 cac video acm

config 802.11 cac voice stream-size

config 802.11 cac voice max-calls

Note Do not use the **config 802.11 cac voice max-calls** command if the SIP call snooping feature is disabled and if the SIP based Call Admission Control (CAC) requirements are not met.

To configure the maximum number of voice call supported by the radio, use the **config 802.11 cac voice max-calls** command.

config 802.11{**a** | **b**} **cac voice max-calls** *number*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
number	Number of calls to be allowed per radio.

Command Default

The default maximum number of voice call supported by the radio is 0, which means that there is no maximum limit check for the number of calls.

Usage Guidelines

CAC commands require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id command*.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable network** command.
- Save the new configuration by entering the **save config command.**
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Command History

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

The following example shows how to configure the maximum number of voice calls supported by radio:

```
(Cisco Controller) > config 802.11 cac voice max-calls 10
```

Related Commands

config 802.11 cac voice roam-bandwidth

config 802.11 cac voice stream-size

config 802.11 exp-bwreq

config 802.11 cac voice tspec-inactivity-timeout

config 802.11 cac voice load-based

config 802.11 cac video acm

config 802.11 cac voice sip bandwidth

Note SIP bandwidth and sample intervals are used to compute per call bandwidth for the SIP-based Call Admission Control (CAC).

To configure the bandwidth that is required per call for the 802.11a or 802.11b/g network, use the **config 802.11 cac voice sip bandwidth** command.

config 802.11 {**a** | **b**} **cac voice sip bandwidth** *bw_kbps* **sample-interval** *number_msecs*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
bw_kbps	Bandwidth in kbps.
sample-interval	Specifies the packetization interval for SIP codec.
number_msecs	Packetization sample interval in msecs. The sample interval for SIP codec is 20 seconds.

Command Default

None

Usage Guidelines

CAC commands require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.

- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable** network command.
- Save the new configuration by entering the **save config** command.
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Command History

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

The following example shows how to configure the bandwidth and voice packetization interval for a SIP codec:

```
(Cisco Controller) > config 802.11 cac voice sip bandwidth 10 sample-interval 40
```

Related Commands

config 802.11 cac voice acm

config 802.11 cac voice load-based

config 802.11 cac voice max-bandwidth

config 802.11 cac voice roam-bandwidth

config 802.11 cac voice tspec-inactivity-timeout

config 802.11 exp-bwreq

config 802.11 cac voice sip codec

To configure the Call Admission Control (CAC) codec name and sample interval as parameters and to calculate the required bandwidth per call for the 802.11a or 802.11b/g network, use the **config 802.11 cac voice sip codec** command.

config 802.11{**a** | **b**} **cac voice sip codec** {**g711** | **g729**} **sample-interval** *number_msecs*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
g711	Specifies CAC parameters for the SIP G711 codec.
g729	Specifies CAC parameters for the SIP G729 codec.
sample-interval	Specifies the packetization interval for SIP codec.
number_msecs	Packetization interval in msecs. The sample interval for SIP codec value is 20 seconds.

Command Default

The default CAC codec parameter is g711.

Usage Guidelines

CAC commands require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable** network command.
- Save the new configuration by entering the **save config** command.
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Command History

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

The following example shows how to configure the codec name and sample interval as parameters for SIP G711 codec:

```
(Cisco Controller) >  config 802.11a cac voice sip codec g711 sample-interval 40
```

This example shows how to configure the codec name and sample interval as parameters for SIP G729 codec:

```
(Cisco Controller) > config 802.11a cac voice sip codec g729 sample-interval 40
```

Related Commands

config 802.11 cac voice acm

config 802.11 cac voice load-based

config 802.11 cac voice max-bandwidth

config 802.11 cac voice roam-bandwidth

config 802.11 cac voice tspec-inactivity-timeout

config 802.11 exp-bwreq

config 802.11 cac voice stream-size

To configure the number of aggregated voice Wi-Fi Multimedia (WMM) traffic specification (TSPEC) streams at a specified data rate for the 802.11a or 802.11b/g network, use the **config 802.11 cac voice stream-size** command.

config 802.11{**a** | **b**} **cac voice stream-size** *stream_size number* **mean_datarate max-streams** *mean_datarate*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
stream-size	Configures the maximum data rate for the stream.
stream_size	Range of stream size is between 84000 and 92100.
number	Number (1 to 5) of voice streams.
mean_datarate	Configures the mean data rate.
max-streams	Configures the mean data rate of a voice stream.
mean_datarate	Mean data rate (84 to 91.2 kbps) of a voice stream.

Command Default

The default number of streams is 2 and the mean data rate of a stream is 84 kbps.

Usage Guidelines

Call Admission Control (CAC) commands require that the WLAN you are planning to modify is configured for the Wi-Fi Multimedia (WMM) protocol and the quality of service (QoS) level be set to Platinum.

Before you can configure CAC parameters on a network, you must complete the following prerequisites:

- Disable all WLANs with WMM enabled by entering the **config wlan disable** *wlan_id* command.
- Disable the radio network you want to configure by entering the **config 802.11**{**a** | **b**} **disable** network command.
- Save the new configuration by entering the **save config** command.
- Enable voice or video CAC for the network you want to configure by entering the **config 802.11**{**a** | **b**} **cac voice acm enable** or **config 802.11**{**a** | **b**} **cac video acm enable** commands.

  For complete instructions, see the "Configuring Voice and Video Parameters" section in the "Configuring Controller Settings" chapter of the *Cisco Wireless LAN Controller Configuration Guide* for your release.

Command History

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

The following example shows how to configure the number of aggregated voice traffic specifications stream with the stream size 5 and the mean data rate of 85000 kbps:

```
(Cisco Controller) > config 802.11 cac voice stream-size 5 max-streams size 85
```

Related Commands

config 802.11 cac voice acm

config 802.11 cac voice load-based

config 802.11 cac voice max-bandwidth

config 802.11 cac voice roam-bandwidth

config 802.11 cac voice tspec-inactivity-timeout

config 802.11 exp-bwreq

Config 802.11 Commands

Use the **config 802.11** commands to configure settings for an 802.11 network.

config 802.11 beacon period

To change the beacon period globally for an 802.11a, 802.11b, or other supported 802.11 network, use the **config 802.11 beacon period** command.

config 802.11 {**a** | **b**} **beacon period** *time_units*

Note Disable the 802.11 network before using this command. See the "Usage Guidelines" section.

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
time_units	Beacon interval in time units (TU). One TU is 1024 microseconds.

Command Default None

Usage Guidelines

In Cisco wireless LAN solution 802.11 networks, all Cisco lightweight access point wireless LANs broadcast a beacon at regular intervals. This beacon notifies clients that the 802.11a service is available and allows the clients to synchronize with the lightweight access point.

Before you change the beacon period, make sure that you have disabled the 802.11 network by using the **config 802.11 disable** command. After changing the beacon period, enable the 802.11 network by using the **config 802.11 enable** command.

Command History

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

This example shows how to configure an 802.11a network for a beacon period of 120 time units:

```
(Cisco Controller) > config 802.11 beacon period 120
```

Related Commands

show 802.11a

config 802.11b beaconperiod

config 802.11a disable

config 802.11a enable

config 802.11 beamforming

To enable or disable Beamforming (ClientLink) on the network or on individual radios, enter the **config 802.11 beamforming** command.

config 802.11 {**a** | **b**} **beamforming** {**global** | **ap** *ap_name*} {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
global	Specifies all lightweight access points.
ap *ap_name*	Specifies the Cisco access point name.
enable	Enables beamforming.
disable	Disables beamforming.

Command Default

None

Command History

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

Usage Guidelines

When you enable Beamforming on the network, it is automatically enabled for all the radios applicable to that network type.

Follow these guidelines for using Beamforming:

- Beamforming is supported only for legacy orthogonal frequency-division multiplexing (OFDM) data rates (6, 9, 12, 18, 24, 36, 48, and 54 mbps).

Note Beamforming is not supported for complementary-code keying (CCK) data rates (1, 2, 5.5, and 11 Mbps).

- Beamforming is supported only on access points that support 802.11n (AP1250 and AP1140).
- Two or more antennas must be enabled for transmission.
- All three antennas must be enabled for reception.
- OFDM rates must be enabled.

  If the antenna configuration restricts operation to a single transmit antenna, or if OFDM rates are disabled, Beamforming is not used.

The following example shows how to enable Beamforming on the 802.11a network:

```
(Cisco Controller) >config 802.11 beamforming global enable
```

config 802.11 channel

To configure an 802.11 network or a single access point for automatic or manual channel selection, use the **config 802.11 channel** command.

config 802.11 {**a** | **b**} **channel** {**global** [**auto** | **once** | **off** | **restart**]} | **ap** {*ap_name* [**global** | *channel*]}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
global	Specifies the 802.11a operating channel that is automatically set by RRM and overrides the existing configuration setting.
auto	(Optional) Specifies that the channel is automatically set by Radio Resource Management (RRM) for the 802.11a radio.
once	(Optional) Specifies that the channel is automatically set once by RRM.
off	(Optional) Specifies that the automatic channel selection by RRM is disabled.
restarts	(Optional) Restarts the aggressive DCA cycle.
ap_name	Access point name.
channel	Manual channel number to be used by the access point. The supported channels depend on the specific access point used and the regulatory region.

Command Default

None

Command History

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

Usage Guidelines

When configuring 802.11 channels for a single lightweight access point, enter the **config 802.11 disable** command to disable the 802.11 network. Enter the **config 802.11 channel** command to set automatic channel selection by Radio Resource Management (RRM) or manually set the channel for the 802.11 radio, and enter the **config 802.11 enable** command to enable the 802.11 network.

Note See the Channels and Maximum Power Settings for Cisco Aironet Lightweight Access Points document for the channels supported by your access point. The power levels and available channels are defined by the country code setting and are regulated on a country-by-country basis.

The following example shows how to have RRM automatically configure the 802.11a channels for automatic channel configuration based on the availability and interference:

```
(Cisco Controller) >config 802.11a channel global auto
```

The following example shows how to configure the 802.11b channels one time based on the availability and interference:

```
(Cisco Controller) >config 802.11b channel global once
```

The following example shows how to turn 802.11a automatic channel configuration off:

```
(Cisco Controller) >config 802.11a channel global off
```

The following example shows how to configure the 802.11b channels in access point AP01 for automatic channel configuration:

```
(Cisco Controller) >config 802.11b AP01 channel global
```

The following example shows how to configure the 802.11a channel 36 in access point AP01 as the default channel:

```
(Cisco Controller) >config 802.11a channel AP01 36
```

config 802.11 channel ap

To set the operating radio channel for an access point, use the **config 802.11 channel ap** command.

config 802.11 {**a** | **b**} **channel ap** *cisco_ap* {**global** | *channel_no*}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
cisco_ap	Name of the Cisco access point.
global	Enables auto-RF on the designated access point.
channel_no	Default channel from 1 to 26, inclusive.

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 auto-RF for access point AP01 on an 802.11b network:

```
(Cisco Controller) >config 802.11b channel ap AP01 global
```

config 802.11 chan_width

To configure the channel width for a particular access point, use the **config 802.11 chan_width** command.

config 802.11 {**a** | **b**} **chan_width** *cisco_ap* {**20** | **40** | **80** | **160** | **best**}

Syntax Description

a	Configures the 802.11a radio on slot 1 and 802.11ac/ax radio on slot 2.

b	Specifies the 802.11b/g radio.
cisco_ap	Access point.
20	Allows the radio to communicate using only 20-MHz channels. Choose this option for legacy 802.11a radios, 20-MHz 802.11n radios, or 40-MHz 802.11n radios that you want to operate using only 20-MHz channels.
40	Allows 40-MHz 802.11n radios to communicate using two adjacent 20-MHz channels bonded together.
80	Allows 80-MHz 802.11ac/ax radios to communicate using two adjacent 40-MHz channels bonded together.
160	Allows 160-MHz 802.11ac/ax radios to communicate.
best	In this mode, the device selects the optimum bandwidth channel.

Command Default

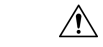
The default channel width is 20.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.3	This command was enhanced in this release with the inclusion of 160 MHz and best channel bandwidth modes.
8.9	This command was enhanced to support 802.11ax.

Usage Guidelines

This parameter can be configured only if the primary channel is statically assigned.



Caution We recommend that you do not configure 40-MHz channels in the 2.4-GHz radio band because severe co-channel interference can occur.

Statically configuring an access point's radio for 20-MHz or 40-MHz mode overrides the globally configured DCA channel width setting (configured by using the **config advanced 802.11 channel dca chan-width** command). If you change the static configuration back to global on the access point radio, the global DCA configuration overrides the channel width configuration that the access point was previously using.

The following example shows how to configure the channel width for access point AP01 on an 802.11 network using 40-MHz channels:

```
(Cisco Controller) >config 802.11a chan_width AP01 40
```

config 802.11 disable

To disable radio transmission for an entire 802.11 network or for an individual Cisco radio, use the **config 802.11 disable** command.

config 802.11 {**a** | **b**} **disable** {**network** | *cisco_ap*}

Syntax Description

a	Configures the 802.11a on slot 1 and 802.11ac/ax radio on slot 2. radio.
b	Specifies the 802.11b/g network.
network	Disables transmission for the entire 802.11a network.
cisco_ap	Individual Cisco lightweight access point radio.

Command Default

The transmission is enabled for the entire network by default.

Command History

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

Usage Guidelines

- You must use this command to disable the network before using many config 802.11 commands.
- This command can be used any time that the CLI interface is active.

The following example shows how to disable the entire 802.11a network:

```
(Cisco Controller) >config 802.11a disable network
```

The following example shows how to disable access point AP01 802.11b transmissions:

```
(Cisco Controller) >config 802.11b disable AP01
```

config 802.11 dtpc

To enable or disable the Dynamic Transmit Power Control (DTPC) setting for an 802.11 network, use the **config 802.11 dtpc** command.

config 802.11 {**a** | **b**} **dtpc** {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables the support for this command.
disable	Disables the support for this command.

Command Default

The default DTPC setting for an 802.11 network 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 disable DTPC for an 802.11a network:

```
(Cisco Controller) > config 802.11a dtpc disable
```

config 802.11 enable

To enable radio transmission for an entire 802.11 network or for an individual Cisco radio, use the **config 802.11 enable** command.

config 802.11 {**a** | **b**} **enable** {**network** | *cisco_ap*}

Syntax Description

a	Configures the 802.11a radioon slot 1 and 802.11ac/ax on slot 2.
b	Specifies the 802.11b/g network.
network	Disables transmission for the entire 802.11a network.
cisco_ap	Individual Cisco lightweight access point radio.

Command Default

The transmission is enabled for the entire network by default.

Usage Guidelines

Use this command with the **config 802.11 disable** command when configuring 802.11 settings.

This command can be used any time that the CLI interface is active.

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 radio transmission for the entire 802.11a network:

```
(Cisco Controller) > config 802.11a enable network
```

The following example shows how to enable radio transmission for AP1 on an 802.11b network:

```
(Cisco Controller) > config 802.11b enable AP1
```

Related Commands

show sysinfo show 802.11a

config wlan radio

config 802.11a disable

config 802.11b disable

config 802.11b enable

config 802.11b 11gSupport enable

config 802.11b 11gSupport disable

config 802.11 exp-bwreq

To enable or disable the Cisco Client eXtension (CCX) version 5 expedited bandwidth request feature for an 802.11 radio, use the **config 802.11 exp-bwreq** command.

config 802.11 {**a** | **b**} **exp-bwreq** {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables the expedited bandwidth request feature.
disable	Disables the expedited bandwidth request feature.

Command Default

The expedited bandwidth request feature is disabled by default.

Usage Guidelines

When this command is enabled, the controller configures all joining access points for this feature.

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 CCX expedited bandwidth settings:

```
(Cisco Controller) > config 802.11a exp-bwreq enable
Cannot change Exp Bw Req mode while 802.11a network is operational.
```

The following example shows how to disable the CCX expedited bandwidth settings:

```
(Cisco Controller) > config 802.11a exp-bwreq disable
```

Related Commands

show 802.11a

show ap stats 802.11a

config 802.11 fragmentation

To configure the fragmentation threshold on an 802.11 network, use the **config 802.11 fragmentation** command.

config 802.11 {**a** | **b**} **fragmentation** *threshold*

Note This command can only be used when the network is disabled using the **config 802.11 disable** command.

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
threshold	Number between 256 and 2346 bytes (inclusive).

Command Default None.

Command History

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

This example shows how to configure the fragmentation threshold on an 802.11a network with the threshold number of 6500 bytes:

```
(Cisco Controller) > config 802.11a fragmentation 6500
```

Related Commands

config 802.11b fragmentation

show 802.11b

show ap auto-rtf

config 802.11 l2roam rf-params

To configure 802.11a or 802.11b/g Layer 2 client roaming parameters, use the **config 802.11 l2roam rf-params** command.

config 802.11 {**a** | **b**} **l2roam rf-params** {**default** | **custom** *min_rssi roam_hyst scan_thresh trans_time*}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
default	Restores Layer 2 client roaming RF parameters to default v
custom	Configures custom Layer 2 client roaming RF parameters.
min_rssi	Minimum received signal strength indicator (RSSI) that is associate to the access point. If the client's average received threshold, reliable communication is usually impossible. Cl and roamed to another access point with a stronger signal be is reached. The valid range is –80 to –90 dBm, and the def

roam_hyst	How much greater the signal strength of a neighboring the client to roam to it. This parameter is intended to re between access points if the client is physically located two access points. The valid range is 2 to 4 dB, and the
scan_thresh	Minimum RSSI that is allowed before the client should When the RSSI drops below the specified value, the clie access point within the specified transition time. This para method to minimize the time that the client spends in a example, the client can scan slowly when the RSSI is al rapidly when the RSSI is below the threshold. The vali the default value is –72 dBm.
trans_time	Maximum time allowed for the client to detect a suitable to and to complete the roam, whenever the RSSI from th is below the scan threshold. The valid range is 1 to 10 s 5 seconds. **Note** For high-speed client roaming applications we recommend that you set the transition t

Command Default

The default minimum RSSI is -85 dBm. The default signal strength of a neighboring access point is 2 dB. The default scan threshold value is -72 dBm. The default time allowed for the client to detect a suitable neighboring access point to roam to and to complete the roam is 5 seconds.

Usage Guidelines

For high-speed client roaming applications in outdoor mesh environments, we recommend that you set the *trans_time* to 1 second.

Command History

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

The following example shows how to configure custom Layer 2 client roaming parameters on an 802.11a network:

```
(Cisco Controller) > config 802.11 l2roam rf-params custom –80 2 –70 7
```

Related Commands

show advanced 802.11 l2roam

show l2tp

config 802.11 max-clients

To configure the maximum number of clients per access point, use the **config 802.11 max-clients** command.

config 802.11 {**a** | **b**} **max-clients** *max-clients*

Syntax Description

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

max-clients	Configures the maximum number of client connections per access point.
max-clients	Maximum number of client connections per access point. The range is from 1 to 200.

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 set the maximum number of clients at 22:

```
(Cisco Controller) > config 802.11 max-clients 22
```

Related Commands

show ap config 802.11a

config 802.11b rate

config 802.11 multicast data-rate

To configure the minimum multicast data rate, use the **config 802.11 multicast data-rate** command.

config 802.11{**a** | **b**} **multicast data-rate** *data_rate* [**ap** *ap_name* | **default**]

Syntax Description

data_rate	Minimum multicast data rates. The options are 6, 9, 12, 18, 24, 36, 48, 54. Enter 0 to specify that APs will dynamically adjust the number of the buffer allocated for multicast.
ap_name	Specific AP radio in this data rate.
default	Configures all APs radio in this data rate.

Command Default The default is 0 where the configuration is disabled and the multicast rate is the lowest mandatory data rate and unicast client data rate.

Usage Guidelines When you configure the data rate without the AP name or **default** keyword, you globally reset all the APs to the new value and update the controller global default with this new data rate value. If you configure the data rate with **default** keyword, you only update the controller global default value and do not reset the value of the APs that are already joined to the controller. The APs that join the controller after the new data rate value is set receives the new data rate value.

Command History

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

The following example shows how to configure minimum multicast data rate settings:

```
(Cisco Controller) > config 802.11 multicast data-rate 12
```

config 802.11 rate

To set mandatory and supported operational data rates for an 802.11 network, use the **config 802.11 rate** command.

config 802.11 {**a** | **b**} **rate** {**disabled** | **mandatory** | **supported**} *rate*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
disabled	Disables a specific data rate.
mandatory	Specifies that a client supports the data rate in order to use the network.
supported	Specifies to allow any associated client that supports the data rate to use the network.
rate	Rate value of 6, 9, 12, 18, 24, 36, 48, or 54 Mbps.

Command Default

None

Usage Guidelines

The data rates set with this command are negotiated between the client and the Cisco wireless LAN controller. If the data rate is set to **mandatory**, the client must support it in order to use the network. If a data rate is set as **supported** by the Cisco wireless LAN controller, any associated client that also supports that rate may communicate with the Cisco lightweight access point using that rate. It is not required that a client is able to use all the rates marked **supported** in order to associate.

Command History

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

The following example shows how to set the 802.11b transmission at a mandatory rate at 12 Mbps:

```
(Cisco Controller) > config 802.11b rate mandatory 12
```

Related Commands

show ap config 802.11a

config 802.11b rate

config 802.11 tsm

To enable or disable the video Traffic Stream Metric (TSM) option for the 802.11a or 802.11b/g network, use the **config 802.11 tsm** command.

config 802.11 {**a** | **b**} **tsm** {**enable** | **disable**}

Syntax Description

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

enable	Enables the video TSM settings.
disable	Disables the video TSM settings.

Command Default By default, the TSM for the 802.11a or 802.11b/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 video TSM option for the 802.11b/g network:

```
(Cisco Controller) > config 802.11b tsm enable
```

The following example shows how to disable the video TSM option for the 802.11b/g network:

```
(Cisco Controller) > config 802.11b tsm disable
```

Related Commands **show ap stats**

show client tsm

config 802.11 txPower

To configure the transmit power level for all access points or a single access point in an 802.11 network, use the **config 802.11 txPower** command.

config 802.11 {**a** | **b**} **txPower** {**global** {*power_level* | **auto** | **max** | **min** | **once** } | **ap** *cisco_ap*}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
global	Configures the 802.11 transmit power level for all lightweight access points.
auto	(Optional) Specifies the power level is automatically set by Radio Resource Management (RRM) for the 802.11 Cisco radio.
once	(Optional) Specifies the power level is automatically set once by RRM.
power_level	(Optional) Manual Transmit power level number for the access point.
ap	Configures the 802.11 transmit power level for a specified lightweight access point.
ap_name	Access point name.

Command Default

The command default (**global**, **auto**) is for automatic configuration by RRM.

Command History

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

Usage Guidelines

The supported power levels depends on the specific access point used and the regulatory region. For example, the 1240 series access point supports eight levels and the 1200 series access point supports six levels. See the Channels and Maximum Power Settings for Cisco Aironet Lightweight Access Points document for the maximum transmit power limits for your access point. The power levels and available channels are defined by the country code setting and are regulated on a country-by-country basis.

The following example shows how to automatically set the 802.11a radio transmit power level in all lightweight access points:

```
(Cisco Controller) > config 802.11a txPower auto
```

The following example shows how to manually set the 802.11b radio transmit power to level 5 for all lightweight access points:

```
(Cisco Controller) > config 802.11b txPower global 5
```

The following example shows how to automatically set the 802.11b radio transmit power for access point AP1:

```
(Cisco Controller) > config 802.11b txPower AP1 global
```

The following example shows how to manually set the 802.11a radio transmit power to power level 2 for access point AP1:

```
(Cisco Controller) > config 802.11b txPower AP1 2
```

Related Commands

show ap config 802.11a

config 802.11b txPower

Configure Advanced 802.11 Commands

Use the **config advanced 802.11** commands to configure advanced settings and devices on 802.11a, 802.11b/g, or other supported 802.11 networks.

config advanced 802.11 7920VSIEConfig

To configure the Cisco unified wireless IP phone 7920 VISE parameters, use the **config advanced 802.11 7920VSIEConfig** command.

config advanced 802.11 {**a** | **b**} **7920VSIEConfig** {**call-admission-limit** *limit* | **G711-CU-Quantum** *quantum*}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
call-admission-limit	Configures the call admission limit for the 7920s.
G711-CU-Quantum	Configures the value supplied by the infrastructure indicating the current number of channel utilization units that would be used by a single G.711-20ms call.
limit	Call admission limit (from 0 to 255). The default value is 105.
quantum	G711 quantum value. The default value is 15.

Command Default

None

Command History

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

This example shows how to configure the call admission limit for 7920 VISE parameters:

```
(Cisco Controller) >config advanced 802.11 7920VSIEConfig call-admission-limit 4
```

config advanced 802.11 channel add

To add channel to the 802.11 networks auto RF channel list, use the **config advanced 802.11 channel add** command.

config advanced 802.11 {**a** | **b**} **channel add** *channel_number*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
add	Adds a channel to the 802.11 network auto RF channel list.

channel_number	Channel number to add to the 802.11 network auto RF channel list.

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 add a channel to the 802.11a network auto RF channel list:

```
(Cisco Controller) >config advanced 802.11 channel add 132
```

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
```

config advanced 802.11 channel dca anchor-time

To specify the time of day when the Dynamic Channel Assignment (DCA) algorithm is to start, use the **config advanced 802.11 channel dca anchor-time** command.

config advanced 802.11 {**a** | **b**} **channel dca anchor-time** *value*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
value	Hour of the time between 0 and 23. These values represent the hour from 12:00 a.m. to 11:00 p.m.

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 configure the time of delay when the DCA algorithm starts:

```
(Cisco Controller) > config advanced 802.11 channel dca anchor-time 17
```

Related Commands

config advanced 802.11 channel dca interval

config advanced 802.11 channel dca sensitivity

config advanced 802.11 channel

config advanced 802.11 channel dca chan-width-11n

To configure the Dynamic Channel Assignment (DCA) channel width for all 802.11n radios in the 5-GHz band, use the **config advanced 802.11 channel dca chan-width-11n** command.

config advanced 802.11 {**a** | **b**} **channel dca chan-width-11n** {**20** | **40** | **80**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
20	Sets the channel width for 802.11n radios to 20 MHz.

40	Sets the channel width for 802.11n radios to 40 MHz.
80	Sets the channel width for 802.11ac/ax radios to 80-MHz.

Command Default

The default channel width is 20.

Command History

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

Usage Guidelines

If you choose 40, be sure to set at least two adjacent channels in the **config advanced 802.11 channel** {**add** | **delete**} *channel_number* command (for example, a primary channel of 36 and an extension channel of 40). If you set only one channel, that channel is not used for the 40-MHz channel width.

To override the globally configured DCA channel width setting, you can statically configure an access point's radio for 20- or 40-MHz mode using the **config 802.11 chan_width** command. If you then change the static configuration to global on the access point radio, the global DCA configuration overrides the channel width configuration that the access point was previously using.

The following example shows how to add a channel to the 802.11a network auto channel list:

```
(Cisco Controller) >config advanced 802.11a channel dca chan-width-11n 40
```

The following example shows how to set the channel width for the 802.11ac radio as 80-MHz:

```
(Cisco Controller) >config advanced 802.11a channel dca chan-width-11n 80
```

config advanced 802.11 channel dca interval

To specify how often the Dynamic Channel Assignment (DCA) is allowed to run, use the **config advanced 802.11 channel dca interval** command.

config advanced 802.11{**a** | **b**} **channel dca interval** *value*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
value	Valid values are 0, 1, 2, 3, 4, 6, 8, 12, or 24 hours. 0 is 10 minutes (600 seconds).

Command Default

The default DCA channel interval is 10 (10 minutes).

Command History

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

Usage Guidelines

If your controller supports only OfficeExtend access points, we recommend that you set the DCA interval to 6 hours for optimal performance. For deployments with a combination of OfficeExtend access points and local access points, the range of 10 minutes to 24 hours can be used.

The following example shows how often the DCA algorithm is allowed to run:

```
(Cisco Controller) > config advanced 802.11 channel dca interval 8
```

Related Commands

config advanced 802.11 dca anchor-time

config advanced 802.11 dca sensitivity

show advanced 802.11 channel

config advanced 802.11 channel dca min-metric

To configure the 5-GHz minimum RSSI energy metric for DCA, use the **config advanced 802.11 channel dca min-metric** command.

config advanced 802.11 {**a** | **b**} **channel dca** *RSSI_value*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
RSSI_value	Minimum received signal strength indicator (RSSI) that is required for the DCA to trigger a channel change. The range is from –100 to –60 dBm.

Command Default

The default minimum RSSI energy metric for DCA is –95 dBm.

Command History

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

The following example shows how to configure the minimum 5-GHz RSSI energy metric for DCA:

```
(Cisco Controller) > config advanced 802.11a channel dca min-metric –80
```

In the above example, the RRM must detect an interference energy of at least -80 dBm in RSSI for the DCA to trigger a channel change.

Related Commands

config advanced 802.11 dca interval

config advanced 802.11 dca anchor-time

show advanced 802.11 channel

config advanced 802.11 channel dca sensitivity

To specify how sensitive the Dynamic Channel Assignment (DCA) algorithm is to environmental changes (for example, signal, load, noise, and interference) when determining whether or not to change channels, use the **config advanced 802.11 channel dca sensitivity** command.

config advanced 802.11 {**a** | **b**} **channel dcasensitivity** {**low** | **medium** | **high**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
low	Specifies the DCA algorithm is not particularly sensitive to environmental changes. See the "Usage Guidelines" section for more information.
medium	Specifies the DCA algorithm is moderately sensitive to environmental changes. See the "Usage Guidelines" section for more information.
high	Specifies the DCA algorithm is highly sensitive to environmental changes. See the "Usage Guidelines" section for more information.

Command Default

None

Command History

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

Usage Guidelines

The DCA sensitivity thresholds vary by radio band as shown in the table below.

To aid in troubleshooting, the output of this command shows an error code for any failed calls. This table explains the possible error codes for failed calls.

Table 1: DCA Sensitivity Thresholds

Sensitivity	2.4-GHz DCA Sensitivity Threshold	5-GHz DCA Sensitivity Threshold
High	5 dB	5 dB
Medium	15 dB	20 dB
Low	30 dB	35 dB

The following example shows how to configure the value of DCA algorithm's sensitivity to low:

```
(Cisco Controller) > config advanced 802.11 channel dca sensitivity low
```

Related Commands

config advanced 802.11 dca interval

config advanced 802.11 dca anchor-time

show advanced 802.11 channel

config advanced 802.11 channel foreign

To have Radio Resource Management (RRM) consider or ignore foreign 802.11a interference avoidance in making channel selection updates for all 802.11a Cisco lightweight access points, use the **config advanced 802.11 channel foreign** command.

config advanced 802.11 {**a** | **b**} **channel foreign** {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables the foreign access point 802.11a interference avoidance in the channel assignment.
disable	Disables the foreign access point 802.11a interference avoidance in the channel assignment.

Command Default

The default value for the foreign access point 802.11a interference avoidance in the channel assignment 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 have RRM consider foreign 802.11a interference when making channel selection updates for all 802.11a Cisco lightweight access points:

```
(Cisco Controller) > config advanced 802.11a channel foreign enable
```

Related Commands

show advanced 802.11a channel

config advanced 802.11b channel foreign

config advanced 802.11 channel load

To have Radio Resource Management (RRM) consider or ignore the traffic load in making channel selection updates for all 802.11a Cisco lightweight access points, use the **config advanced 802.11 channel load** command.

config advanced 802.11 {**a** | **b**} **channel load** {**enable** | **disable**}

Syntax Description

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

enable	Enables the Cisco lightweight access point 802.11a load avoidance in the channel assignment.
disable	Disables the Cisco lightweight access point 802.11a load avoidance in the channel assignment.

Command Default

The default value for Cisco lightweight access point 802.11a load avoidance in the channel assignment 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 have RRM consider the traffic load when making channel selection updates for all 802.11a Cisco lightweight access points:

```
(Cisco Controller) > config advanced 802.11 channel load enable
```

Related Commands

show advanced 802.11a channel

config advanced 802.11b channel load

config advanced 802.11 channel noise

To have Radio Resource Management (RRM) consider or ignore non-802.11a noise in making channel selection updates for all 802.11a Cisco lightweight access points, use the **config advanced 802.11 channel noise** command.

config advanced 802.11 {**a** | **b**} **channel noise** {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables non-802.11a noise avoidance in the channel assignment. or ignore.
disable	Disables the non-802.11a noise avoidance in the channel assignment.

Command Default

The default value for non-802.11a noise avoidance in the channel assignment 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 have RRM consider non-802.11a noise when making channel selection updates for all 802.11a Cisco lightweight access points:

```
(Cisco Controller) > config advanced 802.11 channel noise enable
```

Related Commands

show advanced 802.11a channel

config advanced 802.11b channel noise

config advanced 802.11 channel outdoor-ap-dca

To enable or disable the controller to avoid checking the non-Dynamic Frequency Selection (DFS) channels, use the **config advanced 802.11 channel outdoor-ap-dca** command.

config advanced 802.11 {**a** | **b**} **channel outdoor-ap-dca** {**enable** | **disable**}

Syntax Description

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

Command Default

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

Command History

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

Usage Guidelines

The **config advanced 802.11** {**a** | **b**} **channel outdoor-ap-dca** {**enable** | **disable**} command is applicable only for deployments having outdoor access points such as 1522 and 1524.

The following example shows how to enable the 802.11a DCA list option for outdoor access point:

```
(Cisco Controller) > config advanced 802.11a channel outdoor-ap-dca enable
```

Related Commands

show advanced 802.11a channel

config advanced 802.11b channel noise

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
```

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
```

config advanced 802.11 coverage

To enable or disable coverage hole detection, use the **config advanced 802.11 coverage** command.

config advanced 802.11 { **a** | **b** } **coverage** { **enable** | **disable** }

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables the coverage hole detection.
disable	Disables the coverage hole detection.

Command Default

The default coverage hole detection value is enabled.

Command History

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

Usage Guidelines

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

If both the number and percentage of failed packets exceed the values that you entered in the **config advanced 802.11 coverage packet-count** and **config advanced 802.11 coverage fail-rate** commands for a 5-second period, the client is considered to be in a pre-alarm condition. The controller uses this information to distinguish between real and false coverage holes and excludes clients with poor roaming logic. A coverage hole is detected if both the number and percentage of failed clients meet or exceed the values entered in the **config advanced 802.11 coverage level global** and **config advanced 802.11 coverage exception global** commands over a 90-second period. The controller determines whether the coverage hole can be corrected and, if appropriate, mitigates the coverage hole by increasing the transmit power level for that specific access point.

The following example shows how to enable coverage hole detection on an 802.11a network:

```
(Cisco Controller) > config advanced 802.11a coverage enable
```

Related Commands

config advanced 802.11 coverage exception global

config advanced 802.11 coverage fail-rate

config advanced 802.11 coverage level global

config advanced 802.11 coverage packet-count

config advanced 802.11 coverage rssi-threshold

config advanced 802.11 coverage fail-rate

To specify the failure rate threshold for uplink data or voice packets, use the **config advanced 802.11 coverage fail-rate** command.

config advanced 802.11 {**a** | **b**} **coverage** {**data** | **voice**} **fail-rate** *percent*

Syntax Description

a	Specifies the 802.11a network.

b	Specifies the 802.11b/g network.
data	Specifies the threshold for data packets.
voice	Specifies the threshold for voice packets.
percent	Failure rate as a percentage. Valid values are from 1 to 100 percent.

Command Default

The default failure rate threshold uplink coverage fail-rate value is 20%.

Command History

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

Usage Guidelines

If both the number and percentage of failed packets exceed the values that you entered in the**config advanced 802.11 coverage packet-count** and **config advanced 802.11 coverage fail-rate** commands for a 5-second period, the client is considered to be in a pre-alarm condition. The controller uses this information to distinguish between real and false coverage holes and excludes clients with poor roaming logic. A coverage hole is detected if both the number and percentage of failed clients meet or exceed the values entered in the **config advanced 802.11 coverage level global** and **config advanced 802.11 coverage exception global** commands over a 90-second period. The controller determines whether the coverage hole can be corrected and, if appropriate, mitigates the coverage hole by increasing the transmit power level for that specific access point.

The following example shows how to configure the threshold count for minimum uplink failures for data packets:

```
(Cisco Controller) > config advanced 802.11 coverage fail-rate 80
```

Related Commands

config advanced 802.11 coverage exception global

config advanced 802.11 coverage level global

config advanced 802.11 coverage packet-count

config advanced 802.11 coverage rssi-threshold

config advanced 802.11 coverage

config advanced 802.11 coverage exception global

To specify the percentage of clients on an access point that are experiencing a low signal level but cannot roam to another access point, use the **config advanced 802.11 coverage exception global** command.

config advanced 802.11 {**a** | **b**} **coverage exception global** *percent*

Syntax Description

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

percent	Percentage of clients. Valid values are from 0 to 100%.

Command Default

The default percentage value for clients on an access point is 25%.

Command History

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

Usage Guidelines

If both the number and percentage of failed packets exceed the values that you entered in the **config advanced 802.11 coverage packet-count** and **config advanced 802.11 coverage fail-rate** commands for a 5-second period, the client is considered to be in a pre-alarm condition. The controller uses this information to distinguish between real and false coverage holes and excludes clients with poor roaming logic. A coverage hole is detected if both the number and percentage of failed clients meet or exceed the values entered in the**config advanced 802.11 coverage level global** and **config advanced 802.11 coverage exception global** commands over a 90-second period. The controller determines whether the coverage hole can be corrected and, if appropriate, mitigates the coverage hole by increasing the transmit power level for that specific access point.

The following example shows how to specify the percentage of clients for all 802.11a access points that are experiencing a low signal level:

```
(Cisco Controller) > config advanced 802.11 coverage exception global 50
```

Related Commands

config advanced 802.11 coverage exception global

config advanced 802.11 coverage fail-rate

config advanced 802.11 coverage level global

config advanced 802.11 coverage packet-count

config advanced 802.11 coverage rssi-threshold

config advanced 802.11 coverage

config advanced 802.11 coverage level global

To specify the minimum number of clients on an access point with an received signal strength indication (RSSI) value at or below the data or voice RSSI threshold, use the **config advanced 802.11 coverage level global** command.

config advanced 802.11 {**a** | **b**} **coverage level global** *clients*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
clients	Minimum number of clients. Valid values are from 1 to 75.

Command Default

The default minimum number of clients on an access point is 3.

Command History

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

Usage Guidelines

If both the number and percentage of failed packets exceed the values that you entered in the **config advanced 802.11 coverage packet-count** and **config advanced 802.11 coverage fail-rate** commands for a 5-second period, the client is considered to be in a pre-alarm condition. The controller uses this information to distinguish between real and false coverage holes and excludes clients with poor roaming logic. A coverage hole is detected if both the number and percentage of failed clients meet or exceed the values entered in the **config advanced 802.11 coverage level global** and **config advanced 802.11 coverage exception global** commands over a 90-second period. The controller determines whether the coverage hole can be corrected and, if appropriate, mitigates the coverage hole by increasing the transmit power level for that specific access point.

The following example shows how to specify the minimum number of clients on all 802.11a access points with an RSSI value at or below the RSSI threshold:

```
(Cisco Controller) > config advanced 802.11 coverage level global 60
```

Related Commands

config advanced 802.11 coverage exception global

config advanced 802.11 coverage fail-rate

config advanced 802.11 coverage packet-count

config advanced 802.11 coverage rssi-threshold

config advanced 802.11 coverage

config advanced 802.11 coverage packet-count

To specify the minimum failure count threshold for uplink data or voice packets, use the **config advanced 802.11 coverage packet-count** command.

config advanced 802.11 {**a** | **b**} **coverage** {**data** | **voice**} **packet-count** *packets*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
data	Specifies the threshold for data packets.
voice	Specifies the threshold for voice packets.
packets	Minimum number of packets. Valid values are from 1 to 255 packets.

Command Default

The default failure count threshold for uplink data or voice packets is10.

Command History

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

Usage Guidelines

If both the number and percentage of failed packets exceed the values that you entered in the **config advanced 802.11 coverage packet-count** and **config advanced 802.11 coverage fail-rate** commands for a 5-second period, the client is considered to be in a pre-alarm condition. The controller uses this information to distinguish between real and false coverage holes and excludes clients with poor roaming logic. A coverage hole is detected if both the number and percentage of failed clients meet or exceed the values entered in the **config advanced 802.11 coverage level global** and **config advanced 802.11 coverage exception global** commands over a 90-second period. The controller determines whether the coverage hole can be corrected and, if appropriate, mitigates the coverage hole by increasing the transmit power level for that specific access point.

The following example shows how to configure the failure count threshold for uplink data packets:

```
(Cisco Controller) > config advanced 802.11 coverage packet-count 100
```

Related Commands

config advanced 802.11 coverage exception global

config advanced 802.11 coverage fail-rate

config advanced 802.11 coverage level global

config advanced 802.11 coverage rssi-threshold

config advanced 802.11 coverage

config advanced 802.11 coverage rssi-threshold

To specify the minimum receive signal strength indication (RSSI) value for packets that are received by an access point, use the **config advanced 802.11 coverage rssi-threshold** command.

config advanced 802.11 {**a** | **b**} **coverage** {**data** | **voice**} **rssi-threshold** *rssi*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
data	Specifies the threshold for data packets.
voice	Specifies the threshold for voice packets.
rssi	Valid values are from –60 to –90 dBm.

Command Default

- The default RSSI value for data packets is –80 dBm.
- The default RSSI value for voice packets is –75 dBm.

Command History

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

Usage Guidelines

The *rssi* value that you enter is used to identify coverage holes (or areas of poor coverage) within your network. If the access point receives a packet in the data or voice queue with an RSSI value that is below the value that you enter, a potential coverage hole has been detected.

The access point takes RSSI measurements every 5 seconds and reports them to the controller in 90-second intervals.

If both the number and percentage of failed packets exceed the values that you entered in the **config advanced 802.11 coverage packet-count** and **config advanced 802.11 coverage fail-rate** commands for a 5-second period, the client is considered to be in a pre-alarm condition. The controller uses this information to distinguish between real and false coverage holes and excludes clients with poor roaming logic. A coverage hole is detected if both the number and percentage of failed clients meet or exceed the values entered in the **config advanced 802.11 coverage level global** and **config advanced 802.11 coverage exception global** commands over a 90-second period. The controller determines whether the coverage hole can be corrected and, if appropriate, mitigates the coverage hole by increasing the transmit power level for that specific access point.

The following example shows how to configure the minimum receive signal strength indication threshold value for data packets that are received by an 802.11a access point:

```
(Cisco Controller) > config advanced 802.11a coverage rssi-threshold -60
```

Related Commands

config advanced 802.11 coverage exception global

config advanced 802.11 coverage fail-rate

config advanced 802.11 coverage level global

config advanced 802.11 coverage packet-count

config advanced 802.11 coverage

config advanced 802.11 logging channel

To turn the channel change logging mode on or off, use the **config advanced 802.11 logging channel** command.

config advanced 802.11 {**a** | **b**} **logging channel** {**on** | **off**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
logging channel	Logs channel changes.
on	Enables the 802.11 channel logging.
off	Disables 802.11 channel logging.

Command Default

The default channel change logging mode is Off (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 turn the 802.11a logging channel selection mode on:

```
(Cisco Controller) > config advanced 802.11a logging channel on
```

Related Commands

show advanced 802.11a logging

config advanced 802.11b logging channel

config advanced 802.11 logging coverage

To turn the coverage profile logging mode on or off, use the **config advanced 802.11 logging coverage** command.

config advanced 802.11 {**a** | **b**} **logging coverage** {**on** | **off**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
on	Enables the 802.11 coverage profile violation logging.
off	Disables the 802.11 coverage profile violation logging.

Command Default

The default coverage profile logging mode is Off (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 turn the 802.11a coverage profile violation logging selection mode on:

```
(Cisco Controller) > config advanced 802.11a logging coverage on
```

Related Commands

show advanced 802.11a logging

config advanced 802.11b logging coverage

config advanced 802.11 logging foreign

To turn the foreign interference profile logging mode on or off, use the **config advanced 802.11 logging foreign** command.

config advanced 802.11 {**a** | **b**} **logging foreign** {**on** | **off**}

Syntax Description

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

on	Enables the 802.11 foreign interference profile violation logging.
off	Disables the 802.11 foreign interference profile violation logging.

Command Default

The default foreign interference profile logging mode is Off (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 turn the 802.11a foreign interference profile violation logging selection mode on:

```
(Cisco Controller) > config advanced 802.11a logging foreign on
```

Related Commands

show advanced 802.11a logging

config advanced 802.11b logging foreign

config advanced 802.11 logging load

To turn the 802.11a load profile logging mode on or off, use the **config advanced 802.11 logging load** command.

config advanced 802.11 {**a** | **b**} **logging load** {**on** | **off**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
on	Enables the 802.11 load profile violation logging.
off	Disables the 802.11 load profile violation logging.

Command Default

The default 802.11a load profile logging mode is Off (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 turn the 802.11a load profile logging mode on:

```
(Cisco Controller) > config advanced 802.11 logging load on
```

Related Commands

show advanced 802.11a logging

config advanced 802.11b logging load

config advanced 802.11 logging noise

To turn the 802.11a noise profile logging mode on or off, use the **config advanced 802.11 logging noise** command.

config advanced 802.11 {**a** | **b**} **logging noise** {**on** | **off**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
on	Enables the 802.11 noise profile violation logging.
off	Disables the 802.11 noise profile violation logging.

Command Default

The default 802.11a noise profile logging mode is off (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 turn the 802.11a noise profile logging mode on:

```
(Cisco Controller) > config advanced 802.11a logging noise on
```

Related Commands

show advanced 802.11a logging

config advanced 802.11b logging noise

config advanced 802.11 logging performance

To turn the 802.11a performance profile logging mode on or off, use the **config advanced 802.11 logging performance** command.

config advanced 802.11 {**a** | **b**} **logging performance** {**on** | **off**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
on	Enables the 802.11 performance profile violation logging.
off	Disables the 802.11 performance profile violation logging.

Command Default The default 802.11a performance profile logging mode is off (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 turn the 802.11a performance profile logging mode on:

```
(Cisco Controller) > config advanced 802.11a logging performance on
```

Related Commands **show advanced 802.11a logging**

config advanced 802.11b logging performance

config advanced 802.11 logging txpower

To turn the 802.11a transmit power change logging mode on or off, use the **config advanced 802.11 logging txpower** command.

config advanced 802.11 {**a** | **b**} **logging txpower** {**on** | **off**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
on	Enables the 802.11 transmit power change logging.
off	Disables the 802.11 transmit power change logging.

Command Default The default 802.11a transmit power change logging mode is off (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 turn the 802.11a transmit power change mode on:

```
(Cisco Controller) > config advanced 802.11 logging txpower off
```

Related Commands **show advanced 802.11 logging**

config advanced 802.11b logging power

config advanced 802.11 monitor channel-list

To set the 802.11a noise, interference, and rogue monitoring channel list, use the **config advanced 802.11 monitor channel-list** command.

config advanced 802.11 {**a** | **b**} **monitor channel-list** {**all** | **country** | **dca**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
all	Monitors all channels.
country	Monitors the channels used in the configured country code.
dca	Monitors the channels used by the automatic channel assignment.

Command Default

The default 802.11a noise, interference, and rogue monitoring channel list is country.

Command History

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

The following example shows how to monitor the channels used in the configured country:

```
(Cisco Controller) > config advanced 802.11 monitor channel-list country
```

Related Commands

show advanced 802.11a monitor coverage

config advanced 802.11 monitor coverage

To set the coverage measurement interval between 60 and 3600 seconds, use the **config advanced 802.11 monitor coverage** command.

config advanced 802.11 {**a** | **b**} **monitor coverage** *seconds*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
seconds	Coverage measurement interval between 60 and 3600 seconds.

Command Default

The default coverage measurement interval is180 seconds.

Command History

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

The following example shows how to set the coverage measurement interval to 60 seconds:

```
(Cisco Controller) > config advanced 802.11 monitor coverage 60
```

Related Commands

show advanced 802.11a monitor

config advanced 802.11b monitor coverage

config advanced 802.11 monitor load

To set the load measurement interval between 60 and 3600 seconds, use the **config advanced 802.11 monitor load** command.

config advanced 802.11 {**a** | **b**} **monitor load** *seconds*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
seconds	Load measurement interval between 60 and 3600 seconds.

Command Default

The default load measurement interval is 60 seconds.

Command History

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

The following example shows how to set the load measurement interval to 60 seconds:

```
(Cisco Controller) > config advanced 802.11 monitor load 60
```

Related Commands

show advanced 802.11a monitor

config advanced 802.11b monitor load

config advanced 802.11 monitor ndp-type

To configure the 802.11 access point radio resource management (RRM) Neighbor Discovery Protocol (NDP) type, use the **config advanced 802.11 monitor ndp-type** command:

config advanced 802.11 {**a** | **b**} **monitor ndp-type** {**protected** | **transparent**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
protected	Specifies the Tx RRM protected NDP.
transparent	Specifies the Tx RRM transparent NDP.

Command Default None

Command History

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

Usage Guidelines Before you configure the 802.11 access point RRM NDP type, ensure that you have disabled the network by entering the **config 802.11 disable network** command.

The following example shows how to enable the 802.11a access point RRM NDP type as protected:

```
(Cisco Controller) > config advanced 802.11 monitor ndp-type protected
```

Related Commands

config advanced 802.11 monitor

config advanced 802.11 monitor mode

config advanced 802.11 disable

config advanced 802.11 monitor noise

To set the 802.11a noise measurement interval between 60 and 3600 seconds, use the **config advanced 802.11 monitor noise** command.

config advanced 802.11 {**a** | **b**} **monitor noise** *seconds*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
seconds	Noise measurement interval between 60 and 3600 seconds.

Command Default The default 802.11a noise measurement interval is 80 seconds.

Command History

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

The following example shows how to set the noise measurement interval to 120 seconds:

```
(Cisco Controller) > config advanced 802.11 monitor noise 120
```

Related Commands

show advanced 802.11a monitor

config advanced 802.11b monitor noise

config advanced 802.11 monitor signal

To set the signal measurement interval between 60 and 3600 seconds, use the **config advanced 802.11 monitor signal** command.

config advanced 802.11 {**a** | **b**} **monitor signal** *seconds*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
seconds	Signal measurement interval between 60 and 3600 seconds.

Command Default

The default signal measurement interval is 60 seconds.

Command History

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

The following example shows how to set the signal measurement interval to 120 seconds:

```
(Cisco Controller) > config advanced 802.11 monitor signal 120
```

Related Commands

show advanced 802.11a monitor

config advanced 802.11b monitor signal

config advanced 802.11 profile clients

To set the Cisco lightweight access point clients threshold between 1 and 75 clients, use the **config advanced 802.11 profile clients** command.

config advanced 802.11 {**a** | **b**} **profile clients** {**global** | *cisco_ap*} *clients*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
global	Configures all 802.11a Cisco lightweight access points.
cisco_ap	Cisco lightweight access point name.
clients	802.11a Cisco lightweight access point client threshold between 1 and 75 clients.

Command Default

The default Cisco lightweight access point clients threshold is 12 clients.

Command History

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

The following example shows how to set all Cisco lightweight access point clients thresholds to 25 clients:

```
(Cisco Controller) >config advanced 802.11 profile clients global 25
Global client count profile set.
```

The following example shows how to set the AP1 clients threshold to 75 clients:

```
(Cisco Controller) >config advanced 802.11 profile clients AP1 75
Global client count profile set.
```

config advanced 802.11 profile customize

To turn customizing on or off for an 802.11a Cisco lightweight access point performance profile, use the **config advanced 802.11 profile customize** command.

config advanced 802.11 {**a** | **b**} **profile customize** *cisco_ap* {**on** | **off**}

Syntax Description

a	Specifies the 802.11a/n network.
b	Specifies the 802.11b/g/n network.
cisco_ap	Cisco lightweight access point.
on	Customizes performance profiles for this Cisco lightweight access point.
off	Uses global default performance profiles for this Cisco lightweight access point.

Command Default

The default state of performance profile customization is Off.

Command History

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

The following example shows how to turn performance profile customization on for 802.11a Cisco lightweight access point AP1:

```
(Cisco Controller) >config advanced 802.11 profile customize AP1 on
```

config advanced 802.11 profile foreign

To set the foreign 802.11a transmitter interference threshold between 0 and 100 percent, use the **config advanced 802.11 profile foreign** command.

config advanced 802.11 {**a** | **b**} **profile foreign** {**global** | *cisco_ap*} *percent*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
global	Configures all 802.11a Cisco lightweight access points.
cisco_ap	Cisco lightweight access point name.
percent	802.11a foreign 802.11a interference threshold between 0 and 100 percent.

Command Default

The default foreign 802.11a transmitter interference threshold value is 10.

Command History

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

The following example shows how to set the foreign 802.11a transmitter interference threshold for all Cisco lightweight access points to 50 percent:

```
(Cisco Controller) >config advanced 802.11a profile foreign global 50
```

The following example shows how to set the foreign 802.11a transmitter interference threshold for AP1 to 0 percent:

```
(Cisco Controller) >config advanced 802.11 profile foreign AP1 0
```

config advanced 802.11 profile noise

To set the 802.11a foreign noise threshold between –127 and 0 dBm, use the **config advanced 802.11 profile noise** command.

config advanced 802.11 {**a** | **b**} **profile noise** {**global** | *cisco_ap*} *dBm*

Syntax Description

a	Specifies the 802.11a/n network.
b	Specifies the 802.11b/g/n network.
global	Configures all 802.11a Cisco lightweight access point specific profiles.
cisco_ap	Cisco lightweight access point name.
dBm	802.11a foreign noise threshold between –127 and 0 dBm.

Command Default

The default foreign noise threshold value is –70 dBm.

Command History

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

The following example shows how to set the 802.11a foreign noise threshold for all Cisco lightweight access points to –127 dBm:

```
(Cisco Controller) >config advanced 802.11a profile noise global -127
```

The following example shows how to set the 802.11a foreign noise threshold for AP1 to 0 dBm:

```
(Cisco Controller) >config advanced 802.11a profile noise AP1 0
```

config advanced 802.11 profile throughput

To set the Cisco lightweight access point data-rate throughput threshold between 1000 and 10000000 bytes per second, use the **config advanced 802.11 profile throughput** command.

config advanced 802.11 {**a** | **b**} **profile throughput** {**global** | *cisco_ap*} *value*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
global	Configures all 802.11a Cisco lightweight access point specific profiles.
cisco_ap	Cisco lightweight access point name.
value	802.11a Cisco lightweight access point throughput threshold between 1000 and 10000000 bytes per second.

Command Default

The default Cisco lightweight access point data-rate throughput threshold value is 1,000,000 bytes per second.

Command History

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

The following example shows how to set all Cisco lightweight access point data-rate thresholds to 1000 bytes per second:

```
(Cisco Controller) >config advanced 802.11 profile throughput global 1000
```

The following example shows how to set the AP1 data-rate threshold to 10000000 bytes per second:

```
(Cisco Controller) >config advanced 802.11 profile throughput AP1 10000000
```

config advanced 802.11 profile utilization

To set the RF utilization threshold between 0 and 100 percent, use the **config advanced 802.11 profile utilization** command. The operating system generates a trap when this threshold is exceeded.

config advanced 802.11 {**a** | **b**} **profile utilization** {**global** | *cisco_ap*} *percent*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
global	Configures a global Cisco lightweight access point specific profile.
cisco_ap	Cisco lightweight access point name.
percent	802.11a RF utilization threshold between 0 and 100 percent.

Command Default

The default RF utilization threshold value is 80 percent.

Command History

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

The following example shows how to set the RF utilization threshold for all Cisco lightweight access points to 0 percent:

```
(Cisco Controller) >config advanced 802.11 profile utilization global 0
```

The following example shows how to set the RF utilization threshold for AP1 to 100 percent:

```
(Cisco Controller) >config advanced 802.11 profile utilization AP1 100
```

config advanced 802.11 receiver

To set the advanced receiver configuration settings, use the **config advanced 802.11 receiver** command.

config advanced 802.11 {**a** | **b**} **receiver** {**default** | **rxstart jumpThreshold** *value*}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
receiver	Specifies the receiver configuration.
default	Specifies the default advanced receiver configuration.
rxstart jumpThreshold	Specifies the receiver start signal. **Note** We recommend that you do not use this option as it is for Cisco internal use only.
value	Jump threshold configuration value between 0 and 127.

Command Default

None

Usage Guidelines

- Before you change the 802.11 receiver configuration, you must disable the 802.11 network.

- We recommend that you do not use the **rxstart jumpThreshold** *value* option as it is for Cisco internal use only.

Command History

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

The following example shows how to prevent changes to receiver parameters while the network is enabled:

```
(Cisco Controller) > config advanced 802.11 receiver default
```

config advanced 802.11 edca-parameters

To enable a specific Enhanced Distributed Channel Access (EDCA) profile on a 802.11a network, use the **config advanced 802.11 edca-parameters** command.

config advanced 802.11 { **a** | **b** } **edca-parameters** { **wmm-default** | **svp-voice** | **optimized-voice** | **optimized-video-voice** | **custom-voice** | **fastlane** | **custom-set** { *QoS Profile Name* } { **aifs** *AP-value (0-16) Client value (0-16)* | **ecwmax** *AP-Value (0-10) Client value (0-10)* | **ecwmin** *AP-Value (0-10) Client value (0-10)* | **txop** *AP-Value (0-255) Client value (0-255)* } }

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
wmm-default	Enables the Wi-Fi Multimedia (WMM) default parameters. Choose this option if voice or video services are not deployed on your network.
svp-voice	Enables Spectralink voice-priority parameters. Choose this option if Spectralink phones are deployed on your network to improve the quality of calls.
optimized-voice	Enables EDCA voice-optimized profile parameters. Choose this option if voice services other than Spectralink are deployed on your network.
optimized-video-voice	Enables EDCA voice-optimized and video-optimized profile parameters. Choose this option when both voice and video services are deployed on your network. **Note** If you deploy video services, admission control must be disabled.
custom-voice	Enables custom voice EDCA parameters for 802.11a. The EDCA parameters under this option also match the 6.0 WMM EDCA parameters when this profile is applied.

fastlane	Enables fastlane on compatible devices.
custom-set	Enables customization of EDCA parameters • **aifs—Configures the Arbitration Inter-Frame Space.** **AP Value (0-16) Client value (0-16)** • **ecwmax—Configures the maximum Contention Window.** **AP Value(0-10) Client Value (0-10)** • **ecwmin—Configures the minimum Contention Window.** **AP Value(0-10) Client Value(0-10)** • **txop—Configures the Arbitration Transmission Opportunity Limit.** **AP Value(0-255) Client Value(0-255)** QoS Profile Name - Enter the QoS profile name: • bronze • silver • gold • platinum

Command Default

The default EDCA parameter is **wmm-default**.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.2.110.0	In this release, custom-set keyword was added to edca-parameters command.
8.3	This command was modified and the **fastlane** keyword was added.

Examples

The following example shows how to enable Spectralink voice-priority parameters:

```
(Cisco Controller) > config advanced 802.11 edca-parameters svp-voice
```

Related Commands

config advanced 802.11b edca-parameters	Enables a specific Enhanced Distributed Channel Access (EDCA) profile on the 802.11a network.
show 802.11a	Displays basic 802.11a network settings.

config advanced 802.11 factory

To reset 802.11a advanced settings back to the factory defaults, use the **config advanced 802.11 factory** command.

config advanced 802.11 {**a** | **b**} **factory**

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 return all the 802.11a advanced settings to their factory defaults:

```
(Cisco Controller) > config advanced 802.11a factory
```

Related Commands **show advanced 802.11a channel**

config advanced 802.11 group-member

To configure members in 802.11 static RF group, use the **config advanced 802.11 group-member** command.

config advanced 802.11 {**a** | **b**} **group-member** {**add** | **remove**} *controller controller-ip-address*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
add	Adds a controller to the static RF group.
remove	Removes a controller from the static RF group.
controller	Name of the controller to be added.
controller-ip-address	IP address of the controller to be added.

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 add a controller in the 802.11a automatic RF group:

```
(Cisco Controller) > config advanced 802.11a group-member add cisco-controller 209.165.200.225
```

Related Commands

show advanced 802.11a group

config advanced 802.11 group-mode

config advanced 802.11 tpc-version

To configure the Transmit Power Control (TPC) version for a radio, use the **config advanced 802.11 tpc-version** command.

config advanced 802.11 {**a** | **b**} **tpc-version** {**1** | **2**}

Syntax Description

1	Specifies the TPC version 1 that offers strong signal coverage and stability.
2	Specifies TPC version 2 is for scenarios where voice calls are extensively used. The Tx power is dynamically adjusted with the goal of minimum interference. It is suitable for dense networks. In this mode, there could be higher roaming delays and coverage hole incidents.

Command Default

The default TPC version for a radio is 1.

Command History

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

The following example shows how to configure the TPC version as 1 for the 802.11a radio:

```
(Cisco Controller) > config advanced 802.11a tpc-version 1
```

Related Commands

config advanced 802.11 tpcv1-thresh

config advanced 802.11 tpcv1-thresh

To configure the threshold for Transmit Power Control (TPC) version 1 of a radio, use the **config advanced 802.11 tpcv1-thresh** command.

config advanced 802.11 {**a** | **b**} **tpcv1-thresh** *threshold*

Syntax Description

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

threshold	Threshold value between –50 dBm to –80 dBm.

Command History

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

The following example shows how to configure the threshold as –60 dBm for TPC version 1 of the 802.11a radio:

```
(Cisco Controller) > config advanced 802.11 tpcv1-thresh -60
```

Related Commands

config advanced 802.11 tpc-thresh

config advanced 802.11 tpcv2-thresh

config advanced 802.11 tpcv2-intense

To configure the computational intensity for Transmit Power Control (TPC) version 2 of a radio, use the **config advanced 802.11 tpcv2-intense** command.

config advanced 802.11 {**a** | **b**} **tpcv2-intense** *intensity*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g/n network.
intensity	Computational intensity value between 1 to 100.

Command History

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

The following example shows how to configure the computational intensity as 50 for TPC version 2 of the 802.11a radio:

```
(Cisco Controller) > config advanced 802.11 tpcv2-intense 50
```

Related Commands

config advanced 802.11 tpc-thresh

config advanced 802.11 tpcv2-thresh

config advanced 802.11 tpcv2-per-chan

config advanced 802.11 tpcv2-per-chan

To configure the Transmit Power Control Version 2 on a per-channel basis, use the **config advanced 802.11 tpcv2-per-chan** command.

config advanced 802.11 {**a** | **b**} **tpcv2-per-chan** {**enable** | **disable**}

Syntax Description

enable	Enables the configuration of TPC version 2 on a per-channel basis.
disable	Disables the configuration of TPC version 2 on a per-channel basis.

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 TPC version 2 on a per-channel basis for the 802.11a radio:

```
(Cisco Controller) > config advanced 802.11 tpcv2-per-chan enable
```

Related Commands

config advanced 802.11 tpc-thresh

config advanced 802.11 tpcv2-thresh

config advanced 802.11 tpcv2-intense

config advanced 802.11 tpcv2-thresh

To configure the threshold for Transmit Power Control (TPC) version 2 of a radio, use the **config advanced 802.11 tpcv2-thresh** command.

config advanced 802.11 {**a** | **b**} **tpcv2-thresh** *threshold*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
threshold	Threshold value between –50 dBm to –80 dBm.

Command History

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

The following example shows how to configure the threshold as –60 dBm for TPC version 2 of the 802.11a radio:

```
(Cisco Controller) > config advanced 802.11a tpcv2-thresh -60
```

Related Commands

config advanced 802.11 tpc-thresh

config advanced 802.11 tpcv1-thresh

config advanced 802.11 tpcv2-per-chan

config advanced 802.11 txpower-update

To initiate updates of the 802.11a transmit power for every Cisco lightweight access point, use the **config advanced 802.11 txpower-update** command.

config advanced 802.11 {**a** | **b**} **txpower-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 updates of 802.11a transmit power for an 802.11a access point:

```
(Cisco Controller) > config advanced 802.11 txpower-update
```

Related Commands **config advance 802.11b txpower-update**

config advanced backup-controller primary

To configure a primary backup controller, use the **config advanced backup-controller primary** command.

config advanced backup-controller primary *system name IP addr*

Syntax Description

system name	Configures primary|secondary backup controller.
IP addr	IP address of the backup controller.

Command Default None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

Usage Guidelines To delete a primary backup controller entry (IPv6 or IPv4), enter 0.0.0.0 for the controller IP address.

The following example shows how to configure the IPv4 primary backup controller:

```
(Cisco Controller) >config advanced backup-controller primary Controller_1 10.10.10.10
```

The following example shows how to configure the IPv6 primary backup controller:

```
(Cisco Controller) >config advanced backup-controller primary systemname 2001:9:6:40::623
```

The following example shows how to remove the IPv4 primary backup controller:

```
(Cisco Controller) >config advanced backup-controller primary Controller_1 10.10.10.10
```

The following example shows how to remove the IPv6 primary backup controller:

```
(Cisco Controller) >config advanced backup-controller primary Controller_1 0.0.0.0
```

Related Commands **show advanced back-up controller**

config advanced backup-controller secondary

To configure a secondary backup controller, use the **config advanced backup-controller secondary** command.

config advanced backup-controller secondary *system name IP addr*

Syntax Description

system name	Configures primary|secondary backup controller.
IP addr	IP address of the backup controller.

Command Default None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

Usage Guidelines To delete a secondary backup controller entry (IPv4 or IPv6), enter 0.0.0.0 for the controller IP address.

The following example shows how to configure an IPv4 secondary backup controller:

```
(Cisco Controller) >config advanced backup-controller secondary Controller_2 10.10.10.10
```

The following example shows how to configure an IPv6 secondary backup controller:

```
(Cisco Controller) >config advanced backup-controller secondary Controller_2 2001:9:6:40::623
```

The following example shows how to remove an IPv4 secondary backup controller:

```
(Cisco Controller) >config advanced backup-controller secondary Controller_2 0.0.0.0
```

The following example shows how to remove an IPv6 secondary backup controller:

```
(Cisco Controller) >config advanced backup-controller secondary Controller_2 0.0.0.0
```

Related Commands **show advanced back-up controller**

config advanced client-handoff

To set the client handoff to occur after a selected number of 802.11 data packet excessive retries, use the **config advanced client-handoff** command.

config advanced client-handoff *num_of_retries*

Syntax Description

num_of_retries	Number of excessive retries before client handoff (from 0 to 255).

Command Default

The default value for the number of 802.11 data packet excessive retries is 0.

Command History

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

Usage Guidelines

This command is supported only for the 1000/1510 series access points.

This example shows how to set the client handoff to 100 excessive retries:

```
(Cisco Controller) >config advanced client-handoff 100
```

config advanced dot11-padding

To enable or disable over-the-air frame padding, use the **config advanced dot11-padding** command.

config advanced dot11-padding {**enable** | **disable**}

Syntax Description

enable	Enables the over-the-air frame padding.
disable	Disables the over-the-air frame padding.

Command Default

The default over-the-air frame padding 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 over-the-air frame padding:

```
(Cisco Controller) > config advanced dot11-padding enable
```

Related Commands

debug dot11

debug dot11 mgmt interface

debug dot11 mgmt msg

debug dot11 mgmt ssid

debug dot11 mgmt state-machine

debug dot11 mgmt station

show advanced dot11-padding

config advanced assoc-limit

To configure the rate at which access point radios send association and authentication requests to the controller, use the **config advanced assoc-limit** command.

config advanced assoc-limit {**enable** [*number of associations per interval* | *interval*] | **disable**}

Syntax Description

enable	Enables the configuration of the association requests per access point.
disable	Disables the configuration of the association requests per access point.
number of associations per interval	(Optional) Number of association request per access point slot in a given interval. The range is from 1 to 100.
interval	(Optional) Association request limit interval. The range is from 100 to 10000 milliseconds.

Command Default

The default state of the command is disabled state.

Command History

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

Usage Guidelines

When 200 or more wireless clients try to associate to a controller at the same time, the clients no longer become stuck in the DHCP_REQD state when you use the **config advanced assoc-limit** command to limit association requests from access points.

The following example shows how to configure the number of association requests per access point slot in a given interval of 20 with the association request limit interval of 250:

```
(Cisco Controller) >config advanced assoc-limit enable 20 250
```

config advanced eap

To configure advanced extensible authentication protocol (EAP) settings, use the **config advanced eap** command.

config advanced eap {**bcast-key-interval** *seconds* | **eapol-key-timeout** *timeout* | **eapol-key-retries** *retries* | **identity-request-timeout** *timeout* | **identity-request-retries** *retries* | **key-index** *index* | **max-login-ignore-identity-response** {**enable** | **disable**} **request-timeout** *timeout* | **request-retries** *retries*} | **rsn-capability-validation** {**enable** | **disable** }}

Syntax Description

bcast-key-interval *seconds*	Specifies the EAP-broadcast key renew interval time in seconds. The range is from 120 to 86400 seconds.
eapol-key-timeout *timeout*	Specifies the amount of time (200 to 5000 milliseconds) that the controller waits before retransmitting an EAPOL (WPA) key message to a wireless client using EAP or WPA/WPA-2 PSK. The default value is 1000 milliseconds.
eapol-key-retries *retries*	Specifies the maximum number of times (0 to 4 retries) that the controller retransmits an EAPOL (WPA) key message to a wireless client. The default value is 2.
identity-request- timeout *timeout*	Specifies the amount of time (1 to 120 seconds) that the controller waits before retransmitting an EAP Identity Request message to a wireless client. The default value is 30 seconds.
identity-request- retries	Specifies the maximum number of times (0 to 4 retries) that the controller retransmits an EAPOL (WPA) key message to a wireless client. The default value is 2.
key-index *index*	Specifies the key index (0 or 3) used for dynamic wired equivalent privacy (WEP).
max-login-ignore- identity-response	When enabled, this command ignores the limit set for the number of devices that can be connected to the controller with the same username using 802.1xauthentication. When disabled, this command limits the number of devices that can be connected to the controller with the same username. This option is not applicable for Web auth user. Use the command **config netuser maxUserLogin** to set the limit of maximum number of devices per same username
enable	Ignores the same username reaching the maximum EAP identity response.
disable	Checks the same username reaching the maximum EAP identity response.

request-timeout	For EAP messages other than Identity Requests or EAPOL (WPA) key messages, specifies the amount of time (1 to 120 seconds) that the controller waits before retransmitting the message to a wireless client. The default value is 30 seconds.
request-retries	(Optional) For EAP messages other than Identity Requests or EAPOL (WPA) key messages, specifies the maximum number of times (0 to 20 retries) that the controller retransmits the message to a wireless client. The default value is 2.
rsn-capability-validation {**enable** | **disable**}	Allows you to enable or disable RSN-capability (2-Byte in EAPOL-M2 frame) validation with respect to association request.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.5.151.0 8.10	The **rsn-capability-validation** parameter was added.

The following example shows how to configure the key index used for dynamic wired equivalent privacy (WEP):

```
(Cisco Controller) > config advanced eap key-index 0
```

config advanced fastpath fastcache

To configure the fastpath fast cache control, use the **config advanced fastpath fastcache** command.

config advanced fastpath fastcache {**enable** | **disable**}

Syntax Description

enable	Enables the fastpath fast cache control.
disable	Disables the fastpath fast cache control.

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 fastpath fast cache control:

```
(Cisco Controller) > config advanced fastpath fastcache enable
```

Related Commands **config advanced fastpath pkt-capture**

config advanced fastpath pkt-capture

To configure the fastpath packet capture, use the **config advanced fastpath pkt-capture** command.

config advanced fastpath pkt-capture {**enable** | **disable**}

Syntax Description

enable	Enables the fastpath packet capture.
disable	Disables the fastpath packet capture.

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 fastpath packet capture:

```
(Cisco Controller) > config advanced fastpath pkt-capture enable
```

Related Commands **config advanced fastpath fastcache**

config advanced hotspot

To configure advanced hotspot configurations, use the **config advanced hotspot** command.

config advanced hotspot {**anqp-4way** {**disable** | **enable** | **threshold** *value* } | **cmbk-delay** *value* | **garp** {**disable** | **enable** } | **gas-limit** {**disable** | **enable** } }

Syntax Description

anqp-4way	Enables, disables, or, configures the Access Network Query Protocol (ANQP) four way fragment threshold.
disable	Disables the ANQP four way message.
enable	Enables the ANQP four way message.
threshold	Configures the ANQP fourway fragment threshold.
value	ANQP four way fragment threshold value in bytes. The range is from 10 to 1500. The default value is 1500.
cmbk-delay	Configures the ANQP comeback delay in Time Units (TUs).

value	ANQP comeback delay in Time Units (TUs). 1 TU is defined by 802.11 as 1024 usec. The range is from 1 milliseconds to 30 seconds.
garp	Disables or enables the Gratuitous ARP (GARP) forwarding to wireless network.
disable	Disables the Gratuitous ARP (GARP) forwarding to wireless network.
enable	Enables the Gratuitous ARP (GARP) forwarding to wireless network.
gas-limit	Limits the number of Generic Advertisement Service (GAS) request action frames sent to the switch by an access point in a given interval.
disable	Disables the GAS request action frame limit on access points.
enable	Enables the GAS request action frame limit on access points.

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 configure the ANQP four way fragment threshold value:

```
(Cisco Controller) >config advanced hotspot anqp-4way threshold 200
```

config advanced max-1x-sessions

To configure the maximum number of simultaneous 802.1X sessions allowed per access point, use the **config advanced max-1x-sessions** command.

config advanced max-1x-sessions *no_of_sessions*

Syntax Description

no_of_sessions	Number of maximum 802.1x session initiation per AP at a time. The range is from 0 to 255, where 0 indicates unlimited.

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 configure the maximum number of simultaneous 802.1X sessions:

```
(Cisco Controller) >config advanced max-1x-sessions 200
```

config advanced rate

To configure switch control path rate limiting, use the **config advanced rate** command.

config advanced rate {**enable** | **disable**}

Syntax Description

enable	Enables the switch control path rate limiting feature.
disable	Disables the switch control path rate limiting feature.

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 switch control path rate limiting:

```
(Cisco Controller) >config advanced rate enable
```

config advanced sip-preferred-call-no

To configure voice prioritization, use the **config advanced sip-preferred-call-no** command.

config advanced sip-preferred-call-no *call_index* {*call_number* | **none**}

Syntax Description

call_index	Call index with valid values between 1 and 6.
call_number	Preferred call number that can contain up to 27 characters.
none	Deletes the preferred call set for the specified index.

Command Default

None

Usage Guidelines

Before you configure voice prioritization, you must complete the following prerequisites:

- Set the voice to the platinum QoS level by entering the **config wlan qos** *wlan-id* **platinum** command.
- Enable the admission control (ACM) to this radio by entering the **config 802.11** {**a** | **b**} **cac** {**voice** | **video**} **acm enable** command.
- Enable the call-snooping feature for a particular WLAN by entering the **config wlan call-snoop enable** *wlan-id* command.

  To view statistics about preferred calls, enter the **show ap stats** {**802.11**{**a** | **b**} | **wlan**} *cisco_ap* command.

Command History

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

The following example shows how to add a new preferred call for index 2:

```
(Cisco Controller) > config advanced sip-preferred-call-no 2 0123456789
```

Related Commands

config wlan qos

config 802.11 cac video acm

config 802.11 cac voice acm

config wlan call-snoop

show ap stats

config advanced sip-snooping-ports

To configure call snooping ports, use the **config advanced sip-snooping-ports** command.

config advanced sip-snooping-ports *start_port end_port*

Syntax Description

start_port	Starting port for call snooping. The range is from 0 to 65535.
end_port	Ending port for call snooping. The range is from 0 to 65535.

Usage Guidelines

If you need only a single port for call snooping, configure the start and end port with the same number.

The port used by the CIUS tablet is 5060 and the port range used by Facetime is from 16384 to16402.

Command History

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

The following example shows how to configure the call snooping ports:

```
(Cisco Controller) > config advanced sip-snooping-ports 4000 4500
```

Related Commands

show cac voice stats

show cac voice summary

show cac video stats

show cac video summary

config 802.11 cac video sip

config 802.11 cac voice sip

show advanced sip-preferred-call-no

show advanced sip-snooping-ports

debug cac

config advanced statistics

To enable or disable the Cisco wireless LAN controller port statistics collection, use the **config advanced statistics** command.

config advanced statistics {**enable** | **disable**}

Syntax Description

enable	Enables the switch port statistics collection.
disable	Disables the switch port statistics collection.

Command Default

The default switch port statistics collection value is enable.

Command History

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

The following example shows how to disable the switch port statistics collection settings:

```
(Cisco Controller) > config advanced statistics disable
```

config advanced probe limit

To limit the number of probes sent to the WLAN controller per access point per client in a given interval, use the **config advanced probe limit** command.

config advanced probe limit *num_probes interval*

Syntax Description

num_probes	Number of probe requests (from 1 to 100) forwarded to the controller per client per access point radio in a given interval.
interval	Probe limit interval (from 100 to 10000 milliseconds).

Command Default

The default number of probe requests is 2. The default interval is 500 milliseconds.

Command History

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

This example shows how to set the number of probes per access point per client to 5 and the probe interval to 800 milliseconds:

```
(Cisco Controller) >config advanced probe limit 5 800
```

config advanced timers

To configure an advanced system timer, use the **config advanced timers** command.

config advanced timers { **ap-coverage-report** *seconds* | **ap-discovery-timeout** *discovery-timeout* | **ap-fast-heartbeat** { **local** | **flexconnect** | **all** } { **enable** | **disable** } *fast_heartbeat_seconds* | **ap-heartbeat-timeout** *heartbeat_seconds* | **ap-primary-discovery-timeout** *primary_discovery_timeout* | **ap-primed-join-timeout** *primed_join_timeout* | **auth-timeout** *auth_timeout* | **pkt-fwd-watchdog** { **enable** | **disable** } { *watchdog_timer* | **default** } | **eap-identity-request-delay** *eap_identity_request_delay* | **eap-timeout** *eap_timeout* }

Syntax Description

ap-coverage-report	Configures RRM coverage report interval for all APs.
seconds	Configures the ap coverage report interval in seconds. The range is between 60 and 90 seconds. Default is 90 seconds.
ap-discovery-timeout	Configures the Cisco lightweight access point discovery timeout value.
discovery-timeout	Cisco lightweight access point discovery timeout value, in seconds. The range is from 1 to 10.
ap-fast-heartbeat	Configures the fast heartbeat timer, which reduces the amount of time it takes to detect a controller failure in access points.
local	Configures the fast heartbeat interval for access points in local mode.
flexconnect	Configures the fast heartbeat interval for access points in FlexConnect mode.
all	Configures the fast heartbeat interval for all the access points.
enable	Enables the fast heartbeat interval.
disable	Disables the fast heartbeat interval.
fast_heartbeat_seconds	Small heartbeat interval, which reduces the amount of time it takes to detect a controller failure, in seconds. The range is from 1 to 10.
ap-heartbeat-timeout	Configures Cisco lightweight access point heartbeat timeout value.
heartbeat_seconds	Cisco the Cisco lightweight access point heartbeat timeout value, in seconds. The range is from 1 to 30. This value should be at least three times larger than the fast heartbeat timer.
ap-primary-discovery-timeout	Configures the access point primary discovery request timer.
primary_discovery_timeout	Access point primary discovery request time, in seconds. The range is from 30 to 3600.
ap-primed-join-timeout	Configures the access point primed discovery timeout value.
primed_join_timeout	Access point primed discovery timeout value, in seconds. The range is from 120 to 43200.

auth-timeout	Configures the authentication timeout.
auth_timeout	Authentication response timeout value, in seconds. The range is from 10 to 600.
pkt-fwd-watchdog	Configures the packet forwarding watchdog timer to protect from fastpath deadlock.
watchdog_timer	Packet forwarding watchdog timer, in seconds. The range is from 60 to 300.
default	Configures the watchdog timer to the default value of 240 seconds.
eap-identity-request-delay	Configures the advanced Extensible Authentication Protocol (EAP) identity request delay, in seconds.
eap_identity_request_delay	Advanced EAP identity request delay, in seconds. The range is from 0 to 10.
eap-timeout	Configures the EAP expiration timeout.
eap_timeout	EAP timeout value, in seconds. The range is from 8 to 120.

Command Default

- The default access point discovery timeout is 10 seconds.
- The default access point heartbeat timeout is 30 seconds.
- The default access point primary discovery request timer is 120 seconds.
- The default authentication timeout is 10 seconds.
- The default packet forwarding watchdog timer is 240 seconds.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.3	This command was enhanced.
8.6	This command was enhanced with new keyword in Release 8.6. The new keyword added is **ap-coverage-report**.

Usage Guidelines

The Cisco lightweight access point discovery timeout indicates how often a controller attempts to discover unconnected Cisco lightweight access points.

The Cisco lightweight access point heartbeat timeout controls how often the Cisco lightweight access point sends a heartbeat keepalive signal to the Cisco Wireless Controller.

The following example shows how to configure an access point discovery timeout with a timeout value of 20:

```
(Cisco Controller) >config advanced timers ap-discovery-timeout 20
```

The following example shows how to enable the fast heartbeat interval for an access point in FlexConnect mode:

```
(Cisco Controller) >config advanced timers ap-fast-heartbeat flexconnect enable 8
```

The following example shows how to configure the authentication timeout to 20 seconds:

```
(Cisco Controller) >config advanced timers auth-timeout 20
```

config advanced timers ap-fast-heartbeat

To configure the fast heartbeat timer which reduces the amount of time it takes to detect a controller failure for local, FlexConnect, or all access points, use the **config advanced timers ap-fast-heartbeat** command.

config advanced timers ap-fast-heartbeat {**local** | **flexconnect** | **all**} {**enable** | **disable** } *interval*

Syntax Description

local	Configures the fast heartbeat interval for access points in local mode only.
flexconnect	Configures the fast heartbeat interval for access points in FlexConnect mode only.
all	Configures the fast heartbeat interval for all access points.
enable	Enables the fast heartbeat interval.
disable	Disables the fast heartbeat interval.
interval	Small heartbeat interval (between 1 and 10 seconds, inclusive), which reduces the amount of time it takes to detect a controller failure.

Command Default

The default state of the command is disabled state.

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 fast heartbeat interval for access point in local mode:

```
(Cisco Controller) >config advanced timers ap-fast-heartbeat local enable 5
```

The following example shows how to enable the fast heartbeat interval for access point in FlexConnect mode:

```
(Cisco Controller) >config advanced timers ap-fast-heartbeat flexconnect enable 8
```

The following example shows how to enable the fast heartbeat interval for all access points:

```
(Cisco Controller) >config advanced timers ap-fast-heartbeat all enable 6
```

The following example shows how to disable the fast heartbeat interval for all access point:

```
(Cisco Controller) >config advanced timers ap-fast-heartbeat all disable
```

config advanced timers ap-heartbeat-timeout

To configure the Cisco lightweight access point heartbeat timeout, use the **config advanced timers ap-heartbeat-timeout** command.

config advanced timers ap-heartbeat-timeout *seconds*

Syntax Description

seconds	Cisco lightweight access point heartbeat timeout value between 1 and 30 seconds.

Command Default

The default Cisco lightweight access point heartbeat timeout value is 30 seconds.

Command History

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

Usage Guidelines

The Cisco lightweight access point heartbeat timeout controls how often the Cisco lightweight access point sends a heartbeat keep-alive signal to the Cisco wireless LAN controller.

This *seconds* value should be at least three times larger than the fast heartbeat timer.

The following example shows how to configure an access point heartbeat timeout to 20:

```
(Cisco Controller) >config advanced timers ap-heartbeat-timeout 20
```

config advanced timers ap-primary-discovery-timeout

To configure the access point primary discovery request timer, use the **config advanced timers ap-primary-discovery-timeout** command.

config advanced timers ap-primary-discovery-timeout *interval*

Syntax Description

interval	Access point primary discovery request timer between 30 and 3600 seconds.

Command Default

The default access point primary discovery request timer value is 120 seconds.

Command History

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

This example shows how to configure the access point primary discovery request timer to 1200 seconds:

```
(Cisco Controller) >config advanced timers ap-primary-discovery-timeout 1200
```

config advanced timers auth-timeout

To configure the authentication timeout, use the **config advanced timers auth-timeout** command.

config advanced timers auth-timeout *seconds*

Syntax Description

seconds	Authentication response timeout value in seconds between 10 and 600.

Command Default

The default authentication timeout value is 10 seconds.

Command History

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

The following example shows how to configure the authentication timeout to 20 seconds:

```
(Cisco Controller) >config advanced timers auth-timeout 20
```

config advanced timers eap-timeout

To configure the Extensible Authentication Protocol (EAP) expiration timeout, use the **config advanced timers eap-timeout** command.

config advanced timers eap-timeout *seconds*

Syntax Description

seconds	EAP timeout value in seconds between 8 and 120.

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 configure the EAP expiration timeout to 10 seconds:

```
(Cisco Controller) >config advanced timers eap-timeout 10
```

config advanced timers eap-identity-request-delay

To configure the advanced Extensible Authentication Protocol (EAP) identity request delay in seconds, use the **config advanced timers eap-identity-request-delay** command.

config advanced timers eap-identity-request-delay *seconds*

Syntax Description

seconds	Advanced EAP identity request delay in number of seconds between 0 and 10.

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 configure the advanced EAP identity request delay to 8 seconds:

```
(Cisco Controller) >config advanced timers eap-identity-request-delay 8
```

Configure Access Point Commands

Use the **config ap** commands to configure access point settings.

config ap

To configure a Cisco lightweight access point or to add or delete a third-party (foreign) access point, use the **config ap** command.

config ap {{**enable** | **disable**} *cisco_ap* | {**add** | **delete**} *MAC port* {**enable** | **disable**} *IP_address*}

Syntax Description

enable	Enables the Cisco lightweight access point.
disable	Disables the Cisco lightweight access point.
cisco_ap	Name of the Cisco lightweight access point.
add	Adds foreign access points.
delete	Deletes foreign access points.
MAC	MAC address of a foreign access point.
port	Port number through which the foreign access point can be reached.
IP_address	IP address of the foreign access point.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6.

The following example shows how to disable lightweight access point AP1:

```
(Cisco Controller) >config ap disable AP1
```

The following example shows how to add a foreign access point with MAC address 12:12:12:12:12:12 and IP address 192.12.12.1 from port 2033:

```
(Cisco Controller) >config ap add 12:12:12:12:12:12 2033 enable 192.12.12.1
```

config ap bhrate

To configure the Cisco bridge backhaul Tx rate, use the **config ap bhrate** command.

config ap bhrate {*rate* | **auto**} *cisco_ap*

Syntax Description

rate	Cisco bridge backhaul Tx rate in kbps. The valid values are 6000, 12000, 18000, 24000, 36000, 48000, and 54000.
auto	Configures the auto data rate.
cisco_ap	Name of a Cisco lightweight access point.

Command Default

The default status of the command is set to Auto.

Command History

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

Usage Guidelines

In previous software releases, the default value for the bridge data rate was 24000 (24 Mbps). In Cisco WLC Release 6.0, the default value for the bridge data rate is **auto**. If you configured the default bridge data rate value (24000) in a previous Cisco WLC release, the bridge data rate is configured with the new default value (auto) when you upgrade to Cisco WLC Release 6.0. However, if you configured a non default value (for example, 18000) in a previous Cisco WLC software release, that configuration setting is preserved when you upgrade to software release 6.0.

When the bridge data rate is set to **auto**, the mesh backhaul chooses the highest rate where the next higher rate cannot be used due to unsuitable conditions for that specific rate (and not because of conditions that affect all rates).

The following example shows how to configure the Cisco bridge backhaul Tx rate to 54000 kbps:

```
(Cisco Controller) >config ap bhrate 54000 AP1
```

config ap autoconvert

To automatically convert all access points to FlexConnect mode or Monitor mode upon associating with the controller, use the **config ap autoconvert** command.

config ap autoconvert {**flexconnect** | **monitor** | **disable**}

Syntax Description

flexconnect	Configures all the access points automatically to FlexConnect mode.
monitor	Configures all the access points automatically to monitor mode.
disable	Disables the autoconvert option on the access points.

Command Default

None

Command History

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

Usage Guidelines

When access points in local mode connect to a Cisco 7500 Series Wireless Controller, they do not serve clients. The access point details are available in the controller. To enable access points to serve clients or perform monitoring related tasks when connected to the Cisco 7500 Series Wireless Controller, the access points must be in FlexConnect mode or Monitor mode.

The command can also be used for conversion of AP modes in Cisco 5520, 8540, and 8510 Series Wireless Controller platforms.

The following example shows how to automatically convert all access points to the FlexConnect mode:

```
(Cisco Controller) >config ap autoconvert flexconnect
```

The following example shows how to disable the autoconvert option on the APs:

```
(Cisco Controller) >config ap autoconvert disable
```

config ap bridgegroupname

To set or delete a bridge group name on a Cisco lightweight access point, use the **config ap bridgegroupname** command.

config ap bridgegroupname {**set** *groupname* | **delete** | {**strict-matching** {**enable** | **disable**}}}*cisco_ap*

Syntax Description

set	Sets a Cisco lightweight access point's bridge group name.
groupname	Bridge group name.
delete	Deletes a Cisco lightweight access point's bridge group name.
cisco_ap	Name of a Cisco lightweight access point.
strict-matching	Restricts the possible parent list, if the MAP has a non-default BGN, and the potential parent has a different BGN
enable	Enables a Cisco lightweight access point's group name.
disable	Disables a Cisco lightweight access point's group name.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	The **strict-matching** parameter was added.

Usage Guidelines

Only access points with the same bridge group name can connect to each other. Changing the AP bridgegroupname may strand the bridge AP.

The following example shows how to delete a bridge group name on Cisco access point's bridge group name AP02:

```
(Cisco Controller) >config ap bridgegroupname delete AP02
Changing the AP's bridgegroupname may strand the bridge AP. Please continue with caution.
Changing the AP's bridgegroupname will also cause the AP to reboot.
Are you sure you want to continue? (y/n)
```

config ap bridging

To configure Ethernet-to-Ethernet bridging on a Cisco lightweight access point, use the **config ap bridging** command.

config ap bridging {**enable** | **disable**} *cisco_ap*

Syntax Description

enable	Enables the Ethernet-to-Ethernet bridging on a Cisco lightweight access point.
disable	Disables Ethernet-to-Ethernet bridging.
cisco_ap	Name of a Cisco lightweight access point.

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 bridging on an access point:

```
(Cisco Controller) >config ap bridging enable nyc04-44-1240
```

The following example shows hot to disable bridging on an access point:

```
(Cisco Controller) >config ap bridging disable nyc04-44-1240
```

config ap cdp

To configure the Cisco Discovery Protocol (CDP) on a Cisco lightweight access point, use the **config ap cdp** command.

config ap cdp {**enable** | **disable** | **interface** {**ethernet** *interface_number* | **slot** *slot_id*}} {*cisco_ap* | **all**}

Syntax Description

enable	Enables CDP on an access point.
disable	Disables CDP on an access point.

interface	Configures CDP in a specific interface.
ethernet	Configures CDP for an ethernet interface.
interface_number	Ethernet interface number between 0 and 3.
slot	Configures CDP for a radio interface.
slot_id	Slot number between 0 and 3.
cisco_ap	Name of a Cisco lightweight access point.
all	Specifies all access points.

Note If an AP itself is configured with the keyword **all**, the all access points case takes precedence over the AP that is with the keyword **all**.

Command Default

Enabled on radio interfaces of mesh APs and disabled on radio interfaces of non-mesh APs. Enabled on Ethernet interfaces of all APs.

Command History

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

Usage Guidelines

The **config ap cdp disable all** command disables CDP on all access points that are joined to the controller and all access points that join in the future. CDP remains disabled on both current and future access points even after the controller or access point reboots. To enable CDP, enter the **config ap cdp enable all** command.

Note CDP over Ethernet/radio interfaces is available only when CDP is enabled. After you enable CDP on all access points joined to the controller, you may disable and then reenable CDP on individual access points using the **config ap cdp** {**enable** | **disable**} *cisco_ap command*. After you disable CDP on all access points joined to the controller, you may not enable and then disable CDP on individual access points.

The following example shows how to enable CDP on all access points:

```
(Cisco Controller) >config ap cdp enable all
```

The following example shows how to disable CDP on ap02 access point:

```
(Cisco Controller) >config ap cdp disable ap02
```

The following example shows how to enable CDP for Ethernet interface number 2 on all access points:

```
(Cisco Controller) >config ap cdp ethernet 2 enable all
```

config ap core-dump

To configure a Cisco lightweight access point's memory core dump, use the **config ap core-dump** command.

config ap core-dump {**disable** | **enable** *tftp_server_ipaddress filename* {**compress** | **uncompress**} {*cisco_ap* | **all**}

Syntax Description

enable	Enables the Cisco lightweight access point's memory core dump setting.
disable	Disables the Cisco lightweight access point's memory core dump setting.
tftp_server_ipaddress	IP address of the TFTP server to which the access point sends core dump files.
filename	Name that the access point uses to label the core file.
compress	Compresses the core dump file.
uncompress	Uncompresses the core dump file.
cisco_ap	Name of a Cisco lightweight access point.
all	Specifies all access points.

Note If an AP itself is configured with the name 'all', then the 'all access points' case takes precedence over the AP that is named 'all'.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6.

Usage Guidelines

The access point must be able to reach the TFTP server. This command is applicable for both IPv4 and IPv6 addresses.

The following example shows how to configure and compress the core dump file:

```
(Cisco Controller) >config ap core-dump enable 209.165.200.225 log compress AP02
```

config ap crash-file clear-all

To delete all crash and radio core dump files, use the **config ap crash-file clear-all** command.

config ap crash-file clear-all

Syntax Description

This command has no arguments or keywords.

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 delete all crash files:

```
(Cisco Controller) >config ap crash-file clear-all
```

config ap crash-file delete

To delete a single crash or radio core dump file, use the **config ap crash-file delete** command.

config ap crash-file delete *filename*

Syntax Description

filename	Name of the file to delete.

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 delete crash file 1:

```
(Cisco Controller) >config ap crash-file delete crash_file_1
```

config ap crash-file get-crash-file

To collect the latest crash data for a Cisco lightweight access point, use the **config ap crash-file get-crash-file** command.

config ap crash-file get-crash-file *cisco_ap*

Syntax Description

cisco_ap	Name of the Cisco lightweight access point.

Command Default None

Command History

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

Usage Guidelines Use the **transfer upload datatype** command to transfer the collected data to the Cisco wireless LAN controller.

The following example shows how to collect the latest crash data for access point AP3:

```
(Cisco Controller) >config ap crash-file get-crash-file AP3
```

config ap crash-file get-radio-core-dump

To get a Cisco lightweight access point's radio core dump, use the **config ap crash-file get-radio-core-dump** command.

config ap crash-file get-radio-core-dump *slot_id cisco_ap*

Syntax Description

slot_id	Slot ID (either 0 or 1).
cisco_ap	Name of a Cisco lightweight access point.

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 collect the radio core dump for access point AP02 and slot 0:

```
(Cisco Controller) >config ap crash-file get-radio-core-dump 0 AP02
```

config ap 802.1Xuser

To configure the global authentication username and password for all access points currently associated with the controller as well as any access points that associate with the controller in the future, use the **config ap 802.1Xuser** command.

config ap 802.1Xuser add username *ap-username* **password** *ap-password* {**all** | *cisco_ap*}

Syntax Description

add username	Specifies to add a username.
ap-username	Username on the Cisco AP.
password	Specifies to add a password.
ap-password	Password.
cisco_ap	Specific access point.
all	Specifies all access points.

Command Default None

Command History

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

Usage Guidelines

You must enter a strong *password*. Strong passwords have the following characteristics:

- They are at least eight characters long.
- They contain a combination of uppercase and lowercase letters, numbers, and symbols.
- They are not a word in any language.

You can set the values for a specific access point.

This example shows how to configure the global authentication username and password for all access points:

```
(Cisco Controller) >config ap 802.1Xuser add username cisco123 password cisco2020 all
```

config ap 802.1Xuser delete

To force a specific access point to use the controller's global authentication settings, use the **config ap 802.1Xuser delete** command.

config ap 802.1Xuser delete *cisco_ap*

Syntax Description

cisco_ap	Access point.

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 delete access point AP01 to use the controller's global authentication settings:

```
(Cisco Controller) >config ap 802.1Xuser delete AP01
```

config ap 802.1Xuser disable

To disable authentication for all access points or for a specific access point, use the **config ap 802.1Xuser disable** command.

config ap 802.1Xuser disable {**all** | *cisco_ap*}

Syntax Description

disable	Disables authentication.

all	Specifies all access points.
cisco_ap	Access point.

Command Default

None

Command History

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

Usage Guidelines

You can disable 802.1X authentication for a specific access point only if global 802.1X authentication is not enabled. If global 802.1X authentication is enabled, you can disable 802.1X for all access points only.

The following example shows how to disable the authentication for access point cisco_ap1:

```
(Cisco Controller) >config ap 802.1Xuser disable
```

config ap ethernet duplex

To configure the Ethernet port duplex and speed settings of the lightweight access points, use the **config ap ethernet duplex** command.

config ap ethernet duplex [**auto** | **half** | **full**] **speed** [**auto** | **10** | **100** | **1000**] { **all** | *cisco_ap*}

Syntax Description

auto	(Optional) Specifies the Ethernet port duplex auto settings.
half	(Optional) Specifies the Ethernet port duplex half settings.
full	(Optional) Specifies the Ethernet port duplex full settings.
speed	Specifies the Ethernet port speed settings.
auto	(Optional) Specifies the Ethernet port speed to auto.
10	(Optional) Specifies the Ethernet port speed to 10 Mbps.
100	(Optional) Specifies the Ethernet port speed to 100 Mbps.
1000	(Optional) Specifies the Ethernet port speed to 1000 Mbps.
all	Specifies the Ethernet port setting for all connected access points.
cisco_ap	Cisco access point.

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 configure the Ethernet port duplex half settings as 10 Mbps for all access points:

```
(Cisco Controller) >config ap ethernet duplex half speed 10 all
```

config ap ethernet tag

To configure VLAN tagging of the Control and Provisioning of Wireless Access Points protocol (CAPWAP) packets, use the **config ap ethernet tag** command.

config ap ethernet tag {**id** *vlan_id* | **disable**} {*cisco_ap* | **all**}

Syntax Description

id	Specifies the VLAN id.
vlan_id	ID of the trunk VLAN.
disable	Disables the VLAN tag feature. When you disable VLAN tagging, the access point untags the CAPWAP packets.
cisco_ap	Name of the Cisco AP.
all	Configures VLAN tagging on all the Cisco access points.

Command Default None

Command History

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

Usage Guidelines

After you configure VLAN tagging, the configuration comes into effect only after the access point reboots.

You cannot configure VLAN tagging on mesh access points.

If the access point is unable to route traffic or reach the controller using the specified trunk VLAN, it falls back to the untagged configuration. If the access point joins the controller using this fallback configuration, the controller sends a trap to a trap server such as the Cisco Prime Infrastructure, which indicates the failure of the trunk VLAN. In this scenario, the "Failover to untagged" message appears in show command output.

The following example shows how to configure VLAN tagging on a trunk VLAN:

```
(Cisco Controller) >config ap ethernet tag 6 AP1
```

config ap group-name

To specify a descriptive group name for a Cisco lightweight access point, use the **config ap group-name** command.

config ap group-name *groupname cisco_ap*

Syntax Description

groupname	Descriptive name for the access point group.
cisco_ap	Name of the Cisco lightweight access point.

Command Default

None

Command History

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

Usage Guidelines

The Cisco lightweight access point must be disabled before changing this parameter.

The following example shows how to configure a descriptive name for access point AP01:

```
(Cisco Controller) >config ap group-name superusers AP01
```

config ap flexconnect central-dhcp

To enable central-DHCP on a FlexConnect access point in a WLAN, use the **config ap flexconnect central-dhcp** command.

config ap flexconnect central-dhcp *wlan_id cisco_ap* [**add** | **delete**] {**enable** | **disable**} **override dns** {**enable** | **disable**} **nat-pat** {**enable** | **disable**}

Syntax Description

wlan_id	Wireless LAN identifier from 1 to 512.
cisco_ap	Name of the Cisco lightweight access point.
add	(Optional) Adds a new WLAN DHCP mapping.
delete	(Optional) Deletes a WLAN DHCP mapping.
enable	Enables central-DHCP on a FlexConnect access point. When you enable this feature, the DHCP packets received from the access point are centrally switched to the controller and then forwarded to the corresponding VLAN based on the AP and the SSID.
disable	Disables central-DHCP on a FlexConnect access point.
override dns	Overrides the DNS server address on the interface assigned by the controller. When you override DNS in centrally switched WLANs, the clients get their DNS server IP address from the AP and not from the controller.
enable	Enables the Override DNS feature on a FlexConnect access point.

disable	Disables the Override DNS feature on a FlexConnect access point.
nat-pat	Network Address Translation (NAT) and Port Address Translation (PAT) that you can enable or disable.
enable	Enables NAT-PAT on a FlexConnect access point.
disable	Deletes NAT-PAT on a FlexConnect access point.

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 central-DHCP, Override DNS, and NAT-PAT on a FlexConnect access point:

```
(Cisco Controller) >config ap flexconnect central-dhcp 1 ap1250 enable override dns enable
 nat-pat enable
```

config ap flexconnect local-split

To configure a local-split tunnel on a FlexConnect access point, use the **config ap flexconnect local-split** command.

config ap flexconnect local-split *wlan_id cisco_ap* {**enable** | **disable**} **acl** *acl_name*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
cisco_ap	Name of the FlexConnect access point.
enable	Enables local-split tunnel on a FlexConnect access point.
disable	Disables local-split tunnel feature on a FlexConnect access point.
acl	Configures a FlexConnect local-split access control list.
acl_name	Name of the FlexConnect access control list.

Command Default

None

Command History

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

Usage Guidelines

This command allows you to configure a local-split tunnel in a centrally switched WLAN using a FlexConnect ACL. A local split tunnel supports only for unicast Layer 4 IP traffic as NAT/PAT does not support multicast IP traffic.

The following example shows how to configure a local-split tunnel using a FlexConnect ACL:

```
(Cisco Controller) >config ap flexconnect local-split 6 AP2 enable acl flex6
```

config ap flexconnect radius auth set

To configure a primary or secondary RADIUS server for a specific FlexConnect access point, use the **config ap flexconnect radius auth set** command.

config ap flexconnect radius auth set {**primary** | **secondary**} *ip_address auth_port secret*

Syntax Description

primary	Specifies the primary RADIUS server for a specific FlexConnect access point
secondary	Specifies the secondary RADIUS server for a specific FlexConnect AP
ip_address	IP address of the RADIUS server
auth_port secret	Name of the port
secret	RADIUS server secret

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 configure a primary RADIUS server for a specific access point:

```
(Cisco Controller) >config ap flexconnect radius auth set primary 192.12.12.1
```

config ap flexconnect vlan

To enable or disable VLAN tagging for a FlexConnect access, use the **config ap flexconnect vlan** command.

config ap flexconnect vlan { **enable** | **disable** } *cisco_ap*

Syntax Description

enable	Enables the access point's VLAN tagging.
disable	Disables the access point's VLAN tagging.
cisco_ap	Name of the Cisco lightweight access point.

Command Default Disabled. Once enabled, WLANs enabled for local switching inherit the VLAN assigned at the controller.

Command History

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

This example shows how to enable the access point's VLAN tagging for a FlexConnect access:

```
(Cisco Controller) >config ap flexconnect vlan enable AP02
```

config ap flexconnect vlan add

To add a VLAN to a FlexConnect access point, use the **config ap flexconnect vlan add** command.

config ap flexconnect vlan add *vlan-id acl in-acl out-acl cisco_ap*

Syntax Description

vlan-id	VLAN identifier.
acl	ACL name that contains up to 32 alphanumeric characters.
in-acl	Inbound ACL name that contains up to 32 alphanumeric characters.
out-acl	Outbound ACL name that contains up to 32 alphanumeric characters.
cisco_ap	Name of the Cisco lightweight access point.

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 configure the FlexConnect access point:

```
(Cisco Controller) >config ap flexconnect vlan add 21 acl inacl1 outacl1 ap1
```

config ap flexconnect vlan native

To configure a native VLAN for a FlexConnect access point, use the **config ap flexconnect vlan native** command.

config ap flexconnect vlan native *vlan-id cisco_ap*

Syntax Description

vlan-id	VLAN identifier.
cisco_ap	Name of the Cisco lightweight access point.

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 configure a native VLAN for a FlexConnect access point mode:

```
(Cisco Controller) >config ap flexconnect vlan native 6 AP02
```

config ap flexconnect web-auth

To configure a FlexConnect ACL for external web authentication in locally switched WLANs, use the **config ap flexconnect web-auth** command.

config ap flexconnect web-auth wlan *wlan_id cisco_ap acl_name* { **enable** | **disable** }

Syntax Description

wlan	Specifies the wireless LAN to be configured with a FlexConnect ACL.
wlan_id	Wireless LAN identifier between 1 and 512 (inclusive).
cisco_ap	Name of the FlexConnect access point.
acl_name	Name of the FlexConnect ACL.
enable	Enables the FlexConnect ACL on the locally switched wireless LAN.
disable	Disables the FlexConnect ACL on the locally switched wireless LAN.

Command Default

FlexConnect ACL for external web authentication in locally switched WLANs is disabled.

Command History

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

Usage Guidelines

The FlexConnect ACLs that are specific to an AP have the highest priority. The FlexConnect ACLs that are specific to WLANs have the lowest priority.

The following example shows how to enable FlexConnect ACL for external web authentication on WLAN 6:

```
(Cisco Controller) >config ap flexconnect web-auth wlan 6 AP2 flexacl2 enable
```

config ap flexconnect vlan wlan

To assign a VLAN ID to a FlexConnect access point, use the **config ap flexconnect vlan wlan** command.

config ap flexconnect vlan wlan *wlan-id vlan-id cisco_ap*

Syntax Description

wlan-id	WLAN identifier

vlan-id	VLAN identifier (1 - 4094).
cisco_ap	Name of the Cisco lightweight access point.

Command Default VLAN ID associated to the WLAN.

Command History

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

The following example shows how to assign a VLAN ID to a FlexConnect access point:

```
(Cisco Controller) >config ap flexconnect vlan wlan 192.12.12.1 6 AP02
```

config ap flexconnect web-policy acl

To configure a Web Policy FlexConnect ACL on an access point, use the **config ap flexconnect web-policy acl** command.

config ap flexconnect web-policy acl {**add** | **delete**} *acl_name*

Syntax Description

add	Adds a Web Policy FlexConnect ACL on an access point.
delete	Deletes Web Policy FlexConnect ACL on an access point.
acl_name	Name of the Web Policy FlexConnect ACL.

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 add a Web Policy FlexConnect ACL on an access point:

```
(Cisco Controller) >config ap flexconnect web-policy acl add flexacl2
```

config ap hotspot

To configure hotspot parameters on an access point, use the **config ap hotspot** command.

config ap hotspot venue {**type** *group_code type_code* | **name** {**add** *language_code venue_name* | **delete**}} *cisco_ap*

Syntax Description

venue	Configures venue information for given AP group.
type	Configures the type of venue for given AP group.

group_code	Venue group information for given AP group. The following options are available: • 0—UNSPECIFIED • 1—ASSEMBLY • 2—BUSINESS • 3—EDUCATIONAL • 4—FACTORY-INDUSTRIAL • 5—INSTITUTIONAL • 6—MERCANTILE • 7—RESIDENTIAL • 8—STORAGE • 9—UTILITY-MISC • 10—VEHICULAR • 11—OUTDOOR

type_code

Venue type information for the AP group.

For venue group 1 (ASSEMBLY), the following options are available:

- 0—UNSPECIFIED ASSEMBLY
- 1—ARENA
- 2—STADIUM
- 3—PASSENGER TERMINAL
- 4—AMPHITHEATER
- 5—AMUSEMENT PARK
- 6—PLACE OF WORSHIP
- 7—CONVENTION CENTER
- 8—LIBRARY
- 9—MUSEUM
- 10—RESTAURANT
- 11—THEATER
- 12—BAR
- 13—COFFEE SHOP
- 14—ZOO OR AQUARIUM
- 15—EMERGENCY COORDINATION CENTER

For venue group 2 (BUSINESS), the following options are available:

- 0—UNSPECIFIED BUSINESS
- 1—DOCTOR OR DENTIST OFFICE
- 2—BANK
- 3—FIRE STATION
- 4—POLICE STATION
- 6—POST OFFICE
- 7—PROFESSIONAL OFFICE
- 8—RESEARCH AND DEVELOPMENT FACILITY
- 9—ATTORNEY OFFICE

For venue group 3 (EDUCATIONAL), the following options are available:

- 0—UNSPECIFIED EDUCATIONAL
- 1—PRIMARY SCHOOL
- 2—SECONDARY SCHOOL

- 3—UNIVERSITY OR COLLEGE

For venue group 4 (FACTORY-INDUSTRIAL), the following options are available:

- 0—UNSPECIFIED FACTORY AND INDUSTRIAL
- 1—FACTORY

For venue group 5 (INSTITUTIONAL), the following options are available:

- 0—UNSPECIFIED INSTITUTIONAL
- 1—HOSPITAL
- 2—LONG-TERM CARE FACILITY
- 3—ALCOHOL AND DRUG RE-HABILITATION CENTER
- 4—GROUP HOME
- 5 :PRISON OR JAIL

type_code

For venue group 6 (MERCANTILE), the following options are available:

- 0—UNSPECIFIED MERCANTILE
- 1—RETAIL STORE
- 2—GROCERY MARKET
- 3—AUTOMOTIVE SERVICE STATION
- 4—SHOPPING MALL
- 5—GAS STATION

For venue group 7 (RESIDENTIAL), the following options are available:

- 0—UNSPECIFIED RESIDENTIAL
- 1—PRIVATE RESIDENCE
- 2—HOTEL OR MOTEL
- 3—DORMITORY
- 4—BOARDING HOUSE

For venue group 8 (STORAGE), the option is:

- 0—UNSPECIFIED STORAGE

For venue group 9 (UTILITY-MISC), the option is:

- 0—UNSPECIFIED UTILITY AND MISCELLANEOUS

For venue group 10 (VEHICULAR), the following options are available:

- 0—UNSPECIFIED VEHICULAR
- 1—AUTOMOBILE OR TRUCK
- 2—AIRPLANE
- 3—BUS
- 4—FERRY
- 5—SHIP OR BOAT
- 6—TRAIN
- 7—MOTOR BIKE

For venue group 11 (OUTDOOR), the following options are available:

- 0—UNSPECIFIED OUTDOOR
- 1—MINI-MESH NETWORK
- 2—CITY PARK
- 3—REST AREA

- 4—TRAFFIC CONTROL
- 5—BUS STOP
- 6—KIOSK

name	Configures the name of venue for this access point.
language_code	ISO-639 encoded string defining the language used at the venue. This string is a three-character language code. For example, you can enter ENG for English.
venue_name	Venue name for this access point. This name is associated with the basic service set (BSS) and is used in cases where the SSID does not provide enough information about the venue. The venue name is case sensitive and can be up to 252 alphanumeric characters.
add	Adds the HotSpot venue name for this access point.
delete	Deletes the HotSpot venue name for this access point.
cisco_ap	Name of the Cisco access point.

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 configure the venue group as educational and venue type as university:

```
(Cisco Controller) >config ap hotspot venue type 3 3
```

config ap image predownload

To configure an image on a specified access point, use the **config ap image predownload** command.

config ap image predownload {**abort** | **primary** | **backup**} {*cisco_ap* | **all**}

Syntax Description

abort	Terminates the predownload image process.
primary	Predownloads an image to a Cisco access point from the controller's primary image.
cisco_ap	Name of a Cisco lightweight access point.
all	Specifies all access points to predownload an image.

(Cisco Controller) >

Note If an AP itself is configured with the keyword **all**, the all access points case takes precedence over the AP that is with the keyword **all**.

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 predownload an image to an access point from the primary image:

```
(Cisco Controller) >config ap image predownload primary all
```

config ap image swap

To swap an access point's primary and backup images, use the **config ap image swap** command.

config ap image swap {*cisco_ap* | **all**}

Syntax Description

cisco_ap	Name of a Cisco lightweight access point.
all	Specifies all access points to interchange the boot images.

Note If an AP itself is configured with the keyword **all**, the all access points case takes precedence over the AP that is with the keyword **all**.

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 swap an access point's primary and secondary images:

```
(Cisco Controller) >config ap image swap all
```

config ap led-state

To configure the LED state of an access point or to configure the flashing of LEDs, use the **config ap led-state** command.

config ap led-state {**enable** | **disable**} {*cisco_ap* | **all**}

config ap led-state flash {*seconds* | **indefinite** | **disable**} {*cisco_ap* | **dual-band**}

Syntax Description

enable	Enables the LED state of an access point.
disable	Disables the LED state of an access point.
cisco_ap	Name of a Cisco lightweight access point.
flash	Configure the flashing of LEDs for an access point.
seconds	Duration that the LEDs have to flash. The range is from 1 to 3600 seconds.
indefinite	Configures indefinite flashing of the access point's LED.
dual-band	Configures the LED state for all dual-band access points.

Usage Guidelines

Note If an AP itself is configured with the keyword **all**, the all access points case takes precedence over the AP that is with the keyword **all**.

LEDs on access points with dual-band radio module will flash green and blue when you execute the led state flash command.

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 LED state for an access point:

```
(Cisco Controller) >config ap led-state enable AP02
```

The following example shows how to enable the flashing of LEDs for dual-band access points:

```
(Cisco Controller) >config ap led-state flash 20 dual-band
```

config ap link-encryption

To configure the Datagram Transport Layer Security (DTLS) data encryption for access points on the 5500 series controller, use the **config ap link-encryption** command.

Note If an AP itself is configured with the keyword **all**, the all access points case takes precedence over the AP that is with the keyword **all**.

config ap link-encryption {**enable** | **disable**} {*cisco_ap* | **all**}

Syntax Description

enable	Enables the DTLS data encryption for access points.
disable	Disables the DTLS data encryption for access points.
cisco_ap	Name of a Cisco lightweight access point.
all	Specifies all access points.

Command Default

DTLS data encryption is enabled automatically for OfficeExtend access points but disabled by default for all other access points.

Command History

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

Usage Guidelines

Only Cisco 5500 Series Controllers support DTLS data encryption. This feature is not available on other controller platforms. If an access point with data encryption enabled tries to join any other controller, the access point joins the controller, but data packets are sent unencrypted.

Only Cisco 1130, 1140, 1240, and 1250 series access points support DTLS data encryption, and data-encrypted access points can join a Cisco 5500 Series Controller only if the wplus license is installed on the controller. If the wplus license is not installed, the access points cannot join the controller.

The following example shows how to enable the data encryption for an access point:

```
(Cisco Controller) >config ap link-encryption enable AP02
```

config ap link-latency

To configure link latency for a specific access point or for all access points currently associated to the controller, use the **config ap link-latency** command:

Note If an AP itself is configured with the keyword **all**, the all access points case takes precedence over the AP that is with the keyword **all**.

config ap link-latency {**enable** | **disable** | **reset**} {*cisco_ap* | **all**}

Syntax Description

enable	Enables the link latency for an access point.
disable	Disables the link latency for an access point.

reset	Resets all link latency for all access points.
cisco_ap	Name of the Cisco lightweight access point.
all	Specifies all access points.

Command Default By default, link latency is in disabled state.

Command History

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

Usage Guidelines This command enables or disables link latency only for access points that are currently joined to the controller. It does not apply to access points that join in the future.

The following example shows how to enable the link latency for all access points:

```
(Cisco Controller) >config ap link-latency enable all
```

config ap location

To modify the descriptive location of a Cisco lightweight access point, use the **config ap location** command.

config ap location *location cisco_ap*

Syntax Description

location	Location name of the access point (enclosed by double quotation marks).
cisco_ap	Name of the Cisco lightweight access point.

Command Default None

Command History

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

Usage Guidelines The Cisco lightweight access point must be disabled before changing this parameter.

The following example shows how to configure the descriptive location for access point AP1:

```
(Cisco Controller) >config ap location "Building 1" AP1
```

config ap logging syslog level

To set the severity level for filtering syslog messages for a particular access point or for all access points, use the **config ap logging syslog level** command.

config ap logging syslog level *severity_level* {*cisco_ap* | **all**}

Syntax Description

severity_level	Severity levels are as follows: • emergencies—Severity level 0 • alerts—Severity level 1 • critical—Severity level 2 • errors—Severity level 3 • warnings—Severity level 4 • notifications—Severity level 5 • informational—Severity level 6 • debugging—Severity level 7
cisco_ap	Cisco access point.
all	Specifies all access points.

Note If an AP itself is configured with the keyword **all**, the all access points case takes precedence over the AP that is with the keyword **all**.

Command Default

None

Command History

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

Usage Guidelines

If you set a syslog level, only those messages whose severity is equal to or less than that level are sent to the access point. For example, if you set the syslog level to Warnings (severity level 4), only those messages whose severity is between 0 and 4 are sent to the access point.

This example shows how to set the severity for filtering syslog messages to 3:

```
(Cisco Controller) >config ap logging syslog level 3
```

config ap mgmtuser add

To configure username, password, and secret password for AP management, use the **config ap mgmtuser add** command.

config ap mgmtuser add username *AP_username* **password** *AP_password* **secret** *secret* {**all** | *cisco_ap*}

Syntax Description

username	Configures the username for AP management.
AP_username	Management username.

password	Configures the password for AP management.
AP_password	AP management password.
secret	Configures the secret password for privileged AP management.
secret	AP managemetn secret password.
all	Applies configuration to every AP that does not have a specific username.
cisco_ap	Cisco access point.

Command Default

None

Command History

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

Usage Guidelines

The following requirements are enforced on the password:

- The password should contain characters from at least three of the following classes: lowercase letters, uppercase letters, digits, and special characters.
- No character in the password can be repeated more than three times consecutively.
- The password sould not contain management username or reverse of usename.
- The password should not contain words like Cisco, oscic, admin, nimda or any variant obtained by changing the capitalization of letters by substituting 1, |, or ! or substituting 0 for o or substituting $ for s.

The following requirement is enforced on the secret password:

- The secret password should contain characters from at least three of the following classes: lowercase letters, uppercase letters, digits, or special characters.

The following example shows how to add a username, password, and secret password for AP management:

```
(Cisco Controller) > config ap mgmtuser add username acd password Arc_1234 secret Mid_45
all
```

config ap mgmtuser delete

To force a specific access point to use the controller's global credentials, use the **config ap mgmtuser delete** command.

config ap mgmtuser delete *cisco_ap*

Syntax Description

cisco_ap	Access point.

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 delete the credentials of an access point:

```
(Cisco Controller) > config ap mgmtuser delete cisco_ap1
```

config ap mode

To change a controller communication option for an individual Cisco lightweight access point, use the **config ap mode** command.

config ap mode {**bridge** | **flexconnect sensor submode** {**none** | **wips** | **pppoe-only** | **pppoe-wips**} | **local submode** {**none** | **wips**} | **reap** | **rogue** | **sniffer** | **se-connect** | **monitor submode** {**none** | **wips**} | **flex+bridge submode**{**none** | **wips** | **pppoe-only** | **pppoe-wips**} } *cisco_ap*

Syntax Description

bridge	Converts from a lightweight access point to a mesh access point (bridg
flexconnect	Enables FlexConnect mode on an access point.
local	Converts from an indoor mesh access point (MAP or RAP) to a nonm lightweight access point (local mode).
reap	Enables remote edge access point mode on an access point.
rogue	Enables wired rogue detector mode on an access point.
sniffer	Enables wireless sniffer mode on an access point.
se-connect	Enables flex+bridge mode on an access point.
flex+bridge	Enables spectrum expert mode on an access point.
submode	(Optional) Configures wIPS submode on an access point.
none	Disables the wIPS on an access point.
wips	Enables the wIPS submode on an access point.
pppoe-only	Enables the PPPoE submode on an access point.
pppoe-wips	Enables the PPPoE-wIPS submode on an access point.
sensor	Enables sensor mode for the Cisco AP
cisco_ap	Name of the Cisco lightweight access point.

Command Default Local

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	The **flex+bridge**keyword was added..
8.3	This command was modified. The **sensor**keyword was added.

Usage Guidelines

The sniffer mode captures and forwards all the packets from the clients on that channel to a remote machine that runs AiroPeek or other supported packet analyzer software. It includes information on the timestamp, signal strength, packet size and so on.

The following example shows how to set the controller to communicate with access point AP91 in bridge mode:

```
(Cisco Controller) > config ap mode bridge AP91
```

The following example shows how to set the controller to communicate with access point AP01 in local mode:

```
(Cisco Controller) > config ap mode local AP01
```

The following example shows how to set the controller to communicate with access point AP91 in remote office (REAP) mode:

```
(Cisco Controller) > config ap mode flexconnect AP91
```

The following example shows how to set the controller to communicate with access point AP91 in a wired rogue access point detector mode:

```
(Cisco Controller) > config ap mode rogue AP91
```

The following example shows how to set the controller to communicate with access point AP02 in wireless sniffer mode:

```
(Cisco Controller) > config ap mode sniffer AP02
```

config ap monitor-mode

To configure Cisco lightweight access point channel optimization, use the **config ap monitor-mode** command.

config ap monitor-mode {**802.11b fast-channel** | **no-optimization** | **tracking-opt** | **wips-optimized**} *cisco_ap*

Syntax Description

802.11b fast-channel	Configures 802.11b scanning channels for a monitor-mode access point.
no-optimization	Specifies no channel scanning optimization for the access point.
tracking-opt	Enables tracking optimized channel scanning for the access point.
wips-optimized	Enables wIPS optimized channel scanning for the access point.

cisco_ap	Name of the Cisco lightweight access point.

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 configure a Cisco wireless intrusion prevention system (wIPS) monitor mode on access point AP01:

```
(Cisco Controller) > config ap monitor-mode wips-optimized AP01
```

config ap packet-dump

To configure the Packet Capture parameters on access points, use the **config ap packet-dump** command.

config ap packet-dump {**buffer-size** *Size _in_KB* | **capture-time** *Time_in_Min* | **ftp serverip** *IP_addr* **path** *path* **username** *username***password** *password* | **start** *MAC_address Cisco_AP* | **stop** | **truncate** *Length_in_Bytes*}
config ap packet-dump classifier {{**arp** | **broadcast** | **control** | **data** | **dot1x** | **iapp** | **ip** | **management** | **multicast** } {**enable** | **disable**} | **tcp** {**enable** | **disable** | **port** *TCP_Port* {**enable** | **disable**}} | **udp** {**enable** | **disable** | **port** *UDP_Port* {**enable** | **disable**}}}

Syntax Description

buffer-size	Configures the buffer size for Packet Capture in the access point.
Size _in_KB	Size of the buffer. The range is from 1024 to 4096 KB.
capture-time	Configures the timer value for Packet Capture.
Time_in_Min	Timer value for Packet Capture. The range is from 1 to 60 minutes.
ftp	Configures FTP parameters for Packet Capture.
serverip	Configures the FTP server.
IP_addr	IP address of the FTP server.
path *path*	Configures FTP server path.
username *user_ID*	Configures the username for the FTP server.
password *password*	Configures the password for the FTP server.

start	Starts Packet Capture from the access point.
MAC_address	Client MAC Address for Packet Capture.
Cisco_AP	Name of the Cisco access point.
stop	Stops Packet Capture from the access point.
truncate	Truncates the packet to the specified length during Packet Capture.
Length_in_Bytes	Length of the packet after truncation. The range is from 20 to 1500.
classifier	Configures the classifier information for Packet Capture. You can specify the type of packets that needs to be captured.
arp	Captures ARP packets.
enable	Enables capture of ARP, broadcast, 802.11 control, 802.11 data, dot1x, Inter Access Point Protocol (IAPP), IP, 802.11 management, or multicast packets.
disable	Disables capture of ARP, broadcast, 802.11 control, 802.11 data, dot1x, IAPP, IP, 802.11management, or multicast packets.
broadcast	Captures broadcast packets.
control	Captures 802.11 control packets.
data	Captures 802.11 data packets.
dot1x	Captures dot1x packets.
iapp	Captures IAPP packets.
ip	Captures IP packets.
management	Captures 802.11 management packets.
multicast	Captures multicast packets.
tcp	Captures TCP packets.

TCP_Port	TCP port number. The range is from 1 to 65535.
udp	Captures TCP packets.
UDP_Port	UDP port number. The range is from 1 to 65535.
ftp	Configures FTP parameters for Packet Capture.
server_ip	FTP server IP address.

Command Default

The default buffer size is 2 MB. The default capture time is 10 minutes.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.
8.8	This command is not supported for Cisco Wave 2 APs. For more information, see CSCvj19314.

Usage Guidelines

Packet Capture does not work during intercontroller roaming.

The controller does not capture packets created in the radio firmware and sent out of the access point, such as a beacon or probe response. Only packets that flow through the Radio driver in the Tx path will be captured.

Use the command **config ap packet-dump start** to start the Packet Capture from the access point. When you start Packet Capture, the controller sends a Control and Provisioning of Wireless Access Points protocol (CAPWAP) message to the access point to which the client is associated and captures packets. You must configure the FTP server and ensure that the client is associated to the access point before you start Packet Capture. If the client is not associated to the access point, you must specify the name of the access point.

This command supports both IPv4 and IPv6 address formats.

The following example shows how to start Packet Capture from an access point:

```
(Cisco Controller) >config ap packet-dump start 00:0d:28:f4:c0:45 AP1
```

The following example shows how to capture 802.11 control packets from an access point:

```
(Cisco Controller) >config ap packet-dump classifier control enable
```

config ap port

To configure the port for a foreign access point, use the **config ap port** command.

config ap port *MAC port*

Syntax Description

MAC	Foreign access point MAC address.
port	Port number for accessing the foreign access point.

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 configure the port for a foreign access point MAC address:

```
(Cisco Controller) > config ap port 12:12:12:12:12:12 20
```

config ap power injector

To configure the power injector state for an access point, use the **config ap power injector** command.

config ap power injector {**enable** | **disable**} {*cisco_ap* | **all}** {**installed** | **override** | *switch_MAC*}

Syntax Description

enable	Enables the power injector state for an access point.
disable	Disables the power injector state for an access point.
cisco_ap	Name of the Cisco lightweight access point.
all	Specifies all Cisco lightweight access points connected to the controller.
installed	Detects the MAC address of the current switch port that has a power injector.
override	Overrides the safety checks and assumes a power injector is always installed.
switch_MAC	MAC address of the switch port with an installed power injector.

Note If an AP itself is configured with the keyword **all**, the all access points case takes precedence over the AP that is with the keyword **all**.

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 power injector state for all access points:

```
(Cisco Controller) > config ap power injector enable all 12:12:12:12:12:12
```

config ap power pre-standard

To enable or disable the inline power Cisco pre-standard switch state for an access point, use the **config ap power pre-standard** command.

config ap power pre-standard {**enable** | **disable**} *cisco_ap*

Syntax Description

enable	Enables the inline power Cisco pre-standard switch state for an access point.
disable	Disables the inline power Cisco pre-standard switch state for an access point.
cisco_ap	Name of the Cisco lightweight access point.

Command Default

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 inline power Cisco pre-standard switch state for access point AP02:

```
(Cisco Controller) > config ap power pre-standard enable AP02
```

config ap primary-base

To set the Cisco lightweight access point primary controller, use the **config ap primary-base** command.

config ap primary-base *controller_name Cisco_AP* [*controller_ip_address*]

Syntax Description

controller_name	Name of the controller.
Cisco_AP	Cisco lightweight access point name.
controller_ip_address	(Optional) If the backup controller is outside the mobility group to which the access point is connected, then you need to provide the IP address of the primary, secondary, or tertiary controller. **Note** For OfficeExtend access points, you must enter both the name and IP address of the controller. Otherwise, the access point cannot join this controller.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

Usage Guidelines

The Cisco lightweight access point associates with this controller for all network operations and in the event of a hardware reset.

OfficeExtend access points do not use the generic broadcast or over-the air (OTAP) discovery process to find a controller. You must configure one or more controllers because OfficeExtend access points try to connect only to their configured controllers.

This command supports both IPv4 and IPv6 address formats.

The following example shows how to set an access point primary controller IPv4 address for an Cisco AP:

```
(Cisco Controller) > config ap primary-base SW_1 AP2 10.0.0.0
```

The following example shows how to set an access point primary controller IPv6 address for an Cisco AP:

```
(Cisco Controller) > config ap primary-base SW_1 AP2 2001:DB8:0:1::1
```

Related Commands

show ap config general

config ap priority

To assign a priority designation to an access point that allows it to reauthenticate after a controller failure by priority rather than on a first-come-until-full basis, use the **config ap priority** command.

config ap priority {**1** | **2** | **3** | **4**} *cisco_ap*

Syntax Description

1	Specifies low priority.
2	Specifies medium priority.
3	Specifies high priority.
4	Specifies the highest (critical) priority.
cisco_ap	Cisco lightweight access point name.

Command Default

1 - Low priority.

Command History

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

Usage Guidelines

In a failover situation, if the backup controller does not have enough ports to allow all the access points in the affected area to reauthenticate, it gives priority to higher-priority access points over lower-priority ones, even if it means replacing lower-priority access points.

The following example shows how to assign a priority designation to access point AP02 that allows it to reauthenticate after a controller failure by assigning a reauthentication priority 3:

```
(Cisco Controller) > config ap priority 3 AP02
```

config ap reset

To reset a Cisco lightweight access point, use the **config ap reset** command.

config ap reset *cisco_ap*

Syntax Description

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 reset an access point:

```
(Cisco Controller) > config ap reset AP2
```

config ap reporting-period

To reset a Cisco lightweight access point, use the **config ap reporting-period** command.

config ap reporting-period *period*

Syntax Description

period	Time period in seconds between 10 and 120.

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 reset an access point reporting period to 120 seconds:

```
> config ap reporting-period 120
```

config ap retransmit count

To configure the access point control packet retransmission count, use the **config ap retransmit count** command.

config ap retransmit count *count* {**all** | *cisco_ap*}

Syntax Description

count	Number of times control packet will be retransmitted. The range is from 3 to 8.
all	Specifies all access points.
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 configure the retransmission retry count for a specific access point:

```
(Cisco Controller) > config ap retransmit count 6 cisco_ap
```

config ap retransmit interval

To configure the access point control packet retransmission interval, use the **config ap retransmit interval** command.

config ap retransmit interval *seconds* {**all** | *cisco_ap*}

Syntax Description

seconds	AP control packet retransmission timeout between 2 and 5 seconds.
all	Specifies all access points.
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 configure the retransmission interval for all access points globally:

```
(Cisco Controller) > config ap retransmit interval 4 all
```

config ap role

To specify the role of an access point in a mesh network, use the **config ap role** command.

config ap role {**rootAP** | **meshAP**} *cisco_ap*

Syntax Description

rootAP	Designates the mesh access point as a root access point (RAP).
meshAP	Designates the mesh access point as a mesh access point (MAP).
cisco_ap	Name of the Cisco lightweight access point.

Command Default

meshAP.

Command History

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

Usage Guidelines

Use the **meshAP** keyword if the access point has a wireless connection to the controller, or use the **rootAP** keyword if the access point has a wired connection to the controller. If you change the role of the AP, the AP will be rebooted.

The following example shows how to designate mesh access point AP02 as a root access point:

```
(Cisco Controller) > config ap role rootAP AP02
Changing the AP's role will cause the AP to reboot.
Are you sure you want to continue? (y/n)
```

config ap rst-button

To configure the Reset button for an access point, use the **config ap rst-button** command.

config ap rst-button {**enable** | **disable**} *cisco_ap*

Syntax Description

enable	Enables the Reset button for an access point.
disable	Disables the Reset button for an access point.
cisco_ap	Name of the Cisco lightweight access point.

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 configure the Reset button for access point AP03:

```
(Cisco Controller) > config ap rst-button enable AP03
```

config ap secondary-base

To set the Cisco lightweight access point secondary controller, use the **config ap secondary-base** command.

config ap secondary-base *Controller_name Cisco_AP* [*Controller_IP_address*]

Syntax Description

controller_name	Name of the controller.
Cisco_AP	Cisco lightweight access point name.
Controller_IP_address	(Optional). If the backup controller is outside the mobility group to which the access point is connected, then you need to provide the IP address of the primary, secondary, or tertiary controller. **Note** For OfficeExtend access points, you must enter both the name and IP address of the controller. Otherwise, the access point cannot join this controller.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

Usage Guidelines

The Cisco lightweight access point associates with this controller for all network operations and in the event of a hardware reset.

OfficeExtend access points do not use the generic broadcast or over-the air (OTAP) discovery process to find a controller. You must configure one or more controllers because OfficeExtend access points try to connect only to their configured controllers.

This command supports both IPv4 and IPv6 address formats.

The following example shows how to set an access point secondary controller:

```
(Cisco Controller) > config ap secondary-base SW_1 AP2 10.0.0.0
```

The following example shows how to set an access point primary controller IPv6 address for an Cisco AP:

```
(Cisco Controller) > config ap secondary-base SW_1 AP2 2001:DB8:0:1::1
```

Related Commands **show ap config general**

config ap sniff

To enable or disable sniffing on an access point, use the **config ap sniff** command.

config ap sniff { **802.11a** | **802.11b** } { **enable** *channel server_ip* | **disable** } *cisco_ap*

Syntax Description

802.11a	Specifies the 802.11a network.
802.11b	Specifies the 802.11b network.
enable	Enables sniffing on an access point.
channel	Channel to be sniffed.
server_ip	IP address of the remote machine running Omnipeek, Airopeek,AirMagnet, or Wireshark software.
disable	Disables sniffing on an access point.
cisco_ap	Access point configured as the sniffer.

Command Default Channel 36.

Command History

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

Usage Guidelines When the sniffer feature is enabled on an access point, it starts sniffing the signal on the given channel. It captures and forwards all the packets to the remote computer that runs Omnipeek, Airopeek, AirMagnet, or Wireshark software. It includes information on the timestamp, signal strength, packet size and so on.

Before an access point can act as a sniffer, a remote computer that runs one of the listed packet analyzers must be set up so that it can receive packets sent by the access point. After the Airopeek installation, copy the following .dll files to the location where airopeek is installed:

- socket.dll file to the Plug-ins folder (for example, C:\Program Files\WildPackets\AiroPeek\Plugins)
- socketres.dll file to the PluginRes folder (for example, C:\Program Files\WildPackets\AiroPeek\1033\PluginRes)

The following example shows how to enable the sniffing on the 802.11a an access point from the primary controller:

```
(Cisco Controller) > config ap sniff 80211a enable 23 11.22.44.55 AP01
```

config ap ssh

To enable Secure Shell (SSH) connectivity on an access point, use the **config ap ssh** command.

config ap ssh {**enable** | **disable** | **default**} *cisco_ap* | *all*

Syntax Description

enable	Enables the SSH connectivity on an access point.
disable	Disables the SSH connectivity on an access point.
default	Replaces the specific SSH configuration of an access point with the global SSH configuration.
cisco_ap	Cisco access point name.
all	All access points.

Command Default

None

Command History

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

Usage Guidelines

The Cisco lightweight access point associates with this Cisco wireless LAN controller for all network operation and in the event of a hardware reset.

The following example shows how to enable SSH connectivity on access point Cisco_ap2:

```
> config ap ssh enable cisco_ap2
```

config ap static-ip

To configure Static IP address settings on Cisco lightweight access point , use the **config ap static-ip** command.

config ap static-ip {**enable** *Cisco_AP AP_IP_addr IP_netmask /prefix_length gateway* | **disable** *Cisco_AP* | **add** {**domain** {*Cisco_AP* | **all**} *domain_name* | **nameserver** {*Cisco_AP* | **all**} *nameserver-ip*} | **delete** {**domain** | **nameserver**} {*Cisco_AP* | **all**}}

Syntax Description

enable	Enables the Cisco lightweight access point static IP address.
disable	Disables the Cisco lightweight access point static IP address. The access point uses DHCP to get the IP address.
Cisco_AP	Cisco lightweight access point name.
AP_IP_addr	Cisco lightweight access point IP address

IP_netmask/prefix_length	Cisco lightweight access point network mask.
gateway	IP address of the Cisco lightweight access point gateway.
add	Adds a domain or DNS server.
domain	Specifies the domain to which a specific access point or all access points belong.
all	Specifies all access points.
domain_name	Specifies a domain name.
nameserver	Specifies a DNS server so that a specific access point or all access points can discover the controller using DNS resolution.
nameserver-ip	DNS server IP address.
delete	Deletes a domain or DNS server.

Note If an AP itself is configured with the keyword **all**, the all access points case takes precedence over the AP that is with the keyword **all**.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

Usage Guidelines

An access point cannot discover the controller using Domain Name System (DNS) resolution if a static IP address is configured for the access point, unless you specify a DNS server and the domain to which the access point belongs.

After you enter the IPv6 address, Prefix-length and IPv6 gateway address, the CAPWAP tunnel will restart for access point. Changing the AP's IP address will cause the AP to disjoin. After the access point rejoins the controller, you can enter the domain and IPv6 DNS server information.

This command supports both IPv4 and IPv6 address formats.

The following example shows how to configure static IP address on an access point:

```
(Cisco Controller) >config ap static-ip enable AP2 209.165.200.225 255.255.255.0
209.165.200.254
```

The following example shows how to configure static IPv6 address on an access point:

```
(Cisco Controller) > config ap static-ip enable AP2 2001:DB8:0:1::1
```

Related Commands **show ap config general**

config ap stats-timer

To set the time in seconds that the Cisco lightweight access point sends its DOT11 statistics to the Cisco wireless LAN controller, use the **config ap stats-timer** command.

config ap stats-timer *period cisco_ap*

Syntax Description

period	Time in seconds from 0 to 65535. A zero value disables the timer.
cisco_ap	Cisco lightweight access point name.

Command Default The default value is 0 (disabled state).

Command History

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

Usage Guidelines A value of 0 (zero) means that the Cisco lightweight access point does not send any DOT11 statistics. The acceptable range for the timer is from 0 to 65535 seconds, and the Cisco lightweight access point must be disabled to set this value.

The following example shows how to set the stats timer to 600 seconds for access point AP2:

```
(Cisco Controller) > config ap stats-timer 600 AP2
```

config ap syslog host global

To configure a global syslog server for all access points that join the controller, use the **config ap syslog host global** command.

config ap syslog host global *ip_address*

Syntax Description

ip_address	IPv4/IPv6 address of the syslog server.

Command Default The default value of the IPv4 address of the syslog server is 255.255.255.255.

Command History

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

Release	Modification
8.0	This command supports both IPv4 and IPv6 address formats.

Usage Guidelines

By default, the global syslog server IP address for all access points is 255.255.255.255. Make sure that the access points can reach the subnet on which the syslog server resides before configuring the syslog server on the controller. If the access points cannot reach this subnet, the access points are unable to send out syslog messages.

This command supports both IPv4 and IPv6 address formats.

The following example shows how to configure a global syslog server, using IPv4 address, for all access points:

```
(Cisco Controller) > config ap syslog host global 255.255.255.255
```

The following example shows how to configure a global syslog server, using IPv6 address, for all access points:

```
(Cisco Controller) > config ap syslog host global  2001:9:10:56::100
```

config ap syslog host specific

To configure a syslog server for a specific access point, use the **config ap syslog host specific** command.

config ap syslog host specific *ap_nameip_address*

Syntax Description

ap_name	Cisco lightweight access point.
ip_address	IPv4/IPv6 address of the syslog server.

Command Default

The default value of the syslog server IP address is 0.0.0.0.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

Usage Guidelines

By default, the syslog server IP address for each access point is 0.0.0.0, indicating that it is not yet set. When the default value is used, the global access point syslog server IP address is pushed to the access point.

This command supports both IPv4 and IPv6 address formats.

The following example shows how to configure a syslog server:

```
(Cisco Controller) >config ap syslog host specific 0.0.0.0
```

The following example shows how to configure a syslog server for a specific AP, using IPv6 address:

```
(Cisco Controller) > config ap syslog host specific AP3600 2001:9:10:56::100
```

config ap tcp-mss-adjust

To enable or disable the TCP maximum segment size (MSS) on a particular access point or on all access points, use the **config ap tcp-mss-adjust** command.

config ap tcp-mss-adjust {**enable** | **disable**} {*cisco_ap* | **all**} *size*

Syntax Description

enable	Enables the TCP maximum segment size on an access point.
disable	Disables the TCP maximum segment size on an access point.
cisco_ap	Cisco access point name.
all	Specifies all access points.
size	Maximum segment size. • IPv4—Specify a value between 536 and 1363. • IPv6—Specify a value between 1220 and 1331. **Note** Any TCP MSS value that is below 1220 and above 1331 will not be effective for CAPWAP v6 AP.

Note If an AP itself is configured with the keyword **all**, the all access points case takes precedence over the AP that is with the keyword **all**.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports only IPv6.

Usage Guidelines

When you enable this feature, the access point checks for TCP packets to and from wireless clients in its data path. If the MSS of these packets is greater than the value that you configured or greater than the default value for the CAPWAP tunnel, the access point changes the MSS to the new configured value.

This example shows how to enable the TCP MSS on access point cisco_ap1 with a segment size of 1200 bytes:

```
(Cisco Controller) > config ap tcp-mss-adjust enable cisco_ap1 1200
```

config ap telnet

To enable Telnet connectivity on an access point, use the **config ap telnet** command.

config ap telnet { **enable** | **disable** | **default** } *cisco_ap* | *all*

Syntax Description

enable	Enables the Telnet connectivity on an access point.
disable	Disables the Telnet connectivity on an access point.
default	Replaces the specific Telnet configuration of an access point with the global Telnet configuration.
cisco_ap	Cisco access point name.
all	All access points.

Command Default

None

Command History

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

Usage Guidelines

- The Cisco lightweight access point associates with this controller for all network operation and in the event of a hardware reset.
- Telnet is not supported on Cisco Aironet 1810 OEAP, 1810W, 1830, 1850, 2800, and 3800 Series APs.

The following example shows how to enable Telnet connectivity on access point cisco_ap1:

```
(Cisco Controller) >config ap telnet enable cisco_ap1
```

The following example shows how to disable Telnet connectivity on access point cisco_ap1:

```
(Cisco Controller) > config ap telnet disable cisco_ap1
```

config ap tertiary-base

To set the Cisco lightweight access point tertiary controller, use the **config ap tertiary-base** command.

config ap tertiary-base *controller_name Cisco_AP* [*controller_ip_address*]

Syntax Description

controller_name	Name of the controller.
Cisco_AP	Cisco lightweight access point name.

controller_ip_address	(Optional) If the backup controller is outside the mobility group to which the access point is connected, then you need to provide the IP address of the primary, secondary, or tertiary controller. **Note** For OfficeExtend access points, you must enter both the name and IP address of the controller. Otherwise, the access point cannot join this controller.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

Usage Guidelines

OfficeExtend access points do not use the generic broadcast or over-the air (OTAP) discovery process to find a controller. You must configure one or more controllers because OfficeExtend access points try to connect only to their configured controllers.

The Cisco lightweight access point associates with this controller for all network operations and in the event of a hardware reset.

This command supports both IPv4 and IPv6 address formats.

This example shows how to set the access point tertiary controller:

```
(Cisco Controller) > config ap tertiary-base SW_1 AP02 10.0.0.0
```

The following example shows how to set an access point tertiary controller IPv6 address for an Cisco AP:

```
(Cisco Controller) > config ap tertiary-base SW_1 AP2 2001:DB8:0:1::1
```

Related Commands

show ap config general

config ap tftp-downgrade

To configure the settings used for downgrading a lightweight access point to an autonomous access point, use the **config ap ftp-downgrade** command.

config ap tftp-downgrade *tftp_ip_addressfilename Cisco_AP*

Syntax Description

tftp_ip_address	IP address of the TFTP server.
filename	Filename of the access point image file on the TFTP server.
Cisco_AP	Access point name.

Command Default None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

The following example shows how to configure the settings for downgrading access point ap1240_102301:

```
(Cisco Controller) >config ap ftp-downgrade 209.165.200.224 1238.tar ap1240_102301
```

config ap username

To assign a username and password to access either a specific access point or all access points, use the **config ap username** command.

config ap username *user_id* **password** *passwd* [**all** | *ap_name*]

Syntax Description

user_id	Administrator username.
passwd	Administrator password.
all	(Optional) Specifies all access points.
ap_name	Name of a specific access point.

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 assign a username and password to a specific access point:

```
(Cisco Controller) > config ap username jack password blue la204
```

The following example shows how to assign the same username and password to a all access points:

```
(Cisco Controller) > config ap username jack password blue all
```

config ap venue

To configure the venue information for 802.11u network on an access point, use the **config ap venue** command.

config ap venue {**add***venue_name venue-group venue-type lang-code cisco-ap* | **delete**}

Syntax Description

add	Adds venue information.
venue_name	Venue name.
venue_group	Venue group category. See the table below for details on venue group mappings.
venue_type	Venue type. This value depends on the venue-group specified. See the table below for venue group mappings.
lang_code	Language used. An ISO-14962-1997 encoded string that defines the language. This string is a three character language code. Enter the first three letters of the language in English (for example, eng for English).
cisco_ap	Name of the access point.
deletes	Deletes venue 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 set the venue details for an access point named cisco-ap1:

```
(Cisco Controller) > config ap venue add test 11 34 eng cisco-ap1
```

This table lists the different venue types for each venue group.

Table 2: Venue Group Mapping

Venue Group Name	Value	Venue Type for Group
UNSPECIFIED	0	

Venue Group Name	Value	Venue Type for Group
ASSEMBLY	1	• 0—UNSPECIFIED ASSEMBLY • 1—ARENA • 2—STADIUM • 3—PASSENGER TERMINAL (E.G., AIRPORT, BUS, FERRY, TRAIN STATION) • 4—AMPHITHEATER • 5—AMUSEMENT PARK • 6—PLACE OF WORSHIP • 7—CONVENTION CENTER • 8—LIBRARY • 9—MUSEUM • 10—RESTAURANT • 11—THEATER • 12—BAR • 13—COFFEE SHOP • 14—ZOO OR AQUARIUM • 15—EMERGENCY COORDINATION CENTER
BUSINESS	2	• 0—UNSPECIFIED BUSINESS • 1—DOCTOR OR DENTIST OFFICE • 2—BANK • 3—FIRE STATION • 4—POLICE STATION • 6—POST OFFICE • 7—PROFESSIONAL OFFICE • 8—RESEARCH AND DEVELOPMENT FACILITY • 9—ATTORNEY OFFICE

Venue Group Name	Value	Venue Type for Group
EDUCATIONAL	3	• 0—UNSPECIFIED EDUCATIONAL • 1—SCHOOL, PRIMARY • 2—SCHOOL, SECONDARY • 3—UNIVERSITY OR COLLEGE
FACTORY-INDUSTRIAL	4	• 0—UNSPECIFIED FACTORY AND INDUSTRIAL • 1—FACTORY
INSTITUTIONAL	5	• 0—UNSPECIFIED INSTITUTIONAL • 1—HOSPITAL • 2—LONG-TERM CARE FACILITY (E.G., NURSING HOME, HOSPICE, ETC.) • 3—ALCOHOL AND DRUG RE-HABILITATION CENTER • 4—GROUP HOME • 5—PRISON OR JAIL
MERCANTILE	6	• 0—UNSPECIFIED MERCANTILE • 1—RETAIL STORE • 2—GROCERY MARKET • 3—AUTOMOTIVE SERVICE STATION • 4—SHOPPING MALL • 5—GAS STATION
RESIDENTIAL	7	• 0—UNSPECIFIED RESIDENTIAL • 1—PRIVATE RESIDENCE • 2—HOTEL OR MOTEL • 3—DORMITORY • 4—BOARDING HOUSE
STORAGE	8	UNSPECIFIED STORAGE

Venue Group Name	Value	Venue Type for Group
UTILITY-MISC	9	0—UNSPECIFIED UTILITY AND MISCELLANEOUS
VEHICULAR	10	• 0—UNSPECIFIED VEHICULAR • 1—AUTOMOBILE OR TRUCK • 2—AIRPLANE • 3—BUS • 4—FERRY • 5—SHIP OR BOAT • 6—TRAIN • 7—MOTOR BIKE
OUTDOOR	11	• 0—UNSPECIFIED OUTDOOR • 1—MUNI-MESH NETWORK • 2—CITY PARK • 3—REST AREA • 4—TRAFFIC CONTROL • 5—BUS STOP • 6—KIOSK

config ap wlan

To enable or disable wireless LAN override for a Cisco lightweight access point radio, use the **config ap wlan** command.

config ap wlan {**enable** | **disable**} {**802.11a** | **802.11b**} *wlan_id cisco_ap*

Syntax Description

enable	Enables the wireless LAN override on an access point.
disable	Disables the wireless LAN override on an access point.
802.11a	Specifies the 802.11a network.
802.11b	Specifies the 802.11b network.
wlan_id	Cisco wireless LAN controller ID assigned to a wireless LAN.
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 enable wireless LAN override on the AP03 802.11a radio:

```
(Cisco Controller) > config ap wlan 802.11a AP03
```

Configure Band-Select Commands

Use the **config band-select** command to configure the band selection feature on the controller.

config band-select cycle-count

To set the band select probe cycle count, use the **config band-select cycle-count** command.

config band-select cycle-count *count*

Syntax Description

count	Value for the cycle count between 1 to 10.

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 set the probe cycle count for band select to 8:

```
(Cisco Controller) > config band-select cycle-count 8
```

Related Commands

config band-select cycle-threshold

config band-select expire

config band-select client-rssi

config band-select cycle-threshold

To set the time threshold for a new scanning cycle, use the **config band-select cycle-threshold** command.

config band-select cycle-threshold *threshold*

Syntax Description

threshold	Value for the cycle threshold between 1 and 1000 milliseconds.

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 set the time threshold for a new scanning cycle with threshold value of 700 milliseconds:

```
(Cisco Controller) > config band-select cycle-threshold 700
```

Related Commands

config band-select cycle-count

config band-select expire

config band-select client-rssi

config band-select expire

To set the entry expire for band select, use the **config band-select expire** command.

config band-select expire {**suppression** | **dual-band**} *seconds*

Syntax Description

suppression	Sets the suppression expire to the band select.
dual-band	Sets the dual band expire to the band select.
seconds	• Value for suppression between 10 to 200 seconds. • Value for a dual-band between 10 to 300 seconds.

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 set the suppression expire to 70 seconds:

```
(Cisco Controller) > config band-select expire suppression 70
```

Related Commands

config band-select cycle-threshold

config band-select client-rssi

config band-select cycle-count

config band-select client-rssi

To set the client received signal strength indicator (RSSI) threshold for band select, use the **config band-select client-rssi** command.

config band-select client-rssi *rssi*

Syntax Description

rssi	Minimum dBM of a client RSSI to respond to probe bet

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 set the RSSI threshold for band select to 70:

```
(Cisco Controller) > config band-select client-rssi 70
```

Related Commands

config band-select cycle-threshold

config band-select expire

config band-select cycle-count

Configure Client Commands

User the **config client** commands to configure client settings.

config client ccx clear-reports

To clear the client reporting information, use the **config client ccx clear-reports** command.

config client ccx clear-reports *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

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 clear the reporting information of the client MAC address 00:1f:ca:cf:b6:60:

```
(Cisco Controller) >config client ccx clear-reports 00:1f:ca:cf:b6:60
```

config client ccx clear-results

To clear the test results on the controller, use the **config client ccx clear-results** command.

config client ccx clear-results *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

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 clear the test results of the client MAC address 00:1f:ca:cf:b6:60:

```
(Cisco Controller) >config client ccx clear-results 00:1f:ca:cf:b6:60
```

config client ccx default-gw-ping

To send a request to the client to perform the default gateway ping test, use the **config client ccx default-gw-ping** command.

config client ccx default-gw-ping *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

Command Default None

Command History

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

Usage Guidelines This test does not require the client to use the diagnostic channel.

The following example shows how to send a request to the client00:0b:85:02:0d:20 to perform the default gateway ping test:

```
(Cisco Controller) >config client ccx default-gw-ping 00:0b:85:02:0d:20
```

config client ccx dhcp-test

To send a request to the client to perform the DHCP test, use the **config client ccx dhcp-test** command.

config client ccx dhcp-test *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

Command Default None

Command History

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

Usage Guidelines This test does not require the client to use the diagnostic channel.

The following example shows how to send a request to the client 00:E0:77:31:A3:55 to perform the DHCP test:

```
(Cisco Controller) >config client ccx dhcp-test 00:E0:77:31:A3:55
```

config client ccx dns-ping

To send a request to the client to perform the Domain Name System (DNS) server IP address ping test, use the **config client ccx dns-ping** command.

config client ccx dns-ping *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

Command Default None

Command History

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

Usage Guidelines This test does not require the client to use the diagnostic channel.

The following example shows how to send a request to a client to perform the DNS server IP address ping test:

```
(Cisco Controller) >config client ccx dns-ping 00:E0:77:31:A3:55
```

config client ccx dns-resolve

To send a request to the client to perform the Domain Name System (DNS) resolution test to the specified hostname, use the **config client ccx dns-resolve** command.

config client ccx dns-resolve *client_mac_address host_name*

Syntax Description

client_mac_address	MAC address of the client.
host_name	Hostname of the client.

Command Default None

Command History

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

Usage Guidelines This test does not require the client to use the diagnostic channel.

The following example shows how to send a request to the client 00:E0:77:31:A3:55 to perform the DNS name resolution test to the specified hostname:

```
(Cisco Controller) >config client ccx dns-resolve 00:E0:77:31:A3:55 host_name
```

config client ccx get-client-capability

To send a request to the client to send its capability information, use the **config client ccx get-client-capability** command.

config client ccx get-client-capability *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

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 send a request to the client 172.19.28.40 to send its capability information:

```
(Cisco Controller) >config client ccx get-client-capability 172.19.28.40
```

config client ccx get-manufacturer-info

To send a request to the client to send the manufacturer's information, use the **config client ccx get-manufacturer-info** command.

config client ccx get-manufacturer-info *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

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 send a request to the client 172.19.28.40 to send the manufacturer's information:

```
(Cisco Controller) >config client ccx get-manufacturer-info 172.19.28.40
```

config client ccx get-operating-parameters

To send a request to the client to send its current operating parameters, use the **config client ccx get-operating-parameters** command.

config client ccx get-operating-parameters *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

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 send a request to the client 172.19.28.40 to send its current operating parameters:

```
(Cisco Controller) >config client ccx get-operating-parameters 172.19.28.40
```

config client ccx get-profiles

To send a request to the client to send its profiles, use the **config client ccx get-profiles** command.

config client ccx get-profiles *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

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 send a request to the client 172.19.28.40 to send its profile details:

```
(Cisco Controller) >config client ccx get-profiles 172.19.28.40
```

config client ccx log-request

To configure a Cisco client eXtension (CCX) log request for a specified client device, use the **config client ccx log-request** command.

config client ccx log-request {**roam** | **rsna** | **syslog**} *client_mac_address*

Syntax Description

roam	(Optional) Specifies the request to specify the client CCX roaming log.
rsna	(Optional) Specifies the request to specify the client CCX RSNA log.
syslog	(Optional) Specifies the request to specify the client CCX system log.
client_mac_address	MAC address of the client.

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 specify the request to specify the client CCS system log:

```
(Cisco Controller) >config client ccx log-request syslog 00:40:96:a8:f7:98
Tue Oct 05 13:05:21 2006
SysLog Response LogID=1: Status=Successful
Event Timestamp=121212121212
Client SysLog = 'This is a test syslog 2'
Event Timestamp=121212121212
```

```
Client SysLog = 'This is a test syslog 1'
Tue Oct 05 13:04:04 2006
SysLog Request LogID=1
```

The following example shows how to specify the client CCX roaming log:

```
(Cisco Controller) >config client ccx log-request roam 00:40:96:a8:f7:98
Thu Jun 22 11:55:14 2006
Roaming Response LogID=20: Status=Successful
Event Timestamp=121212121212
Source BSSID=00:40:96:a8:f7:98, Target BSSID=00:0b:85:23:26:70,
Transition Time=100(ms)
Transition Reason: Unspecified Transition Result: Success
Thu Jun 22 11:55:04 2006
Roaming Request LogID=20
Thu Jun 22 11:54:54 2006
Roaming Response LogID=19: Status=Successful
Event Timestamp=121212121212
Source BSSID=00:40:96:a8:f7:98, Target BSSID=00:0b:85:23:26:70,
Transition Time=100(ms)
Transition Reason: Unspecified Transition Result: Success
Thu Jun 22 11:54:33 2006  Roaming Request LogID=19
```

The following example shows how to specify the client CCX RSNA log:

```
(Cisco Controller) >config client ccx log-request rsna 00:40:96:a8:f7:98
Tue Oct 05 11:06:48 2006
RSNA Response LogID=2: Status=Successful
Event Timestamp=242424242424
Target BSSID=00:0b:85:23:26:70
RSNA Version=1
Group Cipher Suite=00-x0f-ac-01
Pairwise Cipher Suite Count = 2
Pairwise Cipher Suite 0 = 00-0f-ac-02
Pairwise Cipher Suite 1 = 00-0f-ac-04
AKM Suite Count = 2
KM Suite 0 = 00-0f-ac-01
KM Suite 1 = 00-0f-ac-02
SN Capability = 0x1
PMKID Count = 2
PMKID 0 = 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16
PMKID 1 = 0a 0b 0c 0d 0e 0f 17 18 19 20 1a 1b 1c 1d 1e 1f
802.11i Auth Type: EAP_FAST
RSNA Result: Success
```

config client ccx send-message

To send a message to the client, use the **config client ccx send-message** command.

config client ccx send-message *client_mac_address message_id*

Syntax Description

client_mac_address	MAC address of the client.

message_id

Message type that involves one of the following:

- 1—The SSID is invalid.
- 2—The network settings are invalid.
- 3—There is a WLAN credibility mismatch.
- 4—The user credentials are incorrect.
- 5—Please call support.
- 6—The problem is resolved.
- 7—The problem has not been resolved.
- 8—Please try again later.
- 9—Please correct the indicated problem.
- 10—Troubleshooting is refused by the network.
- 11—Retrieving client reports.
- 12—Retrieving client logs.
- 13—Retrieval complete.
- 14—Beginning association test.
- 15—Beginning DHCP test.
- 16—Beginning network connectivity test.
- 17—Beginning DNS ping test.
- 18—Beginning name resolution test.
- 19—Beginning 802.1X authentication test.
- 20—Redirecting client to a specific profile.
- 21—Test complete.
- 22—Test passed.
- 23—Test failed.
- 24—Cancel diagnostic channel operation or select a WLAN profile to resume normal operation.
- 25—Log retrieval refused by the client.
- 26—Client report retrieval refused by the client.
- 27—Test request refused by the client.
- 28—Invalid network (IP) setting.
- 29—There is a known outage or problem with the network.
- 30—Scheduled maintenance period.

(continued on next page)

message_type (cont.)	• 31—The WLAN security method is not correct. • 32—The WLAN encryption method is not correct. • 33—The WLAN authentication method is not correct.

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 send a message to the client MAC address 172.19.28.40 with the message user-action-required:

```
(Cisco Controller) >config client ccx send-message 172.19.28.40 user-action-required
```

config client ccx stats-request

To send a request for statistics, use the **config client ccx stats-request** command.

config client ccx stats-request *measurement_duration* {**dot11** | **security**} *client_mac_address*

Syntax Description

measurement_duration	Measurement duration in seconds.
dot11	(Optional) Specifies dot11 counters.
security	(Optional) Specifies security counters.
client_mac_address	MAC address of the client.

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 specify dot11 counter settings:

```
(Cisco Controller) >config client ccx stats-request 1 dot11 00:40:96:a8:f7:98
Measurement duration = 1
dot11TransmittedFragmentCount       = 1
dot11MulticastTransmittedFrameCount = 2
dot11FailedCount                    = 3
dot11RetryCount                     = 4
dot11MultipleRetryCount             = 5
dot11FrameDuplicateCount            = 6
dot11RTSSuccessCount                = 7
dot11RTSFailureCount                = 8
dot11ACKFailureCount                = 9
dot11ReceivedFragmentCount          = 10
```

```
dot11MulticastReceivedFrameCount    = 11
dot11FCSErrorCount                  = 12
dot11TransmittedFrameCount          = 13
```

config client ccx test-abort

To send a request to the client to terminate the current test, use the **config client ccx test-abort** command.

config client ccx test-abort *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

Command Default

None

Command History

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

Usage Guidelines

Only one test can be pending at a time.

The following example shows how to send a request to a client to terminate the correct test settings:

```
(Cisco Controller) >config client ccx test-abort 11:11:11:11:11:11
```

config client ccx test-association

To send a request to the client to perform the association test, use the **config client ccx test-association** command.

config client ccx test-association *client_mac_address ssid bssid* **802.11**{**a** | **b** | **g**} *channel*

Syntax Description

client_mac_address	MAC address of the client.
ssid	Network name.
bssid	Basic SSID.
802.11a	Specifies the 802.11a network.
802.11b	Specifies the 802.11b network.
802.11g	Specifies the 802.11g network.
channel	Channel number.

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 send a request to the client MAC address 00:0E:77:31:A3:55 to perform the basic SSID association test:

```
(Cisco Controller) >config client ccx test-association 00:E0:77:31:A3:55 ssid bssid 802.11a
```

config client ccx test-dot1x

To send a request to the client to perform the 802.1x test, use the **config client ccx test-dot1x** command.

config client ccx test-dot1x *client_mac_address profile_id bssid* **802.11** {**a** | **b** | **g**} *channel*

Syntax Description

client_mac_address	MAC address of the client.
profile_id	Test profile name.
bssid	Basic SSID.
802.11a	Specifies the 802.11a network.
802.11b	Specifies the 802.11b network.
802.11g	Specifies the 802.11g network.
channel	Channel number.

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 send a request to the client to perform the 802.11b test with the profile name profile_01:

```
(Cisco Controller) >config client ccx test-dot1x 172.19.28.40 profile_01 bssid 802.11b
```

config client ccx test-profile

To send a request to the client to perform the profile redirect test, use the **config client ccx test-profile** command.

config client ccx test-profile *client_mac_address profile_id*

Syntax Description

client_mac_address	MAC address of the client.
profile_id	Test profile name. **Note** The *profile_id* should be from one of the client profiles for which client reporting is enabled.

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 send a request to the client to perform the profile redirect test with the profile name profile_01:

```
(Cisco Controller) >config client ccx test-profile 11:11:11:11:11:11 profile_01
```

config client deauthenticate

To disconnect a client, use the **config client deauthenticate** command.

config client deauthenticate {*MAC* | *IPv4/v6_address* | *user_name*}

Syntax Description

MAC	Client MAC address.
IPv4/v6_address	IPv4 or IPv6 address.
user_name	Client user 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 deauthenticate a client using its MAC address:

```
(Cisco Controller) >config client deauthenticate 11:11:11:11:11
```

config client location-calibration

To configure link aggregation, use the **config client location-calibration** command.

config client location-calibration {**enable** *mac_address interval* | **disable** *mac_address*}

Syntax Description

enable	(Optional) Specifies that client location calibration is enabled.
mac_address	MAC address of the client.
interval	Measurement interval in seconds.
disable	(Optional) Specifies that client location calibration is disabled.

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 client location calibration for the client 37:15:85:2a with a measurement interval of 45 seconds:

```
(Cisco Controller) >config client location-calibration enable 37:15:86:2a:Bc:cf 45
```

Configure Guest-LAN Commands

Use the **config guest-lan** commands to create, delete, enable, and disable the wireless LAN commands.

config guest-lan

To create, delete, enable or disable a wireless LAN, use the **config guest-lan** command.

config guest-lan {**create** | **delete**} *guest_lan_id interface_name* | {**enable** | **disable**} *guest_lan_id*

Syntax Description

create	Creates a wired LAN settings.
delete	Deletes a wired LAN settings:
guest_lan_id	LAN identifier between 1 and 5 (inclusive).
interface_name	Interface name up to 32 alphanumeric characters.
enable	Enables a wireless LAN.
disable	Disables a wireless LAN.

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 a wireless LAN with the LAN ID 16:

```
(Cisco Controller) > config guest-lan enable 16
```

Related Commands **show wlan**

config guest-lan custom-web ext-webauth-url

To redirect guest users to an external server before accessing the web login page, use the **config guest-lan custom-web ext-webauth-url** command.

config guest-lan custom-web ext-webauth-url *ext_web_url guest_lan_id*

Syntax Description

ext_web_url	URL for the external server.
guest_lan_id	Guest LAN identifier between 1 and 5 (inclusive).

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 a wireless LAN with the LAN ID 16:

```
(Cisco Controller) > config guest-lan custom-web ext-webauth-url
http://www.AuthorizationURL.com/ 1
```

Related Commands

config guest-lan

config guest-lan create

config guest-lan custom-web login_page

config guest-lan custom-web global disable

To use a guest-LAN specific custom web configuration rather than a global custom web configuration, use the **config guest-lan custom-web global disable** command.

config guest-lan custom-web global disable *guest_lan_id*

Syntax Description

guest_lan_id	Guest LAN identifier between 1 and 5 (inclusive).

Command Default

None

Command History

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

Usage Guidelines

If you enter the **config guest-lan custom-web global enable** *guest_lan_id* command, the custom web authentication configuration at the global level is used.

The following example shows how to disable the global web configuration for guest LAN ID 1:

```
(Cisco Controller) > config guest-lan custom-web global disable 1
```

Related Commands

config guest-lan

config guest-lan create

config guest-lan custom-web ext-webauth-url

config guest-lan custom-web login_page

config guest-lan custom-web webauth-type

config guest-lan custom-web login_page

To enable wired guest users to log into a customized web login page, use the **config guest-lan custom-web login_page** command.

config guest-lan custom-web login_page *page_name guest_lan_id*

Syntax Description

page_name	Name of the customized web login page.
guest_lan_id	Guest LAN identifier between 1 and 5 (inclusive).

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 customize a web login page custompage1 for guest LAN ID 1:

```
(Cisco Controller) > config guest-lan custom-web login_page custompage1 1
```

Related Commands

config guest-lan

config guest-lan create

config guest-lan custom-web ext-webauth-url

config guest-lan custom-web webauth-type

To define the web login page for wired guest users, use the **config guest-lan custom-web webauth-type** command.

config guest-lan custom-web webauth-type {**internal** | **customized** | **external**} *guest_lan_id*

Syntax Description

internal	Displays the default web login page for the controller. This is the default value.
customized	Displays the custom web login page that was previously configured.
external	Redirects users to the URL that was previously configured.
guest_lan_id	Guest LAN identifier between 1 and 5 (inclusive).

Command Default

The default web login page for the controller is internal.

Command History

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

The following example shows how to configure the guest LAN with the webauth-type as internal for guest LAN ID 1:

```
(Cisco Controller) > config guest-lan custom-web webauth-type internal 1
```

Related Commands

config guest-lan

config guest-lan create

config guest-lan custom-web ext-webauth-url

config guest-lan ingress-interface

To configure the wired guest VLAN's ingress interface that provides a path between the wired guest client and the controller through the Layer 2 access switch, use the **config guest-lan ingress-interface** command.

config guest-lan ingress-interface *guest_lan_id interface_name*

Syntax Description

guest_lan_id	Guest LAN identifier from 1 to 5 (inclusive).
interface_name	Interface 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 provide a path between the wired guest client and the controller with guest LAN ID 1 and the interface name guest01:

```
(Cisco Controller) > config guest-lan ingress-interface 1 guest01
```

Related Commands

config interface guest-lan

config guest-lan create

config guest-lan interface

To configure an egress interface to transmit wired guest traffic out of the controller, use the **config guest-lan interface** command.

config guest-lan interface *guest_lan_id interface_name*

Syntax Description

guest_lan_id	Guest LAN identifier between 1 and 5 (inclusive).
interface_name	Interface 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 configure an egress interface to transmit guest traffic out of the controller for guest LAN ID 1 and interface name guest01:

```
(Cisco Controller) > config guest-lan interface 1 guest01
```

Related Commands **config ingress-interface guest-lan**

config guest-lan create

config guest-lan mobility anchor

To add or delete mobility anchor, use the **config guest-lan mobility anchor** command.

config guest-lan mobility anchor {**add** | **delete**} *Guest LAN Id IP addr*

Syntax Description

add	Adds a mobility anchor to a WLAN.
delete	Deletes a mobility anchor from a WLAN.
Guest LAN Id	Guest LAN identifier between 1 and 5.
IP addr	Member switch IPv4 or IPv6 address to anchor WLAN.

Command Default None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

The following example shows how to delete a mobility anchor for WAN ID 4 and the anchor IP *192.168.0.14*:

```
(Cisco Controller) > config guest-lan mobility anchor delete 4 192.168.0.14
```

config guest-lan nac

To enable or disable Network Admission Control (NAC) out-of-band support for a guest LAN, use the **config guest-lan nac** command:

config guest-lan nac {**enable** | **disable**} *guest_lan_id*

Syntax Description

enable	Enables the NAC out-of-band support.
disable	Disables the NAC out-of-band support.
guest_lan_id	Guest LAN identifier between 1 and 5 (inclusive).

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 NAC out-of-band support for guest LAN ID 3:

```
(Cisco Controller) > config guest-lan nac enable 3
```

Related Commands

show nac statistics

show nac summary

config wlan nac

debug nac

config guest-lan security

To configure the security policy for the wired guest LAN, use the **config guest-lan security** command.

config guest-lan security {**web-auth** {**enable** | **disable** | **acl** | **server-precedence**} *guest_lan_id* | **web-passthrough** {**acl** | **email-input** | **disable** | **enable**} *guest_lan_id*}

Syntax Description

web-auth	Specifies web authentication.
enable	Enables the web authentication settings.
disable	Disables the web authentication settings.
acl	Configures an access control list.
server-precedence	Configures the authentication server precedence order for web authentication users.
guest_lan_id	LAN identifier between 1 and 5 (inclusive).
web-passthrough	Specifies the web captive portal with no authentication required.
email-input	Configures the web captive portal using an e-mail address.

Command Default

The default security policy for the wired guest LAN is web authentication.

Command History

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

The following example shows how to configure the security web authentication policy for guest LAN ID 1:

```
(Cisco Controller) > config guest-lan security web-auth enable 1
```

Related Commands

config ingress-interface guest-lan

config guest-lan create

config interface guest-lan

Configure IPv6 Commands

Use the **config ipv6** commands to configure IPv6 settings.

config ipv6 disable

To disable IPv6 globally on the controller, use the **config ipv6 disable** command .

config ipv6 disable

Syntax Description This command has no arguments or keywords.

Command Default By default, the IPv6 configuration is enabled.

Command History

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

Usage Guidelines When you use this command, the controller drops all IPv6 packets and the clients will not receive any IPv6 address.

The following example shows how to disable IPv6 on the controller:

```
(Cisco Controller) >config ipv6 disable
```

config ipv6 enable

To enable IPv6 globally on the controller, use the **config ipv6 enable** command.

config ipv6 enable

Syntax Description This command has no arguments or keywords.

Command Default By default, the IPv6 configuration 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 IPv6 on the controller:

```
(Cisco Controller) >config ipv6 enable
```

config ipv6 acl

To create or delete an IPv6 ACL on the Cisco wireless LAN controller, apply ACL to data path, and configure rules in the IPv6 ACL, use the **config ipv6 acl** command.

config ipv6 acl [**apply** | **cpu** | **create** | **delete** | **rule**]
config ipv6 acl apply *name*
config ipv6 acl cpu {*name* | **none**}
config ipv6 acl create *name*
config ipv6 acl delete *name*
config ipv6 acl rule [**action** | **add** | **change** | **delete** | **destination** | **direction** | **dscp** | **protocol** | **source** | **swap**]
config ipv6 acl rule action *name index* {**permit** | **deny**}
config ipv6 acl rule add *name index*
config ipv6 acl rule change index *name old_index new_index*
config ipv6 acl rule delete *name index*
config ipv6 acl rule destination {**address** *name index ip_address prefix-len* | **port range** *name index* }
`config ipv6 acl rule direction` ***name index*** {`in | out | any`}
config ipv6 acl rule dscp *name dscp*
config ipv6 acl rule protocol *name index protocol*
config ipv6 acl rule source {**address** *name index ip_address prefix-len* | **port range** *name index start_port end_port*}
config ipv6 acl rule swap index *name index_1index_2*

Syntax Description

apply *name*	Applies an IPv6 ACL. An IPv6 ACL can contain up to 32 alphanumeric characters.
cpu *name*	Applies the IPv6 ACL to the CPU.
cpu none	Configure none if you wish not to have a IPV6 ACL.
create	Creates an IPv6 ACL.
delete	Deletes an IPv6 ACL.
rule (**action**) (*name*) (*index*)	Configures rules in the IPv6 ACL to either permit or deny access. IPv6 ACL name can contains up to 32 alphanumeric characters and IPv6 ACL rule index can be between 1 and 32.
{**permit** | **deny**}	Permit or deny the IPv6 rule action.
add *name index*	Adds a new rule and rule index.
change *name old_index new_index*	Changes a rule's index.
delete *name index*	Deletes a rule and rule index.
destination address *name index ip_addr prefix-len*	Configures a rule's destination IP address and prefix length (between 0 and 128).
destination port *name index*	Configure a rule's destination port range. Enter IPv6 ACL name and set an rule index for it.
direction *name index* {**in** | **out** | **any**}	Configures a rule's direction to in, out, or any.

dscp *name index dscp*	Configures a rule's DSCP. For rule index of DSCP, select a number between 0 and 63, or **any**.
protocol *name index protocol*	Configures a rule's protocol. Enter a name and set an index between 0 and 255 or **any**
source address *name index ip_address prefix-len*	Configures a rule's source IP address and netmask.
source port range *name index start_port end_port*	Configures a rule's source port range.
swap index *name index_1 index_2*	Swap's two rules' indices.

Command Default

After adding an ACL, the **config ipv6 acl cpu** is by default configured as **enabled**.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6..
8.0	This command was updated by adding **cpu** and **none** keywords and the *ipv6_acl_name* variable.

Usage Guidelines

For a Cisco 2100 Series Wireless LAN Controller, you must configure a preauthentication ACL on the wireless LAN for the external web server. This ACL should then be set as a wireless LAN preauthentication ACL under Web Policy. However, you do not need to configure any preauthentication ACL for Cisco 4400 Series Wireless LAN Controllers.

The following example shows how to configure an IPv6 ACL to permit access:

```
(Cisco Controller) >config ipv6 acl rule action lab1 4 permit
```

The following example shows how to configure an interface ACL:

```
(Cisco Controller) > config ipv6 interface acl management IPv6-Acl
```

Related Commands

show ipv6 acl detailed

show ipv6 acl cpu

config ipv6 neighbor-binding

To configure the Neighbor Binding table on the Cisco wireless LAN controller, use the **config ipv6 neighbor-binding** command.

config ipv6 neighbor-binding {**timers** {**down-lifetime** *down_time* | **reachable-lifetime** *reachable_time* | **stale-lifetime** *stale_time* } | { **ra-throttle** {**allow at-least** *at_least_value*} | **enable** | **disable** | **interval-option** { **ignore** | **passthrough** | **throttle** } | **max-through** {*no_mcast_RA* | **no-limit**} | **throttle-period** *throttle_period*} }

Syntax Description

timers	Configures the neighbor binding table timeout timers.
down-lifetime	Configures the down lifetime.
down_time	Down lifetime in seconds. The range is from 0 to 86400. The default is 30 seconds.
reachable-lifetime	Configures the reachable lifetime.
reachable_time	Reachable lifetime in seconds. The range is from 0 to 86400. The default is 300 seconds.
stale-lifetime	Configures the stale lifetime.
stale_time	Stale lifetime in seconds. The range is from 0 to 86400. The default is 86400 seconds.
ra-throttle	Configures IPv6 RA throttling options.
allow	Specifies the number of multicast RAs per router per throttle period.
at_least_value	Number of multicast RAs from router before throttling. The range is from 0 to 32. The default is 1.
enable	Enables IPv6 RA throttling.
disable	Disables IPv6 RA throttling.
interval-option	Adjusts the behavior on RA with RFC3775 interval option.
ignore	Indicates interval option has no influence on throttling.
passthrough	Indicates all RAs with RFC3775 interval option will be forwarded (default).
throttle	Indicates all RAs with RFC3775 interval option will be throttled.
max-through	Specifies unthrottled multicast RAs per VLAN per throttle period.
no_mcast_RA	Number of multicast RAs on VLAN by which throttling is enforced. The default multicast RAs on vlan is 10.
no-limit	Configures no upper bound at the VLAN level.
throttle-period	Configures the throttle period.

throttle_period	Duration of the throttle period in seconds. The range is from 10 to 86400 seconds. The default is 600 seconds.

Command Default This command is disabled by default.

Command History

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

The following example shows how to configure the Neighbor Binding table:

```
(Cisco Controller) >config ipv6 neighbor-binding ra-throttle enable
```

Related Commands **show ipv6 neighbor-binding**

config ipv6 ns-mcast-fwd

To configure the nonstop multicast cache miss forwarding, use the **config ipv6 ns-mcast-fwd** command.

config ipv6 ns-mcast-fwd {**enable** | **disable**}

Syntax Description

enable	Enables nonstop multicast forwarding on a cache miss.
disable	Disables nonstop multicast forwarding on a cache miss.

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 configure an nonstop multicast forwarding:

```
(Cisco Controller) >config ipv6 ns-mcast-fwd enable
```

config ipv6 ra-guard

To configure the filter for Router Advertisement (RA) packets that originate from a client on an AP, use the **config ipv6 ra-guard** command.

config ipv6 ra-guard ap {**enable** | **disable**}

Syntax Description

enable	Enables RA guard on an AP.
disable	Disables RA guard on an AP.

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 IPv6 RA guard:

```
(Cisco Controller) >config ipv6 ra-guard enable
```

Related Commands **show ipv6 ra-guard**

Configure Interface Group Commands

Use the **config interface** group to create and delete an interface group.

config interface group

To add an interface to the existing interface group, use the **config interface group** command.

config interface group {**create** *interface-group-name interface-group-description*} | {**delete** *interface-group-name*} | {**interface** {**add** | **delete**} *interface-group-name interface-name*} | {**description** *interface-group-name interface-group-description*}

Syntax Description

create	Adds a new interface group.
interface-group-name	Interface group's name.
interface-group-description	Interface group's description to be entered within double quotation marks. You can enter up to 32 characters.
delete	Deletes an interface group.
interface	Edits the list of interface represented by the interface group.
add	Adds a new interface to the interface group.
delete	Deletes an interface from the interface group.
description	Configures the description for an interface group.

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 configure a new interface group with the name int-grp-10:

```
(Cisco Controller) > config interface group create int-grp-10 "for wlan1"
```

Configure Macfilter Commands

Use the **config macfilter** commands to configure macfilter settings.

config macfilter

To create or delete a MAC filter entry on the Cisco wireless LAN controller, use the **config macfilter** {*add* | *delete*} command.

config macfilter {**add** *client_MAC wlan_id* [*interface_name*] [*description*] [*macfilter_IP*] | **delete** *client_MAC*}

Syntax Description

add	Adds a MAC filter entry on the controller.
delete	Deletes a MAC filter entry on the controller.
MAC_addr	Client MAC address.
wlan_id	Wireless LAN identifier with which the MAC filter entry should associate. A zero value associates the entry with any wireless LAN.
interface_name	(Optional) Name of the interface. Enter **0** to specify no interface.
description	(Optional) Short description of the interface (up to 32 characters) in double quotes. **Note** A description is mandatory if *macfilterIP* is specified.
IP Address	(Optional) IPv4 address of the local MAC filter database.

Command Default

None

Command History

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

Usage Guidelines

Use the **config macfilter add** command to add a client locally to a wireless LAN on the Cisco wireless LAN controller. This filter bypasses the RADIUS authentication process.

As on release 7.6, the optional *macfilter_IP* supports only IPv4 address.

The following example shows how to add a MAC filter entry 00:E0:77:31:A3:55 with the wireless LAN ID 1, interface name labconnect, and MAC filter IP 10.92.125.51 on the controller:

```
(Cisco Controller) > config macfilter add 00:E0:77:31:A3:55 1 lab02 "labconnect" 10.92.125.51
```

Related Commands **show macfilter**

config macfilter ip-address

config macfilter description

To add a description to a MAC filter, use the **config macfilter description** command.

config macfilter description *MAC addrdescription*

Syntax Description

MAC addr	Client MAC address.
description	(Optional) Description within double quotes (up to 32 characters).

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 configure the description MAC filter 01 to MAC address 11:11:11:11:11:11:

```
(Cisco Controller) > config macfilter description 11:11:11:11:11:11 "MAC Filter 01"
```

Related Commands **show macfilter**

config macfilter interface

To create a MAC filter client interface, use the **config macfilter interface** command.

config macfilter interface *MAC_addr interface*

Syntax Description

MAC addr	Client MAC address.
interface	Interface name. A value of zero is equivalent to no 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 configure a MAC filer interface Lab01 on client 11:11:11:11:11:11:

```
(Cisco Controller) > config macfilter interface 11:11:11:11:11:11 Lab01
```

Related Commands **show macfilter**

config macfilter ip-address

To assign an IP address to an existing MAC filter entry if one was not assigned using the **config macfilter add** command, use the **config macfilter ip-address** command.

config macfilter ip-address *MAC_address IP_address*

Syntax Description

MAC_address	Client MAC address.
IP_address	IPv4 address for a specific MAC address in the local MAC filter database.

Command Default None

Usage Guidelines As on release 7.6, *IP_address* supports only IPv4 addresses.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports only IPv4 address format.

The following example shows how to configure IP address 10.92.125.51 for a MAC 00:E0:77:31:A3:55 in the local MAC filter database:

```
(Cisco Controller) > config macfilter ip-address 00:E0:77:31:A3:55 10.92.125.51
```

Related Commands **show macfilter**

config macfilter

config macfilter mac-delimiter

To set the MAC delimiter (colon, hyphen, none, and single-hyphen) for MAC addresses sent to RADIUS servers, use the **config macfilter mac-delimiter** command.

config macfilter mac-delimiter {**none** | **colon** | **hyphen** | **single-hyphen**}

Syntax Description

none	Disables the delimiters (for example, xxxxxxxxxx).
colon	Sets the delimiter to a colon (for example, xx:xx:xx:xx:xx:xx).

hyphen	Sets the delimiter to a hyphen (for example, xx-xx-xx-xx-xx-xx).
single-hyphen	Sets the delimiter to a single hyphen (for example, xxxxxx-xxxxxx).

Command Default

The default delimiter is hyphen.

Command History

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

The following example shows how to have the operating system send MAC addresses to the RADIUS server in the form aa:bb:cc:dd:ee:ff:

```
(Cisco Controller) > config macfilter mac-delimiter colon
```

The following example shows how to have the operating system send MAC addresses to the RADIUS server in the form aa-bb-cc-dd-ee-ff:

```
(Cisco Controller) > config macfilter mac-delimiter hyphen
```

The following example shows how to have the operating system send MAC addresses to the RADIUS server in the form aabbccddeeff:

```
(Cisco Controller) > config macfilter mac-delimiter none
```

Related Commands

show macfilter

config macfilter radius-compat

To configure the Cisco wireless LAN controller for compatibility with selected RADIUS servers, use the **config macfilter radius-compat** command.

config macfilter radius-compat {**cisco** | **free** | **other**}

Syntax Description

cisco	Configures the Cisco ACS compatibility mode (password is the MAC address of the server).
free	Configures the Free RADIUS server compatibility mode (password is secret).
other	Configures for other server behaviors (no password is necessary).

Command Default

Other

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports only IPv4.

The following example shows how to configure the Cisco ACS compatibility mode to "other":

```
(Cisco Controller) > config macfilter radius-compat other
```

Related Commands **show macfilter**

config macfilter wlan-id

To modify a wireless LAN ID for a MAC filter, use the **config macfilter wlan-id** command.

config macfilter wlan-id *MAC_addr WLAN_id*

Syntax Description

MAC addr	Client MAC address.
WLAN_id	Wireless LAN identifier to associate with. A value of zero is not allowed.

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 modify client wireless LAN ID 2 for a MAC filter 11:11:11:11:11:11:

```
(Cisco Controller) > config macfilter wlan-id 11:11:11:11:11:11 2
```

Related Commands **show macfilter**

show wlan

Config Remote LAN Commands

Use the **config remote-lan** commands to configure remote LANs.

config remote-lan

To configure a remote LAN, use the **config remote-lan** command.

config remote-lan {**enable** | **disable**} {*remote-lan-id* | **all**}

Syntax Description

enable	Enables a remote LAN.
disable	Disables a remote LAN.
remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
all	Configures all wireless LANs.

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 a remote LAN with ID 2:

```
(Cisco Controller) >config remote-lan enable 2
```

config remote-lan aaa-override

To configure user policy override through AAA on a remote LAN, use the **config remote-lan aaa-override** command.

config remote-lan aaa-override {**enable** | **disable**} *remote-lan-id*

Syntax Description

enable	Enables user policy override through AAA on a remote LAN.
disable	Disables user policy override through AAA on a remote LAN.
remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.

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 user policy override through AAA on a remote LAN where the remote LAN ID is 2:

```
(Cisco Controller) >config remote-lan aaa-override enable 2
```

config remote-lan acl

To specify an access control list (ACL) for a remote LAN, use the **config remote-lan acl** command.

config remote-lan acl *remote-lan-id acl_name*

Syntax Description

remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
acl_name	ACL name. **Note** Use the **show acl summary** command to know the ACLs available.

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 specify ACL1 for a remote LAN whose ID is 2:

```
(Cisco Controller) >config remote-lan acl 2 ACL1
```

config remote-lan create

To configure a new remote LAN connection, use the **config remote-lan create** command.

config remote-lan create *remote-lan-id name*

Syntax Description

remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
name	Remote LAN name. Valid values are up to 32 alphanumeric characters.

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 configure a new remote LAN, MyRemoteLAN, with the LAN ID as 3:

```
(Cisco Controller) >config remote-lan create 3 MyRemoteLAN
```

config remote-lan custom-web

To configure web authentication for a remote LAN, use the **config remote-lan custom-web** command.

config remote-lan custom-web {**ext-webauth-url** *URL* } | **global** {**enable** | **disable**} | **login-page** *page-name* | **loginfailure-page** {*page-name* | **none**} | **logout-page** {*page-name* | **none**} | **webauth-type** {**internal** | **customized** | **external**} } *remote-lan-id*

Syntax Description

ext-webauth-url	Configures an external web authentication URL.
URL	Web authentication URL for the Login page.
global	Configures the global status for the remote LAN.
enable	Enables the global status for the remote LAN.
disable	Disables the global status for the remote LAN.
login-page	Configures a login page.
page-name	Login page name.
none	Configures no login page.
logout-page	Configures a logout page.
none	Configures no logout page.
webauth-type	Configures the web authentication type for the remote LAN.
internal	Displays the default login page.
customized	Displays a downloaded login page.
external	Displays a login page that is on an external server.
name	Remote LAN name. Valid values are up to 32 alphanumeric characters.
remote-lan-id	Remote LAN identifier. Valid values are from 1 to 512.

Command Default

None

Command History

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

Usage Guidelines

Follow these guidelines when you use the **config remote-lan custom-web** command:

- When you configure the external Web-Auth URL, do the following:
  - Ensure that Web-Auth or Web-Passthrough Security is in enabled state. To enable Web-Auth, use the **config remote-lan security web-auth enable** command. To enable Web-Passthrough, use the **config remote-lan security web-passthrough enable** command.

- Ensure that the global status of the remote LAN is in disabled state. To enable the global status of the remote LAN, use the **config remote-lan custom-web global disable** command.
- Ensure that the remote LAN is in disabled state. To disable a remote LAN, use the **config remote-lan disable** command.

- When you configure the Web-Auth type for the remote LAN, do the following:
  - When you configure a customized login page, ensure that you have a login page configured. To configure a login page, use the **config remote-lan custom-web login-page** command.
  - When you configure an external login page, ensure that you have configured preauthentication ACL for external web authentication to function.

The following example shows how to configure an external web authentication URL for a remote LAN with ID 3:

```
(Cisco Controller) >config remote-lan custom-web ext-webauth-url
http://www.AuthorizationURL.com/ 3
```

The following example shows how to enable the global status of a remote LAN with ID 3:

```
(Cisco Controller) >config remote-lan custom-web global enable 3
```

The following example shows how to configure the login page for a remote LAN with ID 3:

```
(Cisco Controller) >config remote-lan custom-web login-page custompage1 3
```

The following example shows how to configure a web authentication type with the default login page for a remote LAN with ID 3:

```
(Cisco Controller) >config remote-lan custom-web webauth-type internal 3
```

config remote-lan delete

To delete a remote LAN connection, use the **config remote-lan delete** command.

config remote-lan delete *remote-lan-id*

Syntax Description

remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.

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 delete a remote LAN with ID 3:

```
(Cisco Controller) >config remote-lan delete 3
```

config remote-lan dhcp_server

To configure a dynamic host configuration protocol (DHCP) server for a remote LAN, use the **config remote-lan dhcp_server** command.

config remote-lan dhcp_server *remote-lan-id ip_address*

Syntax Description

remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
ip_addr	IPv4 address of the override DHCP server.

Command Default

0.0.0.0 is set as the default interface value.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports only IPv4 address format.

The following example shows how to configure a DHCP server for a remote LAN with ID 3:

```
(Cisco Controller) >config remote-lan dhcp_server 3 209.165.200.225
```

Related Commands

show remote-lan

config remote-lan exclusionlist

To configure the exclusion list timeout on a remote LAN, use the **config remote-lan exclusionlist** command.

config remote-lan exclusionlist *remote-lan-id* {*seconds* | **disabled** | **enabled**}

Syntax Description

remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
seconds	Exclusion list timeout in seconds. A value of 0 requires an administrator override.
disabled	Disables exclusion listing.
enabled	Enables exclusion listing.

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 configure the exclusion list timeout to 20 seconds on a remote LAN with ID 3:

```
(Cisco Controller) >config remote-lan exclusionlist 3 20
```

config remote-lan interface

To configure an interface for a remote LAN, use the **config remote-lan interface** command.

config remote-lan interface *remote-lan-id interface_name*

Syntax Description

remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
interface_name	Interface name. **Note** Interface name should not be in upper case characters.

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 configure an interface myinterface for a remote LAN with ID 3:

```
(Cisco Controller) >config remote-lan interface 3 myinterface
```

config remote-lan ldap

To configure a remote LAN's LDAP servers, use the **config remote-lan ldap** command.

config remote-lan ldap {**add** | **delete**} *remote-lan-id index*

Syntax Description

add	Adds a link to a configured LDAP server (maximum of three).
delete	Deletes a link to a configured LDAP server.
remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
index	LDAP server index.

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 add an LDAP server with the index number 10 for a remote LAN with ID 3:

```
(Cisco Controller) >config remote-lan ldap add 3 10
```

config remote-lan mac-filtering

To configure MAC filtering on a remote LAN, use the **config remote-lan mac-filtering** command.

config remote-lan mac-filtering {**enable** | **disable**} *remote-lan-id*

Syntax Description

enable	Enables MAC filtering on a remote LAN.
disable	Disables MAC filtering on a remote LAN.
remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.

Command Default

MAC filtering on a remote LAN 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 disable MAC filtering on a remote LAN with ID 3:

```
(Cisco Controller) >config remote-lan mac-filtering disable 3
```

config remote-lan max-associated-clients

To configure the maximum number of client connections on a remote LAN, use the **config remote-lan max-associated-clients** command.

config remote-lan max-associated-clients *remote-lan-id max-clients*

Syntax Description

remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
max-clients	Configures the maximum number of client connections on a remote LAN.

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 configure 10 client connections on a remote LAN with ID 3:

```
(Cisco Controller) >config remote-lan max-associated-clients 3 10
```

config remote-lan radius_server

To configure the RADIUS servers on a remote LAN, use the **config remote-lan radius_server** command.

config remote-lan radius_server {**acct** {{**add** | **delete**} *server-index* | {**enable** | **disable**} | **interim-update** {*interval* | **enable** | **disable**}} | **auth** {{**add** | **delete**} *server-index* | {**enable** | **disable** }} | **overwrite-interface** {**enable** | **disable**}} *remote-lan-id*

Syntax Description

acct	Configures a RADIUS accounting server.
add	Adds a link to a configured RADIUS server.
delete	Deletes a link to a configured RADIUS server.
remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
server-index	RADIUS server index.
enable	Enables RADIUS accounting for this remote LAN.
disable	Disables RADIUS accounting for this remote LAN.
interim-update	Enables RADIUS accounting for this remote LAN.
interval	Accounting interim interval. The range is from 180 to 3600 seconds.
enable	Enables accounting interim update.
disable	Disables accounting interim update.
auth	Configures a RADIUS authentication server.
enable	Enables RADIUS authentication for this remote LAN.
disable	Disables RADIUS authentication for this remote LAN.
overwrite-interface	Configures a RADIUS dynamic interface for the remote LAN.
enable	Enables a RADIUS dynamic interface for the remote LAN.
disable	Disables a RADIUS dynamic interface for the remote LAN.

Command Default

The interim update interval is set to 600 seconds.

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 RADIUS accounting for a remote LAN with ID 3:

```
(Cisco Controller) >config remote-lan radius_server acct enable 3
```

config remote-lan security

To configure security policy for a remote LAN, use the **config remote-lan security** command.

config remote-lan security {{**sgt** | **802.1X** | **web-auth** {**enable** | **disable** | **acl** | **server-precedence**} *remote-lan-id* | {**web-passthrough** {**enable** | **disable** | **acl** | **email-input**} *remote-lan-id*}}

Syntax Description

sgt	Configures Secure Group Tag for the WLAN.
802.1X	Configures 802.1X.
web-auth	Specifies web authentication.
enable	Enables the web authentication settings.
disable	Disables the web authentication settings.
acl	Configures an access control list.
server-precedence	Configures the authentication server precedence order for web authentication users.
remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
email-input	Configures the web captive portal using an e-mail address.
web-passthrough	Specifies the web captive portal with no authentication required.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.4	The **802.1X** keyword was added.

The following example shows how to configure the security web authentication policy for remote LAN ID 1:

```
(Cisco Controller) >config remote-lan security web-auth enable 1
```

config remote-lan session-timeout

To configure client session timeout, use the **config remote-lan session-timeout** command.

config remote-lan session-timeout *remote-lan-id seconds*

Syntax Description

remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
seconds	Timeout or session duration in seconds. A value of zero is equivalent to no timeout.

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 configure the client session timeout to 6000 seconds for a remote LAN with ID 1:

```
(Cisco Controller) >config remote-lan session-timeout 1 6000
```

config remote-lan webauth-exclude

To configure web authentication exclusion on a remote LAN, use the **config remote-lan webauth-exclude** command.

config remote-lan webauth-exclude *remote-lan-id* {**enable** | **disable**}

Syntax Description

remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
enable	Enables web authentication exclusion on the remote LAN.
disable	Disables web authentication exclusion on the remote LAN.

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 web authentication exclusion on a remote LAN with ID 1:

```
(Cisco Controller) >config remote-lan webauth-exclude 1 enable
```

Configure Memory Monitor Commands

To troubleshoot hard-to-solve or hard-to-reproduce memory problems, use the **config memory monitor** commands.

Note The commands in this section can be disruptive to your system and should be run only when you are advised to do so by the Cisco Technical Assistance Center (TAC).

config memory monitor errors

To enable or disable monitoring for memory errors and leaks, use the **config memory monitor errors** command.

config memory monitor errors {**enable** | **disable**}

Caution The **config memory monitor** commands can be disruptive to your system and should be run only when you are advised to do so by the Cisco TAC.

Syntax Description

enable	Enables the monitoring for memory settings.
disable	Disables the monitoring for memory settings.

Command Default

Monitoring for memory errors and leaks is disabled by default.

Command History

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

Usage Guidelines

Be cautious about changing the defaults for the **config memory monitor** command unless you know what you are doing, you have detected a problem, or you are collecting troubleshooting information.

The following example shows how to enable monitoring for memory errors and leaks for a controller:

```
(Cisco Controller) > config memory monitor errors enable
```

Related Commands

config memory monitor leaks

debug memory

show memory monitor

config memory monitor leaks

To configure the controller to perform an auto-leak analysis between two memory thresholds, use the **config memory monitor leaks** command.

config memory monitor leaks *low_thresh high_thresh*

Caution The **config memory monitor** commands can be disruptive to your system and should be run only when you are advised to do so by the Cisco TAC.

Syntax Description

low_thresh	Value below which free memory cannot fall without crashing. This value cannot be set lower than 10000 KB.
high_thresh	Value below which the controller enters auto-leak-analysis mode. See the "Usage Guidelines" section.

Command Default

The default value for *low_thresh* is 10000 KB; the default value for *high_thresh* is 30000 KB.

Command History

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

Usage Guidelines

Note Be cautious about changing the defaults for the **config memory monitor** command unless you know what you are doing, you have detected a problem, or you are collecting troubleshooting information.

Use this command if you suspect that a memory leak has occurred.

If the free memory is lower than the *low_thresh* threshold, the system crashes, generating a crash file. The default value for this parameter is 10000 KB, and you cannot set it below this value.

Set the *high_thresh* threshold to the current free memory level or higher so that the system enters auto-leak-analysis mode. After the free memory reaches a level lower than the specified *high_thresh* threshold, the process of tracking and freeing memory allocation begins. As a result, the **debug memory events enable** command shows all allocations and frees, and the **show memory monitor detail** command starts to detect any suspected memory leaks.

The following example shows how to set the threshold values for auto-leak-analysis mode to 12000 KB for the low threshold and 35000 KB for the high threshold:

```
(Cisco Controller) > config memory monitor leaks 12000 35000
```

Related Commands

config memory monitor leaks

debug memory

show memory monitor

Configure Mesh Commands

Use the **configure mesh** commands to set mesh access point settings.

config mesh alarm

To configure alarm settings for outdoor mesh access points, use the **config mesh alarm** command.

config mesh alarm {**max-hop** | **max-children** | **low-snr** | **high-snr** | **association** | **parent-change count**} *value*

Syntax Description

max-hop	Sets the maximum number of hops before triggering an alarm for traffic over the mesh network. The valid values are 1 to 16 (inclusive).
max-children	Sets the maximum number of mesh access points (MAPs) that can be assigned to a mesh router access point (RAP) before triggering an alarm. The valid values are 1to 16 (inclusive).
low-snr	Sets the low-end signal-to-noise ratio (SNR) value before triggering an alarm. The valid values are 1 to 30 (inclusive).
high-snr	Sets the high-end SNR value before triggering an alarm. The valid values are 1 to 30 (inclusive).
association	Sets the mesh alarm association count value before triggering an alarm. The valid values are 1 to 30 (inclusive).
parent-change count	Sets the number of times a MAP can change its RAP association before triggering an alarm. The valid values are 1 to 30 (inclusive).
value	Value above or below which an alarm is generated. The valid values vary for each command.

Command Default

See the "Syntax Description" section for command and argument value ranges.

Command History

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

The following example shows how to set the maximum hops threshold to 8:

```
(Cisco Controller) >config mesh alarm max-hop 8
```

The following example shows how to set the upper SNR threshold to 25:

```
(Cisco Controller) >config mesh alarm high-snr 25
```

config mesh astools

To globally enable or disable the anti-stranding feature for outdoor mesh access points, use the **config mesh astools** command.

config mesh astools {**enable** | **disable**}

Syntax Description

enable	Enables this feature for all outdoor mesh access points.
disable	Disables this feature for all outdoor mesh access points.

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 anti-stranding on all outdoor mesh access points:

```
(Cisco Controller) >config mesh astools enable
```

config mesh backhaul rate-adapt

To globally configure the backhaul Tx rate adaptation (universal access) settings for indoor and outdoor mesh access points, use the **config mesh backhaul rate-adapt** command.

config mesh backhaul rate-adapt [**all** | **bronze** | **silver** | **gold** | **platinum**] {**enable** | **disable**}

Syntax Description

all	(Optional) Grants universal access privileges on mesh access points.
bronze	(Optional) Grants background-level client access privileges on mesh access points.
silver	(Optional) Grants best effort-level client access privileges on mesh access points.
gold	(Optional) Grants video-level client access privileges on mesh access points.
platinum	(Optional) Grants voice-level client access privileges on mesh access points.
enable	Enables this backhaul access level for mesh access points.
disable	Disables this backhaul access level for mesh access points.

Command Default

Backhaul access level for mesh access points is disabled.

Command History

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

Usage Guidelines

To use this command, mesh backhaul with client access must be enabled by using the **config mesh client-access** command.

Note After this feature is enabled, all mesh access points reboot.

The following example shows how to set the backhaul client access to the best-effort level:

```
(Cisco Controller) >config mesh backhaul rate-adapt silver
```

config mesh backhaul slot

To configure the slot radio as a downlink backhaul, use the **config mesh backhaul slot** command.

config mesh backhaul slot *slot_id* {**enable** | **disable**} *cisco_ap*

Syntax Description

slot_id	Slot number between 0 and 2.
enable	Enables the entered slot radio as a downlink backhaul.
disable	Disables the entered slot radio as a downlink backhaul.
cisco_ap	Name of the Root AP of the sector on which the backhaul needs to be enabled or disabled.

Command Default

The entered slot radio as a downlink backhaul is disabled.

Command History

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

Usage Guidelines

For 2.4 GHz, only slot 0 and 1 are valid. If slot 0 is enabled, slot 1 is automatically be disabled. If slot 0 is disabled, slot 1 is automatically enabled.

The following example shows how to enable slot 1 as the preferred backhaul for the root AP myrootap1:

```
(Cisco Controller) >config mesh backhaul slot 1 enable myrootap1
```

config mesh battery-state

To configure the battery state for Cisco mesh access points, use the **config mesh battery-state** command.

config mesh battery-state disable {**all** | *cisco_ap*}

Syntax Description

disable	Disables the battery-state for mesh access points.
all	Applies this command to all mesh access points.
cisco_ap	Specific mesh access point.

Command Default

Battery state 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 disable battery state for all mesh APs:

```
(Cisco Controller) >config mesh battery-state disable all
```

config mesh client-access

To enable or disable client access to the mesh backhaul on indoor and outdoor mesh access points, use the **config mesh client-access** command.

config mesh client-access {**enable** [**extended**] | **disable**}

Syntax Description

enable	Allows wireless client association over the mesh access point backhaul 802.11a radio.
extended	(Optional) Enables client access over both the backhaul radios for backhaul access points.
disable	Restricts the 802.11a radio to backhaul traffic, and allows client association only over the 802.11b/g radio.

Command Default

Client access is disabled.

Command History

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

Usage Guidelines

Backhaul interfaces (802.11a radios) act as primary Ethernet interfaces. Backhauls function as trunks in the network and carry all VLAN traffic between the wireless and wired network. No configuration of primary Ethernet interfaces is required.

When this feature is enabled, the mesh access points allow wireless client association over the 802.11a radio, which implies that a 152x mesh access point can carry both backhaul traffic and 802.11a client traffic over the same 802.11a radio.

When this feature is disabled, the mesh access points carry backhaul traffic over the 802.11a radio and allows client association only over the 802.11b/g radio.

The following example shows how to enable client access extended to allow a wireless client association over the 802.11a radio:

```
(Cisco Controller) >config mesh client-access enable extended
Enabling client access on both backhaul slots
 Same BSSIDs will be used on both slots
 All Mesh AP will be rebooted
 Are you sure you want to start? (y/N)Y
```

The following example shows how to restrict a wireless client association to the 802.11b/g radio:

```
(Cisco Controller) >config mesh client-access disable
All Mesh AP will be rebooted
Are you sure you want to start? (Y/N) Y
Backhaul with client access is canceled.
```

config mesh ethernet-bridging vlan-transparent

To configure how a mesh access point handles VLAN tags for Ethernet bridged traffic, use the **config mesh ethernet-bridging vlan-transparent** command.

config mesh ethernet-bridging vlan-transparent {**enable** | **disable**}

Syntax Description

enable	Bridges packets as if they are untagged.
disable	Drops all tagged packets.

Command Default

Bridges packets as if they are untagged.

Command History

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

The following example shows how to configure Ethernet packets as untagged:

```
(Cisco Controller) >config mesh ethernet-bridging vlan-transparent enable
```

The following example shows how to drop tagged Ethernet packets:

```
(Cisco Controller) >config mesh ethernet-bridging vlan-transparent disable
```

config mesh full-sector-dfs

To globally enable or disable full-sector Dynamic Frequency Selection (DFS) on mesh access points, use the **config mesh full-sector-dfs** command.

config mesh full-sector-dfs {**enable** | **disable**}

Syntax Description

enable	Enables DFS for mesh access points.
disable	Disables DFS for mesh access points.

Command Default

None

Command History

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

Usage Guidelines

This command instructs the mesh sector to make a coordinated channel change on the detection of a radar signal. For example, if a mesh access point (MAP) detects a radar signal, the MAP will notify the root access point (RAP), and the RAP will initiate a sector change.

All MAPs and the RAP that belong to that sector go to a new channel, which lowers the probability of MAPs stranding when radar is detected on the current backhaul channel, and no other valid parent is available as backup.

Each sector change causes the network to be silent for 60 seconds (as dictated by the DFS standard).

It is expected that after a half hour, the RAP will go back to the previously configured channel, which means that if radar is frequently observed on a RAP's channel, it is important that you configure a different channel for that RAP to exclude the radar affected channel at the controller.

This example shows to enable full-sector DFS on mesh access points:

```
(Cisco Controller) >config mesh full-sector-dfs enable
```

config mesh linkdata

To enable external MAC filtering of access points, use the **config mesh linkdata** command.

config mesh linkdata *destination_ap_name*

Syntax Description

destination_ap_name	Destination access point name for MAC address filtering.

Command Default

External MAC filtering is disabled.

Usage Guidelines

Note The **config mesh linktest** and **config mesh linkdata** commands are designed to be used together to verify information between a source and a destination access point. To get this information, first execute the **config mesh linktest** command with the access point that you want link data from in the *dest_ap* argument. When the command completes, enter the **config mesh linkdata** command and list the same destination access point, to display the link data will display (see example).

MAC filtering uses the local MAC filter on the controller by default.

When external MAC filter authorization is enabled, if the MAC address is not found in the local MAC filter, then the MAC address in the external RADIUS server is used.

MAC filtering protects your network against rogue mesh access points by preventing access points that are not defined on the external server from joining.

Before employing external authentication within the mesh network, the following configuration is required:

- The RADUIS server to be used as an AAA server must be configured on the controller.

- The controller must also be configured on the RADIUS server.
- The mesh access point configured for external authorization and authentication must be added to the user list of the RADIUS server.

The following example shows how to enable external MAC address filtering on access point AP001d.710d.e300:

```
(Cisco Controller) >config mesh linkdata MAP2-1-1522.7400 AP001d.710d.e300 18 100 1000 30
LinkTest started on source AP, test ID: 0
[00:1D:71:0E:74:00]->[00:1D:71:0D:E3:0F]
Test config:  1000 byte packets at 100  pps for 30 seconds, a-link rate 18 Mb/s
In progress: | || || || || || || || || || || || |
LinkTest complete
Results
=======
txPkts:             2977
txBuffAllocErr:        0
txQFullErrs:           0
Total rx pkts heard at destination:      2977
rx pkts decoded correctly:               2977
  err pkts: Total         0 (PHY 0 + CRC 0 + Unknown 0), TooBig 0, TooSmall 0
  rx lost packets:        0 (incr for each pkt seq missed or out of order)
  rx dup pkts:            0
  rx out of order:        0
avgSNR:    30, high:   33, low:    3
SNR profile         [0dB...60dB]
          0            6            0            0            0
          0            0            1            2           77
       2888            3            0            0            0
          0            0            0            0            0
    (>60dB)            0
avgNf:    -95, high:  -67, low:  -97
Noise Floor profile [-100dB...-40dB]
          0         2948           19            3            1
          0            0            0            0            0
          3            3            0            0            0
          0            0            0            0            0
    (>-40dB)           0
avgRssi:   64, high:   68, low:   63
RSSI profile        [-100dB...-40dB]
          0            0            0            0            0
          0            0            0            0            0
          0            0            0            0            0
          0            0            0            0            0
    (>-40dB)        2977
Summary PktFailedRate (Total pkts sent/recvd):                       0.000%
Physical layer Error rate (Total pkts with errors/Total pkts heard): 0.000%
```

This example shows how to enable external MAC filtering on access point AP001d.71d.e300:

```
(Cisco Controller) >config mesh linkdata AP001d.710d.e300
[SD:0,0,0(0,0,0), 0,0, 0,0]
[SD:1,105,0(0,0,0),30,704,95,707]
[SD:2,103,0(0,0,0),30,46,95,25]
[SD:3,105,0(0,0,0),30,73,95,29]
[SD:4,82,0(0,0,0),30,39,95,24]
[SD:5,82,0(0,0,0),30,60,95,26]
[SD:6,105,0(0,0,0),30,47,95,23]
[SD:7,103,0(0,0,0),30,51,95,24]
[SD:8,105,0(0,0,0),30,55,95,24]
[SD:9,103,0(0,0,0),30,740,95,749]
```

```
[SD:10,105,0(0,0,0),30,39,95,20]
[SD:11,104,0(0,0,0),30,58,95,23]
[SD:12,105,0(0,0,0),30,53,95,24]
[SD:13,103,0(0,0,0),30,64,95,43]
[SD:14,105,0(0,0,0),30,54,95,27]
[SD:15,103,0(0,0,0),31,51,95,24]
[SD:16,105,0(0,0,0),30,59,95,23]
[SD:17,104,0(0,0,0),30,53,95,25]
[SD:18,105,0(0,0,0),30,773,95,777]
[SD:19,103,0(0,0,0),30,745,95,736]
[SD:20,105,0(0,0,0),30,64,95,54]
[SD:21,103,0(0,0,0),30,747,95,751]
[SD:22,105,0(0,0,0),30,55,95,25]
[SD:23,104,0(0,0,0),30,52,95,35]
[SD:24,105,0(0,0,0),30,134,95,23]
[SD:25,103,0(0,0,0),30,110,95,76]
[SD:26,105,0(0,0,0),30,791,95,788]
[SD:27,103,0(0,0,0),30,53,95,23]
[SD:28,105,0(0,0,0),30,128,95,25]
[SD:29,104,0(0,0,0),30,49,95,24]
[SD:30,0,0(0,0,0), 0,0, 0,0]
```

config mesh linktest

To verify client access between mesh access points, use the **config mesh linktest** command.

config mesh linktest *source_ap* {*dest_ap* | *MAC addr*} *datarate packet_rate packet_size duration*

Syntax Description

source_ap	Source access point.
dest_ap	Destination access point.
MAC addr	MAC address.
datarate	• Data rate for 802.11a radios. Valid values are 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps. • Data rate for 802.11b radios. Valid values are 6, 12, 18, 24, 36, 54, or 100 Mbps. • Data rate for 802.11n radios. Valid values are MCS rates between m0 to m15.
packet_rate	Number of packets per second. Valid range is 1 through 3000, but the recommended default is 100.
packet_size	(Optional) Packet size in bytes. If not specified, packet size defaults to 1500 bytes.
duration	(Optional) Duration of the test in seconds. Valid values are 10-300 seconds, inclusive. If not specified, duration defaults to 30 seconds.

Command Default

100 packets per second, 1500 bytes, 30-second duration.

Command History

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

Usage Guidelines

The **config mesh linktest** and **config mesh linkdata** commands are designed to be used together to verify information between a source and a destination access point. To get this information, first enter the **config mesh linktest** command with the access point that you want link data from in the *dest_ap* argument. When the command completes, enter the **config mesh linkdata** command and list the same destination access point, to display the link data.

The following warning message appears when you run a linktest that might oversubscribe the link:

```
Warning! Data Rate (100 Mbps) is not enough to perform this link test on
packet size (2000bytes) and (1000) packets per second. This may cause AP
to disconnect or reboot. Are you sure you want to continue?
```

The following example shows how to verify client access between mesh access points *SB_MAP1* and *SB_RAP2* at *36 Mbps*, *20 fps*, *100 frame size*, and *15*-second duration:

```
(Cisco Controller) >config mesh linktest SB_MAP1 SB_RAP1 36 20 100 15
LinkTest started on source AP, test ID: 0
[00:1D:71:0E:85:00]->[00:1D:71:0E:D0:0F]
Test config:  100 byte packets at 20  pps for 15 seconds, a-link rate 36 Mb/s
In progress: | || || || || || |
LinkTest complete
Results
=======
txPkts:              290
txBuffAllocErr:        0
txQFullErrs:           0
Total rx pkts heard at destination:       290
rx pkts decoded correctly:
  err pkts: Total         0 (PHY 0 + CRC 0 + Unknown 0), TooBig 0, TooSmall 0
  rx lost packets:        0 (incr for each pkt seq missed or out of order)
  rx dup pkts:            0
  rx out of order:        0
avgSNR:    37, high:   40, low:    5
SNR profile         [0dB...60dB]
          0            1            0            0            1
          3            0            1            0            2
          8           27          243            4            0
          0            0            0            0            0
    (>60dB)            0
avgNf:    -89, high:  -58, low:  -90
Noise Floor profile [-100dB...-40dB]
          0            0            0          145          126
         11            2            0            1            0
          3            0            1            0            1
          0            0            0            0            0
    (>-40dB)           0
avgRssi:   51, high:   53, low:   50
RSSI profile        [-100dB...-40dB]
          0            0            0            0            0
          0            0            0            0            0
          0            0            0            0            0
          0            7          283            0            0
    (>-40dB)           0
Summary PktFailedRate (Total pkts sent/recvd):                       0.000%
Physical layer Error rate (Total pkts with errors/Total pkts heard): 0.000%
```

The following table lists the output flags displayed for the **config mesh linktest** command.

Table 3: Output Flags for the Config Mesh Linktest Command

Output Flag	Description
txPkts	Number of packets sent by the source.
txBuffAllocErr	Number of linktest buffer allocation errors at the source (expected to be zero).
txQFullErrs	Number of linktest queue full errors at the source (expected to be zero).
Total rx pkts heard at destination	Number of linktest packets received at the destination (expected to be same as or close to the txPkts).
rx pkts decoded correctly	Number of linktest packets received and decoded correctly at the destination (expected to be same as close to txPkts).
err pkts: Total	Packet error statistics for linktest packets with errors.
rx lost packets	Total number of linktest packets not received at the destination.
rx dup pkts	Total number of duplicate linktest packets received at the destination.
rx out of order	Total number of linktest packets received out of order at the destination.
avgNF	Average noise floor.
Noise Floor profile	Noise floor profile in dB and are negative numbers.
avgSNR	Average SNR values.
SNR profile [odb...60dB]	Histogram samples received between 0 to 60 dB. The different colums in the SNR profile is the number of packets falling under the bucket 0-3, 3-6, 6-9, up to 57-60.
avgRSSI	Average RSSI values. The average high and low RSSI values are positive numbers.
RSSI profile [-100dB...-40dB]	The RSSI profile in dB and are negative numbers.

config mesh lsc

To configure a locally significant certificate (LSC) on mesh access points, use the **config mesh lsc** command.

config mesh lsc {**enable** | **disable**}

Syntax Description

enable	Enables an LSC on mesh access points.
disable	Disables an LSC on mesh access points.

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 LSC on mesh access points:

```
(Cisco Controller) >config mesh lsc enable
```

config mesh multicast

To configure multicast mode settings to manage multicast transmissions within the mesh network, use the **config mesh multicast** command.

config mesh multicast {**regular** | **in** | **in-out**}

Syntax Description

regular	Multicasts the video across the entire mesh network and all its segments by bridging-enabled root access points (RAPs) and mesh access points (MAPs).
in	Forwards the multicast video received from the Ethernet by a MAP to the RAP's Ethernet network. No additional forwarding occurs, which ensures that non-LWAPP multicasts received by the RAP are not sent back to the MAP Ethernet networks within the mesh network (their point of origin), and MAP-to-MAP multicasts do not occur because they are filtered out
in-out	Configures the RAP and MAP to multicast, but each in a different manner: If multicast packets are received at a MAP over Ethernet, they are sent to the RAP; however, they are not sent to other MAP Ethernets, and the MAP-to-MAP packets are filtered out of the multicast. If multicast packets are received at a RAP over Ethernet, they are sent to all the MAPs and their respective Ethernet networks. See the Usage Guidelines section for more information.

Command Default

In-out mode

Command History

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

Usage Guidelines

Multicast for mesh networks cannot be enabled using the controller GUI.

Mesh multicast modes determine how bridging-enabled access points mesh access points (MAPs) and root access points (RAPs) send multicasts among Ethernet LANs within a mesh network. Mesh multicast modes manage non-LWAPP multicast traffic only. LWAPP multicast traffic is governed by a different mechanism.

You can use the controller CLI to configure three mesh multicast modes to manage video camera broadcasts on all mesh access points. When enabled, these modes reduce unnecessary multicast transmissions within the mesh network and conserve backhaul bandwidth.

When using in-out mode, it is important to properly partition your network to ensure that a multicast sent by one RAP is not received by another RAP on the same Ethernet segment and then sent back into the network.

Note If 802.11b clients need to receive CAPWAP multicasts, then multicast must be enabled globally on the controller as well as on the mesh network (by using the **config network multicast global** command). If multicast does not need to extend to 802.11b clients beyond the mesh network, you should disable the global multicast parameter.

The following example shows how to multicast video across the entire mesh network and all its segments by bridging-enabled RAPs and MAPs:

```
(Cisco Controller) >config mesh multicast regular
```

config mesh parent preferred

To configure a preferred parent for a mesh access point, use the **config mesh parent preferred** command.

config mesh parent preferred *cisco_ap* {*mac_address* | **none**}

Syntax Description

cisco_ap	Name of the child access point.
mac_address	MAC address of the preferred parent.
none	Clears the configured parent.

Command Default None

Command History

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

Usage Guidelines A child AP selects the preferred parent based on the following conditions:

- The preferred parent is the best parent.
- The preferred parent has a link SNR of at least 20 dB (other parents, however good, are ignored).
- The preferred parent has a link SNR in the range of 12 dB and 20 dB, but no other parent is significantly better (that is, the SNR is more than 20 percent better). For an SNR lower than 12 dB, the configuration is ignored.
- The preferred parent is not in a blocked list.
- The preferred parent is not in silent mode because of dynamic frequency selection (DFS).
- The preferred parent is in the same bridge group name (BGN). If the configured preferred parent is not in the same BGN and no other parent is available, the child joins the parent AP using the default BGN.

The following example shows how to configure a preferred parent with the MAC address 00:21:1b:ea:36:60 for a mesh access point myap1:

```
(Cisco Controller) >config mesh parent preferred myap1 00:21:1b:ea:36:60
```

The following example shows how to clear a preferred parent with the MAC address 00:21:1b:ea:36:60 for a mesh access point myap1, by using the keyword none:

```
(Cisco Controller) >config mesh parent preferred myap1 00:21:1b:ea:36:60 none
```

config mesh public-safety

To enable or disable the 4.9-GHz public safety band for mesh access points, use the **config mesh public-safety** command.

config mesh public-safety {**enable** | **disable**} {**all** | *cisco_ap*}

Syntax Description

enable	Enables the 4.9-GHz public safety band.
disable	Disables the 4.9-GHz public safety band.
all	Applies the command to all mesh access points.
cisco_ap	Specific mesh access point.

Command Default

The 4.9-GHz public safety band is disabled.

Command History

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

Usage Guidelines

4.9 GHz is a licensed frequency band restricted to public-safety personnel.

The following example shows how to enable the 4.9-GHz public safety band for all mesh access points:

```
(Cisco Controller) >config mesh public-safety enable all
4.9GHz is a licensed frequency band in -A domain for public-safety usage
 Are you sure you want to continue? (y/N) y
```

config mesh radius-server

To enable or disable external authentication for mesh access points, use the **config mesh radius-server** command.

config mesh radius-server *index* {**enable** | **disable**}

Syntax Description

index	RADIUS authentication method. Options are as follows: • Enter **eap** to designate Extensible Authentication Protocol (EAP) for the mesh RADIUS server setting. • Enter **psk** to designate Preshared Keys (PSKs) for the mesh RADIUS server setting.
enable	Enables the external authentication for mesh access points.

disable	Disables the external authentication for mesh access points.

Command Default

EAP 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 external authentication for mesh access points:

```
(Cisco Controller) >config mesh radius-server eap enable
```

config mesh range

To globally set the maximum range between outdoor root access points (RAPs) and mesh access points (MAPs), use the **config mesh range** command.

config mesh range [*distance*]

Syntax Description

distance	(Optional) Maximum operating range (150 to 132000 ft) of the mesh access point.

Command Default

12,000 feet.

Command History

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

Usage Guidelines

After this command is enabled, all outdoor mesh access points reboot. This command does not affect indoor access points.

The following example shows how to set the range between an outdoor mesh RAP and a MAP:

```
(Cisco Controller) >config mesh range 300
Command not applicable for indoor mesh. All outdoor Mesh APs will be rebooted
Are you sure you want to start? (y/N) y
```

config mesh secondary-backhaul

To configure a secondary backhaul on the mesh network, use the **config mesh secondary-backhaul** command.

config mesh secondary-backhaul {**enable** [**force-same-secondary-channel**] | **disable** [**rll-retransmit** | **rll-transmit**]}

Syntax Description

enable	Enables the secondary backhaul configuration.

force-same-secondary-channel	(Optional) Enables secondary-backhaul mesh capability. Forces all access points rooted at the first hop node to have the same secondary channel and ignores the automatic or manual channel assignments for the mesh access points (MAPs) at the second hop and beyond.
disable	Specifies the secondary backhaul configuration is disabled.
rll-transmit	(Optional) Uses reliable link layer (RLL) at the second hop and beyond.
rll-retransmit	(Optional) Extends the number of RLL retry attempts in an effort to improve reliability.

Command Default

None

Command History

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

Usage Guidelines

This command uses a secondary backhaul radio as a temporary path for traffic that cannot be sent on the primary backhaul due to intermittent interference.

The following example shows ho to enable a secondary backhaul radio and force all access points rooted at the first hop node to have the same secondary channel:

```
(Cisco Controller) >config mesh secondary-backhaul enable force-same-secondary-channel
```

config mesh security

To configure the security settings for mesh networks, use the **config mesh security** command.

config mesh security {{**rad-mac-filter** | **force-ext-auth** | **lsc-only-auth**} {**enable** | **disable**}} | {{**eap** | **psk provisioning** | **provisioning window**} | {**enable** | **disable**}} | {**delete_psk** | **key**}

Syntax Description

rad-mac-filter	Enables a Remote Authentication Dial-In User Service (RADIUS) MAC address filter for the mesh security setting.
force-ext-auth	Disables forced external authentication for the mesh security setting.
lsc-only-auth	Enables Locally Significant Certificate only authentication for the mesh security setting.
enable	Enables the mesh security setting.
disable	Disables the mesh security setting.
eap	Designates the Extensible Authentication Protocol (EAP) for the mesh security setting by default.

psk	Designates a preshared key(PSK) for the mesh security setting.
provisioning	Encrypts provisioning for the PSK in the controller.
provisioning window	Encrypts provisioning window for the PSK in controller.
enable	Enables provisioning of the PSK.
disable	Disables provisioning of the PSK.
key	Specifies the key for the PSK.

Command Default

The EAP is designated as default for the mesh security.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.2	This command was modified, the psk provisioning and psk provisioning keywords are added.

The following example shows how to configure EAP as the security option for all mesh access points:

```
(Cisco Controller) config mesh security eap
```

The following example shows how to configure PSK as the security option for all mesh access points:

```
(Cisco Controller) config mesh security psk
```

The following example shows how to enable PSK provisioning as the security option for all mesh access points:

```
(Cisco Controller)> config mesh security psk provisioning enable
```

The following example shows how to configure a PSK provisioning key as the security option for all mesh access points:

```
(Cisco Controller)> config mesh security psk provisioning key 5
```

The following example shows how to enable a PSK provisioning window as the security option for all mesh access points:

```
(Cisco Controller)> config mesh security psk provisioning window enable
```

The following example shows how to delete the PSK provisioning for controller :

```
(Cisco Controller)> config mesh security psk provisioning delete_psk wlc
```

The following example shows how to delete the PSK provisioning for all mesh access points:

```
(Cisco Controller)> config mesh security psk provisioning delete_psk ap
```

The following example shows how to delete PSK provisioning for all configurations in controller :

```
(Cisco Controller)> config mesh security psk provisioning delete_psk wlc all
```

config mesh slot-bias

To enable or disable slot bias for serial backhaul mesh access points, use the **config mesh slot-bias** command.

config mesh slot-bias {**enable** | **disable**}

Syntax Description

enable	Enables slot bias for serial backhaul mesh APs.
disable	Disables slot bias for serial backhaul mesh APs.

Command Default

By default, slot bias is in enabled state.

Command History

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

Usage Guidelines

Follow these guidelines when using this command:

- The **config mesh slot-bias** command is a global command and therefore applicable to all 1524SB APs associated with the same controller.
- Slot bias is applicable only when both slot 1 and slot 2 are available. If a slot radio does not have a channel that is available because of dynamic frequency selection (DFS), the other slot takes up both the uplink and downlink roles.
- If slot 2 is not available because of hardware issues, slot bias functions normally. Corrective action should be taken by disabling the slot bias or fixing the antenna.

The following example shows how to disable slot bias for serial backhaul mesh APs:

```
(Cisco Controller) >config mesh slot-bias disable
```

Configure Management-User Commands

Use the **config mgmtuser** commands to configure management user settings.

config mgmtuser add

To add a local management user to the controller, use the **config mgmtuser add** command.

config mgmtuser add *username password* {**lobby-admin** | **read-write** | **read-only**} [*description*]

Syntax Description

username	Account username. The username can be up to 24 alphanumeric characters.
password	Account password. The password can be up to 24 alphanumeric characters.
lobby-admin	Creates a management user with lobby ambassador privileges.
read-write	Creates a management user with read-write access.
read-only	Creates a management user with read-only access.
description	(Optional) Description of the account. The description can be up to 32 alphanumeric characters within double quotes.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.4	This command creates lobby-admin user .

The following example shows how to create a management user account with read-write access.

```
(Cisco Controller) > config mgmtuser add admin admin read-write "Main account"
```

Related Commands

show mgmtuser

config mgmtuser delete

To delete a management user from the controller, use the **config mgmtuser delete** command.

config mgmtuser delete *username*

Syntax Description

username	Account username. The username can be up to 24 alphanumeric characters.

Command Default

The management user is not deleted by default.

Command History

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

The following example shows how to delete a management user account admin from the controller.

```
(Cisco Controller) > config mgmtuser delete admin

Deleted user admin
```

Related Commands **show mgmtuser**

config mgmtuser description

To add a description to an existing management user login to the controller, use the **config mgmtuser description** command.

config mgmtuser description *username description*

Syntax Description

username	Account username. The username can be up to 24 alphanumeric characters.
description	Description of the account. The description can be up to 32 alphanumeric characters within double quotes.

Command Default No description is added to the management user.

Command History

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

The following example shows how to add a description “primary-user” to the management user “admin”:

```
(Cisco Controller) > config mgmtuser description admin "primary-user"
```

Related Commands

config mgmtuser add

config mgmtuser delete

config mgmtuser password

show mgmtuser

config mgmtuser password

To configure a management user password, use the **config mgmtuser password** command.

config mgmtuser password *username password*

Syntax Description

username	Account username. The username can be up to 24 alphanumeric characters.
password	Account password. The password can be up to 24 alphanumeric characters.

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 change the password of the management user "admin" with the new password 5rTfm:

```
(Cisco Controller) > config mgmtuser password admin 5rTfm
```

Related Commands **show mgmtuser**

config mgmtuser termination-interval

To configure the user re-authentication terminal interval in seconds, use the **config mgmtuser termination-interval** command.

config mgmtuser termination-interval {*seconds* }

Syntax Description

seconds	Re-authentication terminal interval in seconds for a user before being logged out. Default value is 0, the valid range is 0 to 300 seconds.

Command History

Release	Modification
8.2	This command was introduced in this release.

The following example shows how to set the interval in seconds before the user is logged out:

```
(Cisco Controller) > config mgmtuser termination-interval 180
```

Configure Mobility Commands

Use the **config mobility** commands to configure mobility (roaming) settings.

config mobility dscp

To configure the mobility intercontroller DSCP value, use the **config mobility dscp** command.

config mobility dscp *dscp_value*

Syntax Description

dscp_value	DSCP value ranging from 0 to 63.

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 configure the mobility intercontroller DSCP value to 40:

```
(Cisco Controller) >config mobility dscp 40
```

config mobility group anchor

To create a new mobility anchor for the WLAN or wired guest LAN, enter, use the **config mobility group anchor** command.

config mobility group anchor {**add** | **delete**} {**wlan** *wlan_id* | **guest-lan** *guest_lan_id*} *anchor_ip*

Syntax Description

add	Adds or changes a mobility anchor to a wireless LAN.
delete	Deletes a mobility anchor from a wireless LAN.
wlan	Specifies the wireless LAN anchor settings.
wlan_id	Wireless LAN identifier between 1 and 512 (inclusive).
guest-lan	Specifies the guest LAN anchor settings.
guest_lan_id	Guest LAN identifier between 1 and 5 (inclusive).
anchor_ip	IP address of the anchor controller.

Command Default None

Command History

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

Usage Guidelines

The *wlan_id* or *guest_lan_id* must exist and be disabled.

Auto-anchor mobility is enabled for the WLAN or wired guest LAN when you configure the first mobility anchor. Deleting the last anchor disables the auto-anchor mobility feature and resumes normal mobility for new associations.

The following example shows how to add a mobility anchor with the IP address 192.12.1.5 to a wireless LAN ID 2:

```
(Cisco Controller) >config mobility group anchor add wlan 2 192.12.1.5
```

The following example shows how to delete a mobility anchor with the IP address 193.13.1.15 from a wireless LAN:

```
(Cisco Controller) >config mobility group anchor delete wlan 5 193.13.1.5
```

config mobility group domain

To configure the mobility domain name, use the **config mobility group domain** command.

config mobility group domain *domain_name*

Syntax Description

domain_name	Domain name. The domain name can be up to 31 case-sensitive characters.

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 configure a mobility domain name lab1:

```
(Cisco Controller) >config mobility group domain lab1
```

config mobility group keepalive count

To configure the controller to detect failed mobility group members (including anchor controllers), use the **config mobility group keepalive count** command.

config mobility group keepalive count *count*

Syntax Description

count	Number of times that a ping request is sent to a mobility group member before the member is considered unreachable. The range is from 3 to 20. The default is 3.

Command Default The default number of times that a ping request is sent to a mobility group member is 3.

Command History

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

The following example shows how to specify the number of times a ping request is sent to a mobility group member before the member is considered unreachable to three counts:

```
(Cisco Controller) >config mobility group keepalive count 3
```

config mobility group keepalive interval

To configure the controller to detect failed mobility group members (including anchor controllers), use the **config mobility group keepalive** command.

config mobility group keepalive *interval*

Syntax Description

interval	Interval of time between each ping request sent to a mobility group member. The range is from 1 to 30 seconds. The default value is 10 seconds.

Command Default The default interval of time between each ping request is 10 seconds.

Command History

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

The following example shows how to specify the amount of time between each ping request sent to a mobility group member to 10 seconds:

```
(Cisco Controller) >config mobility group keepalive 10
```

config mobility group member

To add or delete users from the mobility group member list, use the **config mobility group member** command.

config mobility group member {**add** *MAC-addr IP-addr* [*group_name*] [**encrypt**{**enable** | **disable**] | [**data-dtls** *mac-addr* {**enable** | **disable**} | **delete** *MAC-addr* | **hash** *IP-addr* {*key* | **none**}}

Syntax Description

add	Adds or changes a mobility group member to the list.
MAC-addr	Member switch MAC address.
IP-addr	Member switch IP address.

group_name	(Optional) Member switch group name (if different from the default group name).
encrypt	(Optional) Secure communication to peer. Default value is disabled
data-dtls	(Optional) Configure data-dtls for mobility peer. Default value is enabled
delete	(Optional) Deletes a mobility group member from the list.
hash	Configures the hash key for authorization. You can configure the hash key only if the member is a virtual controller in the same domain.
key	Hash key of the virtual controller. For example, a819d479dcfeb3e0974421b6e8335582263d9169
none	Clears the previous hash key of the virtual controller.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.
8.8.111.0	This command was updated by adding **encrypt** , **data-dtls** keywords to support IRCM functionality.

The following example shows how to add a mobility group member with an IPv4 address to the list:

```
(Cisco Controller) >config mobility group member add 11:11:11:11:11:11 209.165.200.225
```

The following example shows how to add a mobility group member with an IPv6 address to the list:

```
(Cisco Controller) >config mobility group member add 11:11:11:11:11:11 2001:DB8::1
```

The following example shows how to configure the hash key of a virtual controller in the same domain:

Note The IP address in this example can be in either IPv4 or IPv6 format.

```
(Cisco Controller) >config mobility group member hash 209.165.201.1
a819d479dcfeb3e0974421b6e8335582263d9169
```

config mobility group multicast-address

To configure the multicast group IP address for nonlocal groups within the mobility list, use the **config mobility group multicast-address** command.

config mobility group multicast-address *group_name ip_address*

Syntax Description

group_name	Member switch group name (if different from the default group name).
ip_address	Member switch IP address.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

The following example shows how to configure the multicast group IP address 10.10.10.1 for a group named test:

```
(Cisco Controller) >config mobility group multicast-address test 10.10.10.1
```

The following example shows how to configure the multicast group IP address 2001:DB8::1 for a group named test:

```
(Cisco Controller) >config mobility group multicast-address test 2001:DB8::1
```

config mobility multicast-mode

To enable or disable mobility multicast mode, use the **config mobility multicast-mode** command.

config mobility multicast-mode {**enable** | **disable**} *local_group_multicast_address*

Syntax Description

enable	Enables the multicast mode; the controller uses to send Mobile Announce messages to the local
disable	Disables the multicast mode; the controller uses send the Mobile Announce messages to the loca
local_group_multicast_address	IP address for the local mobility group.

Command Default The mobility multicast mode 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 multicast mobility mode for the local mobility group IP address 157.168.20.0:

```
(Cisco Controller) >config mobility multicast-mode enable 157.168.20.0
```

config mobility secure-mode

To configure the secure mode for mobility messages between controllers, use the **config mobility secure-mode** command.

config mobility secure-mode {**enable** | **disable**}

Syntax Description

enable	Enables the mobility group message security.
disable	Disables mobility group message security.

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 secure mode for mobility messages:

```
(Cisco Controller) >config mobility secure-mode enable
```

config mobility statistics reset

To reset the mobility statistics, use the **config mobility statistics reset** command.

config mobility statistics reset

Syntax Description This command has no arguments or keywords.

Command Default None

Command History

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

This example shows how to reset the mobility group statistics:

```
(Cisco Controller) >config mobility statistics reset
```

Configure Message Log Level Commands

Use the **config msglog** commands to configure msglog level settings.

config msglog level critical

To reset the message log so that it collects and displays only critical (highest-level) messages, use the **config msglog level critical** command.

config msglog level critical

Syntax Description This command has no arguments or keywords.

Command Default None

Command History

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

Usage Guidelines The message log always collects and displays critical messages, regardless of the message log level setting.

The following example shows how to configure the message log severity level and display critical messages:

```
(Cisco Controller) > config msglog level critical
```

Related Commands **show msglog**

config msglog level error

To reset the message log so that it collects and displays both critical (highest-level) and error (second-highest) messages, use the **config msglog level error** command.

config msglog level error

Syntax Description This command has no arguments or keywords.

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 reset the message log to collect and display critical and noncritical error messages:

```
(Cisco Controller) > config msglog level error
```

Related Commands **show msglog**

config msglog level security

To reset the message log so that it collects and displays critical (highest-level), error (second-highest), and security (third-highest) messages, use the **config msglog level security** command.

config msglog level security

Syntax Description This command has no arguments or keywords.

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 reset the message log so that it collects and display critical, noncritical, and authentication or security-related errors:

```
(Cisco Controller) > config msglog level security
```

Related Commands **show msglog**

config msglog level verbose

To reset the message log so that it collects and displays all messages, use the **config msglog level verbose** command.

config msglog level verbose

Syntax Description This command has no arguments or keywords.

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 reset the message logs so that it collects and display all messages:

```
(Cisco Controller) > config msglog level verbose
```

Related Commands **show msglog**

config msglog level warning

To reset the message log so that it collects and displays critical (highest-level), error (second-highest), security (third-highest), and warning (fourth-highest) messages, use the **config msglog level warning** command.

config msglog level warning

Syntax Description

This command has no arguments or keywords.

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 reset the message log so that it collects and displays warning messages in addition to critical, noncritical, and authentication or security-related errors:

```
(Cisco Controller) > config msglog level warning
```

Related Commands

show msglog

Configure Media-Stream Commands

Use the config media-stream commands to configure media stream settings.

config 802.11 media-stream multicast-direct

To configure the media stream multicast-direct parameters for the 802.11 networks, use the **config 802.11 media-stream multicast-direct** command.

config 802.11 {**a** | **b**} **media-stream multicast-direct** {**admission-besteffort** {**enable** | **disable**} | {**client-maximum** | **radio-maximum**} {*value* | **no-limit** } | **enable** | **disable**}

Syntax Description

802.11a	Specifies the 802.11a network.
802.11b	Specifies the 802.11b/g network.
admission-besteffort	Admits media stream to best-effort queue.
enable	Enables multicast-direct on a 2.4-GHz or a 5-GHz band.
disable	Disables multicast-direct on a 2.4-GHz or a 5-GHz band.
client-maximum	Specifies the maximum number of streams allowed on a client.
radio-maximum	Specifies the maximum number of streams allowed on a 2.4-GHz or a 5-GHz band.
value	Number of streams allowed on a client or on a 2.4-GHz or a 5-GHz band, between 1 to 20.
no-limit	Specifies the unlimited number of streams allowed on a client or on a 2.4-GHz or a 5-GHz band.

Command Default

None

Command History

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

Usage Guidelines

Before you configure the media stream multicast-direct parameters on a 802.11 network, ensure that the network is nonoperational.

This example shows how to enable a media stream multicast-direct settings on an 802.11a network:

```
> config 802.11a media-stream multicast-direct enable
```

This example shows how to admit the media stream to the best-effort queue:

```
> config 802.11a media-stream multicast-direct admission-besteffort enable
```

This example shows how to set the maximum number of streams allowed on a client:

```
> config 802.11a media-stream multicast-direct client-maximum 10
```

Related Commands

config 802.11 media-stream video-redirect

show 802.11a media-stream name

show media-stream group summary

show media-stream group detail

config 802.11 media-stream video-redirect

To configure the media stream video-redirect for the 802.11 networks, use the **config 802.11 media-stream video-redirect** command.

config 802.11 {**a** | **b**} **media-stream video-redirect** {**enable** | **disable**}

Syntax Description

802.11a	Specifies the 802.11a network.
802.11b	Specifies the 802.11b/g network.
enable	Enables traffic redirection.
disable	Disables traffic redirection.

Command Default

None.

Usage Guidelines

Before you configure the media stream video-redirect on a 802.11 network, ensure that the network is nonoperational.

This example shows how to enable media stream traffic redirection on an 802.11a network:

```
> config 802.11a media-stream video-redirect enable
```

Related Commands

config 802.11 media-stream multicast-redirect

show 802.11a media-stream name

show media-stream group summary

show media-stream group detail

config media-stream multicast-direct

To configure the media-stream multicast direct, use the **config media-stream multicast direct** command.

config media-stream multicast-direct {**enable** | **disable**}

Syntax Description

enable	Enables a media stream.
disable	Disables a media stream.

Command Default None.

Usage Guidelines Media-stream multicast-direct requires load based Call Admission Control (CAC) to run.

This example shows how to enable media-stream multicast-direct settings:

```
> config media-stream multicast-direct enable
```

This example shows how to disable media-stream multicast-direct settings:

```
> config media-stream multicast-direct disable
```

Related Commands

config 802.11 media-stream video-redirect

show 802.11a media-stream name

show media-stream group summary

show media-stream group detail

config media-stream message

To configure various parameters of message configuration, use the **config media-stream message** command.

config media-stream message {**state** [**enable** | **disable**] | **url** *url* | **email** *email* | **phone** *phone_number* | **note** *note*}

Syntax Description

state	Specifies the media stream message state.
enable	(Optional) Enables the session announcement message state.
disable	(Optional) Disables the session announcement message state.
url	Configures the URL.
url	Session announcement URL.
email	Configures the email ID.
email	Specifies the session announcement e-mail.
phone	Configures the phone number.
phone_number	Session announcement phone number.
note	Configures the notes.

note	Session announcement notes.

Command Default Disabled.

Usage Guidelines Media-stream multicast-direct requires load-based Call Admission Control (CAC) to run.

This example shows how to enable the session announcement message state:

```
> config media-stream message state enable
```

This example shows how to configure the session announcement e-mail address:

```
> config media-stream message mail abc@co.com
```

Related Commands

config media-stream

show 802.11a media-stream name

show media-stream group summary

show media-stream group detail

config media-stream add

To configure the various global media-stream configurations, use the **config media-stream add** command.

config media-stream add multicast-direct *media_stream_name start-IP end-IP* [**template** {**very coarse** | **coarse** | **ordinary** | **low-resolution** | **med-resolution** | **high-resolution**} | **detail** {*bandwidth packet-size* {**periodic** | **initial**}} **qos** *priority* {**drop** | **fallback**}

Syntax Description

multicast-direct	Specifies the media stream for the multicast-direct setting.
media_stream_name	Media-stream name.
start-IP	IP multicast destination start address.
end-IP	IP multicast destination end address.
template	(Optional) Configures the media stream from templates.
very coarse	Applies a very-coarse template.
coarse	Applies a coarse template.
ordinary	Applies an ordinary template.
low-resolution	Applies a low-resolution template.
med-resolution	Applies a medium-resolution template.
high-resolution	Applies a high-resolution template.
detail	Configures the media stream with specific parameters.

bandwidth	Maximum expected stream bandwidth.
packet-size	Average packet size.
periodic	Specifies the periodic admission evaluation.
initial	Specifies the Initial admission evaluation.
qos	AIR QoS class (video only).
priority	Media-stream priority.
drop	Specifies that the stream is dropped on a periodic reevaluation.
fallback	Specifies if the stream is demoted to the best-effort class on a periodic reevaluation.

Command Default None

Command History

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

Usage Guidelines Media-stream multicast-direct requires load-based Call Admission Control (CAC) to run.

This example shows how to configure a new media stream:

```
> config media-stream add multicast-direct abc 227.8.8.8 227.9.9.9 detail 2 150 periodic
video 1 drop
```

Related Commands

show 802.11a media-stream name

show media-stream group summary

show media-stream group detail

config media-stream admit

To allow traffic for a media stream group, use the **config media-stream admit** command.

config media-stream admit *media_stream_name*

Syntax Description

media_stream_name	Media-stream group name.

Command Default None

Command History

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

Usage Guidelines When you try to allow traffic for the media stream group, you will be prompted that IGMP snooping will be disabled and enabled again, and all clients might observe a glitch on the multicast traffic.

This example shows how to allow traffic for a media stream group:

```
(Cisco Controller) > config media-stream admit MymediaStream
```

Related Commands

show 802.11a media-stream name

show media-stream group summary

show media-stream group detail

config media-stream deny

To block traffic for a media stream group, use the **config media-stream deny** command.

Syntax Description

media_stream_name	Media-stream group name.

config media-stream deny *media_stream_name*

Command Default None

Command History

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

Usage Guidelines When you try to block traffic for the media stream group, you will be prompted that IGMP snooping will be disabled and enabled again, and all clients might observe a glitch on the multicast traffic.

This example shows how to block traffic for a media stream group:

```
(Cisco Controller) > config media-stream deny MymediaStream
```

Related Commands

show 802.11a media-stream name

show media-stream group summary

show media-stream group detail

config media-stream delete

To configure the various global media-stream configurations, use the **config media-stream delete** command.

config media-stream delete *media_stream_name*

Syntax Description

media_stream_name	Media-stream name.

Command Default None

Command History

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

Usage Guidelines Media-stream multicast-direct requires load-based Call Admission Control (CAC) to run.

This example shows how to delete the media stream named abc:

```
(Cisco Controller) > config media-stream delete abc
```

Related Commands

show 802.11a media-stream name

show media-stream group summary

show media-stream group detail

Configure Net User Commands

Use the **config netuser** commands to configure netuser settings.

config netuser add

To add a guest user on a WLAN or wired guest LAN to the local user database on the controller, use the **config netuser add** command.

config netuser add *username password* {**wlan** *wlan_id* | **guestlan** *guestlan_id*} **userType guest lifetime** *lifetime* **description** *description*

Syntax Description

username	Guest username. The username can be up to 50 alphanumeric characters.
password	User password. The password can be up to 24 alphanumeric characters.
wlan	Specifies the wireless LAN identifier to associate with or zero for any wireless LAN.
wlan_id	Wireless LAN identifier assigned to the user. A zero value associates the user with any wireless LAN.
guestlan	Specifies the guest LAN identifier to associate with or zero for any wireless LAN.
guestlan_id	Guest LAN ID.
userType	Specifies the user type.
guest	Specifies the guest for the guest user.
lifetime	Specifies the lifetime.
lifetime	Lifetime value (60 to 259200 or 0) in seconds for the guest user. **Note** A value of 0 indicates an unlimited lifetime.
description	Short description of user. The description can be up to 32 characters enclosed in double-quotes.

Command Default

None

Command History

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

Usage Guidelines

Local network usernames must be unique because they are stored in the same database.

The following example shows how to add a permanent username Jane to the wireless network for 1 hour:

```
(Cisco Controller) > config netuser add jane able2 1 wlan_id 1 userType permanent
```

The following example shows how to add a guest username George to the wireless network for 1 hour:

```
(Cisco Controller) > config netuser add george able1 guestlan 1 3600
```

Related Commands **show netuser**

config netuser delete

config netuser delete

To delete an existing user from the local network, use the **config netuser delete** command.

config netuser delete { **username** *username* | **wlan-id** *wlan-id* }

Syntax Description

username	Network username. The username can be up to 24 alphanumeric characters.
wlan-id	WLAN identification number.

Command Default None

Command History

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

Usage Guidelines Local network usernames must be unique because they are stored in the same database.

Note When a WLAN associated with network users is deleted, the system prompts to delete all network users associated with the WLAN first. After deleting the network users, you can delete the WLAN.

The following example shows how to delete an existing username named able1 from the network:

```
(Cisco Controller) > config netuser delete able1
Deleted user able1
```

Related Commands **show netuser**

config netuser guest-lan-id

To configure a wired guest LAN ID for a network user, use the **config netuser guest-lan-id** command.

config netuser guest-lan-id *username lan_id*

Syntax Description		
	username	Network username. The username can be 24 alphanumeric characters.
	lan_id	Wired guest LAN identifier to associate with the user. A zero value associates the user with any wired LAN.

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 configure a wired LAN ID 2 to associate with the user named aire1:

```
(Cisco Controller) > config netuser guest- lan-id aire1 2
```

Related Commands **show netuser**

show wlan summary

config netuser description

To add a description to an existing net user, use the **config netuser description** command.

config netuser description *username description*

Syntax Description		
	username	Network username. The username can contain up to 24 alphanumeric characters.
	description	(Optional) User description. The description can be up to 32 alphanumeric characters enclosed in double quotes.

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 add a user description “HQ1 Contact” to an existing network user named able 1:

```
(Cisco Controller) > config netuser description able1 “HQ1 Contact”
```

Related Commands **show netuser**

config netuser guest-role apply

To apply a quality of service (QoS) role to a guest user, use the **config netuser guest-role apply** command.

config netuser guest-role apply *username role_name*

Syntax Description

username	Name of the user.
role_name	QoS guest role name.

Command Default None

Command History

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

Usage Guidelines If you do not assign a QoS role to a guest user, the Role field in the User Details shows the role as default. The bandwidth contracts for this user are defined in the QoS profile for the WLAN.

If you want to unassign a QoS role from a guest user, use the **config netuser guest-role apply** *username* **default**. This user now uses the bandwidth contracts defined in the QoS profile for the WLAN.

The following example shows how to apply a QoS role to a guest user jsmith with the QoS guest role named Contractor:

```
(Cisco Controller) > config netuser guest-role apply jsmith Contractor
```

Related Commands

config netuser guest-role create

config netuser guest-role delete

config netuser guest-role create

To create a quality of service (QoS) role for a guest user, use the **config netuser guest-role create** command.

config netuser guest-role create *role_name*

Syntax Description

role name	QoS guest role name.

Command Default None

Command History

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

Usage Guidelines To delete a QoS role, use the **config netuser guest-role delete** *role-name* .

The following example shows how to create a QoS role for the guest user named guestuser1:

```
(Cisco Controller) > config netuser guest-role create guestuser1
```

Related Commands

config netuser guest-role delete

config netuser guest-role delete

To delete a quality of service (QoS) role for a guest user, use the **config netuser guest-role delete** command.

config netuser guest-role delete *role_name*

Syntax Description

role name	Quality of service (QoS) guest role 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 delete a quality of service (QoS) role for guestuser1:

```
(Cisco Controller) > config netuser guest-role delete guestuser1
```

Related Commands **config netuser guest-role create**

config netuser guest-role qos data-rate average-data-rate

To configure the average data rate for TCP traffic on a per user basis, use the **config netuser guest-role qos data-rate average-data-rate** command.

config netuser guest-role qos data-rate average-data-rate *role_name rate*

Syntax Description

role_name	Quality of service (QoS) guest role name.
rate	Rate for TCP traffic on a per user basis.

Command Default None

Usage Guidelines For the *role_name* parameter in each of these commands, enter a name for the new QoS role. The name uniquely identifies the role of the QoS user (such as contractor, vendor, and so on.). For the *rate* parameter, you can enter a value between 0 and 60,000 Kbps (inclusive). A value of 0 imposes no bandwidth restriction on the QoS role.

The following example shows how to configure an average rate for the QoS guest named guestuser1:

```
(Cisco Controller) > config netuser guest-role qos data-rate average-data-rate guestuser1
0
```

Related Commands

config netuser guest-role create

config netuser guest-role delete

config netuser guest-role qos data-rate burst-data-rate

config netuser guest-role qos data-rate average-realtime-rate

To configure the average data rate for TCP traffic on a per user basis, use the **config netuser guest-role qos data-rate average-realtime-rate** command.

config netuser guest-role qos data-rate average-realtime-rate *role_name rate*

Syntax Description

role_name	Quality of service (QoS) guest role name.
rate	Rate for TCP traffic on a per user basis.

Command Default None

Usage Guidelines For the *role_name* parameter in each of these commands, enter a name for the new QoS role. The name uniquely identifies the role of the QoS user (such as contractor, vendor, and so on.). For the *rate* parameter, you can enter a value between 0 and 60,000 Kbps (inclusive). A value of 0 imposes no bandwidth restriction on the QoS role.

The following example shows how to configure an average data rate for the QoS guest user named guestuser1 with the rate for TCP traffic of 0 Kbps:

```
(Cisco Controller) > config netuser guest-role qos data-rate average-realtime-rate guestuser1
 0
```

Related Commands

config netuser guest-role

config netuser guest-role qos data-rate average-data-rate

config netuser guest-role qos data-rate burst-data-rate

To configure the peak data rate for TCP traffic on a per user basis, use the **config netuser guest-role qos data-rate burst-data-rate** command.

config netuser guest-role qos data-rate burst-data-rate *role_name rate*

Syntax Description

role_name	Quality of service (QoS) guest role name.
rate	Rate for TCP traffic on a per user basis.

Command Default None

Command History

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

Usage Guidelines The burst data rate should be greater than or equal to the average data rate. Otherwise, the QoS policy may block traffic to and from the wireless client.

For the *role_name* parameter in each of these commands, enter a name for the new QoS role. The name uniquely identifies the role of the QoS user (such as contractor, vendor, and so on.). For the *rate* parameter, you can enter a value between 0 and 60,000 Kbps (inclusive). A value of 0 imposes no bandwidth restriction on the QoS role.

The following example shows how to configure the peak data rate for the QoS guest named guestuser1 with the rate for TCP traffic of 0 Kbps:

```
(Cisco Controller) > config netuser guest-role qos data-rate burst-data-rate guestuser1 0
```

Related Commands

config netuser guest-role create

config netuser guest-role delete

config netuser guest-role qos data-rate average-data-rate

config netuser guest-role qos data-rate burst-realtime-rate

To configure the burst real-time data rate for UDP traffic on a per user basis, use the **config netuser guest-role qos data-rate burst-realtime-rate** command.

config netuser guest-role qos data-rate burst-realtime-rate *role_name rate*

Syntax Description

role_name	Quality of service (QoS) guest role name.
rate	Rate for TCP traffic on a per user basis.

Command Default

None

Command History

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

Usage Guidelines

The burst real-time rate should be greater than or equal to the average real-time rate. Otherwise, the quality of service (QoS) policy may block traffic to and from the wireless client.

For the *role_name* parameter in each of these commands, enter a name for the new QoS role. The name uniquely identifies the role of the QoS user (such as contractor, vendor, and so on.). For the *rate* parameter, you can enter a value between 0 and 60,000 Kbps (inclusive). A value of 0 imposes no bandwidth restriction on the QoS role.

The following example shows how to configure a burst real-time rate for the QoS guest user named guestuser1 with the rate for TCP traffic of 0 Kbps:

```
(Cisco Controller) > config netuser guest-role qos data-rate burst-realtime-rate guestuser1
 0
```

Related Commands

config netuser guest-role

config netuser guest-role qos data-rate average-data-rate

config netuser guest-role qos data-rate burst-data-rate

config netuser lifetime

To configure the lifetime for a guest network user, use the **config netuser lifetime** command.

config netuser lifetime *username time*

Syntax Description

username	Network username. The username can be up to 50 alphanumeric characters.
time	Llifetime between 60 to 31536000 seconds or 0 for no limit.

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 configure lifetime for a guest network user:

```
(Cisco Controller) > config netuser lifetime guestuser1 22450
```

Related Commands

show netuser

show wlan summary

config netuser maxUserLogin

To configure the maximum number of login sessions allowed for a network user, use the **config netuser maxUserLogin** command.

config netuser maxUserLogin *count*

Syntax Description

count	Maximum number of login sessions for a single user. The allowed values are from 0 (unlimited) to 8.

Command Default

By default, the maximum number of login sessions for a single user is 0 (unlimited).

Command History

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

The following example shows how to configure the maximum number of login sessions for a single user to 8:

```
(Cisco Controller) > config netuser maxUserLogin 8
```

Related Commands **show netuser**

config netuser password

To change a local network user password, use the **config netuser password** command.

config netuser password *username password*

Syntax Description

username	Network username. The username can be up to 24 alphanumeric characters.
password	Network user password. The password can contain up to 24 alphanumeric characters.

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 change the network user password from aire1 to aire2:

```
(Cisco Controller) > config netuser password aire1 aire2
```

Related Commands **show netuser**

config netuser wlan-id

To configure a wireless LAN ID for a network user, use the **config netuser wlan-id** command.

config netuser wlan-id *username wlan_id*

Syntax Description

username	Network username. The username can be 24 alphanumeric characters.
wlan_id	Wireless LAN identifier to associate with the user. A zero value associates the user with any wireless LAN.

Command Default None

Command History

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

Examples

The following example shows how to configure a wireless LAN ID 2 to associate with the user named aire1:

```
(Cisco Controller) > config netuser wlan-id aire1 2
```

Related Commands

show netuser

show wlan summary

Configure Network Commands

Use the **config network** commands to configure network settings.

config network 802.3-bridging

To enable or disable 802.3 bridging on a controller, use the **config network 802.3-bridging** command.

config network 802.3-bridging {**enable** | **disable**}

Syntax Description

enable	Enables the 802.3 bridging.
disable	Disables the 802.3 bridging.

Command Default

By default, 802.3 bridging on the controller is disabled.

Command History

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

Usage Guidelines

In controller software release 5.2, the software-based forwarding architecture for Cisco 2100 Series Controllers is being replaced with a new forwarding plane architecture. As a result, Cisco 2100 Series Controllers and the Cisco wireless LAN controller Network Module for Cisco Integrated Services Routers bridge 802.3 packets by default. Therefore, 802.3 bridging can now be disabled only on Cisco 4400 Series Controllers, the Cisco WiSM, and the Catalyst 3750G Wireless LAN Controller Switch.

To determine the status of 802.3 bridging, enter the **show netuser guest-roles** command.

The following example shows how to enable the 802.3 bridging:

```
(Cisco Controller) > config network 802.3-bridging enable
```

Related Commands

show netuser guest-roles

show network

config network allow-old-bridge-aps

To configure an old bridge access point's ability to associate with a switch, use the **config network allow-old-bridge-aps** command.

config network allow-old-bridge-aps {**enable** | **disable**}

Syntax Description

enable	Enables the switch association.
disable	Disables the switch association.

Command Default Switch association 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 configure an old bridge access point to associate with the switch:

```
(Cisco Controller) > config network allow-old-bridge-aps enable
```

config network ap-discovery

To enable or disable NAT IP in an AP discovery response, use the **config network ap-discovery** command.

config network ap-discovery nat-ip-only {**enable** | **disable**}

Syntax Description

enable	Enables use of NAT IP only in discovery response.
disable	Enables use of both NAT IP and non NAT IP in discovery response.

Command Default The use of NAT IP only in discovery response is enabled.

Command History

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

Usage Guidelines

- If the **config interface nat-address management** command is set, this command controls which address(es) are sent in the CAPWAP discovery responses.
- If all APs are on the outside of the NAT gateway of the controller, enter the **config network ap-discovery nat-ip-only enable** command, and only the management NAT address is sent.
- If the controller has both APs on the outside and the inside of its NAT gateway, enter the **config network ap-discovery nat-ip-only disable** command, and both the management NAT address and the management inside address are sent. Ensure that you have entered the **config ap link-latency disable all** command to avoid stranding APs.
- If you disable **nat-ip-only**, the controller sends all active AP-Manager interfaces with their non-NAT IP in discovery response to APs.

  If you enable **nat-ip-only**, the controller sends all active AP-Manager interfaces with NAT IP if configured for the interface, else non-NAT IP.

  We recommend that you configure the interface as AP-Manager interface with NAT IP or non-NAT IP keeping these scenarios in mind because the AP chooses the least loaded AP-Manager interface received in the discovery response.

The following example shows how to enable NAT IP in an AP discovery response:

```
(Cisco Controller) > config network ap-discovery nat-ip-only enable
```

config network ap-fallback

To configure Cisco lightweight access point fallback, use the **config network ap-fallback** command.

config network ap-fallback {**enable** | **disable**}

Syntax Description

enable	Enables the Cisco lightweight access point fallback.
disable	Disables the Cisco lightweight access point fallback.

Command Default

The Cisco lightweight access point fallback 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 Cisco lightweight access point fallback:

```
(Cisco Controller) > config network ap-fallback enable
```

config network ap-priority

To enable or disable the option to prioritize lightweight access points so that after a controller failure they reauthenticate by priority rather than on a first-come-until-full basis, use the **config network ap-priority** command.

config network ap-priority {**enable** | **disable**}

Syntax Description

enable	Enables the lightweight access point priority reauthentication.
disable	Disables the lightweight access point priority reauthentication.

Command Default

The lightweight access point priority reauthentication 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 lightweight access point priority reauthorization:

```
(Cisco Controller) > config network ap-priority enable
```

config network apple-talk

To configure AppleTalk bridging, use the **config network apple-talk** command.

config network apple-talk {**enable** | **disable**}

Syntax Description

enable	Enables the AppleTalk bridging.
disable	Disables the AppleTalk bridging.

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 configure AppleTalk bridging:

```
(Cisco Controller) > config network apple-talk enable
```

config network bridging-shared-secret

To configure the bridging shared secret, use the **config network bridging-shared-secret** command.

config network bridging-shared-secret *shared_secret*

Syntax Description

shared_secret	Bridging shared secret string. The string can contain up to 10 bytes.

Command Default

The bridging shared secret is enabled by default.

Command History

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

Usage Guidelines

This command creates a secret that encrypts backhaul user data for the mesh access points that connect to the switch.

The zero-touch configuration must be enabled for this command to work.

The following example shows how to configure the bridging shared secret string “shhh1”:

```
(Cisco Controller) > config network bridging-shared-secret shhh1
```

Related Commands

show network summary

config network arptimeout

To set the Address Resolution Protocol (ARP) entry timeout value, use the **config network arptimeout** command.

config network arptimeout *seconds*

Syntax Description

seconds	Timeout in seconds. The minimum value is 10 seconds. The default value is 300 seconds.

Command Default

The default ARP entry timeout value is 300 seconds.

Command History

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

This example shows how to set the ARP entry timeout value to 240 seconds:

```
(Cisco Controller) > config network arptimeout 240
```

Related Commands

show network summary

config network broadcast

To enable or disable broadcast packet forwarding, use the **config network broadcast** command.

config network broadcast {**enable** | **disable**}

Syntax Description

enable	Enables the broadcast packet forwarding.
disable	Disables the broadcast packet forwarding.

Command Default

The broadcast packet forwarding is disabled by default.

Command History

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

Usage Guidelines

This command allows you to enable or disable broadcasting. You must enable multicast mode before enabling broadcast forwarding. Use the **config network multicast mode command** to configure multicast mode on the controller.

Note The default multicast mode is unicast in case of all controllers except for Cisco 2106 Controllers. The broadcast packets and multicast packets can be independently controlled. If multicast is off and broadcast is on, broadcast packets still reach the access points, based on the configured multicast mode.

The following example shows how to enable broadcast packet forwarding:

```
(Cisco Controller) > config network broadcast enable
```

Related Commands

show network summary

config network multicast global

config network multicast mode

config network fast-ssid-change

To enable or disable fast Service Set Identifier (SSID) changing for mobile stations, use the **config network fast-ssid-change** command.

config network fast-ssid-change {**enable** | **disable**}

Syntax Description

enable	Enables the fast SSID changing for mobile stations
disable	Disables the fast SSID changing for mobile stations.

Command Default

None

Command History

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

Usage Guidelines

When you enable the Fast SSID Change feature, the controller allows clients to move between SSIDs. When the client sends a new association for a different SSID, the client entry in the controller connection table is cleared before the client is added to the new SSID.

When you disable the FastSSID Change feature, the controller enforces a delay before clients are allowed to move to a new SSID.

The following example shows how to enable the fast SSID changing for mobile stations:

```
(Cisco Controller) > config network fast-ssid-change enable
```

Related Commands

show network summary

config network ip-mac-binding

To validate the source IP address and MAC address binding within client packets, use the **config network ip-mac-binding** command.

config network ip-network-binding {**enable** | **disable**}

Syntax Description

enable	Enables the validation of the source IP address to MAC address binding in clients packets.
disable	Disables the validation of the source IP address to MAC address binding in clients packets.

Command Default

The validation of the source IP address to MAC address binding in clients packets is enabled by default.

Command History

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

Usage Guidelines

In controller software release 5.2, the controller enforces strict IP address-to-MAC address binding in client packets. The controller checks the IP address and MAC address in a packet, compares them to the addresses that are registered with the controller, and forwards the packet only if they both match. In previous releases, the controller checks only the MAC address of the client and ignores the IP address.

Note You might want to disable this binding check if you have a routed network behind a workgroup bridge (WGB).

The following example shows how to validate the source IP and MAC address within client packets:

```
(Cisco Controller) > config network ip-mac-binding enable
```

config network master-base

To enable or disable the Cisco wireless LAN controller as an access point default primary, use the **config network master-base** command.

config network master-base {**enable** | **disable**}

Syntax Description

enable	Enables the Cisco wireless LAN controller acting as a Cisco lightweight access point default primary.
disable	Disables the Cisco wireless LAN controller acting as a Cisco lightweight access point default primary.

Command Default

None

Command History

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

Usage Guidelines

This setting is only used upon network installation and should be disabled after the initial network configuration. Because the primary Cisco wireless LAN controller is normally not used in a deployed network, the primary Cisco wireless LAN controller setting can be saved from 6.0.199.0 or later releases.

The following example shows how to enable the Cisco wireless LAN controller as a default primary:

```
(Cisco Controller) > config network master-base enable
```

config network mgmt-via-wireless

To enable Cisco wireless LAN controller management from an associated wireless client, use the **config network mgmt-via-wireless** command.

config network mgmt-via-wireless {**enable** | **disable**}

Syntax Description

enable	Enables the switch management from a wireless interface.
disable	Disables the switch management from a wireless interface.

Command Default

The switch management from a wireless interface is disabled by default.

Command History

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

Usage Guidelines

This feature allows wireless clients to manage only the Cisco wireless LAN controller associated with the client and the associated Cisco lightweight access point. That is, clients cannot manage another Cisco wireless LAN controller with which they are not associated.

This example shows how to configure switch management from a wireless interface:

```
(Cisco Controller) > config network mgmt-via-wireless enable
```

Related Commands

show network summary

config network multicast global

To enable or disable multicasting on the controller, use the **config network multicast global** command.

config network multicast global {**enable** | **disable**}

Syntax Description

enable	Enables the multicast global support.
disable	Disables the multicast global support.

Command Default

Multicasting on the controller is disabled by default.

Command History

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

Usage Guidelines

The **config network broadcast** {**enable** | **disable**} command allows you to enable or disable broadcasting without enabling or disabling multicasting as well. This command uses the multicast mode configured on the controller (by using the **config network multicast mode command)** to operate.

The following example shows how to enable the global multicast support:

```
(Cisco Controller) > config network multicast global enable
```

Related Commands

show network summary

config network broadcast

config network multicast mode

config network multicast igmp query interval

To configure the IGMP query interval, use the **config network multicast igmp query interval** command.

config network multicast igmp query interval *value*

Syntax Description

value	Frequency at which controller sends IGMP query messages. The range is from 15 to 2400 seconds.

Command Default

The default IGMP query interval is 20 seconds.

Command History

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

Usage Guidelines

To configure IGMP query interval, ensure that you do the following:

- Enable the global multicast by entering the **config network multicast global enable** command.
- Enable IGMP snooping by entering the **config network multicast igmp snooping enable** command.

The following example shows how to configure the IGMP query interval at 20 seconds:

```
(Cisco Controller) > config network multicast igmp query interval 20
```

Related Commands

config network multicast global

config network multicast igmp snooping

config network multicast igmp timeout

config network multicast igmp snooping

To enable or disable IGMP snooping, use the **config network multicast igmp snooping** command.

config network multicast igmp snooping {**enable** | **disable**}

Syntax Description

enable	Enables IGMP snooping.
disable	Disables IGMP snooping.

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 internet IGMP snooping settings:

```
(Cisco Controller) > config network multicast igmp snooping enable
```

Related Commands

config network multicast global

config network multicast igmp query interval

config network multicast igmp timeout

config network multicast igmp timeout

To set the IGMP timeout value, use the **config network multicast igmp timeout** command.

config network multicast igmp timeout *value*

Syntax Description

value	Timeout range from 30 to 7200 seconds.

Command Default None

Command History

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

Usage Guidelines

You can enter a timeout value between 30 and 7200 seconds. The controller sends three queries in one timeout value at an interval of timeout/3 to see if any clients exist for a particular multicast group. If the controller does not receive a response through an IGMP report from the client, the controller times out the client entry from the MGID table. When no clients are left for a particular multicast group, the controller waits for the IGMP timeout value to expire and then deletes the MGID entry from the controller. The controller always generates a general IGMP query (to destination address 224.0.0.1) and sends it on all WLANs with an MGID value of 1.

The following example shows how to configure the timeout value 50 for IGMP network settings:

```
(Cisco Controller) > config network multicast igmp timeout 50
```

Related Commands

config network multicast global

config network igmp snooping

config network multicast igmp query interval

config network multicast l2mcast

To configure the Layer 2 multicast on an interface or all interfaces, use the **config network multicast l2mcast** command.

config network multicast l2mcast {**enable** | **disable** {**all** | *interface-name*}

Syntax Description

enable	Enables Layer 2 multicast.
disable	Disables Layer 2 multicast.
all	Applies to all interfaces.
interface-name	Interface name for which the Layer 2 multicast is to enabled or disabled.

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 Layer 2 multicast for all interfaces:

```
(Cisco Controller) > config network multicast l2mcast enable all
```

Related Commands

config network multicast global

config network multicast igmp snooping

config network multicast igmp query interval

config network multicast mld

config network multicast mld

To configure the Multicast Listener Discovery (MLD) parameters, use the **config network multicast mld** command.

config network multicast mld {**query interval** *interval-value* | **snooping** {**enable** | **disable**} | **timeout** *timeout-value*}

Syntax Description

query interval	Configures query interval to send MLD query n
interval-value	Query interval in seconds. The range is from 15
snooping	Configures MLD snooping.
enable	Enables MLD snooping.

disable	Disables MLD snooping.
timeout	Configures MLD timeout.
timeout-value	Timeout value in seconds. The range is from 30 secon

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 set a query interval of 20 seconds for MLD query messages:

```
(Cisco Controller) > config network multicast mld query interval 20
```

Related Commands

config network multicast global

config network multicast igmp snooping

config network multicast igmp query interval

config network multicast l2mcast

config network multicast mode multicast

To configure the controller to use the multicast method to send broadcast or multicast packets to an access point, use the **config network multicast mode multicast** command.

config network multicast mode multicast

Syntax Description This command has no arguments or keywords.

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 configure the multicast mode to send a single copy of data to multiple receivers:

```
(Cisco Controller) > config network multicast mode multicast
```

Related Commands

config network multicast global

config network broadcast

config network multicast mode unicast

config network multicast mode unicast

To configure the controller to use the unicast method to send broadcast or multicast packets to an access point, use the **config network multicast mode unicast** command.

config network multicast mode unicast

Syntax Description This command has no arguments or keywords.

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 configure the controller to use the unicast mode:

```
(Cisco Controller) > config network multicast mode unicast
```

Related Commands

config network multicast global

config network broadcast

config network multicast mode multicast

config network oeap-600 dual-rlan-ports

To configure the Ethernet port 3 of Cisco OfficeExtend 600 Series access points to operate as a remote LAN port in addition to port 4, use the **config network oeap-600 dual-rlan-ports** command.

config network oeap-600 dual-rlan-ports {**enable** | **disable**}

Syntax Description

enable	Enables Ethernet port 3 of Cisco OfficeExtend 600 Series access points to operate as a remote LAN port in addition to port 4.
disable	Resets the Ethernet port 3 Cisco OfficeExtend 600 Series access points to function as a local LAN port.

Command Default The Ethernet port 3 Cisco 600 Series OEAP is reset.

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 Ethernet port 3 of Cisco OfficeExtend 600 Series access points to operate as a remote LAN port:

```
(Cisco Controller) > config network oeap-600 dual-rlan-ports enable
```

config network oeap-600 local-network

To configure access to the local network for the Cisco 600 Series OfficeExtend access points, use the **config network oeap-600 local-network** command.

config network oeap-600 local-network {**enable** | **disable**}

Syntax Description

enable	Enables access to the local network for the Cisco 600 Series OfficeExtend access points.
disable	Disables access to the local network for the Cisco 600 Series OfficeExtend access points.

Command Default

Access to the local network for the Cisco 600 Series OEAPs 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 access to the local network for the Cisco 600 Series OfficeExtend access points:

```
(Cisco Controller) > config network oeap-600 local-network enable
```

config network otap-mode

To enable or disable over-the-air provisioning (OTAP) of Cisco lightweight access points, use the **config network otap-mode** command.

config network otap-mode {**enable** | **disable**}

Syntax Description

enable	Enables the OTAP provisioning.
disable	Disables the OTAP provisioning.

Command Default

The OTAP provisioning 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 disable the OTAP provisioning:

```
(Cisco Controller) >config network otap-mode disable
```

config network profiling

To profile http port for a specific port, use the **config network profiling http-port** command.

config network profiling http-port *port number*

Syntax Description

port number	Interface port number. Default value is 80.

Command History

Release	Modification
8.2	This command was introduced

The following example shows how to configure the http port in a network:

```
(Cisco Controller) > config network profiling http-port 80
```

config network rf-network-name

To set the RF-Network name, use the **config network rf-network-name** command.

config network rf-network-name *name*

Syntax Description

name	RF-Network name. The name can contain up to 19 characters.

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 set the RF-network name to travelers:

```
(Cisco Controller) > config network rf-network-name travelers
```

Related Commands

show network summary

config network secureweb

To change the state of the secure web (https is http and SSL) interface for management users, use the **config network secureweb** command.

config network secureweb {**enable** | **disable**}

Syntax Description

enable	Enables the secure web interface for management users.

disable	Disables the secure web interface for management users.

Command Default

The secure web interface for management users is enabled by default.

Command History

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

Usage Guidelines

This command allows management users to access the controller GUI using an http://ip-address. Web mode is not a secure connection.

The following example shows how to enable the secure web interface settings for management users:

```
(Cisco Controller) > config network secureweb enable
You must reboot for the change to take effect.
```

Related Commands

config network secureweb cipher-option

show network summary

config network secureweb cipher-option

To enable or disable secure web mode with increased security, or to enable or disable Secure Sockets Layer (SSL v2) for web administration and web authentication, use the **config network secureweb cipher-option** command.

config network secureweb cipher-option {**high** | **sslv2** | **rc4-preference**} {**enable** | **disable**}

Syntax Description

high	Configures whether or not 128-bit ciphers are required for web administration and web authentication.
sslv2	Configures SSLv2 for both web administration and web authentication.
rc4-preference	Configures preference for RC4-SHA (Rivest Cipher 4-Secure Hash Algorithm) cipher suites (over CBC cipher suites) for web authentication and web administration.
enable	Enables the secure web interface.
disable	Disables the secure web interface.

Command Default

The default is **disable** for secure web mode with increased security and **enable** for SSL v2.

Command History

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

Usage Guidelines

Note The **config network secureweb cipher-option** command allows users to access the controller GUI using an http://ip-address but only from browsers that support 128-bit (or larger) ciphers.

When cipher-option sslv2 is disabled, users cannot connect using a browser configured with SSLv2 only. They must use a browser that is configured to use a more secure protocol such as SSLv3 or later.

In RC4-SHA based cipher suites, RC4 is used for encryption and SHA is used for message authentication.

The following example shows how to enable secure web mode with increased security:

```
(Cisco Controller) > config network secureweb cipher-option
```

The following example shows how to disable SSL v2:

```
(Cisco Controller) > config network secureweb cipher-option sslv2 disable
```

Related Commands

config network secureweb

show network summary

config network ssh

To allow or disallow new Secure Shell (SSH) sessions, use the **config network ssh** command.

config network ssh {**enable** | **disable**}

Syntax Description

enable	Allows the new SSH sessions.
disable	Disallows the new SSH sessions.

Command Default

The default value for the new SSH session is **disable**.

The following example shows how to enable the new SSH session:

```
(Cisco Controller) > config network ssh enable
```

Related Commands

show network summary

config network telnet

To allow or disallow new Telnet sessions, use the **config network telnet** command.

config network telnet {**enable** | **disable**}

Syntax Description

enable	Allows new Telnet sessions.

disable	Disallows new Telnet sessions.

Command Default By default, the new Telnet session is disallowed and the value is **disable**.

Usage Guidelines Telnet is not supported on Cisco Aironet 1830 and 1850 Series Access Points.

Command History

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

The following example shows how to configure the new Telnet sessions:

```
(Cisco Controller) > config network telnet enable
```

Related Commands **config ap telnet**

show network summary

config network usertimeout

To change the timeout for idle client sessions, use the **config network usertimeout** command.

config network usertimeout *seconds*

Syntax Description

seconds	Timeout duration in seconds. The minimum value is 90 seconds. The default value is 300 seconds.

Command Default The default timeout value for idle client session is 300 seconds.

Usage Guidelines Use this command to set the idle client session duration on the Cisco wireless LAN controller. The minimum duration is 90 seconds.

The following example shows how to configure the idle session timeout to 1200 seconds:

```
(Cisco Controller) > config network usertimeout 1200
```

Related Commands **show network summary**

config network web-auth captive-bypass

To configure the controller to support bypass of captive portals at the network level, use the **config network web-auth captive-bypass** command.

config network web-auth captive-bypass {**enable** | **disable**}

Syntax Description

enable	Allows the controller to support bypass of captive portals.

disable	Disallows the controller to support bypass of captive portals.

Command Default None

The following example shows how to configure the controller to support bypass of captive portals:

```
(Cisco Controller) > config network web-auth captive-bypass enable
```

Related Commands
show network summary
config network web-auth cmcc-support

config network web-auth cmcc-support

To configure eWalk on the controller, use the **config network web-auth cmcc-support** command.

config network web-auth cmcc-support {**enable** | **disable**}

Syntax Description

enable	Enables eWalk on the controller.
disable	Disables eWalk on the controller.

Command Default None

The following example shows how to enable eWalk on the controller:

```
(Cisco Controller) > config network web-auth cmcc-support enable
```

Related Commands
show network summary
config network web-auth captive-bypass

config network web-auth port

To configure an additional port to be redirected for web authentication at the network level, use the **config network web-auth port** command.

config network web-auth port *port*

Syntax Description

port	Port number. The valid range is from 0 to 65535.

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 configure an additional port number 1200 to be redirected for web authentication:

```
(Cisco Controller) > config network web-auth port 1200
```

Related Commands **show network summary**

config network web-auth proxy-redirect

To configure proxy redirect support for web authentication clients, use the **config network web-auth proxy-redirect** command.

config network web-auth proxy-redirect {**enable** | **disable**}

Syntax Description

enable	Allows proxy redirect support for web authentication clients.
disable	Disallows proxy redirect support for web authentication clients.

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 proxy redirect support for web authentication clients:

```
(Cisco Controller) > config network web-auth proxy-redirect enable
```

Related Commands **show network summary**

config network web-auth secureweb

To configure the secure web (https) authentication for clients, use the **config network web-auth secureweb** command.

config network web-auth secureweb { **enable** | **disable** }

Syntax Description

enable	Allows secure web (https) authentication for clients.
disable	Disallows secure web (https) authentication for clients. Enables http web authentication for clients.

Command Default The default secure web (https) authentication for clients is enabled.

Command History

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

Usage Guidelines

If you configure the secure web (https) authentication for clients using the **config network web-auth secureweb disable** command, then you must reboot the controller to implement the change.

The following example shows how to enable the secure web (https) authentication for clients:

```
(Cisco Controller) > config network web-auth secureweb enable
```

Related Commands

show network summary

config network webmode

To enable or disable the web mode, use the **config network webmode** command.

config network webmode {**enable** | **disable**}

Syntax Description

enable	Enables the web interface.
disable	Disables the web interface.

Command Default

The default value for the web mode is **enable**.

Command History

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

The following example shows how to disable the web interface mode:

```
(Cisco Controller) > config network webmode disable
```

Related Commands

show network summary

config network web-auth

To configure the network-level web authentication options, use the **config network web-auth** command.

config network web-auth {**port** *port-number*} | {**proxy-redirect** {**enable** | **disable**}}

Syntax Description

port	Configures additional ports for web authentication redirection.
port-number	Port number (between 0 and 65535).

proxy-redirect	Configures proxy redirect support for web authentication clients.
enable	Enables proxy redirect support for web authentication clients. **Note** Web-auth proxy redirection will be enabled for ports 80, 8080, and 3128, along with user defined port 345.
disable	Disables proxy redirect support for web authentication clients.

Command Default

The default network-level web authentication value is disabled.

Command History

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

Usage Guidelines

You must reset the system for the configuration to take effect.

The following example shows how to enable proxy redirect support for web authentication clients:

```
(Cisco Controller) > config network web-auth proxy-redirect enable
```

Related Commands

show network summary

show run-config

config qos protocol-type

config network zero-config

To configure bridge access point ZeroConfig support, use the **config network zero-config** command.

config network zero-config {**enable** | **disable**}

Syntax Description

enable	Enables the bridge access point ZeroConfig support.
disable	Disables the bridge access point ZeroConfig support.

Command Default

The bridge access point ZeroConfig support 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 bridge access point ZeroConfig support:

```
(Cisco Controller) >config network zero-config enable
```

Configure Port Commands

Use the **config port** commands to configure port settings.

config port adminmode

To enable or disable the administrative mode for a specific controller port or for all ports, use the **config port adminmode** command.

config port adminmode {**all** | *port*} {**enable** | **disable**}

Syntax Description

all	Configures all ports.
port	Number of the port.
enable	Enables the specified ports.
disable	Disables the specified ports.

Command Default

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 disable port 8:

```
(Cisco Controller) > config port adminmode 8 disable
```

The following example shows how to enable all ports:

```
(Cisco Controller) > config port adminmode all enable
```

config qos average-realtime-rate

To define the average real-time data rate in Kbps for UDP traffic per user or per service set identifier (SSID), use the **config qos average-realtime-rate** command.

config qos average-realtime-rate {**bronze** | **silver** | **gold** | **platinum**} {**per-ssid** | **per-client**} {**downstream** | **upstream**} *rate*

Syntax Description

bronze	Specifies the average real-time data rate for the queue bronze.
silver	Specifies the average real-time data rate for the queue silver.
gold	Specifies the average real-time data rate for the queue gold.

platinum	Specifies the average real-time data rate for the queue platinum.
per-ssid	Configures the rate limit for an SSID per radio. The combined tra
per-client	Configures the rate limit for each client associated with the SSID.
downstream	Configures the rate limit for downstream traffic.
upstream	Configures the rate limit for upstream traffic.
rate	Average real-time data rate for UDP traffic per user. A value betwe restriction on the QoS profile.

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 configure the average real-time actual rate for queue gold:

```
(Cisco Controller) > config qos average-realtime-rate gold per ssid downstream 10
```

Related Commands

config qos average-data-rate

config qos burst-data-rate

config qos burst-realtime-rate

config wlan override-rate-limit

config port autoneg

To configure 10/100BASE-T Ethernet ports for physical port autonegotiation, use the **config port autoneg** command.

config port autoneg {**all** | *port*} {**enable** | **disable**}

Syntax Description

all	Configures all ports.
port	Number of the port.
enable	Enables the specified ports.
disable	Disables the specified ports.

Command Default The default for all ports is that auto-negotiation is enabled.

Command History

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

Example

The following example shows how to turn on physical port autonegotiation for all front-panel Ethernet ports:

```
(Cisco Controller) > config port autoneg all enable
```

The following example shows how to disable physical port autonegotiation for front-panel Ethernet port 19:

```
(Cisco Controller) > config port autoneg 19 disable
```

config pmipv6 add profile

To create a Proxy Mobility IPv6 (PMIPv6) profile for the WLAN, use the **config pmipv6 add profile** command. You can configure PMIPv6 profiles based on a realm or a service set identifier (SSID).

config pmipv6 add profile *profile_name* **nai** {*user@realm* | *@realm* | *****} **lma** *lma_name* **apn** *apn_name*

Syntax Description

profile_name	Name of the profile. The profile name is case sensitive and can be up to 127 alphanumeric characters.
nai	Specifies the Network Access Identifier of the client.
user@realm	Network Access Identifier of the client in the format *user@*realm. The NAI name is case sensitive and can be up to 127 alphanumeric characters.
@realm	Network Access Identifier of the client in the format @realm.
*****	All Network Access Identifiers. You can have profiles based on an SSID for all users.
lma	Specifies the Local Mobility Anchor (LMA).
lma_name	Name of LMA. The LMA name is case sensitive and can be up to 127 alphanumeric characters.
apn	Specifies the access point.
ap_name	Name of the access point. The access point name is case sensitive and can be up to 127 alphanumeric characters.

Command Default

None

Command History

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

Usage Guidelines

This command is a prerequisite for using PMIPv6 configuration commands if the controller uses open authentication.

The following example shows how to create a PMIPv6 profile:

```
(Cisco Controller) >config pmipv6 add profile profile1 nai @vodfone.com lma vodfonelma apn
 vodafoneapn
```

config port linktrap

To enable or disable the up and down link traps for a specific controller port or for all ports, use the **config port linktrap** command.

config port linktrap {**all** | *port*} {**enable** | **disable**}

Syntax Description

all	Configures all ports.
port	Number of the port.
enable	Enables the specified ports.
disable	Disables the specified ports.

Command Default

The default value for down link traps for a specific controller port or for all ports 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 disable port 8 traps:

```
(Cisco Controller) > config port linktrap 8 disable
```

The following example shows how to enable all port traps:

```
(Cisco Controller) > config port linktrap all enable
```

config port multicast appliance

To enable or disable the multicast appliance service for a specific controller port or for all ports, use the **config port multicast appliance** commands.

config port multicast appliance {**all** | *port*} {**enable** | **disable**}

Syntax Description

all	Configures all ports.
port	Number of the port.
enable	Enables the specified ports.
disable	Disables the specified ports.

Command Default

The default multicast appliance service for a specific controller port or for all ports 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 multicast appliance service on all ports:

```
(Cisco Controller) > config port multicast appliance all enable
```

The following example shows how to disable multicast appliance service on port 8:

```
(Cisco Controller) > config port multicast appliance 8 disable
```

config port power

To enable or disable Power over Ethernet (PoE) for a specific controller port or for all ports, use the **config port power** command.

config port power {**all** | *port*} {**enable** | **disable**}

Syntax Description

all	Configures all ports.
port	Port number.
enable	Enables the specified ports.
disable	Disables the specified ports.

Command Default

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 PoE on all ports:

```
(Cisco Controller) > config port power all enable
```

The following example shows how to disable PoE on port 8:

```
(Cisco Controller) > config port power 8 disable
```

Configure PMIPv6 Commands

Use the **config pmipv6** commands to configure PMIPv6 parameters on the Mobile Access Gateway (MAG) module of the controller. To enable the MAG module on the controller and to configure the PMIPv6 commands, you must configure the following prerequisite commands:

- **config pmipv6 domain**—Enables MAG functionality on the controller and configures a PMIPv6 domain.
- **config pmipv6 mag lma**—Configures a Local Mobility Anchor (LMA) with the MAG.
- **config pmipv6 add profile**—Creates a PMIPv6 profile. This command is a prerequisite only when open authentication is used.

config pmipv6 domain

To configure PMIPv6 and to enable Mobile Access Gateway (MAG) functionality on controller, use the **config pmipv6 domain** command.

config pmipv6 domain *domain_name*

Syntax Description

domain_name	Name of the PMIPv6 domain. The domain name can be up to 127 case-sensitive, alphanumeric characters.

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 configure a domain name for a PMIPv6 WLAN:

```
(Cisco Controller) >config pmipv6 domain floor1
```

config pmipv6 add profile

To create a Proxy Mobility IPv6 (PMIPv6) profile for the WLAN, use the **config pmipv6 add profile** command. You can configure PMIPv6 profiles based on a realm or a service set identifier (SSID).

config pmipv6 add profile *profile_name* **nai** {*user@realm* | *@realm* | *****} **lma** *lma_name* **apn** *apn_name*

Syntax Description

profile_name	Name of the profile. The profile name is case sensitive and can be up to 127 alphanumeric characters.
nai	Specifies the Network Access Identifier of the client.
user@realm	Network Access Identifier of the client in the format *user@*realm. The NAI name is case sensitive and can be up to 127 alphanumeric characters.

@realm	Network Access Identifier of the client in the format @realm.
*****	All Network Access Identifiers. You can have profiles based on an SSID for all users.
lma	Specifies the Local Mobility Anchor (LMA).
lma_name	Name of LMA. The LMA name is case sensitive and can be up to 127 alphanumeric characters.
apn	Specifies the access point.
ap_name	Name of the access point. The access point name is case sensitive and can be up to 127 alphanumeric characters.

Command Default

None

Command History

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

Usage Guidelines

This command is a prerequisite for using PMIPv6 configuration commands if the controller uses open authentication.

The following example shows how to create a PMIPv6 profile:

```
(Cisco Controller) >config pmipv6 add profile profile1 nai @vodfone.com lma vodfonelma apn
 vodafoneapn
```

config pmipv6 delete

To delete a Proxy Mobility IPv6 (PMIPv6) profile, domain, or Local Mobility Anchor (LMA), use the **config pmipv6 delete** command.

config pmipv6 delete {**profile** *profile_name* **nai** { *nai_id* | **all** } | **domain** *domain_name* | **lma** *lma_name*}

Syntax Description

profile	Specifies the PMIPv6 profile.
profile_name	Name of the PMIPv6 profile. The profile name is case sensitive and can be up to 127 alphanumeric characters.
nai	Specifies the Network Access Identifier (NAI) of a mobile client.
nai_id	Network Access Identifier of a mobile client. The NAI is case sensitive and can be up to 127 alphanumeric characters.
all	Specifies all NAIs. When you delete all NAIs, the profile is deleted.
domain	Specifies the PMIPv6 domain.

domain_name	Name of the PMIPv6 domain. The domain name is case sensitive and can be up to 127 alphanumeric characters.
lma	Specifies the LMA.
lma_name	Name of the LMA. The LMA name is case sensitive and can be up to 127 alphanumeric characters.

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 delete a domain:

```
(Cisco Controller) >config pmipv6 delete lab1
```

config pmipv6 mag binding init-retx-time

To configure the initial timeout between the proxy binding updates (PBUs) when the Mobile Access Gateway (MAG) does not receive the proxy binding acknowledgements (PBAs), use the **config pmipv6 mag binding init-retx-time** command.

config pmipv6 mag binding init-retx-time *units*

Syntax Description

units	Initial timeout between the PBUs when the MAG does not receive the PBAs. The range is from 100 to 65535 seconds.

Command Default

The default initial timeout is 1000 seconds.

Command History

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

The following example shows how to configure the initial timeout between the PBUs when the MAG does not receive the PBAs:

```
(Cisco Controller) >config pmipv6 mag binding init-retx-time 500
```

config pmipv6 mag binding lifetime

To configure the lifetime of the binding entries in the Mobile Access Gateway (MAG), use the **config pmipv6 mag binding lifetime** command.

config pmipv6 mag binding lifetime *units*

Syntax Description

units	Lifetime of the binding entries in the MAG. The binding lifetime must be a multiple of 4 seconds. The range is from 10 to 65535 seconds.

Command Default

The default lifetime of the binding entries is 65535 seconds.

Command History

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

Usage Guidelines

You must configure a Proxy Mobility IPv6 (PMIPv6) domain before you configure the lifetime of the binding entries in the controller.

The following example shows how to configure the lifetime of the binding entries in the controller:

```
(Cisco Controller) >config pmipv6 mag binding lifetime 5000
```

config pmipv6 mag binding max-retx-time

To configure the maximum timeout between the proxy binding updates (PBUs) when the Mobility Access Gateway (MAG) does not receive the proxy binding acknowledgments (PBAs), use the **config pmipv6 mag binding max-retx-time** command.

config pmipv6 mag binding max-retx-time *units*

Syntax Description

units	Maximum timeout between the PBUs when the MAG does not receive the PBAs. The range is from 100 to 65535 seconds.

Command Default

The default maximum timeout is 32000 seconds.

Command History

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

The following example shows how to configure the maximum timeout between the PBUs when the MAG does not receive the PBAs:

```
(Cisco Controller) >config pmipv6 mag binding max-retx-time 50
```

config pmipv6 mag binding maximum

To configure the maximum number of binding entries in the Mobile Access Gateway (MAG), use the **config pmipv6 mag binding maximum** command.

config pmipv6 mag binding maximum *units*

Syntax Description

units	Maximum number of binding entries in the MAG. This number indicates the maximum number of users connected to the MAG. The range is from 0 to 40000.

Command Default

The default maximum number of binding entries in the MAG is 10000.

Command History

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

Usage Guidelines

You must configure a Proxy Mobility IPv6 (PMIPv6) domain before you configure the maximum number of binding entries in the MAG.

The following example shows how to configure the maximum number of binding entries in the MAG:

```
(Cisco Controller) >config pmipv6 mag binding maximum 20000
```

config pmipv6 mag binding refresh-time

To configure the refresh time of the binding entries in the MAG, use the **config pmipv6 mag binding refresh-time** command.

config pmipv6 mag binding refresh-time *units*

Syntax Description

units	Refresh time of the binding entries in the MAG. The binding refresh time must be a multiple of 4. The range is from 4 to 65535 seconds.

Command Default

The default refresh time of the binding entries in the MAG is 300 seconds.

Usage Guidelines

You must configure a PMIPv6 domain before you configure the refresh time of the binding entries in the MAG.

The following example shows how to configure the refresh time of the binding entries in the MAG:

```
(Cisco Controller) >config pmipv6 mag binding refresh-time 500
```

config pmipv6 mag bri delay

To configure the maximum or minimum amount of time that the MAG waits before retransmitting a Binding Revocation Indication (BRI) message, use the **config pmipv6 mag bri delay** command.

config pmipv6 mag bri delay {**min** | **max**} *time*

Syntax Description

min	Specifies the minimum amount of time that the MAG waits before retransmitting a BRI message.
max	Specifies the maximum amount of time that the MAG waits before retransmitting a BRI message.

time	Maximum or minimum amount of time that the controller waits before retransmitting a BRI message. The range is from 500 to 65535 milliseconds.

Command Default

The default value of the maximum amount of time that the MAG waits before retransmitting a BRI message is 2 seconds.

The default value of the minimum amount of time that the MAG waits before retransmitting a BRI message is 1 second.

Command History

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

The following example shows how to configure the minimum amount of time that the MAG waits before retransmitting a BRI message:

```
(Cisco Controller) >config pmipv6 mag bri delay min 500
```

config pmipv6 mag bri retries

To configure the maximum number of times that the MAG retransmits the Binding Revocation Indication (BRI) message before receiving the Binding Revocation Acknowledgment (BRA) message, use the **config pmipv6 mag bri retries** command.

config pmipv6 mag bri retries *retries*

Syntax Description

retries	Maximum number of times that the MAG retransmits the BRI message before receiving the BRA message. The range is from 1 to 10 retries.

Command Default

The default is 1 retry.

The following example shows how to configure the maximum number of times that the MAG retries:

```
(Cisco Controller) >config pmipv6 mag bri retries 5
```

config pmipv6 mag lma

To configure a local mobility anchor (LMA) with the mobile access gateway (MAG), use the **config pmipv6 mag lma** command.

config pmipv6 mag lma *lma_name* **ipv4-address** *address*

Syntax Description

lma_name	Name of the LMA. The LMA name can be a NAI or a string that uniquely identifies the LMA.
ipv4-address	Specifies the IP address of the LMA.
address	IP address of the LMA.

Command Default None

Command History

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

Usage Guidelines This command is a prerequisite to configure PMIPv6 parameters on the MAG.

The following example shows how to configure an LMA with the MAG:

```
(Cisco Controller) >config pmipv6 mag lma vodafonelma ipv4-address 209.165.200.254
```

config pmipv6 mag replay-protection

To configure the maximum amount of time difference between the timestamp in the received proxy binding acknowledgment (PBA) and the current time of the day for replay protection, use the **config pmipv6 mag replay-protection** command.

config pmipv6 mag replay-protection { **timestamp window** *time* | **sequence-no** *sequence* | **mobile-node-timestamp** *mobile_node_timestamp* }

Syntax Description

timestamp	Specifies the time stamp of the PBA message.
window	Specifies the maximum time difference between the time stamp in the received PBA message and the current time of day.
time	Maximum time difference between the time stamp in the received PBA message and the current time of day. The range is from 1 to 300 milliseconds.
sequence-no	(Optional) Specifies the sequence number in a Proxy Binding Update message.
sequence	(Optional) Sequence number in the Proxy Binding Update message.
mobile_node_timestamp	(Optional) Specifies the time stamp of the mobile node.
mobile_node_timestamp	(Optional) Time stamp of the mobile node.

Command Default The default maximum time difference is 300 milliseconds.

Usage Guidelines Only the timestamp option is supported.

The following example shows how to configure the maximum amount of time difference in milliseconds between the time stamp in the received PBA message and the current time of day:

```
(Cisco Controller) >config pmipv6 mag replay-protection timestamp window 200
```

Configure QoS Commands

Use the **config qos** commands to configure Quality of Service (QoS) settings.

config qos average-realtime-rate

To define the average real-time data rate in Kbps for UDP traffic per user or per service set identifier (SSID), use the **config qos average-realtime-rate** command.

config qos average-realtime-rate {**bronze** | **silver** | **gold** | **platinum**} {**per-ssid** | **per-client**} {**downstream** | **upstream**} *rate*

Syntax Description

bronze	Specifies the average real-time data rate for the queue bronze.
silver	Specifies the average real-time data rate for the queue silver.
gold	Specifies the average real-time data rate for the queue gold.
platinum	Specifies the average real-time data rate for the queue platinum.
per-ssid	Configures the rate limit for an SSID per radio. The combined tra
per-client	Configures the rate limit for each client associated with the SSID.
downstream	Configures the rate limit for downstream traffic.
upstream	Configures the rate limit for upstream traffic.
rate	Average real-time data rate for UDP traffic per user. A value betwe restriction on the QoS profile.

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 configure the average real-time actual rate for queue gold:

```
(Cisco Controller) > config qos average-realtime-rate gold per ssid downstream 10
```

Related Commands

config qos average-data-rate

config qos burst-data-rate

config qos burst-realtime-rate

config wlan override-rate-limit

config qos average-data-rate

To define the average data rate in Kbps for TCP traffic per user or per service set identifier (SSID), use the **config qos average-data-rate** command.

config qos average-data-rate {**bronze** | **silver** | **gold** | **platinum**} {**per-ssid** | **per-client**} {**downstream** | **upstream**} *rate*

Syntax Description

bronze	Specifies the average data rate for the queue bronze.
silver	Specifies the average data rate for the queue silver.
gold	Specifies the average data rate for the queue gold.
platinum	Specifies the average data rate for the queue platinum.
per-ssid	Configures the rate limit for an SSID per radio. The com
per-client	Configures the rate limit for each client associated with t
downstream	Configures the rate limit for downstream traffic.
upstream	Configures the rate limit for upstream traffic.
rate	Average data rate for TCP traffic per user. A value betwe no bandwidth restriction on the QoS profile.

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 configure the average data rate 0 Kbps for the queue gold per SSID:

```
(Cisco Controller) > config qos average-data-rate gold per ssid downstream 0
```

Related Commands

config qos burst-data-rate

config qos average-realtime-rate

config qos burst-realtime-rate

config wlan override-rate-limit

config qos burst-data-rate

To define the peak data rate in Kbps for TCP traffic per user or per service set identifier (SSID), use the **config qos burst-data-rate** command.

config qos burst-data-rate {**bronze** | **silver** | **gold** | **platinum**} {**per-ssid** | **per-client**} {**downstream** | **upstream**} *rate*

Syntax Description

bronze	Specifies the peak data rate for the queue bronze.
silver	Specifies the peak data rate for the queue silver.
gold	Specifies the peak data rate for the queue gold.
platinum	Specifies the peak data rate for the queue platinum.
per-ssid	Configures the rate limit for an SSID per radio. The combined traffic of all clients will not exceed this limit.
per-client	Configures the rate limit for each client associated with the SSID.
downstream	Configures the rate limit for downstream traffic.
upstream	Configures the rate limit for upstream traffic.
rate	Peak data rate for TCP traffic per user. A value between 0 and 51,2000 Kbps (inclusive). A value of 0 imposes no bandwidth restriction on the QoS profile.

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 configure the peak rate 30000 Kbps for the queue gold:

```
(Cisco Controller) > config qos burst-data-rate gold per ssid downstream 30000
```

Related Commands

config qos average-data-rate

config qos average-realtime-rate

config qos burst-realtime-rate

config wlan override-rate-limit

config qos burst-realtime-rate

To define the burst real-time data rate in Kbps for UDP traffic per user or per service set identifier (SSID), use the **config qos burst-realtime-rate** command.

config qos burst-realtime-rate {**bronze** | **silver** | **gold** | **platinum**} { **per-ssid** | **per-client** } { **downstream** | **upstream** } *rate*

Syntax Description

bronze	Specifies the burst real-time data rate for the queue bronze.

silver	Specifies the burst real-time data rate for the queue silver.
gold	Specifies the burst real-time data rate for the queue gold.
platinum	Specifies the burst real-time data rate for the queue platinum.
per-ssid	Configures the rate limit for an SSID per radio. The combined traffic of all clients will not exceed this limit.
per-client	Configures the rate limit for each client associated with the SSID.
downstream	Configures the rate limit for downstream traffic.
upstream	Configures the rate limit for upstream traffic.
rate	Burst real-time data rate for UDP traffic per user. A value between 0 and 51,2000 Kbps (inclusive). A value of 0 imposes no bandwidth restriction on the QoS profile.

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 configure the burst real-time actual rate 2000 Kbps for the queue gold:

```
(Cisco Controller) > config qos burst-realtime-rate gold per ssid downstream  2000
```

Related Commands

config qos average-data-rate

config qos burst-data-rate

config qos average-realtime-rate

config wlan override-rate-limit

config qos description

To change the profile description, use the **config qos description** command.

config qos description {**bronze** | **silver** | **gold** | **platinum**} *description*

Syntax Description

bronze	Specifies the QoS profile description for the queue bronze.
silver	Specifies the QoS profile description for the queue silver.
gold	Specifies the QoS profile description for the queue gold.

platinum	Specifies the QoS profile description for the queue platinum.
description	QoS profile description.

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 configure the QoS profile description “description” for the queue gold:

```
(Cisco Controller) > config qos description gold abc
```

Related Commands

show qos average-data-rate

config qos burst-data-rate

config qos average-realtime-rate

config qos burst-realtime-rate

config qos max-rf-usage

config qos max-rf-usage

To specify the maximum percentage of RF usage per access point, use the **config qos max-rf-usage** command.

config qos max-rf-usage {**bronze** | **silver** | **gold** | **platinum**} *usage_percentage*

Syntax Description

bronze	Specifies the maximum percentage of RF usage for the queue bronze.
silver	Specifies the maximum percentage of RF usage for the queue silver.
gold	Specifies the maximum percentage of RF usage for the queue gold.
platinum	Specifies the maximum percentage of RF usage for the queue platinum.
usage-percentage	Maximum percentage of RF usage.

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 specify the maximum percentage of RF usage for the queue gold:

```
(Cisco Controller) > config qos max-rf-usage gold 20
```

Related Commands

show qos description

config qos average-data-rate

config qos burst-data-rate

config qos average-realtime-rate

config qos burst-realtime-rate

config qos dot1p-tag

To define the maximum value (0 to 7) for the priority tag associated with packets that fall within the profile, use the **config qos dot1p-tag** command.

config qos dot1p-tag {**bronze** | **silver** | **gold** | **platinum**} *dot1p_tag*

Syntax Description

bronze	Specifies the QoS 802.1p tag for the queue bronze.
silver	Specifies the QoS 802.1p tag for the queue silver.
gold	Specifies the QoS 802.1p tag for the queue gold.
platinum	Specifies the QoS 802.1p tag for the queue platinum.
dot1p_tag	Dot1p tag value between 1 and 7.

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 configure the a QoS 802.1p tag for the queue gold with the dot1p tag value of 5:

```
(Cisco Controller) > config qos dot1p-tag gold 5
```

Related Commands

show qos queue_length all

config qos protocol-type

config qos priority

To define the maximum and default QoS levels for unicast and multicast traffic when you assign a QoS profile to a WLAN, use the **config qos priority** command.

config qos priority {**bronze** | **silver** | **gold** | **platinum**} {*maximum-priority* | *default-unicast-priority* | *default-multicast-priority*}

Syntax Description

bronze	Specifies a Bronze profile of the WLAN.
silver	Specifies a Silver profile of the WLAN.
gold	Specifies a Gold profile of the WLAN.
platinum	Specifies a Platinum profile of the WLAN.
maximum-priority	Maximum QoS priority as one of the following: • besteffort • background • video • voice
default-unicast-priority	Default unicast priority as one of the following: • besteffort • background • video • voice
default-multicast-priority	Default multicast priority as one of the following: • besteffort • background • video • voice

Command History

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

Usage Guidelines

The maximum priority level should not be lower than the default unicast and multicast priority levels.

The following example shows how to configure the QoS priority for a gold profile of the WLAN with voice as the maximum priority, video as the default unicast priority, and besteffort as the default multicast priority.

```
(Cisco Controller) > config qos priority gold voice video besteffort
```

Related Commands

config qos protocol-type

config qos protocol-type

To define the maximum value (0 to 7) for the priority tag associated with packets that fall within the profile, use the **config qos protocol-type** command.

config qos protocol-type {**bronze** | **silver** | **gold** | **platinum**} {**none** | *dot1p*}

Syntax Description

bronze	Specifies the QoS 802.1p tag for the queue bronze.
silver	Specifies the QoS 802.1p tag for the queue silver.
gold	Specifies the QoS 802.1p tag for the queue gold.
platinum	Specifies the QoS 802.1p tag for the queue platinum.
none	Specifies when no specific protocol is assigned.
dot1p	Specifies when dot1p type protocol is assigned.

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 configure the QoS protocol type silver:

```
(Cisco Controller) > config qos protocol-type silver dot1p
```

Related Commands

show qos queue_length all

config qos dot1p-tag

config qos queue_length

To specify the maximum number of packets that access points keep in their queues, use the **config qos queue_length** command.

config qos queue_length {**bronze** | **silver** | **gold** | **platinum**} *queue_length*

Syntax Description

bronze	Specifies the QoS length for the queue bronze.
silver	Specifies the QoS length for the queue silver.
gold	Specifies the QoS length for the queue gold.
platinum	Specifies the QoS length for the queue platinum.
queue_length	Maximum queue length values (10 to 255).

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 configure the QoS length for the queue “gold” with the maximum queue length value as 12:

```
(Cisco Controller) > config qos queue_length gold 12
```

Related Commands **show qos**

Configure RADIUS Account Commands

Use the **config radius acct** commands to configure RADIUS account server settings.

config radius acct

To configure settings for a RADIUS accounting server for the Cisco wireless LAN controller, use the **config radius acct** command.

config radius acct { {**add** *index IP addr port* {**ascii** | **hex**} *secret*} | **delete** *index* | **disable** *index* | **enable** *index* | **disable** *index* | **enable** *index* | {**mac-delimiter** {**colon** | **hyphen** | **none** | **single-hyphen**}} | {**network** *index* {**disable** | **enable**}} | {**region** {**group** | **none** | **provincial**}} | **retransmit-timeout** *index seconds* | **realm** {**add** | **delete**} *index realm-string*}

Syntax Description

add	Adds a RADIUS accounting server (IPv4 or IPv6).
index	RADIUS server index (1 to 17).
IP addr	RADIUS server IP address (IPv4 or IPv6).
port	RADIUS server's UDP port number for the interface protocols.
ascii	Specifies the RADIUS server's secret type: **ascii**.
hex	Specifies the RADIUS server's secret type: **hex**.
secret	RADIUS server's secret.
enable	Enables a RADIUS accounting server.
disable	Disables a RADIUS accounting server.
delete	Deletes a RADIUS accounting server.
disable	Disables IPSec support for an accounting server.
enable	Enables IPSec support for an accounting server.
mac-delimiter	Configures MAC delimiter for caller station ID and calling station ID.
colon	Sets the delimiter to colon (For example: xx:xx:xx:xx:xx:xx).
hyphen	Sets the delimiter to hyphen (For example: xx-xx-xx-xx-xx-xx).
none	Disables delimiters (For example: xxxxxxxxxx).
single-hyphen	Sets the delimiters to single hyphen (For example: xxxxxx-xxxxxx).

network	Configures a default RADIUS server for network users.
group	Specifies RADIUS server type group.
none	Specifies RADIUS server type none.
provincial	Specifies RADIUS server type provincial.
retransmit-timeout	Changes the default retransmit timeout for the server.
seconds	The number of seconds between retransmissions.
realm	Specifies radius acct realm.
add	Adds radius acct realm.
delete	Deletes radius acct realm.

Command Default

When adding a RADIUS server, the port number defaults to 1813 and the state is **enabled**.

Usage Guidelines

IPSec is not supported for IPv6.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

The following example shows how to configure a priority 1 RADIUS accounting server at *10.10.10.10* using port *1813* with a login password of *admin*:

```
(Cisco Controller) > config radius acct add 1 10.10.10.10 1813 ascii admin
```

The following example shows how to configure a priority 1 RADIUS accounting server at *2001:9:6:40::623* using port *1813* with a login password of *admin*:

```
(Cisco Controller) > config radius acct add 1 2001:9:6:40::623 1813 ascii admin
```

config radius acct ipsec authentication

To configure IPsec authentication for the Cisco wireless LAN controller, use the **config radius acct ipsec authentication** command.

config radius acct ipsec authentication {**hmac-md5** | **hmac-sha1**} *index*

Syntax Description

hmac-md5	Enables IPsec HMAC-MD5 authentication.
hmac-sha1	Enables IPsec HMAC-SHA1 authentication.

index	RADIUS server index.

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 configure the IPsec hmac-md5 authentication service on the RADIUS accounting server index 1:

```
(Cisco Controller) > config radius acct ipsec authentication hmac-md5 1
```

Related Commands **show radius acct statistics**

config radius acct ipsec enable

To enable IPsec support for an accounting server for the Cisco wireless LAN controller, use the **config radius acct ipsec enable** command.

config radius acct ipsec enable *index*

Syntax Description

index	RADIUS server index.

Command Default None

Command History

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

Examples

The following example shows how to enable the IPsec support for RADIUS accounting server index 1:

```
(Cisco Controller) > config radius acct ipsec enable 1
```

Related Commands **show radius acct statistics**

config radius acct ipsec disable

To disable IPsec support for an accounting server for the Cisco wireless LAN controller, use the **config radius acct ipsec disable** command.

config radius acct ipsec disable *index*

Syntax Description		
	index	RADIUS server index.

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 disable the IPsec support for RADIUS accounting server index 1:

```
(Cisco Controller) > config radius acct ipsec disable 1
```

Related Commands **show radius acct statistics**

config radius acct ipsec encryption

To configure IPsec encryption for an accounting server for the Cisco wireless LAN controller, use the **config radius acct ipsec encryption** command.

config radius acct ipsec encryption {**3des** | **aes** | **des**} *index*

Syntax Description		
	256-aes	Enables IPSec AES-256 encryption.
	3des	Enables IPsec 3DES encryption.
	aes	Enables IPsec AES encryption.
	des	Enables IPsec DES encryption.
	index	RADIUS server index value of between 1 and 17.

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 configure the IPsec 3DES encryption for RADIUS server index value 3:

```
(Cisco Controller) > config radius acct ipsec encryption 3des 3
```

config radius auth

To configure settings for a RADIUS authentication server for the Cisco wireless LAN controller, use the **config radius auth** command.

config radius auth {**add** *index IP addr portascii/hexsecret*} | | **delete** *index* | **disable** *index* | **enable** *index* | **framed-mtu** *mtu* | { **ipsec** {**authentication** {**hmac-md5** *index* | **hmac-sha1** *index* } | **disable** *index* | **enable** *index* | **encryption** {**256-aes** | **3des** | **aes** | **des**} *index* | **ike** {**auth-mode** {**pre-shared-key** *index ascii/hex shared_secret* | **certificate** *index* } | **dh-group** { **2048bit-group-14** | **group-1** | **group-2** | **group-5**} *index* | **lifetime** *seconds index* | **phase1** {**aggressive** | **main**} *index* } } | { { **keywrap**{**add** *ascii/hex kek mack index* } | **delete** *index* | **disable** | **enable**} } | {**mac-delimiter** {**colon** | **hyphen** | **none** | **single-hyphen**}} | {{**management** *index* {**enable** | **disable**}} | { **mgmt-retransmit-timeout** *index Retransmit Timeout* } | { **network** *index* {**enable** | **disable**}} | {**realm** {**add** | **delete**} *radius-index realm-string*} } | {**region** {**group** | **none** | **provincial**}} | {**retransmit-timeout** *index Retransmit Timeout*} | { **rfc3576** {**enable** | **disable**} *index* }

Syntax Description

enable	Enables a RADIUS authentication server.
disable	Disables a RADIUS authentication server.
delete	Deletes a RADIUS authentication server.
index	RADIUS server index. The controller begins the search with 1. The server index range is from 1 to 17.
add	Adds a RADIUS authentication server. See the "Defaults" section.
IP addr	IP address (IPv4 or IPv6) of the RADIUS server.
port	RADIUS server's UDP port number for the interface protocols.
ascii/hex	Specifies RADIUS server's secret type: **ascii** or **hex**.
secret	RADIUS server's secret.
callStationIdType	Configures Called Station Id information sent in RADIUS authentication messages.
framed-mtu	Configures the Framed-MTU for all the RADIUS servers. The framed-mtu range is from 64 to 1300 bytes.
ipsec	Enables or disables IPSEC support for an authentication server. **Note** IPSec is not supported for IPv6.
keywrap	Configures RADIUS keywrap.
ascii/hex	Specifies the input format of the keywrap keys.

kek	Enters the 16-byte key-encryption-key.
mack	Enters the 20-byte message-authenticator-code-key.
mac-delimiter	Configures MAC delimiter for caller station ID and calling station ID.
management	Configures a RADIUS Server for management users.
mgmt-retransmit-timeout	Changes the default management login retransmission timeout for the server.
network	Configures a default RADIUS server for network users.
realm	Configures radius auth realm.
region	Configures RADIUS region property.
retransmit-timeout	Changes the default network login retransmission timeout for the server.
rfc3576	Enables or disables RFC-3576 support for an authentication server.

Command Default

When adding a RADIUS server, the port number defaults to 1812 and the state is **enabled**.

Usage Guidelines

IPSec is not supported for IPv6.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

The following example shows how to configure a priority *3* RADIUS authentication server at *10.10.10.10* using port *1812* with a login password of *admin*:

```
(Cisco Controller) > config radius auth add 3 10.10.10.10 1812 ascii admin
```

The following example shows how to configure a priority *3* RADIUS authentication server at *2001:9:6:40::623* using port *1812* with a login password of *admin*:

```
(Cisco Controller) > config radius auth add 3 2001:9:6:40::623 1812 ascii admin
```

config radius acct ipsec ike

To configure Internet Key Exchange (IKE) for the controller, use the **config radius acct ipsec ike** command.

config radius acct ipsec ike dh-group {**group-1** | **group-2** | **group-5** | **group-14**} | **lifetime** *seconds* | **phase1** {**aggressive** | **main**}} *index*

Syntax Description

dh-group	Specifies the Dixie-Hellman (DH) group.
group-1	Configures the DH Group 1 (768 bits).
group-2	Configures the DH Group 2 (1024 bits).
group-5	Configures the DH Group 5 (1024 bits).
group-5	Configures the DH Group 14 (2048 bits).
lifetime	Configures the IKE lifetime.
seconds	IKE lifetime in seconds.
phase1	Configures the IKE phase1 node.
aggressive	Enables the aggressive mode.
main	Enables the main mode.
index	RADIUS server index.

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 configure an IKE lifetime of 23 seconds for RADIUS server index 1:

```
(Cisco Controller) > config radius acct ipsec ike lifetime 23 1
```

Related Commands

show radius acct statistics

config radius acct mac-delimiter

To specify the delimiter to be used in the MAC addresses that are sent to the RADIUS accounting server, use the **config radius acct mac-delimiter** command.

config radius acct mac-delimiter {**colon** | **hyphen** | **single-hyphen** | **none**}

Syntax Description

colon	Sets the delimiter to a colon (for example, xx:xx:xx:xx:xx:xx).
hyphen	Sets the delimiter to a hyphen (for example, xx-xx-xx-xx-xx-xx).

single-hyphen	Sets the delimiter to a single hyphen (for example, xxxxxx-xxxxxx).
none	Disables the delimiter (for example, xxxxxxxxxxxx).

Command Default

The default delimiter is a hyphen.

Command History

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

The following example shows how to set the delimiter hyphen to be used in the MAC addresses that are sent to the RADIUS accounting server for the network users:

```
(Cisco Controller) > config radius acct mac-delimiter hyphen
```

Related Commands

show radius acct statistics

config radius acct network

To configure a default RADIUS server for network users, use the **config radius acct network** command.

config radius acct network *index* {**enable** | **disable**}

Syntax Description

index	RADIUS server index.
enable	Enables the server as a network user's default RADIUS server.
disable	Disables the server as a network user's default RADIUS server.

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 configure a default RADIUS accounting server for the network users with RADIUS server index1:

```
(Cisco Controller) > config radius acct network 1 enable
```

Related Commands

show radius acct statistics

config radius acct retransmit-timeout

To change the default transmission timeout for a RADIUS accounting server for the Cisco wireless LAN controller, use the **config radius acct retransmit-timeout** command.

config radius acct retransmit-timeout *index timeout*

Syntax Description

index	RADIUS server index.
timeout	Number of seconds (from 2 to 30) between retransmissions.

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 configure retransmission timeout value 5 seconds between the retransmission:

```
(Cisco Controller) > config radius acct retransmit-timeout 5
```

Related Commands

show radius acct statistics

Configure RADIUS Authentication Server Commands

Use the **config radius** auth commands to configure RADIUS authentication server settings.

config radius auth

To configure settings for a RADIUS authentication server for the Cisco wireless LAN controller, use the **config radius auth** command.

config radius auth {**add** *index IP addr portascii/hexsecret*} | | **delete** *index* | **disable** *index* | **enable** *index* | **framed-mtu** *mtu* | { **ipsec** {**authentication** {**hmac-md5** *index* | **hmac-sha1** *index* } | **disable** *index* | **enable** *index* | **encryption** {**256-aes** | **3des** | **aes** | **des**} *index* | **ike** {**auth-mode** {**pre-shared-key** *index ascii/hex shared_secret* | **certificate** *index* } | **dh-group** { **2048bit-group-14** | **group-1** | **group-2** | **group-5**} *index* | **lifetime** *seconds index* | **phase1** {**aggressive** | **main**} *index* } } | { { **keywrap** {**add** *ascii/hex kek mack index* } | **delete** *index* | **disable** | **enable**} } | {**mac-delimiter** {**colon** | **hyphen** | **none** | **single-hyphen**}} | {{**management** *index* {**enable** | **disable**}} | { **mgmt-retransmit-timeout** *index Retransmit Timeout* } | { **network** *index* {**enable** | **disable**}} | {**realm** {**add** | **delete**} *radius-index realm-string*} } | {**region** {**group** | **none** | **provincial**}} | {**retransmit-timeout** *index Retransmit Timeout*} | { **rfc3576** {**enable** | **disable**} *index* }

Syntax Description

enable	Enables a RADIUS authentication server.
disable	Disables a RADIUS authentication server.
delete	Deletes a RADIUS authentication server.
index	RADIUS server index. The controller begins the search with 1. The server index range is from 1 to 17.
add	Adds a RADIUS authentication server. See the “Defaults” section.
IP addr	IP address (IPv4 or IPv6) of the RADIUS server.
port	RADIUS server’s UDP port number for the interface protocols.
ascii/hex	Specifies RADIUS server’s secret type: **ascii** or **hex**.
secret	RADIUS server’s secret.
callStationIdType	Configures Called Station Id information sent in RADIUS authentication messages.
framed-mtu	Configures the Framed-MTU for all the RADIUS servers. The framed-mtu range is from 64 to 1300 bytes.

ipsec	Enables or disables IPSEC support for an authentication server. **Note** IPSec is not supported for IPv6.
keywrap	Configures RADIUS keywrap.
ascii/hex	Specifies the input format of the keywrap keys.
kek	Enters the 16-byte key-encryption-key.
mack	Enters the 20-byte message-authenticator-code-key.
mac-delimiter	Configures MAC delimiter for caller station ID and calling station ID.
management	Configures a RADIUS Server for management users.
mgmt-retransmit-timeout	Changes the default management login retransmission timeout for the server.
network	Configures a default RADIUS server for network users.
realm	Configures radius auth realm.
region	Configures RADIUS region property.
retransmit-timeout	Changes the default network login retransmission timeout for the server.
rfc3576	Enables or disables RFC-3576 support for an authentication server.

Command Default

When adding a RADIUS server, the port number defaults to 1812 and the state is **enabled**.

Usage Guidelines

IPSec is not supported for IPv6.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

The following example shows how to configure a priority *3* RADIUS authentication server at *10.10.10.10* using port *1812* with a login password of *admin*:

```
(Cisco Controller) > config radius auth add 3 10.10.10.10 1812 ascii admin
```

The following example shows how to configure a priority *3* RADIUS authentication server at *2001:9:6:40::623* using port *1812* with a login password of *admin*:

```
(Cisco Controller) > config radius auth add 3 2001:9:6:40::623 1812 ascii admin
```

config radius auth callStationIdType

To configure the RADIUS authentication server, use the **config radius auth callStationIdType** command.

config radius auth callStationIdType {**ap-ethmac-only** | **ap-ethmac-ssid** | **ap-group-name** | **ap-label-address** | **ap-label-address-ssid** | **ap-location** | **ap-mac-ssid-ap-group** | **ap-macaddr-only** | **ap-macaddr-ssid** | **ap-name** | **ap-name-ssid** | **flex-group-name** | **ipaddr** | **macaddr** | **vlan-id**}

Syntax Description

ipaddr	Configures the Call Station ID type to use the IP address (only Layer 3).
macaddr	Configures the Call Station ID type to use the system's MAC address (Layers 2 and 3).
ap-macaddr-only	Configures the Call Station ID type to use the access point's MAC address (Layers 2 and 3).
ap-macaddr-ssid	Configures the Call Station ID type to use the access point's MAC address (Layers 2 and 3) in the format *AP MAC address*:*SSID*.
ap-ethmac-only	Configures the Called Station ID type to use the access point's Ethernet MAC address.
ap-ethmac-ssid	Configures the Called Station ID type to use the access point's Ethernet MAC address in the format *AP Ethernet MAC address*:*SSID*.
ap-group-name	Configures the Call Station ID type to use the AP group name. If the AP is not part of any AP group, default-group is taken as the AP group name.
flex-group-name	Configures the Call Station ID type to use the FlexConnect group name. If the FlexConnect AP is not part of any FlexConnect group, the system MAC address is taken as the Call Station ID.
ap-name	Configures the Call Station ID type to use the access point's name.
ap-name-ssid	Configures the Call Station ID type to use the access point's name in the format *AP name*:*SSID*
ap-location	Configures the Call Station ID type to use the access point's location.
ap-mac-ssid-ap-group	Sets Called Station ID type to the format <AP MAC address>:<SSID>:<AP Group>

vlan-id	Configures the Call Station ID type to use the system's VLAN-ID.
ap-label-address	Configures the Call Station ID type to the AP MAC address that is printed on the AP label, for the accounting messages.
ap-label-address-ssid	Configures the Call Station ID type to the AP MAC address:SSID format.

Command Default

The MAC address of the system.

Usage Guidelines

The controller sends the Called Station ID attribute to the RADIUS server in all authentication and accounting packets. The Called Station ID attribute can be used to classify users to different groups based on the attribute value. The command is applicable only for the Called Station and not for the Calling Station.

You cannot send only the SSID as the Called-Station-ID, you can only combine the SSID with either the access point MAC address or the access point name.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
7.6	The **ap-ethmac-only** and **ap-ethmac-ssid** keywords were added to support the access point's Ethernet MAC address. The **ap-label-address** and **ap-label-address-ssid** keywords were added.
8.0	This command supports both IPv4 and IPv6 address formats.
8.3	The **ap-mac-ssid-ap-group** keyword was added.

The following example shows how to configure the call station ID type to use the IP address:

```
(Cisco Controller) > config radius auth callStationIdType ipAddr
```

The following example shows how to configure the call station ID type to use the system's MAC address:

```
(Cisco Controller) > config radius auth callStationIdType macAddr
```

The following example shows how to configure the call station ID type to use the access point's MAC address:

```
(Cisco Controller) > config radius auth callStationIdType ap-macAddr
```

config radius auth IPsec authentication

To configure IPsec support for an authentication server for the Cisco wireless LAN controller, use the **config radius auth IPsec authentication** command.

config radius auth IPsec authentication {**hmac-md5** | **hmac-sha1**} *index*

Syntax Description

hmac-md5	Enables IPsec HMAC-MD5 authentication.
hmac-shal	Enables IPsec HMAC-SHA1 authentication.
index	RADIUS server index.

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 configure the IPsec hmac-md5 support for RADIUS authentication server index 1:

```
(Cisco Controller) > config radius auth IPsec authentication hmac-md5 1
```

Related Commands

show radius acct statistics

config radius auth ipsec disable

To disable IPsec support for an authentication server for the Cisco wireless LAN controller, use the **config radius auth IPsec disable** command.

config radius auth ipsec {**enable** | **disable**} *index*

Syntax Description

enable	Enables the IPsec support for an authentication server.
disable	Disables the IPsec support for an authentication server.
index	RADIUS server index.

Command Default

None

Command History

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

This example shows how to enable the IPsec support for RADIUS authentication server index 1:

```
(Cisco Controller) > config radius auth ipsec enable 1
```

This example shows how to disable the IPsec support for RADIUS authentication server index 1:

```
(Cisco Controller) > config radius auth ipsec disable 1
```

Related Commands **show radius acct statistics**

config radius auth ipsec encryption

To configure IPsec encryption support for an authentication server for the Cisco wireless LAN controller, use the **config radius auth ipsec encryption** command.

config radius auth IPsec encryption {**256-aes** | **3des** | **aes** | **des**} *index*

Syntax Description

256-aes	Enables the IPsec 256 AES encryption.
3des	Enables the IPsec 3DES encryption.
aes	Enables the IPsec AES encryption.
des	Enables the IPsec DES encryption.
index	RADIUS server index.

Command Default None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	The keyword 256-aes was added.

The following example shows how to configure IPsec 3dec encryption RADIUS authentication server index 3:

```
(Cisco Controller) > config radius auth ipsec encryption 3des 3
```

Related Commands **show radius acct statistics**

config radius auth ipsec ike

To configure Internet Key Exchange (IKE) for the Cisco wireless LAN controller, use the **config radius auth IPsec ike** command.

config radius auth ipsec ike {**auth-mode** {**pre-shared-key***index* {**ascii** | **hex** *shared-secret*} | **certificate** *index* } **dh-group** {**2048bit-group-14** | **group-1** | **group-2** | **group-5**} | **lifetime** *seconds* | **phase1** {**aggressive** | **main**}} *index*

Syntax Description

auth-mode	Configures the IKE authentication method.
pre-shared-key	Configures the preshared key for IKE authentication method.
index	RADIUS server index between 1 and 17.
ascii	Configures RADIUS IPsec IKE secret in an ASCII format.
hex	Configures RADIUS IPsec IKE secret in a hexadecimal format.
shared-secret	Configures the shared RADIUS IPsec secret.
certificate	Configures the certificate for IKE authentication.
dh-group	Configures the IKE Diffe-Hellman group.
2048bit-group-14	Configures the DH Group14 (2048 bits).
group-1	Configures the DH Group 1 (768 bits).
group-2	Configures the DH Group 2 (1024 bits).
group-5	Configures the DH Group 2 (1024 bits).
lifetime	Configures the IKE lifetime.
seconds	IKE lifetime in seconds. The range is from 1800 to 57600 seconds.
phase1	Configures the IKE phase1 mode.
aggressive	Enables the aggressive mode.
main	Enables the main mode.
index	RADIUS server index.

Command Default

By default, preshared key is used for IPsec sessions and IKE lifetime is 28800 seconds.

Command History

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

The following example shows how to configure IKE lifetime of 23 seconds for RADIUS authentication server index 1:

```
(Cisco Controller) > config radius auth ipsec ike lifetime 23 1
```

Related Commands **show radius acct statistics**

config radius auth keywrap

To enable and configure Advanced Encryption Standard (AES) key wrap, which makes the shared secret between the controller and the RADIUS server more secure, use the **config radius auth keywrap** command.

config radius auth keywrap {**enable** | **disable** | **add** {**ascii** | **hex**} *kek mack* | **delete**} *index*

Syntax Description

enable	Enables AES key wrap.
disable	Disables AES key wrap.
add	Configures AES key wrap attributes.
ascii	Configures key wrap in an ASCII format.
hex	Configures key wrap in a hexadecimal format.
kek	16-byte Key Encryption Key (KEK).
mack	20-byte Message Authentication Code Key (MACK).
delete	Deletes AES key wrap attributes.
index	Index of the RADIUS authentication server on which to configure the AES key wrap.

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 AES key wrap for a RADIUS authentication server:

```
(Cisco Controller) > config radius auth keywrap enable
```

Related Commands **show radius auth statistics**

config radius auth mac-delimiter

To specify a delimiter to be used in the MAC addresses that are sent to the RADIUS authentication server, use the **config radius auth mac-delimiter** command.

config radius auth mac-delimiter {**colon** | **hyphen** | **single-hyphen** | **none**}

Syntax Description

colon	Sets a delimiter to a colon (for example, xx:xx:xx:xx:xx:xx).
hyphen	Sets a delimiter to a hyphen (for example, xx-xx-xx-xx-xx-xx).
single-hyphen	Sets a delimiter to a single hyphen (for example, xxxxxx-xxxxxx).
none	Disables the delimiter (for example, xxxxxxxxxxxx).

Command Default

The default delimiter is a hyphen.

Command History

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

The following example shows how to specify a delimiter hyphen to be used for a RADIUS authentication server:

```
(Cisco Controller) > config radius auth mac-delimiter hyphen
```

Related Commands

show radius auth statistics

config radius auth management

To configure a default RADIUS server for management users, use the **config radius auth management** command.

config radius auth management *index* {**enable** | **disable**}

Syntax Description

index	RADIUS server index.
enable	Enables the server as a management user's default RADIUS server.
disable	Disables the server as a management user's default RADIUS server.

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 configure a RADIUS server for management users:

```
(Cisco Controller) > config radius auth management 1 enable
```

Related Commands

show radius acct statistics

config radius acct network

config radius auth mgmt-retransmit-timeout

config radius auth mgmt-retransmit-timeout

To configure a default RADIUS server retransmission timeout for management users, use the **config radius auth mgmt-retransmit-timeout** command.

config radius auth mgmt-retransmit-timeout *index retransmit-timeout*

Syntax Description

index	RADIUS server index.
retransmit-timeout	Timeout value. The range is from 1 to 30 seconds.

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 configure a default RADIUS server retransmission timeout for management users:

```
(Cisco Controller) > config radius auth mgmt-retransmit-timeout 1 10
```

Related Commands

config radius auth management

config radius auth network

To configure a default RADIUS server for network users, use the **config radius auth network** command.

config radius auth network *index* {**enable** | **disable**}

Syntax Description

index	RADIUS server index.
enable	Enables the server as a network user default RADIUS server.
disable	Disables the server as a network user default RADIUS server.

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 configure a default RADIUS server for network users:

```
(Cisco Controller) > config radius auth network 1 enable
```

Related Commands

show radius acct statistics

config radius acct network

config radius auth mgmt-retransmit-timeout

To configure a default RADIUS server retransmission timeout for management users, use the **config radius auth mgmt-retransmit-timeout** command.

config radius auth mgmt-retransmit-timeout *index retransmit-timeout*

Syntax Description

index	RADIUS server index.
retransmit-timeout	Timeout value. The range is from 1 to 30 seconds.

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 configure a default RADIUS server retransmission timeout for management users:

```
(Cisco Controller) > config radius auth mgmt-retransmit-timeout 1 10
```

Related Commands

config radius auth management

config radius auth rfc3576

To configure RADIUS RFC-3576 support for the authentication server for the controller, use the **config radius auth rfc3576** command.

config radius auth rfc3576 { **enable** | **disable** } *index*

Syntax Description

enable	Enables RFC-3576 support for an authentication server.

disable	Disables RFC-3576 support for an authentication server.
index	RADIUS server index.

Command Default Disabled

Command History

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

Usage Guidelines RFC 3576, which is an extension to the RADIUS protocol, allows dynamic changes to a user session. RFC 3576 includes support for disconnecting users and changing authorizations applicable to a user session. Disconnect messages cause a user session to be terminated immediately; CoA messages modify session authorization attributes such as data filters.

The following example shows how to enable the RADIUS RFC-3576 support for a RADIUS authentication server:

```
(Cisco Controller) > config radius auth rfc3576 enable 2
```

Related Commands

show radius auth statistics

show radius summary

show radius rfc3576

config radius aggressive-failover disabled

To configure the controller to mark a RADIUS server as down (not responding) after the server does not reply to three consecutive clients, use the **config radius aggressive-failover disabled** command.

config radius aggressive-failover disabled

Syntax Description This command has no arguments or keywords.

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 configure the controller to mark a RADIUS server as down:

```
(Cisco Controller) > config radius aggressive-failover disabled
```

Related Commands

show radius summary

config radius backward compatibility

To configure RADIUS backward compatibility for the controller, use the **config radius backward compatibility** command.

config radius backward compatibility {**enable** | **disable**}

Syntax Description

enable	Enables RADIUS vendor ID backward compatibility.
disable	Disables RADIUS vendor ID backward compatibility.

Command Default

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 RADIUS backward compatibility settings:

```
(Cisco Controller) > config radius backward compatibility disable
```

Related Commands

show radius summary

config radius callStationIdCase

To configure callStationIdCase information sent in RADIUS messages for the controller, use the **config radius callStationIdCase** command.

config radius callStationIdCase { **legacy** | **lower** | **upper** }

Syntax Description

legacy	Configures Call Station IDs for Layer 2 authentication to RADIUS in uppercase.
lower	Configures all Call Station IDs to RADIUS in lowercase.
upper	Configures all Call Station IDs to RADIUS in uppercase.

Command Default

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 send the call station ID in lowercase:

```
(Cisco Controller) > config radius callStationIdCase lower
```

Related Commands **show radius summary**

config radius auth callStationIdType

To configure the RADIUS authentication server, use the **config radius auth callStationIdType** command.

config radius auth callStationIdType {**ap-ethmac-only** | **ap-ethmac-ssid** | **ap-group-name** | **ap-label-address** | **ap-label-address-ssid** | **ap-location** | **ap-mac-ssid-ap-group** | **ap-macaddr-only** | **ap-macaddr-ssid** | **ap-name** | **ap-name-ssid** | **flex-group-name** | **ipaddr** | **macaddr** | **vlan-id**}

Syntax Description

ipaddr	Configures the Call Station ID type to use the IP address (only Layer 3).
macaddr	Configures the Call Station ID type to use the system's MAC address (Layers 2 and 3).
ap-macaddr-only	Configures the Call Station ID type to use the access point's MAC address (Layers 2 and 3).
ap-macaddr-ssid	Configures the Call Station ID type to use the access point's MAC address (Layers 2 and 3) in the format *AP MAC address*:*SSID*.
ap-ethmac-only	Configures the Called Station ID type to use the access point's Ethernet MAC address.
ap-ethmac-ssid	Configures the Called Station ID type to use the access point's Ethernet MAC address in the format *AP Ethernet MAC address*:*SSID*.
ap-group-name	Configures the Call Station ID type to use the AP group name. If the AP is not part of any AP group, default-group is taken as the AP group name.
flex-group-name	Configures the Call Station ID type to use the FlexConnect group name. If the FlexConnect AP is not part of any FlexConnect group, the system MAC address is taken as the Call Station ID.
ap-name	Configures the Call Station ID type to use the access point's name.
ap-name-ssid	Configures the Call Station ID type to use the access point's name in the format *AP name*:*SSID*
ap-location	Configures the Call Station ID type to use the access point's location.
ap-mac-ssid-ap-group	Sets Called Station ID type to the format <AP MAC address>:<SSID>:<AP Group>

vlan-id	Configures the Call Station ID type to use the system's VLAN-ID.
ap-label-address	Configures the Call Station ID type to the AP MAC address that is printed on the AP label, for the accounting messages.
ap-label-address-ssid	Configures the Call Station ID type to the AP MAC address:SSID format.

Command Default

The MAC address of the system.

Usage Guidelines

The controller sends the Called Station ID attribute to the RADIUS server in all authentication and accounting packets. The Called Station ID attribute can be used to classify users to different groups based on the attribute value. The command is applicable only for the Called Station and not for the Calling Station.

You cannot send only the SSID as the Called-Station-ID, you can only combine the SSID with either the access point MAC address or the access point name.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
7.6	The **ap-ethmac-only** and **ap-ethmac-ssid** keywords were added to support the access point's Ethernet MAC address. The **ap-label-address** and **ap-label-address-ssid** keywords were added.
8.0	This command supports both IPv4 and IPv6 address formats.
8.3	The **ap-mac-ssid-ap-group** keyword was added.

The following example shows how to configure the call station ID type to use the IP address:

```
(Cisco Controller) > config radius auth callStationIdType ipAddr
```

The following example shows how to configure the call station ID type to use the system's MAC address:

```
(Cisco Controller) > config radius auth callStationIdType macAddr
```

The following example shows how to configure the call station ID type to use the access point's MAC address:

```
(Cisco Controller) > config radius auth callStationIdType ap-macAddr
```

config radius fallback-test

To configure the RADIUS server fallback behavior, use the **config radius fallback-test** command.

config radius fallback-test mode {**off** | **passive** | **active**} | **username** *username*} | {**interval** *interval*}

Syntax Description

mode	Specifies the mode.
off	Disables RADIUS server fallback.
passive	Causes the controller to revert to a preferable server (with a lower server index) from the available backup servers without using extraneous probe messages. The controller ignores all inactive servers for a time period and retries later when a RADIUS message needs to be sent.
active	Causes the controller to revert to a preferable server (with a lower server index) from the available backup servers by using RADIUS probe messages to proactively determine whether a server that has been marked inactive is back online. The controller ignores all inactive servers for all active RADIUS requests.
username	Specifies the username.
username	Username. The username can be up to 16 alphanumeric characters.
interval	Specifies the probe interval value.
interval	Probe interval. The range is 180 to 3600.

Command Default

The default probe interval is 300.

Command History

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

The following example shows how to disable the RADIUS accounting server fallback behavior:

```
(Cisco Controller) > config radius fallback-test mode off
```

The following example shows how to configure the controller to revert to a preferable server from the available backup servers without using the extraneous probe messages:

```
(Cisco Controller) > config radius fallback-test mode passive
```

The following example shows how to configure the controller to revert to a preferable server from the available backup servers by using RADIUS probe messages:

```
(Cisco Controller) > config radius fallback-test mode active
```

Related Commands

config advanced probe filter

config advanced probe limit

show advanced probe

show radius acct statistics

Configure Redundancy Commands

Use the **config redundancy** commands to configure High Availability parameters on the Active and Standby controllers.

config redundancy interface address peer-service-port

To configure the service port IP and netmask of the peer or standby controller, use the **config redundancy interface address peer-service-port** command.

config redundancy interface address peer-service-port *ip_address netmask*

Syntax Description

ip_address	IP address of the peer service port.
netmask	Netmask of the peer service port.

Command Default

None

Command History

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

Usage Guidelines

You can configure this command only from the Active controller. For the HA feature, the service port configurations are made per controller. You will loose these configurations if you change the mode from HA to non-HA and vice-versa.

The following example shows how to configure the service port IP and netmask of the peer or standby controller:

```
(Cisco Controller) >config redundancy interface address peer-service-port 11.22.44.55
```

config redundancy mobilitymac

To configure the High Availability mobility MAC address to be used as an identifier, use the **config redundancy mobilitymac** command.

config redundancy mobilitymac *mac_address*

Syntax Description

mac_address	MAC address that is an identifier for the active and standby controller pair.

Command Default

None

Command History

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

Usage Guidelines From Release 8.0.132.0 onwards, mobility MAC configuration is no longer present in the uploaded configuration. Therefore, if you download this configuration file back to the controller, you must add the **config redundancy mobilitymac** *mac_address*command in the config file before download.

Examples The following example shows how to configure the High Availability mobility MAC address:

```
(Cisco Controller) >config redundancy mobilitymac ff:ff:ff:ff:ff:ff
```

config redundancy mode

To enable or disable redundancy or High Availability (HA), use the **config redundancy mode** command.

config redundancy mode {**sso** | **none**}

Syntax Description

sso	Enables a stateful switch over (SSO) or hot standby redundancy mode.
none	Disables redundancy mode.

Command Default None

Command History

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

Usage Guidelines You must configure local and peer redundancy management IP addresses before you configure redundancy.

The following example shows how to enable redundancy:

```
(Cisco Controller) >config redundancy mode sso
```

config redundancy peer-route

To configure the route configurations of the peer or standby controller, use the **config redundancy peer-route** command.

config redundancy peer-route {**add** | **delete**} *network_ip_address netmask gateway*

Syntax Description

add	Adds a network route.
delete	Deletes a network route specific to standby controller.
network_ip_address	Network IP address.
netmask	Subnet mask of the network.
gateway	IP address of the gateway for the route network.

Command Default None

Command History

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

Usage Guidelines You can configure this command only from the Active controller. For the HA feature, the service port configurations are made per controller. You will lose these configurations if you change the mode from HA to non-HA and vice-versa.

The following example shows how to configure route configurations of a peer or standby controller.

```
(Cisco Controller) >config redundancy peer-route add 10.1.1.0 255.255.255.0 10.1.1.1
```

config redundancy timer peer-search-timer

To configure the peer search timer, use the **config redundancy timer peer-search-timer** command.

config redundancy timer peer-search-timer *seconds*

Syntax Description

seconds	Value of the peer search timer in seconds. The range is from 60 to 180 secs.

Command Default The default value of the peer search timer is 120 seconds.

Command History

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

Usage Guidelines You can use this command to configure the boot up role negotiation timeout value in seconds.

The following example shows how to configure the redundancy peer search timer:

```
(Cisco Controller) >config redundancy timer peer-search-timer 100
```

config redundancy timer keep-alive-timer

To configure the keep-alive timeout value, use the **config redundancy timer keep-alive-timer** command.

config redundancy timer keep-alive-timer *milliseconds*

Syntax Description

milliseconds	Keep-alive timeout value in milliseconds. The range is from 100 to 400 milliseconds.

Command Default The default keep-alive timeout value is 100 milliseconds.

Command History

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

The following example shows how to configure the keep-alive timeout value:

```
(Cisco Controller) >config redundancy timer keep-alive-timer 200
```

config redundancy unit

To configure a controller as a primary or secondary controller, use the **config redundancy unit** command.

config redundancy unit { **primary** | **secondary** }

Syntax Description

primary	Configures the controller as the primary controller.
secondary	Configures the controller as the secondary controller.

Command Default

The default state is as the primary controller.

Command History

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

Usage Guidelines

When you configure a controller as the secondary controller, it becomes the High Availability Stackable Unit (SKU) without any valid AP licenses.

The following example shows how to configure a controller as the primary controller:

```
(Cisco Controller) >config redundancy unit primary
```

redundancy force-switchover

To trigger a manual switch over on the active Cisco WLC, use the **redundancy force-switchover** command.

redundancy force-switchover

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command History

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

Usage Guidelines

When a manual switchover occurs, the active Cisco WLC reboots and the standby Cisco WLC takes over the network. A stateful switchover of access points (AP SSO) is supported. AP SSO ensures that the AP sessions are maintained after the standby Cisco WLC takes over and the APs switch over to the standby Cisco WLC. The clients on the active Cisco WLC deauthenticate and join the new active Cisco WLC.

The following example shows how to trigger a forceful switchover on the Cisco WLC:

```
(Cisco Controller) >redundancy force-switchover
```

config interface address redundancy-management

To configure the management interface IP address, subnet and gateway of the controller, use the **config interface address redundancy-management** command.

config interface address redundancy-management *IP_address netmask gateway*

Syntax Description

IP_address	Management interface IP address of the active controller.
netmask	Network mask.
gateway	IP address of the gateway.

Command Default

None

Command History

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

Usage Guidelines

You can use this command to check the Active-Standby reachability when the keep-alive fails.

The following example shows how to configure the management IP addresses of the controller:

```
(Cisco Controller) > config interface address redundancy-management 209.165.201.31 255.255.0.0
 209.165.201.30
```

Related Commands

config redundancy mobilitymac

config redundancy interface address peer-service-port

config redundancy peer-route

config redundancy unit

config redundancy timer

show redundancy timers

show redundancy summary

debug rmgr

debug rsyncmgr

Configure RF-Profile commands

Use the **configure rf-profile** commands to configure RF profiles.

config rf-profile band-select

To configure the RF profile band selection parameters, use the **config rf-profile band-select** command.

config rf-profile band-select {**client-rssi** *rssi* | **cycle-count** *cycles* | **cycle-threshold** *value* | **expire** {**dual-band** *value* | **suppression** *value*} | **probe-response** {**enable** | **disable**}} *profile_name*

Syntax Description

client-rssi	Configures the client Received Signal Strength Indicator (RSSI) threshold for the RF profile.
rssi	Minimum RSSI for a client to respond to a probe. The range is from -20 to -90 dBm.
cycle-count	Configures the probe cycle count for the RF profile. The cycle count sets the number of suppression cycles for a new client.
cycles	Value of the cycle count. The range is from 1 to 10.
cycle-threshold	Configures the time threshold for a new scanning RF Profile band select cycle period. This setting determines the time threshold during which new probe requests from a client come in a new scanning cycle.
value	Value of the cycle threshold for the RF profile. The range is from 1 to 1000 milliseconds.
expire	Configures the expiration time of clients for band select.
dual-band	Configures the expiration time for pruning previously known dual-band clients. After this time elapses, clients become new and are subject to probe response suppression.
value	Value for a dual band. The range is from 10 to 300 seconds.
suppression	Configures the expiration time for pruning previously known 802.11b/g clients. After this time elapses, clients become new and are subject to probe response suppression.
value	Value for suppression. The range is from 10 to 200 seconds.
probe-response	Configures the probe response for a RF profile.
enable	Enables probe response suppression on clients operating in the 2.4-GHz band for a RF profile.
disable	Disables probe response suppression on clients operating in the 2.4-GHz band for a RF profile.
profile name	Name of the RF profile. The profile name can be up to 32 case-sensitive, alphanumeric characters.

Command Default

The default value for client RSSI is –80 dBm.

The default cycle count is 2.

The default cycle threshold is 200 milliseconds.

The default value for dual-band expiration is 60 seconds.

The default value for suppression expiration is 20 seconds.

Command History

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

Usage Guidelines

When you enable band select on a WLAN, the access point suppresses client probes on 2.4-GHz and moves the dual band clients to the 5-Ghz spectrum. The band-selection algorithm directs dual-band clients only from the 2.4-GHz radio to the 5-GHz radio of the same access point, and it only runs on an access point when both the 2.4-GHz and 5-GHz radios are up and running. Band selection can be used only with Cisco Aironet 1040, 1140, and 1250 Series and the 3500 series access points.

The following example shows how to configure the client RSSI:

```
(Cisco Controller) >config rf-profile band-select client-rssi -70
```

config rf-profile client-trap-threshold

To configure the threshold value of the number of clients that associate with an access point, after which an SNMP trap is sent to the controller, use the **config rf-profile client-trap-threshold** command.

config rf-profile client-trap-threshold *threshold profile_name*

Syntax Description

threshold	Threshold value of the number of clients that associate with an access point, after which an SNMP trap is sent to the controller. The range is from 0 to 200. Traps are disabled if the threshold value is configured as zero.
profile_name	Name of the RF profile. The profile name can be up to 32 case-sensitive, alphanumeric characters.

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 configure the threshold value of the number of clients that associate with an access point:

```
(Cisco Controller) >config rf-profile client-trap-threshold 150
```

config rf-profile create

To create a RF profile, use the **config rf-profile create** command.

config rf-profile create {**802.11a** | **802.11b/g**} *profile-name*

Syntax Description

802.11a	Configures the RF profile for the 2.4GHz band.
802.11b/g	Configures the RF profile for the 5GHz band.
profile-name	Name of the RF profile.

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 create a new RF profile:

```
(Cisco Controller) >config rf-profile create 802.11a RFtestgroup1
```

config rf-profile fra client-aware

To configure the RF profile client-aware FRA feature, use the **config rf-profile fra client-aware** command.

config rf-profile fra client-aware {**client-reset** *percent rf-profile-name* | **client-select** *percent rf-profile-name* | **disable** *rf-profile-name* | **enable** *rf-profile-name*}

Syntax Description

client-reset	Configures the RF profile AP utilization threshold for radio to switch back to Monitor mode.
percent	Utilization percentage value ranges from 0 to 100. The default is 5%.
rf-profile-name	Name of the RF Profile.
client-select	Configures the RF profile utilization threshold for radio to switch to 5GHz.
percent	Utilization percentage value ranges from 0 to 100. The default is 50%.
disable	Disables the RF profile client-aware FRA feature.
enable	Enables the RF profile client-aware FRA feature.

Command Default

The default percent value for client-select and client-reset is 50% and 5% respectively.

Command History

Release	Modification
8.5	This command was introduced.

The following example shows how to configure the RF profile utilization threshold for redundant dual-band radios to switch back from 5GHz client-serving role to Monitor mode:

```
(Cisco Controller) >config rf-profile fra client-aware client-reset 15 profile1
```

The following example shows how to configure the RF profile utilization threshold for redundant dual-band radios to switch from Monitor mode to 5GHz client-serving role:

```
(Cisco Controller) >config rf-profile fra client-aware client-select 20 profile1
```

The following example shows how to disable the RF profile client-aware FRA feature:

```
(Cisco Controller) >config rf-profile fra client-aware disable profile1
```

The following example shows how to enable the RF profile client-aware FRA feature:

```
(Cisco Controller) >config rf-profile fra client-aware enable profile1
```

config rf-profile data-rates

To configure the data rate on a RF profile, use the **config rf-profile data-rates** command.

config rf-profile data-rates {**802.11a** | **802.11b** } {**disabled** | **mandatory** | **supported**} *data-rate profile-name*

Syntax Description

802.11a	Specifies 802.11a as the radio policy of the RF profile.
802.11b	Specifies 802.11b as the radio policy of the RF profile.
disabled	Disables a rate.
mandatory	Sets a rate to mandatory.
supported	Sets a rate to supported.
data-rate	802.11 operational rates, which are 1*, 2*, 5.5*, 6, 9, 11*, 12, 18, 24, 36, 48 and 54, where * denotes 802.11b only rates.
profile-name	Name of the RF profile.

Command Default

Default data rates for RF profiles are derived from the controller system defaults, the global data rate configurations. For example, if the RF profile's radio policy is mapped to 802.11a then the global 802.11a data rates are copied into the RF profiles at the time of creation.

The data rates set with this command are negotiated between the client and the Cisco wireless LAN controller. If the data rate is set to mandatory, the client must support it in order to use the network. If a data rate is set as supported by the Cisco wireless LAN controller, any associated client that also supports that rate may communicate with the Cisco lightweight access point using that rate. It is not required that a client is able to use all the rates marked supported in order to associate.

Command History

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

The following example shows how to set the 802.11b transmission of an RF profile at a mandatory rate at 12 Mbps:

```
(Cisco Controller) >config rf-profile 802.11b data-rates mandatory 12 RFGroup1
```

config rf-profile delete

To delete a RF profile, use the **config rf-profile delete** command.

config rf-profile delete *profile-name*

Syntax Description

profile-name	Name of the RF profile.

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 delete a RF profile:

```
(Cisco Controller) >config rf-profile delete RFGroup1
```

config rf-profile description

To provide a description to a RF profile, use the **config rf-profile description** command.

config rf-profile description *description profile-name*

Syntax Description

description	Description of the RF profile.
profile-name	Name of the RF profile.

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 add a description to a RF profile:

```
(Cisco Controller) >config rf-profile description This is a demo desciption RFGroup1
```

config rf-profile load-balancing

To configure load balancing on an RF profile, use the **config rf-profile load-balancing** command.

config rf-profile load-balancing {**window** *clients* | **denial** *value*} *profile_name*

Syntax Description

window	Configures the client window for load balancing of an RF profile.

clients	Client window size that limits the number of client associations with an access point. The range is from 0 to 20. The default value is 5. The window size is part of the algorithm that determines whether an access point is too heavily loaded to accept more client associations: *load-balancing window + client associations on AP with lightest load = load-balancing threshold* Access points with more client associations than this threshold are considered busy, and clients can associate only to access points with client counts lower than the threshold. This window also helps to disassociate sticky clients.
denial	Configures the client denial count for load balancing of an RF profile.
value	Maximum number of association denials during load balancing. The range is from 1 to 10. The default value is 3. When a client tries to associate on a wireless network, it sends an association request to the access point. If the access point is overloaded and load balancing is enabled on the controller, the access point sends a denial to the association request. If there are no other access points in the range of the client, the client tries to associate the same access point again. After the maximum denial count is reached, the client is able to associate. Association attempts on an access point from any client before associating any AP is called a sequence of association. The default is 3.
profile_name	Name of the RF profile. The profile name can be up to 32 case-sensitive, alphanumeric characters.

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 configure the client window size for an RF profile:

```
(Cisco Controller) >config rf-profile load-balancing window 15
```

config rf-profile max-clients

To configure the maximum number of client connections per access point of an RF profile, use the **config rf-profile max-clients** commands.

config rf-profile max-clients *clients*

Syntax Description

clients	Maximum number of client connections per access point of an RF profile. The range is from 1 to 200.

Command Default

None

Command History

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

Usage Guidelines

You can use this command to configure the maximum number of clients on access points that are in client dense areas, or serving high bandwidth video or mission critical voice applications.

The following example shows how to set the maximum number of clients at 50:

```
(Cisco Controller) >config rf-profile max-clients 50
```

config rf-profile multicast data-rate

To configure the minimum RF profile multicast data rate, use the **config rf-profile multicast data-rate** command.

config rf-profile multicast data-rate *value profile_name*

Syntax Description

value	Minimum RF profile multicast data rate. The options are 6, 9, 12, 18, 24, 36, 48, 54. Enter 0 to specify that access points will dynamically adjust the data rate.
profile_name	Name of the RF profile. The profile name can be up to 32 case-sensitive, alphanumeric characters.

Command Default

The minimum RF profile multicast data rate is 0.

Command History

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

The following example shows how to set the multicast data rate for an RF profile:

```
(Cisco Controller) >config rf-profile multicast data-rate 24
```

config rf-profile out-of-box

To create an out-of-box AP group consisting of newly installed access points, use the **config rf-profile out-of-box** command.

config rf-profile out-of-box {**enable** | **disable**}

Syntax Description

enable	Enables the creation of an out-of-box AP group. When you enable this command, the following occurs: • Newly installed access points that are part of the default AP group will be part of the out-of-box AP group and their radios will be switched off, which eliminates any RF instability caused by the new access points. • All access points that do not have a group name become part of the out-of-box AP group. • Special RF profiles are created per 802.11 band. These RF profiles have default-settings for all the existing RF parameters and additional new configurations.
disable	Disables the out-of-box AP group. When you disable this feature, only the subscription of new APs to the out-of-box AP group stops. All APs that are subscribed to the out-of-box AP group remain in this AP group. You can move APs to the default group or a custom AP group upon network convergence.

Command Default

None

Command History

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

Usage Guidelines

When an out-of-box AP associates with the controller for the first time, it will be redirected to a special AP group and the RF profiles applicable to this AP Group will control the radio admin state configuration of the AP. You can move APs to the default group or a custom group upon network convergence.

The following example shows how to enable the creation of an out-of-box AP group:

```
(Cisco Controller) >config rf-profile out-of-box enable
```

config rf-profile trap-threshold

To configure the RF profile trap threshold, use the **config rf-profile trap-threshold** command.

config rf-profile trap-threshold {**clients** *clients profile name* | **interference** *percent profile name* | **noise** *dBm profile name* | **utilization** *percent profile name*}

Syntax Description

clients	Configures the RF profile trap threshold for clients.
clients	The number of clients on an access point's radio for the trap is between 1 and 200. The default is 12 clients.
profile name	Specifies the name of the RF profile. The profile name can be up to 32 case-sensitive, alphanumeric characters.
interference	Configures the RF profile trap threshold for interference.
percent	The percentage of interference threshold for the trap is from 0 to 100 %. The default is 10 %.

noise	Configures the RF profile trap threshold for noise.
dBM	The level of noise threshold for the trap is from -127 to 0 dBm. The default is -17 dBm.
utilization	Configures the RF profile trap threshold for utilization.
percent	The percentage of bandwidth being used by an access point threshold for the trap is from 0 to 100 %. The default is 80 %.

Command Default None

Command History

Release	Modification
8.0	This command was introduced.

The following example shows how to configure the RF profile trap threshold for clients:

```
(Cisco Controller) >config rf-profile trap-threshold clients 50 admin1
```

config rf-profile tx-power-control-thresh-v1

To configure Transmit Power Control version1 (TPCv1) to an RF profile, use the **config rf-profile tx-power-control-thresh-v1** command.

config rf-profile tx-power-control-thresh-v1 *tpc-threshold profile_name*

Syntax Description

tpc-threshold	TPC threshold.
profile-name	Name of the RF profile.

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 configure TPCv1 on an RF profile:

```
(Cisco Controller) >config rf-profile tx-power-control-thresh-v1 RFGroup1
```

config rf-profile tx-power-control-thresh-v2

To configure Transmit Power Control version 2 (TPCv2) to an RF profile, use the **config rf-profile tx-power-control-thresh-v2** command.

config rf-profile tx-power-control-thresh-v2 *tpc-threshold profile-name*

Syntax Description

tpc-threshold	TPC threshold.

profile-name	Name of the RF profile.

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 configure TPCv2 on an RF profile:

```
(Cisco Controller) >config rf-profile tx-power-control-thresh-v2 RFGroup1
```

config rf-profile tx-power-max

To configure maximum auto-rf to an RF profile, use the **config rf-profile tx-power-max** command.

config rf-profile *tx-power-max profile-name*

Syntax Description

tx-power-max	Maximum auto-rf tx power.
profile-name	Name of the RF profile.

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 configure tx-power-max on an RF profile:

```
(Cisco Controller) >config rf-profile tx-power-max RFGroup1
```

config rf-profile tx-power-min

To configure minimum auto-rf to an RF profile, use the **config rf-profile tx-power-min** command.

config rf-profile tx-power-min *tx-power-min profile-name*

Syntax Description

tx-power-min	Minimum auto-rf tx power.
profile-name	Name of the RF profile.

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 configure tx-power-min on an RF profile:

```
(Cisco Controller) >config rf-profile tx-power-min RFGroup1
```

Configure Rogue Commands

Use the **configure rogue** commands to configure policy settings for unidentified (rogue) clients.

config rogue adhoc

To globally or individually configure the status of an Independent Basic Service Set (IBSS or *ad-hoc*) rogue access point, use the **config rogue adhoc** command.

config rogue adhoc {**enable** | **disable** | **external** *rogue_MAC* | **alert** {*rogue_MAC* | **all**} | **auto-contain** [*monitor_ap*] | **contain** *rogue_MAC 1234_aps* | }

config rogue adhoc {**delete** {**all** | **mac-address** *mac-address*} | **classify** {**friendly state** {**external** | **internal**} *mac-address* | **malicious state** {**alert** | **contain**} *mac-address* | **unclassified state** {**alert** | **contain** } *mac-address*}

Syntax Description

enable	Globally enables detection and reporting of ad-hoc rogues.
disable	Globally disables detection and reporting of ad-hoc rogues.
external	Configure external state on the rogue access point that is outside the network and poses no threat to WLAN security. The controller acknowledges the presence of this rogue access point.
rogue_MAC	MAC address of the ad-hoc rogue access point.
alert	Generates an SMNP trap upon detection of the ad-hoc rogue, and generates an immediate alert to the system administrator for further action.
all	Enables alerts for all ad-hoc rogue access points.
auto-contain	Contains all wired ad-hoc rogues detected by the controller.
monitor_ap	(Optional) IP address of the ad-hoc rogue access point.
contain	Contains the offending device so that its signals no longer interfere with authorized clients.
1234_aps	Maximum number of Cisco access points assigned to actively contain the ad-hoc rogue access point (1 through 4, inclusive).
delete	Deletes ad-hoc rogue access points.
all	Deletes all ad-hoc rogue access points.

mac-address	Deletes ad-hoc rogue access point with the specified MAC address.
mac-address	MAC address of the ad-hoc rogue access point.
classify	Configures ad-hoc rogue access point classification.
friendly state	Classifies ad-hoc rogue access points as friendly.
internal	Configures alert state on rogue access point that is inside the network and poses no threat to WLAN security. The controller trusts this rogue access point.
malicious state	Classifies ad-hoc rogue access points as malicious.
alert	Configures alert state on the rogue access point that is not in the neighbor list or in the user configured friendly MAC list. The controller forwards an immediate alert to the system administrator for further action.
contain	Configures contain state on the rogue access point. Controller contains the offending device so that its signals no longer interfere with authorized clients.
unclassified state	Classifies ad-hoc rogue access points as unclassified.

Command Default

The default for this command is **enabled** and is set to **alert**. The default for auto-containment is **disabled**.

Command History

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

Usage Guidelines

The controller continuously monitors all nearby access points and automatically discovers and collects information on rogue access points and clients. When the controller discovers a rogue access point, it uses RLDP to determine if the rogue is attached to your wired network.

Note RLDP is not supported for use with Cisco autonomous rogue access points. These access points drop the DHCP Discover request sent by the RLDP client. Also, RLDP is not supported if the rogue access point channel requires dynamic frequency selection (DFS).

When you enter any of the containment commands, the following warning appears:

```
Using this feature may have legal consequences. Do you want to continue? (y/n) :
```

The 2.4- and 5-GHz frequencies in the Industrial, Scientific, and Medical (ISM) band are open to the public and can be used without a license. As such, containing devices on another party's network could have legal consequences.

Enter the **auto-contain** command with the *monitor_ap* argument to monitor the rogue access point without containing it. Enter the **auto-contain** command without the optional *monitor_ap* to automatically contain all wired ad-hoc rogues detected by the controller.

The following example shows how to enable the detection and reporting of ad-hoc rogues:

```
(Cisco Controller) > config rogue adhoc enable
```

The following example shows how to enable alerts for all ad-hoc rogue access points:

```
(Cisco Controller) > config rogue adhoc alert all
```

The following example shows how to classify an ad-hoc rogue access point as friendly and configure external state on it:

```
(Cisco Controller) > config rogue adhoc classify friendly state internal 11:11:11:11:11:11
```

Related Commands

config rogue auto-contain level

show rogue ignore-list

show rogue rule detailed

show rogue rule summary

config rogue ap classify

To classify the status of a rogue access point, use the **config rogue ap classify** command.

config rogue ap classify {**friendly state** {**internal** | **external**} *ap_mac* }

config rogue ap classify {**malicious** | **unclassified**} **state** {**alert** | **contain**} *ap_mac*

Syntax Description

friendly	Classifies a rogue access point as friendly.
state	Specifies a response to classification.
internal	Configures the controller to trust this rogue access point.
external	Configures the controller to acknowledge the presence of this access point.
ap_mac	MAC address of the rogue access point.
malicious	Classifies a rogue access point as potentially malicious.
unclassified	Classifies a rogue access point as unknown.
alert	Configures the controller to forward an immediate alert to the system administrator for further action.

contain	Configures the controller to contain the offending device so that its signals no longer interfere with authorized clients.

Command Default

These commands are disabled by default. Therefore, all unknown access points are categorized as **unclassified** by default.

Command History

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

Usage Guidelines

A rogue access point cannot be moved to the unclassified class if its current state is contain.

When you enter any of the containment commands, the following warning appears: "Using this feature may have legal consequences. Do you want to continue?" The 2.4- and 5-GHz frequencies in the Industrial, Scientific, and Medical (ISM) band are open to the public and can be used without a license. As such, containing devices on another party's network could have legal consequences.

The following example shows how to classify a rogue access point as friendly and can be trusted:

```
(Cisco Controller) > config rogue ap classify friendly state internal 11:11:11:11:11:11
```

The following example shows how to classify a rogue access point as malicious and to send an alert:

```
(Cisco Controller) > config rogue ap classify malicious state alert 11:11:11:11:11:11
```

The following example shows how to classify a rogue access point as unclassified and to contain it:

```
(Cisco Controller) > config rogue ap classify unclassified state contain 11:11:11:11:11:11
```

Related Commands

config rogue adhoc

config rogue ap friendly

config rogue ap rldp

config rogue ap ssid

config rogue ap timeout

config rogue ap valid-client

config rogue client

config trapflags rogueap

show rogue ap clients

show rogue ap detailed

show rogue ap summary

show rogue ap friendly summary

show rogue ap malicious summary

show rogue ap unclassified summary

show rogue client detailed

show rogue client summary

show rogue ignore-list

show rogue rule detailed

show rogue rule summary

config rogue ap friendly

To add a new friendly access point entry to the friendly MAC address list, or delete an existing friendly access point entry from the list, use the **config rogue ap friendly** command.

config rogue ap friendly {**add** | **delete**} *ap_mac*

Syntax Description

add	Adds this rogue access point from the friendly MAC address list.
delete	Deletes this rogue access point from the friendly MAC address list.
ap_mac	MAC address of the rogue access point that you want to add or delete.

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 add a new friendly access point with MAC address 11:11:11:11:11:11 to the friendly MAC address list.

```
(Cisco Controller) > config rogue ap friendly add 11:11:11:11:11:11
```

Related Commands

config rogue adhoc

config rogue ap classify

config rogue ap rldp

config rogue ap ssid

config rogue ap timeout

config rogue ap valid-client

config rogue client

config trapflags rogueap

show rogue ap clients

show rogue ap detailed

show rogue ap summary

show rogue ap friendly summary

show rogue ap malicious summary

show rogue ap unclassified summary

show rogue client detailed

show rogue client summary

show rogue ignore-list

show rogue rule detailed

show rogue rule summary

config rogue ap rldp

To enable, disable, or initiate the Rogue Location Discovery Protocol (RLDP), use the **config rogue ap rldp** command.

config rogue ap rldp enable {**alarm-only** | **auto-contain**} [*monitor_ap_only*]

config rogue ap rldp initiate *rogue_mac_address*

config rogue ap rldp disable

Syntax Description

alarm-only	When entered without the optional argument *monitor_ap_only*, enables RLDP on all access points.
auto-contain	When entered without the optional argument *monitor_ap_only*, automatically contains all rogue access points.
monitor_ap_only	(Optional) RLDP is enabled (when used with **alarm-only** keyword), or automatically contained (when used with **auto-contain** keyword) is enabled only on the designated monitor access point.
initiate	Initiates RLDP on a specific rogue access point.
rogue_mac_address	MAC address of specific rogue access point.
disable	Disables RLDP on all access points.

Command Default

None

Command History

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

Usage Guidelines

When you enter any of the containment commands, the following warning appears: "Using this feature may have legal consequences. Do you want to continue?" The 2.4- and 5-GHz frequencies in the Industrial, Scientific, and Medical (ISM) band are open to the public and can be used without a license. As such, containing devices on another party's network could have legal consequences.

The following example shows how to enable RLDP on all access points:

```
(Cisco Controller) > config rogue ap rldp enable alarm-only
```

The following example shows how to enable RLDP on monitor-mode access point ap_1:

```
(Cisco Controller) > config rogue ap rldp enable alarm-only ap_1
```

The following example shows how to start RLDP on the rogue access point with MAC address 123.456.789.000:

```
(Cisco Controller) > config rogue ap rldp initiate 123.456.789.000
```

The following example shows how to disable RLDP on all access points:

```
(Cisco Controller) > config rogue ap rldp disable
```

Related Commands

config rogue adhoc

config rogue ap classify

config rogue ap friendly

config rogue ap ssid

config rogue ap timeout

config rogue ap valid-client

config rogue client

config trapflags rogueap

show rogue ap clients

show rogue ap detailed

show rogue ap summary

show rogue ap friendly summary

show rogue ap malicious summary

show rogue ap unclassified summary

show rogue client detailed

show rogue client summary

show rogue ignore-list

show rogue rule detailed

show rogue rule summary

config rogue ap ssid

To generate an alarm only, or to automatically contain a rogue access point that is advertising your network's service set identifier (SSID), use the **config rogue ap ssid** command.

config rogue ap ssid {**alarm** | **auto-contain**}

Syntax Description

alarm	Generates only an alarm when a rogue access point is discovered to be advertising your network's SSID.
auto-contain	Automatically contains the rogue access point that is advertising your network's SSID.

Command Default

None

Command History

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

Usage Guidelines

When you enter any of the containment commands, the following warning appears: "Using this feature may have legal consequences. Do you want to continue?" The 2.4- and 5-GHz frequencies in the Industrial, Scientific, and Medical (ISM) band are open to the public and can be used without a license. As such, containing devices on another party's network could have legal consequences.

The following example shows how to automatically contain a rogue access point that is advertising your network's SSID:

```
(Cisco Controller) > config rogue ap ssid auto-contain
```

Related Commands

config rogue adhoc

config rogue ap classify

config rogue ap friendly

config rogue ap rldp

config rogue ap timeout

config rogue ap valid-client

config rogue client

config trapflags rogueap

show rogue ap clients

show rogue ap detailed

show rogue ap summary

show rogue ap friendly summary

show rogue ap malicious summary

show rogue ap unclassified summary

show rogue client detailed

show rogue client summary

show rogue ignore-list

show rogue rule detailed

show rogue rule summary

config rogue ap timeout

To specify the number of seconds after which the rogue access point and client entries expire and are removed from the list, use the **config rogue ap timeout** command.

config rogue ap timeout *seconds*

Syntax Description

seconds	Value of 240 to 3600 seconds (inclusive), with a default value of 1200 seconds.

Command Default

The default number of seconds after which the rogue access point and client entries expire is 1200 seconds.

Command History

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

The following example shows how to set an expiration time for entries in the rogue access point and client list to 2400 seconds:

```
(Cisco Controller) > config rogue ap timeout 2400
```

Related Commands

config rogue ap classify

config rogue ap friendly

config rogue ap rldp

config rogue ap ssid

config rogue rule

config trapflags rogueap

show rogue ap clients

show rogue ap detailed

show rogue ap summary

show rogue ap friendly summary

show rogue ap malicious summary

show rogue ap unclassified summary

show rogue ignore-list

show rogue rule detailed

show rogue rule summary

config rogue auto-contain level

To configure rogue the auto-containment level, use the **config rogue auto-contain level** command.

config rogue auto-contain level *level* [**monitor_ap_only**]

Syntax Description

level	Rogue auto-containment level in the range of 1 to 4. You can enter a value of 0 to enable the controller to automatically select the number of APs used for auto containment. The controller chooses the required number of APs based on the RSSI for effective containment. **Note** Up to four APs can be used to auto-contain when a rogue AP is moved to contained state through any of the auto-containment policies.
monitor_ap_only	(Optional) Configures auto-containment using only monitor AP mode.

Command Default

The default auto-containment level is 1.

Command History

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

Usage Guidelines

The controller continuously monitors all nearby access points and automatically discovers and collects information on rogue access points and clients. When the controller discovers a rogue access point, it uses any of the configured auto-containment policies to start autocontainment. The policies for initiating autocontainment are rogue on wire (detected through RLDP or rogue detector AP), rogue using managed SSID, Valid client on Rogue AP, and AdHoc Rogue.

This table lists the RSSI value associated with each containment level.

Table 4: RSSI Associated with Each Containment Level

Auto-containment Level	RSSI
1	0 to –55 dBm
2	–75 to –55 dBm
3	–85 to –75 dBm
4	Less than –85 dBm

Note RLDP is not supported for use with Cisco autonomous rogue access points. These access points drop the DHCP Discover request sent by the RLDP client. Also, RLDP is not supported if the rogue access point channel requires dynamic frequency selection (DFS).

When you enter any of the containment commands, the following warning appears:

```
Using this feature may have legal consequences. Do you want to continue? (y/n) :
```

The 2.4-GHz and 5-GHz frequencies in the Industrial, Scientific, and Medical (ISM) band are open to the public and can be used without a license. As such, containing devices on another party's network could have legal consequences.

The following example shows how to configure the auto-contain level to 3:

```
(Cisco Controller) > config rogue auto-contain level 3
```

Related Commands

config rogue adhoc

show rogue adhoc summary

show rogue client summary

show rogue ignore-list

show rogue rule summary

config rogue ap valid-client

To generate an alarm only, or to automatically contain a rogue access point to which a trusted client is associated, use the **config rogue ap valid-client** command.

config rogue ap valid-client {**alarm** | **auto-contain**}

Syntax Description

alarm	Generates only an alarm when a rogue access point is discovered to be associated with a valid client.
auto-contain	Automatically contains a rogue access point to which a trusted client is associated.

Command Default

None

Command History

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

Usage Guidelines

When you enter any of the containment commands, the following warning appears: "Using this feature may have legal consequences. Do you want to continue?" The 2.4- and 5-GHz frequencies in the Industrial, Scientific, and Medical (ISM) band are open to the public and can be used without a license. As such, containing devices on another party's network could have legal consequences.

The following example shows how to automatically contain a rogue access point that is associated with a valid client:

```
(Cisco Controller) > config rogue ap valid-client auto-contain
```

Related Commands

config rogue ap classify

config rogue ap friendly

config rogue ap rldp

config rogue ap timeout

config rogue ap ssid

config rogue rule

config trapflags rogueap

show rogue ap clients

show rogue ap detailed

show rogue ap summary

show rogue ap friendly summary

show rogue ap malicious summary

show rogue ap unclassified summary

show rogue ignore-list

show rogue rule detailed

show rogue rule summary

config rogue client

To configure rogue clients, use the **config rogue client** command.

config rogue client {**aaa** {**enable** | **disable**} | **alert** *ap_mac* | **contain** *client_mac* | **delete** {**state** {**alert** | **any** | **contained** | **contained-pending**} | **all** | **mac-address** *client_mac*} | **mse**{**enable** | **disable**} } }

Syntax Description

aaa	Configures AAA server or local database to validate whether rogue clients are valid clients. The default is disabled.
enable	Enables the AAA server or local database to check rogue client MAC addresses for validity.
disable	Disables the AAA server or local database to check rogue client MAC addresses for validity.
alert	Configures the controller to forward an immediate alert to the system administrator for further action.
ap_mac	Access point MAC address.
contain	Configures the controller to contain the offending device so that its signals no longer interfere with authorized clients.
client_mac	MAC address of the rogue client.
delete	Deletes the rogue client.
state	Deletes the rogue clients according to their state.
alert	Deletes the rogue clients in alert state.
any	Deletes the rogue clients in any state.
contained	Deletes all rogue clients that are in contained state.
contained-pending	Deletes all rogue clients that are in contained pending state.
all	Deletes all rogue clients.
mac-address	Deletes a rogue client with the configured MAC address.
mse	Validates if the rogue clients are valid clients using MSE. The default is disabled.

Command Default

None

Command History

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

Usage Guidelines

You cannot validate rogue clients against MSE and AAA at the same time.

The following example shows how to enable the AAA server or local database to check MAC addresses:

```
(Cisco Controller) > config rogue client aaa enable
```

The following example shows how to disable the AAA server or local database from checking MAC addresses:

```
(Cisco Controller) > config rogue client aaa disable
```

Related Commands

config rogue rule

config trapflags rogueap

show rogue ap clients

show rogue ap detailed

show rogue client summary

show rogue ignore-list

show rogue rule detailed

show rogue rule summary

config rogue detection

To enable or disable rogue detection, use the **config rogue detection** command.

Note If an AP itself is configured with the keyword **all**, the **all access points** case takes precedence over the AP that is with the keyword **all**.

config rogue detection {**enable** | **disable**} {*cisco_ap* | **all**}

Syntax Description

enable	Enables rogue detection on this access point.
disable	Disables rogue detection on this access point.
cisco_ap	Cisco access point.
all	Specifies all access points.

Command Default

The default rogue detection value is enabled.

Command History

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

Usage Guidelines

Rogue detection is enabled by default for all access points joined to the controller except for OfficeExtend access points. OfficeExtend access points are deployed in a home environment and are likely to detect a large number of rogue devices.

The following example shows how to enable rogue detection on the access point Cisco_AP:

```
(Cisco Controller) > config rogue detection enable Cisco_AP
```

Related Commands

config rogue rule

config trapflags rogueap

show rogue client detailed

show rogue client summary

show rogue ignore-list

show rogue rule detailed

show rogue rule summary

config rogue detection min-rssi

To configure the minimum Received Signal Strength Indicator (RSSI) value at which APs can detect rogues and create a rogue entry in the controller, use the **config rogue detection min-rssi** command.

config rogue detection min-rssi *rssi-in-dBm*

Syntax Description

rssi-in-dBm	Minimum RSSI value. The valid range is from –70 dBm to –128 dBm, and the default value is –128 dBm.

Command Default

The default RSSI value to detect rogues in APs is -128 dBm.

Command History

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

Usage Guidelines

This feature is applicable to all the AP modes.

There can be many rogues with very weak RSSI values that do not provide any valuable information in rogue analysis. Therefore, you can use this option to filter rogues by specifying the minimum RSSI value at which APs should detect rogues.

The following example shows how to configure the minimum RSSI value:

```
(Cisco Controller) > config rogue detection min-rssi –80
```

Related Commands

config rogue detection

show rogue ap clients

config rogue rule

config trapflags rogueap

show rogue client detailed

show rogue client summary

show rogue ignore-list

show rogue rule detailed

show rogue rule summary

config rogue detection monitor-ap

To configure the rogue report interval for all monitor mode Cisco APs, use the **config rogue detection monitor-ap** command.

config rogue detection monitor-ap {**report-interval** | **transient-rogue-interval**} *time-in-seconds*

Syntax Description

report-interval	Specifies the interval at which rogue reports are sent.
transient-rogue-interval	Specifies the interval at which rogues are consistently scanned for by APs after the first time the rogues are scanned.
time-in-seconds	Time in seconds. The valid range is as follows: • 10 to 300 for **report-interval** • 120 to 1800 for **transient-rogue-interval**

Command History

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

Usage Guidelines

This feature is applicable to APs that are in monitor mode only.

Using the transient interval values, you can control the time interval at which APs should scan for rogues. APs can also filter the rogues based on their transient interval values.

This feature has the following advantages:

- Rogue reports from APs to the controller are shorter.
- Transient rogue entries are avoided in the controller.
- Unnecessary memory allocation for transient rogues are avoided.

The following example shows how to configure the rogue report interval to 60 seconds:

```
(Cisco Controller) > config rogue detection monitor-ap report-interval 60
```

The following example shows how to configure the transient rogue interval to 300 seconds:

```
(Cisco Controller) > config rogue detection monitor-ap transient-rogue-interval 300
```

Related Commands

config rogue detection

config rogue detection min-rssi

config rogue rule

config trapflags rogueap

show rogue ap clients

show rogue client detailed

show rogue client summary

show rogue ignore-list

show rogue rule detailed

show rogue rule summary

config rogue rule

To add and configure rogue classification rules, use the **config rogue rule** command.

config rogue rule {**add ap priority** *priority* **classify** {**custom** *severity-score classification-name* | **friendly** | **malicious**} **notify** {**all** | **global** | **none** | **local**} **state** {**alert** | **contain** | **delete** | **internal** | **external**} *rule_name* | **classify** {**custom** *severity-score classification-name* | **friendly** | **malicious**} *rule_name* | **condition ap** {**set** | **delete**} *condition_type condition_value rule_name* | {**enable** | **delete** | **disable**} {**all** | *rule_name*} | **match** {**all** | **any**} | **priority** *priority* | **notify** {**all** | **global** | **none** | **local**} *rule_name* | **state** {**alert** | **contain** | **internal** | **external**} *rule_name*}

Syntax Description

add ap priority	Adds a rule with match any criteria and the priority that you specify.
priority	Priority of this rule within the list of rules.
classify	Specifies the classification of a rule.
custom	Classifies devices matching the rule as custom.
severity-score	Custom classification severity score of the rule. The range is from 1 to 100.
classification-name	Custom classification name. The name can be up to 32 case-sensitive, alphanumeric characters.
friendly	Classifies a rule as friendly.
malicious	Classifies a rule as malicious.
notify	Configures type of notification upon rule match.
all	Notifies the controller and a trap receiver such as Cisco Prime Infrastructure.
global	Notifies only a trap receiver such as Cisco Prime Infrastructure.

local	Notifies only the controller.
none	Notifies neither the controller nor a trap receiver such as Cisco Prime Infrastructure.
state	Configures state of the rogue access point after a rule match.
alert	Configures alert state on the rogue access point that is not in the neighbor list or in the user configured friendly MAC list. The controller forwards an immediate alert to the system administrator for further action.
contain	Configures contain state on the rogue access point. Controller contains the offending device so that its signals no longer interfere with authorized clients.
delete	Configures delete state on the rogue access point.
external	Configures external state on the rogue access point that is outside the network and poses no threat to WLAN security. The controller acknowledges the presence of this rogue access point.
internal	Configures alert state on rogue access point that is inside the network and poses no threat to WLAN security. The controller trusts this rogue access point.
rule_name	Rule to which the command applies, or the name of a new rule.
condition ap	Specifies the conditions for a rule that the rogue access point must meet.
set	Adds conditions to a rule that the rogue access point must meet.
delete	Removes conditions to a rule that the rogue access point must meet.

condition_type	Type of the condition to be configured. The condition types are listed below: • client-count—Requires that a minimum number of clients be associated to a rogue access point. The valid range is 1 to 10 (inclusive). • duration—Requires that a rogue access point be detected for a minimum period of time. The valid range is 0 to 3600 seconds (inclusive). • managed-ssid—Requires that a rogue access point's SSID be known to the controller. • no-encryption—Requires that a rogue access point's advertised WLAN does not have encryption enabled. • rssi—Requires that a rogue access point have a minimum RSSI value. The range is from –95 to –50 dBm (inclusive). • ssid—Requires that a rogue access point have a specific SSID. • substring-ssid—Requires that a rogue access point have a substring of a user-configured SSID.
condition_value	Value of the condition. This value is dependent upon the condition_type. For instance, if the condition type is ssid, then the condition value is either the SSID name or all.
enable	Enables all rules or a single specific rule.
delete	Deletes all rules or a single specific rule.
disable	Deletes all rules or a single specific rule.
match	Specifies whether a detected rogue access point must meet all or any of the conditions specified by the rule in order for the rule to be matched and the rogue access point to adopt the classification type of the rule.
all	Specifies all rules defined.
any	Specifies any rule meeting certain criteria.
priority	Changes the priority of a specific rule and shifts others in the list accordingly.

Command Default No rogue rules are configured.

Command History

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

Usage Guidelines

For your changes to be effective, you must enable the rule. You can configure up to 64 rules.

Reclassification of rogue APs according to the RSSI condition of the rogue rule occurs only when the RSSI changes more than +/- 2 dBm of the configured RSSI value. Manual and automatic classification override custom rogue rules. Rules are applied to manually changed rogues if their class type changes to unclassified and state changes to alert. Adhoc rogues are classified and do not go to the pending state. You can have up to 50 classification types.

The following example shows how to create a rule called rule_1 with a priority of 1 and a classification as friendly.

```
(Cisco Controller) > config rogue rule add ap priority 1 classify friendly rule_1
```

The following example shows how to enable rule_1.

```
(Cisco Controller) > config rogue rule enable rule_1
```

The following example shows how to change the priority of the last command.

```
(Cisco Controller) > config rogue rule priority 2 rule_1
```

The following example shows how to change the classification of the last command.

```
(Cisco Controller) > config rogue rule classify malicious rule_1
```

The following example shows how to disable the last command.

```
(Cisco Controller) > config rogue rule disable rule_1
```

The following example shows how to delete SSID_2 from the user-configured SSID list in rule-5.

```
(Cisco Controller) > config rogue rule condition ap delete ssid ssid_2 rule-5
```

The following example shows how to create a custom rogue rule.

```
(Cisco Controller) > config rogue rule classify custom 1 VeryMalicious rule6
```

Configure SNMP Commands

Use the **config snmp** commands to configure Simple Network Management Protocol (SNMP) settings.

config snmp community accessmode

To modify the access mode (read only or read/write) of an SNMP community, use the **config snmp community accessmode** command.

config snmp community accessmode {**ro** | **rw**} *name*

Syntax Description

ro	Specifies a read-only mode.
rw	Specifies a read/write mode.
name	SNMP community name.

Command Default

Two communities are provided by default with the following settings:

```
SNMP Community Name Client IP Address Client IP Mask   Access Mode Status
------------------- ----------------- ---------------- ----------- ------
public              0.0.0.0           0.0.0.0          Read Only   Enable
private             0.0.0.0           0.0.0.0          Read/Write  Enable
```

Command History

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

The following example shows how to configure read/write access mode for SNMP community:

```
(Cisco Controller) > config snmp community accessmode rw private
```

Related Commands

show snmp community

config snmp community mode

config snmp community create

config snmp community delete

config snmp community ipaddr

config snmp community create

To create a new SNMP community, use the **config snmp community create** command.

config snmp community create *name*

Syntax Description

name	SNMP community name of up to 16 characters.

Command Default None

Command History

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

Usage Guidelines Use this command to create a new community with the default configuration.

The following example shows how to create a new SNMP community named test:

```
(Cisco Controller) > config snmp community create test
```

Related Commands

show snmp community

config snmp community mode

config snmp community accessmode

config snmp community delete

config snmp community ipaddr

config snmp community delete

To delete an SNMP community, use the **config snmp community delete** command.

config snmp community delete *name*

Syntax Description

name	SNMP community 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 delete an SNMP community named test:

```
(Cisco Controller) > config snmp community delete test
```

Related Commands

show snmp community

config snmp community mode

config snmp community accessmode

config snmp community create

config snmp community ipaddr

config snmp community ipaddr

To configure the IPv4 or IPv6 address of an SNMP community, use the **config snmp community ipaddr** command.

config snmp community ipaddr *IP addr IPv4 mask/IPv6 Prefix lengthname*

Syntax Description

IP addr	SNMP community IPv4 or IPv6 address.
IPv4 mask/IPv6 Prefix length	SNMP community IP mask (IPv4 mask or IPv6 Prefix length). The IPv6 prefix length is from 0 to 128.
name	SNMP community name.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

Usage Guidelines

- This command is applicable for both IPv4 and IPv6 addresses.
- This command is not applicable for default SNMP community (public, private).

The following example shows how to configure an SNMP community with the IPv4 address 10.10.10.10, IPv4 mask 255.255.255.0, and SNMP community named comaccess:

```
(Cisco Controller) > config snmp community ipaddr 10.10.10.10 255.255.255.0 comaccess
```

The following example shows how to configure an SNMP community with the IPv6 address 2001:9:2:16::1, IPv6 prefix length 64, and SNMP community named comaccess:

```
(Cisco Controller) > config snmp community ipaddr 2001:9:2:16::1 64 comaccess
```

config snmp community mode

To enable or disable an SNMP community, use the **config snmp community mode** command.

config snmp community mode {**enable** | **disable**} *name*

Syntax Description

enable	Enables the community.
disable	Disables the community.
name	SNMP community 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 enable the SNMP community named public:

```
(Cisco Controller) > config snmp community mode disable public
```

Related Commands

show snmp community

config snmp community delete

config snmp community accessmode

config snmp community create

config snmp community ipaddr

config snmp engineID

To configure the SNMP engine ID, use the **config snmp engineID** command.

config snmp engineID {*engine_id* | **default**}

Syntax Description

engine_id	Engine ID in hexadecimal characters (a minimum of 10 and a maximum of 24 characters are allowed).
default	Restores the default engine ID.

Command Default

None

Command History

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

Usage Guidelines

The SNMP engine ID is a unique string used to identify the device for administration purposes. You do need to specify an engine ID for the device because a default string is automatically generated using Cisco's enterprise number and the MAC address of the first interface on the device.

If you change the engine ID, then a reboot is required for the change to take effect.

Caution If you change the value of the SNMP engine ID, then the password of the user entered on the command line is converted to an MD5 (Message-Digest algorithm 5) or SHA (Secure Hash Algorithm) security digest. This digest is based on both the password and the local engine ID. The command line password is then deleted. Because of this deletion, if the local value of the engine ID changes, the security digests of the SNMP users will become invalid, and the users will have to be reconfigured.

The following example shows how to configure the SNMP engine ID with the value ffffffffff:

```
(Cisco Controller) > config snmp engineID ffffffffff
```

Related Commands **show snmpengineID**

config snmp syscontact

To set the SNMP system contact name, use the **config snmp syscontact** command.

config snmp syscontact *contact*

Syntax Description		
	contact	SNMP system contact name. Valid value can be up to 255 printable characters.

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 set the SMNP system contact named Cisco WLAN Solution_administrator:

```
(Cisco Controller) > config snmp syscontact Cisco WLAN Solution_administrator
```

config snmp syslocation

To configure the SNMP system location name, use the **config snmp syslocation** command.

config snmp syslocation *location*

Syntax Description		
	location	SNMP system location name. Valid value can be up to 255 printable characters.

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 configure the SNMP system location name to Building_2a:

```
(Cisco Controller) > config snmp syslocation Building_2a
```

config snmp trapreceiver create

To configure a server to receive SNMP traps, use the **config snmp trapreceiver create** command.

config snmp trapreceiver create *name IP addr*

Syntax Description

name	SNMP community name. The name contain up to 31 characters.
IP addr	Configure the IPv4 or IPv6 address of where to send SNMP traps.

Command Default None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

Usage Guidelines The IPv4 or IPv6 address must be valid for the command to add the new server.

The following example shows how to add a new SNMP trap receiver with the SNMP trap receiver named test and IP address 10.1.1.1:

```
(Cisco Controller) > config snmp trapreceiver create test 10.1.1.1
```

The following example shows how to add a new SNMP trap receiver with the SNMP trap receiver named test and IP address 2001:10:1:1::1:

```
(Cisco Controller) > config snmp trapreceiver create test 2001:10:1:1::1
```

config snmp trapreceiver delete

To delete a server from the trap receiver list, use the **config snmp trapreceiver delete** command.

config snmp trapreceiver delete *name*

Syntax Description

name	SNMP community name. The name can contain up to 16 characters.

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 delete a server named test from the SNMP trap receiver list:

```
(Cisco Controller) > config snmp trapreceiver delete test
```

Related Commands **show snmp trap**

config snmp trapreceiver mode

To send or disable sending traps to a selected server, use the **config snmp trapreceiver mode** command.

config snmp trapreceiver mode {**enable** | **disable**} *name*

Syntax Description

enable	Enables an SNMP trap receiver.
disable	Disables an SNMP trap receiver.
name	SNMP community name.

Command Default None

Command History

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

Usage Guidelines This command enables or disables the Cisco wireless LAN controller from sending the traps to the selected server.

The following example shows how to disable an SNMP trap receiver from sending traps to a server named server1:

```
(Cisco Controller) > config snmp trapreceiver mode disable server1
```

Related Commands **show snmp trap**

config snmp v3user create

To create a version 3 SNMP user, use the **config snmp v3user create** command.

config snmp v3user create *username* {**ro** | **rw**} {**none** | **hmacmd5** | **hmacsha**} {**none** | **des** | **aescfb128**} [*auth_key*] [*encrypt_key*]

Syntax Description

username	Version 3 SNMP username.
ro	Specifies a read-only user privilege.
rw	Specifies a read-write user privilege.
none	Specifies if no authentication is required.
hmacmd5	Specifies Hashed Message Authentication Coding Message Digest 5 (HMAC-MD5) for authentication.
hmacsha	Specifies Hashed Message Authentication Coding-Secure Hashing Algorithm (HMAC-SHA) for authentication.
none	Specifies if no encryption is required.

des	Specifies to use Cipher Block Chaining-Digital Encryption Standard (CBC-DES) encryption.
aescfb128	Specifies to use Cipher Feedback Mode-Advanced Encryption Standard-128 (CFB-AES-128) encryption.
auth_key	(Optional) Authentication key for the HMAC-MD5 or HMAC-SHA authentication protocol.
encrypt_key	(Optional) Encryption key for the CBC-DES or CFB-AES-128 encryption protocol.

Command Default

SNMP v3 username AccessMode Authentication Encryption

```
-------------------- ------------ -------------- -----------
default              Read/Write    HMAC-SHA       CFB-AES
```

Command History

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

The following example shows how to add an SNMP username named test with read-only privileges and no encryption or authentication:

```
(Cisco Controller) > config snmp v3user create test ro none none
```

Related Commands

show snmpv3user

config snmp v3user delete

To delete a version 3 SNMP user, use the **config snmp v3user delete** command.

config snmp v3user delete *username*

Syntax Description

username	Username to delete.

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 remove an SNMP user named test:

```
(Cisco Controller) > config snmp v3user delete test
```

Related Commands **show snmp v3user**

config snmp version

To enable or disable selected SNMP versions, use the **config snmp version** command.

config snmp version {**v1** | **v2** | **v3**} {**enable** | **disable**}

Syntax Description

v1	Specifies an SNMP version to enable or disable.
v2	Specifies an SNMP version to enable or disable.
v3	Specifies an SNMP version to enable or disable.
enable	Enables a specified version.
disable	Disables a specified version.

Command Default By default, all the SNMP versions are 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 SNMP version v1:

```
(Cisco Controller) > config snmp version v1 enable
```

Related Commands **show snmpversion**

Configure Spanning Tree Protocol Commands

Use the **config spanningtree** commands to configure Spanning Tree Protocol settings.

config spanningtree port mode

To turn fast or 802.1D Spanning Tree Protocol (STP) on or off for one or all Cisco wireless LAN controller ports, use the **config spanningtree port mode** command.

config spanningtree port mode {**off** | **802.1d** | **fast**} {*port* | **all**}

Syntax Description

off	Disables STP for the specified ports.
802.1d	Specifies a supported port mode as 802.1D.
fast	Specifies a supported port mode as fast.
port	Port number (1 through 12 or 1 through 24).
all	Configures all ports.

Command Default

The default is that port STP is off.

Command History

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

Usage Guidelines

When the Cisco 4400 Series Wireless LAN Controller is configured for port redundancy, STP must be disabled for all ports on the controller. STP can remain enabled on the switch connected to the controller.

Entering this command allows the controller to set up STP, detect logical network loops, place redundant ports on standby, and build a network with the most efficient pathways.

The following example shows how to disable STP for all Ethernet ports:

```
(Cisco Controller) > config spanningtree port mode off all
```

The following example shows how to turn on STP 802.1D mode for Ethernet port 24:

```
(Cisco Controller) > config spanningtree port mode 802.1d 24
```

The following example shows how to turn on fast STP mode for Ethernet port 2:

```
(Cisco Controller) > config spanningtree port mode fast 2
```

config spanningtree port pathcost

To set the Spanning Tree Protocol (STP) path cost for an Ethernet port, use the **config spanningtree port pathcost** command.

config spanningtree port pathcost {*cost* | **auto**} {*port* | **all**}

Syntax Description

cost	Cost in decimal as determined by the network planner.
auto	Specifies the default cost.
port	Port number (1 through 12 or 1 through 24), or **all** to configure all ports.
all	Specifies to configure all ports.

Command Default

The default STP path cost for an Ethernet port is auto.

Command History

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

Usage Guidelines

When the Cisco 4400 Series Wireless LAN Controller is configured for port redundancy, STP must be disabled for all ports on the controller. STP can remain enabled on the switch that is connected to the controller.

The following example shows how to have the STP algorithm automatically assign a path cost for all ports:

```
(Cisco Controller) > config spanningtree port pathcost auto all
```

The following example shows how to have the STP algorithm use a port cost of 200 for port 22:

```
(Cisco Controller) > config spanningtree port pathcost 200 22
```

config spanningtree port priority

To configure the Spanning Tree Protocol (STP) port priority, use the **config spanningtree port priority** command.

config spanningtree port priority *priority_num port*

Syntax Description

priority_num	Priority number from 0 to 255.
port	Port number (1 through 12 or 1 through 24).

Command Default

The default STP priority value is 128.

Command History

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

Usage Guidelines

When the Cisco 4400 Series Wireless LAN Controller is configured for port redundancy, STP must be disabled for all ports on the controller. STP can remain enabled on the switch connected to the controller.

The following example shows how to set Ethernet port 2 to STP priority 100:

```
(Cisco Controller) > config spanningtree port priority 100 2
```

config spanningtree switch bridgepriority

To set the bridge ID, use the **config spanningtree switch bridgepriority** command.

config spanningtree switch bridgepriority *priority_num*

Syntax Description

priority_num	Priority number between 0 and 65535.

Command Default

The default priority number value to set the bridge ID is 32768.

Command History

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

Usage Guidelines

Note When the Cisco 4400 Series Wireless LAN Controller is configured for port redundancy, STP must be disabled for all ports on the controller. STP can remain enabled on the switch connected to the controller.

The value of the writable portion of the Bridge ID, that is, the first two octets of the (8 octet long) Bridge ID. The other (last) 6 octets of the Bridge ID are given by the value of Bridge MAC address. The value may be specified as a number between 0 and 65535.

The following example shows how to configure spanning tree values on a per switch basis with the bridge priority 40230:

```
(Cisco Controller) > config spanningtree switch bridgepriority 40230
```

config spanningtree switch forwarddelay

To set the bridge timeout, use the **config spanningtree switch forwarddelay** command.

config spanningtree switch forwarddelay *seconds*

Syntax Description		
	seconds	Timeout in seconds (between 4 and 30).

Command Default The default value to set a bridge timeout is 15 seconds.

Command History

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

Usage Guidelines The value that all bridges use for forward delay when this bridge is acting as the root. 802.1D-1990 specifies that the range for this setting is related to the value of the STP bridge maximum age. The granularity of this timer is specified by 802.1D-1990 to be 1 second. An agent may return a badValue error if a set is attempted to a value that is not a whole number of seconds. The default is 15. Valid values are 4 through 30 seconds.

The following example shows how to configure spanning tree values on a per switch basis with the bridge timeout as 20 seconds:

```
(Cisco Controller) > config spanningtree switch forwarddelay 20
```

config spanningtree switch hellotime

To set the hello time, use the **config spanningtree switch hellotime** command.

config spanningtree switch hellotime *seconds*

Syntax Description		
	seconds	STP hello time in seconds.

Command Default The default hello time value is 15.

Command History

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

Usage Guidelines All bridges use this value for HelloTime when this bridge is acting as the root. The granularity of this timer is specified by 802.1D- 1990 to be 1 second. Valid values are 1 through 10 seconds.

The following example shows how to configure the STP hello time to 4 seconds:

```
(Cisco Controller) > config spanningtree switch hellotime 4
```

Related Commands

show spanningtree switch

show spanningtree switch bridgepriority

config spanningtree switch forwarddelay

config spanningtree switch maxage

config spanningtree switch mode

config spanningtree switch maxage

To set the maximum age, use the **config spanningtree switch maxage** command.

config spanningtree switch maxage *seconds*

Syntax Description

seconds	STP bridge maximum age in seconds.

Command Default

The default value for maximum age is 20.

Command History

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

Usage Guidelines

All bridges use this value for MaxAge when this bridge is acting as the root. 802.1D-1990 specifies that the range for this parameter is related to the value of Stp Bridge Hello Time. The granularity of this timer is specified by 802.1D-1990 to be 1 second. Valid values are 6 through 40 seconds.

The following example shows how to configure the STP bridge maximum age to 30 seconds:

```
(Cisco Controller) > config spanningtree switch maxage 30
```

config spanningtree switch mode

To turn the Cisco wireless LAN controller Spanning Tree Protocol (STP) on or off, use the **config spanningtree switch mode** command.

config spanningtree switch mode {**enable** | **disable**}

Syntax Description

enable	Enables STP on the switch.
disable	Disables STP on the switch.

Command Default

The default is that STP is disabled.

Command History

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

Usage Guidelines

Using this command allows the controller to set up STP, detect logical network loops, place redundant ports on standby, and build a network with the most efficient pathways.

The following example shows how to support STP on all Cisco wireless LAN controller ports:

```
(Cisco Controller) > config spanningtree switch mode enable
```

Configure TACACS Commands

Use the **config tacacs** commands to configure TACACS+ settings.

config tacacs acct

To configure TACACS+ accounting server settings, use the **config tacacs acct** command.

config tacacs acct {**add***1-3 IP addr port ascii/hex secret* | **delete** *1-3* | **disable** *1-3* | **enable** *1-3* | **server-timeout** *1-3 seconds*}

Syntax Description

add	Adds a new TACACS+ accounting server.
1-3	Specifies TACACS+ accounting server index from 1 to 3.
IP addr	Specifies IPv4 or IPv6 address of the TACACS+ accounting server.
port	Specifies TACACS+ Server's TCP port.
ascii/hex	Specifies type of TACACS+ server's secret being used (ASCII or HEX).
secret	Specifies secret key in ASCII or hexadecimal characters.
delete	Deletes a TACACS+ server.
disable	Disables a TACACS+ server.
enable	Enables a TACACS+ server.
server-timeout	Changes the default server timeout for the TACACS+ server.
seconds	Specifies the number of seconds before the TACACS+ server times out. The server timeout range is from 5 to 30 seconds.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

The following example shows how to add a new TACACS+ accounting server index 1 with the IPv4 address 10.0.0.0, port number 49, and secret key 12345678 in ASCII:

```
(Cisco Controller) > config tacacs acct add 1 10.0.0.0 10 ascii 12345678
```

The following example shows how to add a new TACACS+ accounting server index 1 with the IPv6 address 2001:9:6:40::623, port number 49, and secret key 12345678 in ASCII:

```
(Cisco Controller) > config tacacs acct add 1  2001:9:6:40::623 10 ascii 12345678
```

The following example shows how to configure the server timeout of 5 seconds for the TACACS+ accounting server:

```
(Cisco Controller) > config tacacs acct server-timeout 1 5
```

config tacacs athr

To configure TACACS+ authorization server settings, use the **config tacacs athr** command.

config tacacs athr {**add***1-3 IP addr port ascii/hex secret* | **delete** *1-3* | **disable** *1-3* | **enable** *1-3* | **mgmt-server-timeout** *1-3 seconds* | **server-timeout** *1-3 seconds*}

Syntax Description

add	Adds a new TACACS+ authorization server (IPv4 or IPv6).
1-3	TACACS+ server index from 1 to 3.
IP addr	TACACS+ authorization server IP address (IPv4 or IPv6).
port	TACACS+ server TCP port.
ascii/hex	Type of secret key being used (ASCII or HEX).
secret	Secret key in ASCII or hexadecimal characters.
delete	Deletes a TACACS+ server.
disable	Disables a TACACS+ server.
enable	Enables a TACACS+ server.
mgmt-server-timeout *1-3seconds*	Changes the default management login server timeout for the server. The number of seconds before server times out is from 1 to 30 seconds.
server-timeout *1-3 seconds*	Changes the default network login server timeout for the server. The number of seconds before server times out is from 5 to 30 seconds.

Command Default None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

The following example shows how to add a new TACACS+ authorization server index 1 with the IPv4 address 10.0.0.0, port number 49, and secret key 12345678 in ASCII:

```
(Cisco Controller) > config tacacs athr add 1 10.0.0.0 49 ascii 12345678
```

The following example shows how to add a new TACACS+ authorization server index 1 with the IPv6 address 2001:9:6:40::623, port number 49, and secret key 12345678 in ASCII:

```
(Cisco Controller) > config tacacs athr add 1 2001:9:6:40::623 49 ascii 12345678
```

The following example shows how to configure the retransmit timeout of 5 seconds for the TACACS+ authorization server:

```
(Cisco Controller) > config tacacs athr server-timeout 1 5
```

config tacacs athr mgmt-server-timeout

To configure a default TACACS+ authorization server timeout for management users, use the **config tacacs athr mgmt-server-timeout** command.

config tacacs athr mgmt-server-timeout *index timeout*

Syntax Description

index	TACACS+ authorization server index.
timeout	Timeout value. The range is 1 to 30 seconds.

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 configure a default TACACS+ authorization server timeout for management users:

```
(Cisco Controller) > config tacacs athr mgmt-server-timeout 1 10
```

Related Commands **config tacacs athr**

config tacacs auth mgmt-server-timeout

To configure a default TACACS+ authentication server timeout for management users, use the **config tacacs auth mgmt-server-timeout** command.

config tacacs auth mgmt-server-timeout *index timeout*

Syntax Description

index	TACACS+ authentication server index.
timeout	Timeout value. The range is 1 to 30 seconds.

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 configure a default TACACS+ authentication server timeout for management users:

```
(Cisco Controller) > config tacacs auth mgmt-server-timeout 1 10
```

Related Commands **config tacacs auth**

config tacacs auth

To configure TACACS+ authentication server settings, use the **config tacacs auth** command.

config tacacs auth { **add***1-3 IP addr port ascii/hex secret* | **delete** *1-3* | **disable** *1-3* | **enable** *1-3* | **mgmt-server-timeout** *1-3 seconds* | **server-timeout** *1-3seconds* }

Syntax Description

add	Adds a new TACACS+ accounting server.
1-3	TACACS+ accounting server index from 1 to 3.
IP addr	IP address for the TACACS+ accounting server.
port	Controller port used for the TACACS+ accounting server.
ascii/hex	Type of secret key being used (ASCII or HEX).
secret	Secret key in ASCII or hexadecimal characters.
delete	Deletes a TACACS+ server.
disable	Disables a TACACS+ server.

enable	Enables a TACACS+ server.
mgmt-server-timeout *1-3 seconds*	Changes the default management login server timeout for the server. The number of seconds before server times out is from 1 to 30 seconds.
server-timeout *1-3 seconds*	Changes the default network login server timeout for the server. The number of seconds before server times out is from 5 to 30 seconds.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

The following example shows how to add a new TACACS+ authentication server index 1 with the IPv4 address 10.0.0.3, port number 49, and secret key 12345678 in ASCII:

```
(Cisco Controller) > config tacacs auth add 1 10.0.0.3 49 ascii 12345678
```

The following example shows how to add a new TACACS+ authentication server index 1 with the IPv6 address 2001:9:6:40::623, port number 49, and secret key 12345678 in ASCII:

```
(Cisco Controller) > config tacacs auth add 1 2001:9:6:40::623 49 ascii 12345678
```

The following example shows how to configure the server timeout for TACACS+ authentication server:

```
(Cisco Controller) > config tacacs auth server-timeout 1 5
```

config tacacs dns

To retrieve the TACACS IP information from a DNS server, use the **config radius dns** command.

config radius dns { **global** *port* { *ascii* | *hex* } *secret* | **query** *url timeout* | **serverip** *ip_address* | **disable** | **enable** }

Syntax Description

global	Configures the global port and secret to retrieve the TACACS IP information from a DNS server.
port	Port number for authentication. The range is from 1 to 65535. All the DNS servers should use the same authentication port.
ascii	Format of the shared secret that you should set to ASCII.

hex	Format of the shared secret that you should set to hexadecimal.
secret	TACACS server login secret.
query	Configures the fully qualified domain name (FQDN) of the TACACS server and DNS timeout.
url	FQDN of the TACACS server. The FQDN can be up to 63 case-sensitive, alphanumeric characters.
timeout	Maximum time that the controller waits for, in days, before timing out a request and resending it. The range is from 1 to 180.
serverip	Configures the DNS server IP address.
ip_address	DNS server IP address.
disable	Disables the TACACS DNS feature. The default is disabled.
enable	Enables the controller to retrieve the TACACS IP information from a DNS server.

Command Default

You cannot retrieve the TACACS IP information from a DNS server.

Command History

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

Usage Guidelines

The accounting port is derived from the authentication port. All the DNS servers should use the same secret. When you enable a DNS query, the static configurations will be overridden. The DNS list overrides the static AAA list.

The following example shows how to enable the TACACS DNS feature on the controller:

```
(Cisco Controller) > config tacacs dns enable
```

Configure Trap Flag Commands

Use the **config trapflags** commands to configure trap flags settings.

config trapflags 802.11-Security

To enable or disable sending 802.11 security-related traps, use the **config trapflags 802.11-Security** command.

config trapflags 802.11-Security wepDecryptError { **enable** | **disable** }

Syntax Description

enable	Enables sending 802.11 security-related traps.
disable	Disables sending 802.11 security-related traps.

Command Default By default, sending the 802.11 security-related traps 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 disable the 802.11 security related traps:

```
(Cisco Controller) >
config trapflags 802.11-Security wepDecryptError disable
```

Related Commands **show trapflags**

config trapflags aaa

To enable or disable the sending of AAA server-related traps, use the **config trapflags aaa** command.

config trapflags aaa {**auth** | **servers**} {**enable** | **disable**}

Syntax Description

auth	Enables trap sending when an AAA authentication failure occurs for management user, net user, or MAC filter.
servers	Enables trap sending when no RADIUS servers are responding.
enable	Enables the sending of AAA server-related traps.
disable	Disables the sending of AAA server-related traps.

Command Default By default, the sending of AAA server-related traps 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 sending of AAA server-related traps:

```
(Cisco Controller) > config trapflags aaa auth enable
```

Related Commands **show watchlist**

config trapflags ap

To enable or disable the sending of Cisco lightweight access point traps, use the **config trapflags ap** command.

config trapflags ap {**register** | **interfaceUp**} {**enable** | **disable**}

Syntax Description

register	Enables sending a trap when a Cisco lightweight access point registers with Cisco switch.
interfaceUp	Enables sending a trap when a Cisco lightweight access point interface (A or B) comes up.
enable	Enables sending access point-related traps.
disable	Disables sending access point-related traps.

Command Default By default, the sending of Cisco lightweight access point traps 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 prevent traps from sending access point-related traps:

```
(Cisco Controller) > config trapflags ap register disable
```

Related Commands **show trapflags**

config trapflags authentication

To enable or disable sending traps with invalid SNMP access, use the **config trapflags authentication** command.

config trapflags authentication {**enable** | **disable**}

Syntax Description

enable	Enables sending traps with invalid SNMP access.
disable	Disables sending traps with invalid SNMP access.

Command Default By default, the sending traps with invalid SNMP access 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 prevent sending traps on invalid SNMP access:

```
(Cisco Controller) > config trapflags authentication disable
```

Related Commands **show trapflags**

config trapflags client

To enable or disable the sending of client-related DOT11 traps, use the **config trapflags client** command.

config trapflags client {**802.11-associate 802.11-disassociate** | **802.11-deauthenticate** | **802.11-authfail** | **802.11-assocfail** | **authentication** | **excluded**} {**enable** | **disable**}

Syntax Description

802.11-associate	Enables the sending of Dot11 association traps to clients.
802.11-disassociate	Enables the sending of Dot11 disassociation traps to clients.
802.11-deauthenticate	Enables the sending of Dot11 deauthentication traps to clients.
802.11-authfail	Enables the sending of Dot11 authentication fail traps to clients.
802.11-assocfail	Enables the sending of Dot11 association fail traps to clients.
authentication	Enables the sending of authentication success traps to clients.
excluded	Enables the sending of excluded trap to clients.
enable	Enables sending of client-related DOT11 traps.
disable	Disables sending of client-related DOT11 traps.

Command Default By default, the sending of client-related DOT11 traps 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 sending of Dot11 disassociation trap to clients:

```
(Cisco Controller) > config trapflags client 802.11-disassociate enable
```

Related Commands **show trapflags**

config trapflags configsave

To enable or disable the sending of configuration-saved traps, use the **config trapflags configsave** command.

config trapflags configsave {**enable** | **disable**}

Syntax Description

enable	Enables sending of configuration-saved traps.
disable	Disables the sending of configuration-saved traps.

Command Default By default, the sending of configuration-saved traps 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 sending of configuration-saved traps:

```
(Cisco Controller) > config trapflags configsave enable
```

Related Commands **show trapflags**

config trapflags IPsec

To enable or disable the sending of IPsec traps, use the **config trapflags IPsec** command.

config trapflags IPsec {**esp-auth** | **esp-reply** | **invalidSPI** | **ike-neg** | **suite-neg** | **invalid-cookie**} {**enable** | **disable**}

Syntax Description

esp-auth	Enables the sending of IPsec traps when an ESP authentication failure occurs.
esp-reply	Enables the sending of IPsec traps when an ESP replay failure occurs.
invalidSPI	Enables the sending of IPsec traps when an ESP invalid SPI is detected.
ike-neg	Enables the sending of IPsec traps when an IKE negotiation failure occurs.
suite-neg	Enables the sending of IPsec traps when a suite negotiation failure occurs.
invalid-cookie	Enables the sending of IPsec traps when a Isakamp invalid cookie is detected.
enable	Enables sending of IPsec traps.
disable	Disables sending of IPsec traps.

Command Default By default, the sending of IPsec traps 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 sending of IPsec traps when ESP authentication failure occurs:

```
(Cisco Controller) > config trapflags IPsec esp-auth enable
```

Related Commands **show trapflags**

config trapflags linkmode

To enable or disable the controller level link up/down trap flags, use the **config trapflags linkmode** command.

config trapflags linkmode {**enable** | **disable**}

Syntax Description

enable	Enables the controller level link up/down trap flags.
disable	Disables Cisco wireless LAN controller level link up/down trap flags.

Command Default By default, the controller level link up/down trap flags are 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 Cisco wireless LAN controller level link up/down trap:

```
(Cisco Controller) > config trapflags linkmode disable
```

Related Commands **show trapflags**

config trapflags multiusers

To enable or disable the sending of traps when multiple logins are active, use the **config trapflags multiusers** command.

config trapflags multiusers {**enable** | **disable**}

Syntax Description

enable	Enables the sending of traps when multiple logins are active.
disable	Disables the sending of traps when multiple logins are active.

Command Default By default, the sending of traps when multiple logins are active 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 disable the sending of traps when multiple logins are active:

```
(Cisco Controller) > config trapflags multiusers disable
```

Related Commands **show trapflags**

config trapflags rogueap

To enable or disable sending rogue access point detection traps, use the **config trapflags rogueap** command.

config trapflags rogueap {**enable** | **disable**}

Syntax Description

enable	Enables the sending of rogue access point detection traps.
disable	Disables the sending of rogue access point detection traps.

Command Default By default, the sending of rogue access point detection traps 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 disable the sending of rogue access point detection traps:

```
(Cisco Controller) > config trapflags rogueap disable
```

Related Commands

config rogue ap classify
config rogue ap friendly
config rogue ap rldp
config rogue ap ssid
config rogue ap timeout
config rogue ap valid-client
show rogue ap clients
show rogue ap detailed
show rogue ap summary
show rogue ap friendly summary
show rogue ap malicious summary
show rogue ap unclassified summary
show trapflags

config trapflags rrm-params

To enable or disable the sending of Radio Resource Management (RRM) parameters traps, use the **config trapflags rrm-params** command.

config trapflags rrm-params {**tx-power** | **channel** | **antenna**} {**enable** | **disable**}

Syntax Description

tx-power	Enables trap sending when the RF manager automatically changes the tx-power level for the Cisco lightweight access point interface.
channel	Enables trap sending when the RF manager automatically changes the channel for the Cisco lightweight access point interface.
antenna	Enables trap sending when the RF manager automatically changes the antenna for the Cisco lightweight access point interface.
enable	Enables the sending of RRM parameter-related traps.
disable	Disables the sending of RRM parameter-related traps.

Command Default

By default, the sending of RRM parameters traps 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 sending of RRM parameter-related traps:

```
(Cisco Controller) > config trapflags rrm-params tx-power enable
```

Related Commands

show trapflags

config trapflags rrm-profile

To enable or disable the sending of Radio Resource Management (RRM) profile-related traps, use the **config trapflags rrm-profile** command.

config trapflags rrm-profile {**load** | **noise** | **interference** | **coverage**} {**enable** | **disable**}

Syntax Description

load	Enables trap sending when the load profile maintained by the RF manager fails.
noise	Enables trap sending when the noise profile maintained by the RF manager fails.
interference	Enables trap sending when the interference profile maintained by the RF manager fails.
coverage	Enables trap sending when the coverage profile maintained by the RF manager fails.
enable	Enables the sending of RRM profile-related traps.

disable	Disables the sending of RRM profile-related traps.

Command Default By default, the sending of RRM profile-related traps 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 disable the sending of RRM profile-related traps:

```
(Cisco Controller) > config trapflags rrm-profile load disable
```

Related Commands **show trapflags**

config trapflags stpmode

To enable or disable the sending of spanning tree traps, use the **config trapflags stpmode** command.

config trapflags stpmode {**enable** | **disable**}

Syntax Description

enable	Enables the sending of spanning tree traps.
disable	Disables the sending of spanning tree traps.

Command Default By default, the sending of spanning tree traps 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 disable the sending of spanning tree traps:

```
(Cisco Controller) > config trapflags stpmode disable
```

Related Commands **show trapflags**

config trapflags wps

To enable or disable Wireless Protection System (WPS) trap sending, use the **config trapflags wps** command.

config trapflags wps {**enable** | **disable**}

Syntax Description

enable	Enables WPS trap sending.
disable	Disables WPS trap sending.

Command Default By default, the WPS trap sending 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 disable the WPS traps sending:

```
(Cisco Controller) > config trapflags wps disable
```

Related Commands **show trapflags**

Configure Watchlist Commands

Use the **config watchlist** commands to configure watchlist settings.

config watchlist add

To add a watchlist entry for a wireless LAN, use the **config watchlist add** command.

config watchlist add {**mac** *MAC* | **username** *username*}

Syntax Description

mac *MAC*	Specifies the MAC address of the wireless LAN.
username *username*	Specifies the name of the user to watch.

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 add a watchlist entry for the MAC address a5:6b:ac:10:01:6b:

```
(Cisco Controller) >config watchlist add mac a5:6b:ac:10:01:6b
```

config watchlist delete

To delete a watchlist entry for a wireless LAN, use the **config watchlist delete** command.

config watchlist delete {**mac** *MAC* | **username** *username*}

Syntax Description

mac *MAC*	Specifies the MAC address of the wireless LAN to delete from the list.
username *username*	Specifies the name of the user to delete from the list.

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 delete a watchlist entry for the MAC address a5:6b:ac:10:01:6b:

```
(Cisco Controller) >config watchlist delete mac a5:6b:ac:10:01:6b
```

config watchlist enable

To enable a watchlist entry for a wireless LAN, use the **config watchlist enable** command.

config watchlist enable

Syntax Description This command has no arguments or keywords.

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 a watchlist entry:

```
(Cisco Controller) >config watchlist enable
```

config watchlist disable

To disable the client watchlist, use the **config watchlist disable** command.

config watchlist disable

Syntax Description This command has no arguments or keywords.

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 disable the client watchlist:

```
(Cisco Controller) >config watchlist disable
```

Configure Wireless LAN Commands

Use the **config wlan** commands to configure wireless LAN command settings.

config wlan

To create, delete, enable, or disable a wireless LAN, use the **config wlan** command.

config wlan {**enable** | **disable** | **create** | **delete**} *wlan_id* [*name* | **foreignAp** *name ssid* | **all**]

Syntax Description

enable	Enables a wireless LAN.
disable	Disables a wireless LAN.
create	Creates a wireless LAN.
delete	Deletes a wireless LAN.
wlan_id	Wireless LAN identifier between 1 and 512.
name	(Optional) WLAN profile name up to 32 alphanumeric characters.
foreignAp	(Optional) Specifies the third-party access point settings.
ssid	SSID (network name) up to 32 alphanumeric characters.
all	(Optional) Specifies all wireless LANs.

Command Default

None

Command History

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

Usage Guidelines

When you create a new WLAN using the **config wlan create** command, it is created in disabled mode. Leave it disabled until you have finished configuring it.

If you do not specify an SSID, the profile *name* parameter is used for both the profile name and the SSID.

If the management and AP-manager interfaces are mapped to the same port and are members of the same VLAN, you must disable the WLAN before making a port-mapping change to either interface. If the management and AP-manager interfaces are assigned to different VLANs, you do not need to disable the WLAN.

An error message appears if you try to delete a WLAN that is assigned to an access point group. If you proceed, the WLAN is removed from the access point group and from the access point's radio.

The following example shows how to enable wireless LAN identifier 16:

```
(Cisco Controller) >config wlan enable 16
```

config wlan 7920-support

To configure support for phones, use the **config wlan 7920-support** command.

config wlan 7920-support {**client-cac-limit** | **ap-cac-limit**} {**enable** | **disable**} *wlan_id*

Syntax Description

ap-cac-limit	Supports phones that require client-controlled Call Admission Control (CAC) that expect the Cisco vendor-specific information element (IE).
client-cac-limit	Supports phones that require access point-controlled CAC that expect the IEEE 802.11e Draft 6 QBSS-load.
enable	Enables phone support.
disable	Disables phone support.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None

Command History

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

Usage Guidelines

You cannot enable both WMM mode and client-controlled CAC mode on the same WLAN.

The following example shows how to enable the phone support that requires client-controlled CAC with wireless LAN ID 8:

```
(Cisco Controller) >config wlan 7920-support ap-cac-limit enable 8
```

config wlan 802.11e

To configure 802.11e support on a wireless LAN, use the **config wlan 802.11e** command.

config wlan 802.11e {**allow** | **disable** | **require**} *wlan_id*

Syntax Description

allow	Allows 802.11e-enabled clients on the wireless LAN.
disable	Disables 802.11e on the wireless LAN.
require	Requires 802.11e-enabled clients on the wireless LAN.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None

Command History

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

Usage Guidelines

802.11e provides quality of service (QoS) support for LAN applications, which are critical for delay sensitive applications such as Voice over Wireless IP (VoWIP).

802.11e enhances the 802.11 Media Access Control layer (MAC layer) with a coordinated time division multiple access (TDMA) construct, and adds error-correcting mechanisms for delay sensitive applications such as voice and video. The 802.11e specification provides seamless interoperability and is especially well suited for use in networks that include a multimedia capability.

The following example shows how to allow 802.11e on the wireless LAN with LAN ID 1:

```
(Cisco Controller) >config wlan 802.11e allow 1
```

config wlan aaa-override

To configure a user policy override via AAA on a wireless LAN, use the **config wlan aaa-override** command.

config wlan aaa-override {**enable** | **disable**} {*wlan_id* | **foreignAp**}

Syntax Description

enable	Enables a policy override.
disable	Disables a policy override.
wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default

AAA is disabled.

Command History

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

Usage Guidelines

When AAA override is enabled and a client has conflicting AAA and Cisco wireless LAN controller wireless LAN authentication parameters, client authentication is performed by the AAA server. As part of this authentication, the operating system will move clients from the default Cisco wireless LAN VLAN to a VLAN returned by the AAA server and predefined in the controller interface configuration (only when configured for MAC filtering, 802.1X, and/or WPA operation). In all cases, the operating system will also use QoS, DSCP, 802.1p priority tag values, and ACLs provided by the AAA server, as long as they are predefined in the controller interface configuration. (This VLAN switching by AAA override is also referred to as Identity Networking.)

If the corporate wireless LAN uses a management interface assigned to VLAN 2, and if AAA override returns a redirect to VLAN 100, the operating system redirects all client transmissions to VLAN 100, regardless of the physical port to which VLAN 100 is assigned.

When AAA override is disabled, all client authentication defaults to the controller authentication parameter settings, and authentication is performed by the AAA server if the controller wireless LAN does not contain any client-specific authentication parameters.

The AAA override values might come from a RADIUS server.

The following example shows how to configure user policy override via AAA on WLAN ID 1:

```
(Cisco Controller) >config wlan aaa-override enable 1
```

config wlan acl

To configure a wireless LAN access control list (ACL), use the **config wlan acl** command.

config wlan acl [*acl_name* | **none**]

Syntax Description

wlan_id	Wireless LAN identifier (1 to 512).
acl_name	(Optional) ACL name.
none	(Optional) Clears the ACL settings for the specified wireless LAN.

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 configure a WLAN access control list with WLAN ID 1 and ACL named office_1:

```
(Cisco Controller) >config wlan acl 1 office_1
```

config wlan apgroup

To manage access point group VLAN features, use the **config wlan apgroup** command.

config wlan apgroup {**add** *apgroup_name* [*description*] | **delete** *apgroup_name* | **description** *apgroup_name description* | **interface-mapping** {**add** | **delete**} *apgroup_name wlan_id interface_name* | **nac-snmp** {**enable** | **disable**} *apgroup_name wlan_id* | **nasid** *NAS-ID apgroup_name* | **profile-mapping** {**add** | **delete**} *apgroup_name profile_name* | **wlan-radio-policy** *apgroup_name wlan-id* {**802.11a-only** | **802.11bg** | **802.11g-only** | **all**} | **hotspot** {**venue** {**type** *apgroup_name group_codetype_code* | **name** *apgroup_name language_codevenue_name* } | **operating-class** {**add** | **delete**} *apgroup_name operating_class_value*}}

Syntax Description

add	Creates a new access point group (AP group).
apgroup_name	Access point group name.
wlan_id	Wireless LAN identifier from 1 to 512.
delete	Removes a wireless LAN from an AP group.

description	Describes an AP group.
description	Description of the AP group.
interface-mapping	(Optional) Assigns or removes a Wireless LAN fro
interface_name	(Optional) Interface to which you want to map an A
nac-snmp	Configures NAC SNMP functionality on given AP disables Network Admission Control (NAC) out-o access point group.
enable	Enables NAC out-of-band support on an AP group
disable	Disables NAC out-of-band support on an AP group
NAS-ID	Network Access Server identifier (NAS-ID) for the A is sent to the RADIUS server by the controller (as a the authentication request, which is used to classify u You can enter up to 32 alphanumeric characters. Be and later releases, you can configure the NAS-ID on or an access point group. The order of priority is A WLAN NAS-ID > Interface NAS-ID.
none	Configures the controller system name as the NAS
profile-mapping	Configures RF profile mapping on an AP group.
profile_name	RF profile name for a specified AP group.
wlan-radio-policy	Configures WLAN radio policy on an AP group.
802.11a-only	Configures WLAN radio policy on an AP group.
802.11bg	Configures WLAN radio policy on an AP group.
802.11g-only	Configures WLAN radio policy on an AP group.
all	Configures WLAN radio policy on an AP group.
hotspot	Configures a HotSpot on an AP group.
venue	Configures venue information for an AP group.
type	Configures the type of venue for an AP group.

group_code	Venue group information for an AP group. The following options are available: • 0 : UNSPECIFIED • 1 : ASSEMBLY • 2 : BUSINESS • 3 : EDUCATIONAL • 4 : FACTORY-INDUSTRIAL • 5 : INSTITUTIONAL • 6 : MERCANTILE • 7 : RESIDENTIAL • 8 : STORAGE • 9 : UTILITY-MISC • 10 : VEHICULAR • 11 : OUTDOOR

type_code

Venue type information for an AP group.

For venue group 1 (ASSEMBLY), the followin

- 0 : UNSPECIFIED ASSEMBLY
- 1 : ARENA
- 2 : STADIUM
- 3 : PASSENGER TERMINAL
- 4 : AMPHITHEATER
- 5 : AMUSEMENT PARK
- 6 : PLACE OF WORSHIP
- 7 : CONVENTION CENTER
- 8 : LIBRARY
- 9 : MUSEUM
- 10 : RESTAURANT
- 11 : THEATER
- 12 : BAR
- 13 : COFFEE SHOP
- 14 : ZOO OR AQUARIUM
- 15 : EMERGENCY COORDINATION C

For venue group 2 (BUSINESS), the following

- 0 : UNSPECIFIED BUSINESS
- 1 : DOCTOR OR DENTIST OFFICE
- 2 : BANK
- 3 : FIRE STATION
- 4 : POLICE STATION
- 6 : POST OFFICE
- 7 : PROFESSIONAL OFFICE
- 8 : RESEARCH AND DEVELOPMENT
- 9 : ATTORNEY OFFICE

For venue group 3 (EDUCATIONAL), the follo

- 0 : UNSPECIFIED EDUCATIONAL
- 1 : PRIMARY SCHOOL
- 2 : SECONDARY SCHOOL

- 3 : UNIVERSITY OR COLLEGE

For venue group 4 (FACTORY-INDUSTRIAL), th
available:

- 0 : UNSPECIFIED FACTORY AND INDUS
- 1 : FACTORY

For venue group 5 (INSTITUTIONAL), the followi

- 0 : UNSPECIFIED INSTITUTIONAL
- 1 : HOSPITAL
- 2 : LONG-TERM CARE FACILITY
- 3 : ALCOHOL AND DRUG RE-HABILITAT
- 4 :GROUP HOME
- 5 :PRISON OR JAIL

For venue group 6 (MERCANTILE), the following

- 0 : UNSPECIFIED MERCANTILE
- 1 : RETAIL STORE
- 2 : GROCERY MARKET
- 3 : AUTOMOTIVE SERVICE STATION
- 4 : SHOPPING MALL
- 5 : GAS STATION

For venue group 7 (RESIDENTIAL), the following

- 0 : UNSPECIFIED RESIDENTIAL
- 1 : PRIVATE RESIDENCE
- 2 : HOTEL OR MOTEL
- 3 : DORMITORY
- 4 : BOARDING HOUSE

For venue group 8 (STORAGE), the following opt

- 0 : UNSPECIFIED STORAGE

For venue group 9 (UTILITY-MISC), the followin

- 0 : UNSPECIFIED UTILITY AND MISCEL

For venue group 10 (VEHICULAR), the follow

- 0 : UNSPECIFIED VEHICULAR
- 1 : AUTOMOBILE OR TRUCK
- 2 : AIRPLANE
- 3 : BUS
- 4 : FERRY
- 5 : SHIP OR BOAT
- 6 : TRAIN
- 7 : MOTOR BIKE

For venue group 11 (OUTDOOR), the followin

- 0 : UNSPECIFIED OUTDOOR
- 1 : MINI-MESH NETWORK
- 2 : CITY PARK
- 3 : REST AREA
- 4 : TRAFFIC CONTROL
- 5 : BUS STOP
- 6 : KIOSK

name	Configures the name of venue for an AP group.
language_code	An ISO-639 encoded string defining the langua string is a three character language code. For ex for English.
venue_name	Venue name for this AP group. This name is as service set (BSS) and is used in cases where the enough information about the venue. The venue can be up to 252 alphanumeric characters.
add	Adds an operating class for an AP group.
delete	Deletes an operating class for an AP group.
operating_class_value	Operating class for an AP group. The available 83, 84, 112, 113, 115, 116, 117, 118, 119, 120, 126, 127.

Command Default

AP Group VLAN is disabled.

Command History

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

Usage Guidelines

An error message appears if you try to delete an access point group that is used by at least one access point. Before you can delete an AP group in controller software release 6.0, move all APs in this group to another group. The access points are not moved to the default-group access point group as in previous releases. To see the APs, enter the **show wlan apgroups** command. To move APs, enter the **config ap group-name** *groupname cisco_ap* command.

The NAS-ID configured on the controller for AP group or WLAN or interface is used for authentication. The NAS-ID is not propagated across controllers.

The following example shows how to enable the NAC out-of band support on access point group 4:

```
(Cisco Controller) >config wlan apgroup nac enable apgroup 4
```

config wlan band-select allow

To configure band selection on a WLAN, use the **config wlan band-select allow** command.

config wlan band-select allow {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables band selection on a WLAN.
disable	Disables band selection on a WLAN.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None

Command History

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

Usage Guidelines

When you enable band select on a WLAN, the access point suppresses client probes on 2.4-GHz and moves the dual band clients to the 5-Ghz spectrum. The band-selection algorithm directs dual-band clients only from the 2.4-GHz radio to the 5-GHz radio of the same access point, and it only runs on an access point when both the 2.4-GHz and 5-GHz radios are up and running. Band selection can be used only with Cisco Aironet 1040, 1140, and 1250 Series and the 3500 series access points.

The following example shows how to enable band selection on a WLAN:

```
(Cisco Controller) >config wlan band-select allow enable 6
```

config wlan broadcast-ssid

To configure an Service Set Identifier (SSID) broadcast on a wireless LAN, use the **config wlan broadcast-ssid** command.

config wlan broadcast-ssid {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables SSID broadcasts on a wireless LAN.

disable	Disables SSID broadcasts on a wireless LAN.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default Broadcasting of SSID 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 configure an SSID broadcast on wireless LAN ID 1:

```
(Cisco Controller) >config wlan broadcast-ssid enable 1
```

config wlan call-snoop

To enable or disable Voice-over-IP (VoIP) snooping for a particular WLAN, use the **config wlan call-snoop** command.

config wlan call-snoop {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables VoIP snooping on a wireless LAN.
disable	Disables VoIP snooping on a wireless LAN.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default None

Command History

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

Usage Guidelines WLAN should be with Platinum QoS and it needs to be disabled while invoking this CLI

The following example shows how to enable VoIP snooping for WLAN 3:

```
(Cisco Controller) >config wlan call-snoop 3 enable
```

config wlan chd

To enable or disable Coverage Hole Detection (CHD) for a wireless LAN, use the **config wlan chd** command.

config wlan chd *wlan_id* {**enable** | **disable**}

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
enable	Enables SSID broadcasts on a wireless LAN.

disable	Disables SSID broadcasts on a wireless LAN.

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 CHD for WLAN 3:

```
(Cisco Controller) >config wlan chd 3 enable
```

config wlan ccx aironet-ie

To enable or disable Aironet information elements (IEs) for a WLAN, use the **config wlan ccx aironet-ie** command.

config wlan ccx aironet-ie {**enable** | **disable**}

Syntax Description

enable	Enables the Aironet information elements.
disable	Disables the Aironet information elements.

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 Aironet information elements for a WLAN:

```
(Cisco Controller) >config wlan ccx aironet-ie enable
```

config wlan channel-scan defer-priority

To configure the controller to defer priority markings for packets that can defer off channel scanning, use the **config wlan channel-scan defer-priority** command.

config wlan channel-scan defer-priority *priority* [**enable** | **disable**] *wlan_id*

Syntax Description

priority	User priority value (0 to 7).
enable	(Optional) Enables packet at given priority to defer off channel scanning.
disable	(Optional) Disables packet at gven priority to defer off channel scanning.
wlan_id	Wireless LAN identifier (1 to 512).

Command Default None

Command History

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

Usage Guidelines The priority value should be set to 6 on the client and on the WLAN.

The following example shows how to enable the controller to defer priority markings that can defer off channel scanning with user priority value 6 and WLAN id 30:

```
(Cisco Controller) >config wlan channel-scan defer-priority 6 enable 30
```

config wlan channel-scan defer-time

To assign the channel scan defer time in milliseconds, use the **config wlan channel-scan defer-time** command.

config wlan channel-scan defer-time *msecs wlan_id*

Syntax Description

msecs	Deferral time in milliseconds (0 to 60000 milliseconds).
wlan_id	Wireless LAN identifier from 1 to 512.

Command Default None

Command History

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

Usage Guidelines The time value in milliseconds should match the requirements of the equipment on your WLAN.

The following example shows how to assign the scan defer time to 40 milliseconds for WLAN with ID 50:

```
(Cisco Controller) >config wlan channel-scan defer-time 40 50
```

config wlan dhcp_server

To configure the internal DHCP server for a wireless LAN, use the **config wlan dhcp_server** command.

config wlan dhcp_server {*wlan_id* | **foreignAp**} *ip_address* [**required**]

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.
ip_address	IP address of the internal DHCP server (this parameter is required).
required	(Optional) Specifies whether DHCP address assignment is required.

Command Default None

Command History

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

Usage Guidelines The preferred method for configuring DHCP is to use the primary DHCP address assigned to a particular interface instead of the DHCP server override. If you enable the override, you can use the **show wlan** command to verify that the DHCP server has been assigned to the WLAN.

The following example shows how to configure an IP address 10.10.2.1 of the internal DHCP server for wireless LAN ID 16:

```
(Cisco Controller) >config wlan dhcp_server 16 10.10.2.1
```

config wlan diag-channel

To enable the diagnostic channel troubleshooting on a particular WLAN, use the **config wlan diag-channel** command.

config wlan diag-channel [**enable** | **disable**] *wlan_id*

Syntax Description

enable	(Optional) Enables the wireless LAN diagnostic channel.
disable	(Optional) Disables the wireless LAN diagnostic channel.
wlan_id	Wireless LAN identifier (1 to 512).

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 wireless LAN diagnostic channel for WLAN ID 1:

```
(Cisco Controller) >config wlan diag-channel enable 1
```

config wlan dtim

To configure a Delivery Traffic Indicator Message (DTIM) for 802.11 radio network **config wlan dtim** command.

config wlan dtim {**802.11a** | **802.11b**} *dtim wlan_id*

Syntax Description

802.11a	Configures DTIM for the 802.11a radio network.
802.11b	Configures DTIM for the 802.11b radio network.

dtim	Value for DTIM (between 1 to 255 inclusive).
wlan_id	Number of the WLAN to be configured.

Command Default

The default is DTIM 1.

Command History

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

The following example shows how to configure DTIM for 802.11a radio network with DTIM value 128 and WLAN ID 1:

```
(Cisco Controller) >config wlan dtim 802.11a 128 1
```

config wlan exclusionlist

To configure the wireless LAN exclusion list, use the **config wlan exclusionlist** command.

config wlan exclusionlist {*wlan_id* [**enabled** | **disabled** | *time*] | **foreignAp** [**enabled** | **disabled** | *time*]}

Syntax Description

wlan_id	Wireless LAN identifier (1 to 512).
enabled	(Optional) Enables the exclusion list for the specified wireless LAN or foreign access point.
disabled	(Optional) Disables the exclusion list for the specified wireless LAN or a foreign access point.
time	(Optional) Exclusion list timeout in seconds. A value of zero (0) specifies infinite time.
foreignAp	Specifies a third-party access point.

Command Default

None

Command History

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

Usage Guidelines

This command replaces the **config wlan blacklist** command.

The following example shows how to enable the exclusion list for WLAN ID 1:

```
(Cisco Controller) >config wlan exclusionlist 1 enabled
```

config wlan flexconnect ap-auth

To configure local authentication of clients associated with FlexConnect on a locally switched WLAN, use the **config wlan flexconnect ap-auth** command.

config wlan flexconnect ap-auth *wlan_id* {**enable** | **disable**}

Syntax Description

ap-auth	Configures local authentication of clients associated with an FlexConnect on a locally switched WLAN.
wlan_id	Wireless LAN identifier between 1 and 512.
enable	Enables AP authentication on a WLAN.
disable	Disables AP authentication on a WLAN.

Command Default

None

Command History

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

Usage Guidelines

Local switching must be enabled on the WLAN where you want to configure local authentication of clients associated with FlexConnect.

The following example shows how to enable authentication of clients associated with FlexConnect on a specified WLAN:

```
(Cisco Controller) >config wlan flexconnect ap-auth 6 enable
```

config wlan flexconnect learn-ipaddr

To enable or disable client IP address learning for the Cisco WLAN controller, use the **config wlan flexconnect learn-ipaddr** command.

config wlan flexconnect learn-ipaddr *wlan_id* {**enable** | **disable**}

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
enable	Enables client IPv4 address learning on a wireless LAN.
disable	Disables client IPv4 address learning on a wireless LAN.

Command Default

Disabled when the **config wlan flexconnect local-switching** command is disabled. Enabled when the **config wlan flexconnect local-switching** command is enabled.

Command History

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

Release	Modification
8.0	This command supports only IPv4 address format.

Usage Guidelines

If the client is configured with Layer 2 encryption, the controller cannot learn the client IP address, and the controller will periodically drop the client. Disable this option to keep the client connection without waiting to learn the client IP address.

Note This command is valid only for IPv4.

Note The ability to disable IP address learning is not supported with FlexConnect central switching.

The following example shows how to disable client IP address learning for WLAN 6:

```
(Cisco Controller) >config wlan flexconnect learn-ipaddr disable 6
```

Related Commands **show wlan**

config wlan flexconnect vlan-central-switching

To configure central switching on a locally switched WLAN, use the **config wlan flexconnect vlan-central-switching** command.

config wlan flexconnect vlan-central-switching *wlan_id* { **enable** | **disable** }

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
enable	Enables central switching on a locally switched wireless LAN.
disable	Disables central switching on a locally switched wireless LAN.

Command Default Central switching is disabled.

Command History

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

Usage Guidelines

You must enable Flexconnect local switching to enable VLAN central switching. When you enable WLAN central switching, the access point bridges the traffic locally if the WLAN is configured on the local IEEE 802.1Q link. If the VLAN is not configured on the access point, the AP tunnels the traffic back to the controller and the controller bridges the traffic to the corresponding VLAN.

WLAN central switching does not support:

- FlexConnect local authentication.

- Layer 3 roaming of local switching client.

The following example shows how to enable WLAN 6 for central switching:

```
(Cisco Controller) >config wlan flexconnect vlan-central-switching 6 enable
```

config wlan flexconnect local-switching

To configure local switching, central DHCP, NAT-PAT, or the override DNS option on a FlexConnect WLAN, use the **config wlan flexconnect local switching** command.

config wlan flexconnect local-switching *wlan_id* {**enable** | **disable**} { {**central-dhcp** {**enable** | **disable**} **nat-pat** {**enable** | **disable**} } | {**override option dns** { **enable** | **disable**} } }

Syntax Description

wlan_id	Wireless LAN identifier from 1 to 512.
enable	Enables local switching on a FlexConnect WLAN.
disable	Disables local switching on a FlexConnect WLAN.
central-dhcp	Configures central switching of DHCP packets on the local swit When you enable this feature, the DHCP packets received from to the controller and forwarded to the corresponding VLAN base
enable	Enables central DHCP on a FlexConnect WLAN.
disable	Disables central DHCP on a FlexConnect WLAN.
nat-pat	Configures Network Address Translation (NAT) and Port Addre local switching FlexConnect WLAN.
enable	Enables NAT-PAT on the FlexConnect WLAN.
disable	Disables NAT-PAT on the FlexConnect WLAN.
override	Specifies the DHCP override options on the FlexConnect WLAN
option dns	Specifies the override DNS option on the FlexConnect WLAN. the clients get their DNS server IP address from the AP, not from
enable	Enables the override DNS option on the FlexConnect WLAN.
disable	Disables the override DNS option on the FlexConnect WLAN.

Command Default

This feature is disabled.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports only IPv4 address format.

Usage Guidelines

When you enable the **config wlan flexconnect local-switching** command, the **config wlan flexconnect learn-ipaddr** command is enabled by default.

Note This command is valid only for IPv4.

Note The ability to disable IP address learning is not supported with FlexConnect central switching.

The following example shows how to enable WLAN 6 for local switching and enable central DHCP and NAT-PAT:

```
(Cisco Controller) >config wlan flexconnect local-switching 6 enable central-dhcp enable
nat-pat enable
```

The following example shows how to enable the override DNS option on WLAN 6:

```
(Cisco Controller) >config wlan flexconnect local-switching 6 override option dns enable
```

config wlan override-rate-limit

To override the bandwidth limits for upstream and downstream traffic per user and per service set identifier (SSID) defined in the QoS profile, use the **config wlan override-rate-limit** command.

config wlan override-rate-limit *wlan_id* { **average-data-rate** | **average-realtime-rate** | **burst-data-rate** | **burst-realtime-rate** } { **per-ssid** | **per-client** } { **downstream** | **upstream** } *rate*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
average-data-rate	Specifies the average data rate for TCP traffic per user or per SSID. The range is from 0 to 51,2000 Kbps.
average-realtime-rate	Specifies the average real-time data rate for UDP traffic per user or per SSID. The range is from 0 to 51,2000 Kbps.
burst-data-rate	Specifies the peak data rate for TCP traffic per user or per SSID. The range is from 0 to 51,2000 Kbps.
burst-realtime-rate	Specifies the peak real-time data rate for UDP traffic per user or per SSID. The range is from 0 to 51,2000 Kbps.
per-ssid	Configures the rate limit for an SSID per radio. The combined traffic of all clients will not exceed this limit.
per-client	Configures the rate limit for each client associated with the SSID.
downstream	Configures the rate limit for downstream traffic.

upstream	Configures the rate limit for upstream traffic.
rate	Data rate for TCP or UDP traffic per user or per SSID. The range is form 0 to 51,2000 Kbps. A value of 0 imposes no bandwidth restriction on the QoS profile.

Command Default None

Command History

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

Usage Guidelines The rate limits are enforced by the controller and the AP. For central switching, the controller handles the downstream enforcement of per-client rate limit and the AP handles the enforcement of the upstream traffic and per-SSID rate limit for downstream traffic. When the AP enters standalone mode it handles the downstream enforcement of per-client rate limits too.

In FlexConnect local switching and standalone modes, per-client and per-SSID rate limiting is done by the AP for downstream and upstream traffic. However, in FlexConnect standalone mode, the configuration is not saved on the AP, so when the AP reloads, the configuration is lost and rate limiting does not happen after reboot.

For roaming clients, if the client roams between the APs on the same controller, same rate limit parameters are applied on the client. However, if the client roams from an anchor to a foreign controller, the per-client downstream rate limiting uses the parameters configured on the anchor controller while upstream rate limiting uses the parameters of the foreign controller.

The following example shows how to configure the burst real-time actual rate 2000 Kbps for the upstream traffic per SSID:

```
(Cisco Controller) >config wlan override-rate-limit 2 burst-realtime-rate per-ssid upstream
 2000
```

config wlan interface

To configure a wireless LAN interface or an interface group, use the **config wlan interface** command.

config wlan interface {*wlan_id* | **foreignAp**} {*interface-name* | *interface-group-name*}

Syntax Description

wlan_id	(Optional) Wireless LAN identifier (1 to 512).
foreignAp	Specifies third-party access points.
interface-name	Interface name.
interface-group-name	Interface group 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 configure an interface named VLAN901:

```
(Cisco Controller) >config wlan interface 16 VLAN901
```

config wlan ipv6 acl

To configure IPv6 access control list (ACL) on a wireless LAN, use the **config wlan ipv6 acl** command.

config wlan ipv6 acl *wlan_id acl_name*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
acl_name	IPv6 ACL 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 configure an IPv6 ACL for local switching:

```
(Cisco Controller) >config wlan ipv6 acl 22 acl_sample
```

config wlan kts-cac

To configure the Key Telephone System-based CAC policy for a WLAN, use the **config wlan kts-cac** command.

config wlan kts-cac {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables the KTS-based CAC policy.
disable	Disables the KTS-based CAC policy.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default None

Command History

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

Usage Guidelines

To enable the KTS-based CAC policy for a WLAN, ensure that you do the following:

- Configure the QoS profile for the WLAN to Platinum by entering the following command:

  config wlan qos *wlan-id* **platinum**

- Disable the WLAN by entering the following command:

  config wlan disable *wlan-id*

- Disable FlexConnect local switching for the WLAN by entering the following command:

  config wlan flexconnect local-switching *wlan-id* **disable**

The following example shows how to enable the KTS-based CAC policy for a WLAN with the ID 4:

```
(Cisco Controller) >config wlan kts-cac enable 4
```

config wlan ldap

To add or delete a link to a configured Lightweight Directory Access Protocol (LDAP) server, use the **config wlan ldap** command.

config wlan ldap {**add** *wlan_id server_id* | **delete** *wlan_id* {**all** | *server_id*}}

Syntax Description

add	Adds a link to a configured LDAP server.
wlan_id	Wireless LAN identifier between 1 and 512.
server_id	LDAP server index.
delete	Removes the link to a configured LDAP server.
all	Specifies all LDAP servers.

Command Default

None

Command History

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

Usage Guidelines

Use this command to specify the LDAP server priority for the WLAN.

To specify the LDAP server priority, one of the following must be configured and enabled:

- 802.1X authentication and Local EAP
- Web authentication and LDAP

Note Local EAP was introduced in controller software release 4.1; LDAP support on Web authentication was introduced in controller software release 4.2.

The following example shows how to add a link to a configured LDAP server with the WLAN ID 100 and server ID 4:

```
(Cisco Controller) >config wlan ldap add 100 4
```

config wlan load-balance

To override the global load balance configuration and enable or disable load balancing on a particular WLAN, use the **config wlan load-balance** command.

config wlan load-balance allow {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables band selection on a wireless LAN.
disable	Disables band selection on a wireless LAN.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

Load balancing is enabled by default.

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 band selection on a wireless LAN with WLAN ID 3:

```
(Cisco Controller) >config wlan load-balance allow enable 3
```

config wlan mac-filtering

To change the state of MAC filtering on a wireless LAN, use the **config wlan mac-filtering** command.

config wlan mac-filtering {**enable** | **disable**} {*wlan_id* | **foreignAp**}

Syntax Description

enable	Enables MAC filtering on a wireless LAN.
disable	Disables MAC filtering on a wireless LAN.
wlan_id	Wireless LAN identifier from 1 to 512.
foreignAp	Specifies third-party access points.

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 MAC filtering on WLAN ID 1:

```
(Cisco Controller) >config wlan mac-filtering enable 1
```

config wlan max-associated-clients

To configure the maximum number of client connections on a wireless LAN, guest LAN, or remote LAN, use the **config wlan max-associated-clients** command.

config wlan max-associated-clients *max_clients wlan_id*

Syntax Description

max_clients	Maximum number of client connections to be accepted.
wlan_id	Wireless LAN identifier between 1 and 512.

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 specify the maximum number of client connections on WLAN ID 2:

```
(Cisco Controller) >config wlan max-associated-clients 25 2
```

config wlan max-radio-clients

To configure the maximum number of WLAN client per access point, use the **config wlan max-radio-clients** command.

config wlan max-radio-clients *max_radio_clients wlan_id*

Syntax Description

max_radio_clients	Maximum number of client connections to be accepted per access point radio. The valid range is from 1 to 200.
wlan_id	Wireless LAN identifier between 1 and 512.

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 specify the maximum number of client connections per access point radio on WLAN ID 2:

```
(Cisco Controller) >config wlan max-radio-clients 25 2
```

config wlan media-stream

To configure multicast-direct for a wireless LAN media stream, use the **config wlan media-stream** command.

config wlan media-stream multicast-direct {*wlan_id* | **all**} {**enable** | **disable**}

Syntax Description

multicast-direct	Configures multicast-direct for a wireless LAN media stream.
wlan_id	Wireless LAN identifier between 1 and 512.
all	Configures the wireless LAN on all media streams.
enable	Enables global multicast to unicast conversion.
disable	Disables global multicast to unicast conversion.

Command Default

None

Command History

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

Usage Guidelines

Media stream multicast-direct requires load based Call Admission Control (CAC) to run. WLAN quality of service (QoS) needs to be set to either gold or platinum.

The following example shows how to enable the global multicast-direct media stream with WLAN ID 2:

```
(Cisco Controller) >config wlan media-stream multicast-direct 2 enable
```

config wlan mfp

To configure management frame protection (MFP) options for the wireless LAN, use the **config wlan mfp** command.

config wlan mfp {**client** [**enable** | **disable**] *wlan_id* | **infrastructure protection** [**enable** | **disable**] *wlan_id*}

Syntax Description

client	Configures client MFP for the wireless LAN.
enable	(Optional) Enables the feature.
disable	(Optional) Disables the feature.
wlan_id	Wireless LAN identifier (1 to 512).

infrastructure protection	(Optional) Configures the infrastructure MFP for the wireless LAN.

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 configure client management frame protection for WLAN ID 1:

```
(Cisco Controller) >config wlan mfp client enable 1
```

config wlan mobility anchor

To change the state of MAC filtering on a wireless LAN, use the **config wlan mobility anchor** command.

config wlan mobility anchor {**add** | **delete**} *wlan_id ip_addr* **priority** *priority-number*

Syntax Description

add	Enables MAC filtering on a wireless LAN.
delete	Disables MAC filtering on a wireless LAN.
wlan_id	Wireless LAN identifier between 1 and 512.
ip_addr	Member switch IPv4 address for anchoring the wireless LAN.
priority	Sets priority to the anchored wireless LAN IP address.
priority-number	Range between 1 to 3.

Command Default None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports only IPv4 address format.
8.1	**priority***priority number* parameter introduced.

The following example shows how to configure and set priority to the mobility wireless LAN anchor list with WLAN ID 4 and IPv4 address 192.168.0.14

```
(Cisco Controller) >config wlan mobility anchor add 4 192.168.0.14 priority 1
```

Related Commands **show wlan**

config wlan mobility foreign-map

To configure interfaces or interface groups for foreign controllers, use the **config wlan mobility foreign-map** command.

config wlan mobility foreign-map {**add** | **delete**} *wlan_id foreign_mac_address* {*interface_name* | *interface_group_name*}

Syntax Description

add	Adds an interface or interface group to the map of foreign controllers.
delete	Deletes an interface or interface group from the map of foreign controllers.
wlan_id	Wireless LAN identifier from 1 to 512.
foreign_mac_address	Foreign switch MAC address on a WLAN.
interface_name	Interface name up to 32 alphanumeric characters.
interface_group_name	Interface group name up to 32 alphanumeric characters.

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 add an interface group for foreign controllers with WLAN ID 4 and a foreign switch MAC address on WLAN 00:21:1b:ea:36:60:

```
(Cisco Controller) >config wlan mobility foreign-map add 4 00:21:1b:ea:36:60 mygroup1
```

config wlan multicast buffer

To configure the radio multicast packet buffer size, use the **config wlan multicast buffer** command.

config wlan multicast buffer {**enable** | **disable**} *buffer-size*

Syntax Description

enable	Enables the multicast interface feature for a wireless LAN.
disable	Disables the multicast interface feature on a wireless LAN.
buffer-size	Radio multicast packet buffer size. The range is from 30 to 60. Enter 0 to indicate APs will dynamically adjust the number of buffers allocated for multicast.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

The default buffer size is 30

Command History

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

The following example shows how to configure radio multicast buffer settings:

```
(Cisco Controller) >config wlan multicast buffer enable 45 222
```

config wlan multicast interface

To configure a multicast interface for a wireless LAN, use the **config wlan multicast interface** command.

config wlan multicast interface *wlan_id* {**enable** | **disable**} *interface_name*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
enable	Enables multicast interface feature for a wireless LAN.
delete	Disables multicast interface feature on a wireless LAN.
interface_name	Interface name. **Note** The interface name can only be specified in lower case characters.

Command Default

Multicast 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 multicast interface feature for a wireless LAN with WLAN ID 4 and interface name myinterface1:

```
(Cisco Controller) >config wlan multicast interface 4 enable myinterface1
```

config wlan nac

To enable or disable Network Admission Control (NAC) out-of-band support for a WLAN, use the **config wlan nac** command.

config wlan nac {**snmp** | **radius**} {**enable** | **disable**} *wlan_id*

Syntax Description

snmp	Configures SNMP NAC support.
radius	Configures RADIUS NAC support.
enable	Enables NAC for the WLAN.

disable	Disables NAC for the WLAN.
wlan_id	WLAN identifier from 1 to 512.

Command Default None

Command History

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

Usage Guidelines You should enable AAA override before you enable the RADIUS NAC state. You also should disable FlexConnect local switching before you enable the RADIUS NAC state.

The following example shows how to configure SNMP NAC support for WLAN 13:

```
(Cisco Controller) >config wlan nac snmp enable 13
```

The following example shows how to configure RADIUS NAC support for WLAN 34:

```
(Cisco Controller) >config wlan nac radius enable 20
```

config wlan passive-client

To configure passive-client feature on a wireless LAN, use the **config wlan passive-client** command.

config wlan passive-client {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables the passive-client feature on a WLAN.
disable	Disables the passive-client feature on a WLAN.
wlan_id	WLAN identifier between 1 and 512.

Command Default None

Command History

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

Usage Guidelines You need to enable the global multicast mode and multicast-multicast mode by using the **config network multicast global** and **config network multicast mode** commands before entering this command.

Note You should configure the multicast in multicast-multicast mode only not in unicast mode. The passive client feature does not work with multicast-unicast mode in this release.

The following example shows how to configure the passive client on wireless LAN ID 2:

```
(Cisco Controller) >config wlan passive-client enable 2
```

config wlan peer-blocking

To configure peer-to-peer blocking on a WLAN, use the **config wlan peer-blocking** command.

config wlan peer-blocking {**disable** | **drop** | **forward-upstream**} *wlan_id*

Syntax Description

disable	Disables peer-to-peer blocking and bridge traffic locally within the controller whenever possible.
drop	Causes the controller to discard the packets.
forward-upstream	Causes the packets to be forwarded on the upstream VLAN. The device above the controller decides what action to take regarding the packets.
wlan_id	WLAN identifier between 1 and 512.

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 disable the peer-to-peer blocking for WLAN ID 1:

```
(Cisco Controller) >config wlan peer-blocking disable 1
```

config wlan profiling

To configure client profiling on a WLAN, use the **config wlan profiling** command.

config wlan profiling { **local** | **radius** } { **all** | **dhcp** | **http** } { **enable** | **disable** } *wlan_id*

Syntax Description

local	Configures client profiling in Local mode for a WLAN.
radius	Configures client profiling in RADIUS mode on a WLAN.
all	Configures DHCP and HTTP client profiling in a WLAN.
dhcp	Configures DHCP client profiling alone in a WLAN.
http	Configures HTTP client profiling in a WLAN.

enable	Enables the specific type of client profiling in a WLAN. When you enable HTTP profiling, the controller collects the HTTP attributes of clients for profiling. When you enable DHCP profiling, the controller collects the DHCP attributes of clients for profiling.
disable	Disables the specific type of client profiling in a WLAN.
wlan_id	Wireless LAN identifier from 1 to 512.

Usage Guidelines

Ensure that you have disabled the WLAN before configuring client profiling on the WLAN.

Command Default

Client profiling is disabled.

Command History

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

Usage Guidelines

Only clients connected to port 80 for HTTP can be profiled. IPv6 only clients are not profiled.

If a session timeout is configured for a WLAN, clients must send the HTTP traffic before the configured timeout to get profiled.

This feature is not supported on the following:

- FlexConnect Standalone mode
- FlexConnect Local Authentication

The following example shows how to enable both DHCP and HTTP profiling on a WLAN:

```
(Cisco Controller) >config wlan profiling radius all enable 6
                                        HTTP Profiling successfully enabled.
                                        DHCP Profiling successfully enabled.
```

config wlan qos

To change the quality of service (QoS) for a wireless LAN, use the **config wlan qos** command.

config wlan qos *wlan_id* {**bronze** | **silver** | **gold** | **platinum**}
config wlan qos foreignAp {**bronze** | **silver** | **gold** | **platinum**}

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
bronze	Specifies the bronze QoS policy.
silver	Specifies the silver QoS policy.
gold	Specifies the gold QoS policy.
platinum	Specifies the platinum QoS policy.

foreignAp	Specifies third-party access points.

Command Default

The default QoS policy is silver.

Command History

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

The following example shows how to set the highest level of service on wireless LAN 1:

```
(Cisco Controller) >config wlan qos 1 gold
```

config wlan radio

To set the Cisco radio policy on a wireless LAN, use the **config wlan radio** command.

config wlan radio *wlan_id* {**all** | **802.11a** | **802.11bg** | **802.11g** | **802.11ag**}

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
all	Configures the wireless LAN on all radio bands.
802.11a	Configures the wireless LAN on only 802.11a.
802.11bg	Configures the wireless LAN on only 802.11b/g (only 802.11b if 802.11g is disabled).
802.11g	Configures the wireless LAN on 802.11g only.

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 configure the wireless LAN on all radio bands:

```
(Cisco Controller) >config wlan radio 1 all
```

config wlan radius_server acct

To configure RADIUS accounting servers of a WLAN, use the **config wlan radius_server acct** command.

config wlan radius_server acct {**enable** | **disable**} *wlan_id* | **add** *wlan_id server_id* | **delete** *wlan_id* {**all** | *server_id*} | **framed-ipv6** { **address** | **both** | **prefix** } *wlan_id*}

Syntax Description

enable	Enables RADIUS accounting for the WLAN.

disable	Disables RADIUS accounting for the WLAN.
wlan_id	Wireless LAN identifier from 1 to 512.
add	Adds a link to a configured RADIUS accounting server.
server_id	RADIUS server index.
delete	Deletes a link to a configured RADIUS accounting server.
address	Configures an accounting framed IPv6 attribute to an IPv6 address.
both	Configures the accounting framed IPv6 attribute to an IPv6 address and prefix.
prefix	Configures the accounting framed IPv6 attribute to an IPv6 prefix.

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 RADIUS accounting for the WLAN 2:

```
(Cisco Controller) >config wlan radius_server acct enable 2
```

The following example shows how to add a link to a configured RADIUS accounting server:

```
(Cisco Controller) > config wlan radius_server acct add 2 5
```

config wlan radius_server acct interim-update

To configure the interim update of a RADIUS accounting server of a WLAN, use the **config wlan radius_server acct interim-update** command.

config wlan radius_server acct interim-update {**enable** | **disable** | *interval* } *wlan_id*

Syntax Description

interim-update	Configures the interim update of the RADIUS accounting server.
enable	Enables interim update of the RADIUS accounting server for the WLAN.
disable	Disables interim update of the RADIUS accounting server for the WLAN.
interval	Interim update interval that you specify. The valid range is 60 to 3600 seconds.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

Interim update of a RADIUS accounting sever is set at 600 seconds.

Command History

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

The following example shows how to specify an interim update of 200 seconds to a RADIUS accounting server of WLAN 2:

```
(Cisco Controller) >config wlan radius_server acct interim-update 200 2
```

config wlan radius_server auth

To configure RADIUS authentication servers of a WLAN, use the **config wlan radius_server auth** command.

config wlan radius_server auth {**enable** *wlan_id* | **disable** *wlan_id*} {**add** *wlan_id server_id* | **delete** *wlan_id* {**all** | *server_id*}}

Syntax Description

auth	Configures a RADIUS authentication
enable	Enables RADIUS authentication for this WLAN.
wlan_id	Wireless LAN identifier from 1 to 512.
disable	Disables RADIUS authentication for this WLAN.
add	Adds a link to a configured RADIUS server.
server_id	RADIUS server index.
delete	Deletes a link to a configured RADIUS server.
all	Deletes all links to configured RADIUS servers.

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 add a link to a configured RADIUS authentication server with WLAN ID 1 and Server ID 1:

```
(Cisco Controller) >config wlan radius_server auth add 1 1
```

config wlan radius_server overwrite-interface

To configure a wireless LAN's RADIUS dynamic interface, use the **config wlan radius_server overwrite-interface** command.

config wlan radius_server overwrite-interface {**apgroup** | **enable** | **disable** | **wlan**} *wlan_id*

Syntax Description

apgroup	Enables AP group's interface for all RADIUS traffic on the WLAN.
enable	Enables RADIUS dynamic interface for this WLAN.
disable	Disables RADIUS dynamic interface for this WLAN.
wlan	Enables WLAN's interface for all RADIUS traffic on the WLAN.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None

Command History

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

Usage Guidelines

The controller uses the management interface as identity. If the RADIUS server is on a directly connected dynamic interface, the traffic is sourced from the dynamic interface. Otherwise, the management IP address is used.

If the feature is enabled, controller uses the interface specified on the WLAN configuration as identity and source for all RADIUS related traffic on the WLAN.

The following example shows how to enable RADIUS dynamic interface for a WLAN with an ID 1:

```
(Cisco Controller) >config wlan radius_server overwrite-interface enable 1
```

config wlan roamed-voice-client re-anchor

To configure a roamed voice client's reanchor policy, use the **config wlan roamed-voice-client re-anchor** command.

config wlan roamed-voice-client re-anchor {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables the roamed client's reanchor policy.
disable	Disables the roamed client's reanchor policy.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

The roamed client reanchor policy 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 a roamed voice client's reanchor policy where WLAN ID is 1:

```
(Cisco Controller) >config wlan roamed-voice-client re-anchor enable 1
```

config wlan sip-cac disassoc-client

To enable client disassociation in case of session initiation protocol (SIP) call admission control (CAC) failure, use the **config wlan sip-cac disassoc-client** command.

config wlan sip-cac disassoc-client {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables a client disassociation on a SIP CAC failure.
disable	Disables a client disassociation on a SIP CAC failure.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

Client disassociation for SIP CAC 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 a client disassociation on a SIP CAC failure where the WLAN ID is 1:

```
(Cisco Controller) >config wlan sip-cac disassoc-client enable 1
```

config wlan sip-cac send-486busy

To configure sending session initiation protocol (SIP) 486 busy message if a SIP call admission control (CAC) failure occurs, use the **config wlan sip-cac send-486busy** command:

config wlan sip-cac send-486busy {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables sending a SIP 486 busy message upon a SIP CAC failure.
disable	Disables sending a SIP 486 busy message upon a SIP CAC failure.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

Session initiation protocol is enabled by default.

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 sending a SIP 486 busy message upon a SIP CAC failure where the WLAN ID is 1:

```
(Cisco Controller) >config wlan sip-cac send-busy486 enable 1
```

config wlan security wpa3

To configure WPA3 on a WLAN, use the **config wlan security wpa wpa3** command.

config wlan security wpa wpa3 {**enable** | **disable**} *wlan-id*

Syntax Description

enable	Enables WPA3 on a WLAN.
disable	Disables WPA3 on a WLAN.
wlan-id	Wireless LAN identifier between 1 and 512.

Command Default

None

Command History

Release	Modification
8.10	This command was introduced.

Examples

The following example shows you how to enable WPA3 on a WLAN whose ID is 4:

```
(Cisco Controller) > config wlan security wpa wpa3 enable 4
```

config wlan session-timeout

To change the timeout of wireless LAN clients, use the **config wlan session-timeout** command.

config wlan session-timeout {*wlan_id* | **foreignAp**} *seconds*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

seconds	Timeout or session duration in seconds. A value of zero is equivalent to no timeout. **Note** The range of session timeout depends on the security type: • Open system: 0-65535 (sec) • 802.1x: 300-86400 (sec) • static wep: 0-65535 (sec) • cranite: 0-65535 (sec) • fortress: 0-65535 (sec) • CKIP: 0-65535 (sec) • open+web auth: 0-65535 (sec) • web pass-thru: 0-65535 (sec) • wpa-psk: 0-65535 (sec) • disable: To disable reauth/session-timeout timers.

Command Default

None

Usage Guidelines

For 802.1X client security type, which creates the PMK cache, the maximum session timeout that can be set is 86400 seconds when the session timeout is disabled. For other client security such as open, WebAuth, and PSK for which the PMK cache is not created, the session timeout value is shown as infinite when session timeout 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 configure the client timeout to 6000 seconds for WLAN ID 1:

```
(Cisco Controller) >config wlan session-timeout 1 6000
```

config wlan user-idle-threshold

To configure the threshold data sent by the client during the idle timeout for client sessions for a WLAN, use the **config wlan user-idle-threshold** command.

config wlan user-idle-threshold *bytes wlan_id*

Syntax Description

bytes	Threshold data sent by the client during the idle timeout for the client session for a WLAN. If the client send traffic less than the defined threshold, the client is removed on timeout. The range is from 0 to 10000000 bytes.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default The default timeout for threshold data sent by client during the idle timeout is 0 bytes.

Command History

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

The following example shows how to configure the threshold data sent by the client during the idle timeout for client sessions for a WLAN:

```
(Cisco Controller) >config wlan user-idle-threshold 100 1
```

config wlan usertimeout

To configure the timeout for idle client sessions for a WLAN, use the **config wlan usertimeout** command.

config wlan usertimeout *timeout wlan_id*

Syntax Description

timeout	Timeout for idle client sessions for a WLAN. If the client sends traffic less than the threshold, the client is removed on timeout. The range is from 15 to 100000 seconds.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default The default client session idle timeout is 300 seconds.

Command History

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

Usage Guidelines The timeout value that you configure here overrides the global timeout that you define using the command **config network usertimeout**.

The following example shows how to configure the idle client sessions for a WLAN:

```
(Cisco Controller) >config wlan usertimeout 100 1
```

config wlan webauth-exclude

To release the guest user IP address when the web authentication policy time expires and exclude the guest user from acquiring an IP address for three minutes, use the **config wlan webauth-exclude** command.

config wlan webauth-exclude *wlan_id* {**enable** | **disable**}

Syntax Description

wlan_id	Wireless LAN identifier (1 to 512).
enable	Enables web authentication exclusion.
disable	Disables web authentication exclusion.

Command Default Disabled.

Command History

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

Usage Guidelines

You can use this command for guest WLANs that are configured with web authentication.

This command is applicable when you configure the internal DHCP scope on the controller.

By default, when the web authentication timer expires for a guest user, the guest user can immediately reassociate with the same IP address before another guest user can acquire the IP address. If there are many guest users or limited IP address in the DHCP pool, some guest users might not be able to acquire an IP address.

When you enable this feature on the guest WLAN, the guest user's IP address is released when the web authentication policy time expires and the guest user is excluded from acquiring an IP address for three minutes. The IP address is available for another guest user to use. After three minutes, the excluded guest user can reassociate and acquire an IP address, if available.

The following example shows how to enable the web authentication exclusion for WLAN ID 5:

```
(Cisco Controller) >config wlan webauth-exclude 5 enable
```

config wlan wmm

To configure Wi-Fi Multimedia (WMM) mode on a wireless LAN, use the **config wlan wmm** command.

config wlan wmm {**allow** | **disable** | **require**} *wlan_id*

Syntax Description

allow	Allows WMM on the wireless LAN.
disable	Disables WMM on the wireless LAN.
require	Specifies that clients use WMM on the specified wireless LAN.
wlan_id	Wireless LAN identifier (1 to 512).

Command Default

None

Command History

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

Usage Guidelines

When the controller is in Layer 2 mode and WMM is enabled, you must put the access points on a trunk port in order to allow them to join the controller.

The following example shows how to configure wireless LAN ID 1 to allow WMM:

```
(Cisco Controller) >config wlan wmm allow 1
```

The following example shows how to configure wireless LAN ID 1 to specify that clients use WMM:

```
(Cisco Controller) >config wlan wmm require 1
```

Configure Wireless LAN HotSpot Commands

Use the **config wlan hotspot** commands to configure HotSpot and 802.11u parameters on a WLAN.

config wlan hotspot

To configure a HotSpot on a WLAN, use the **config wlan hotspot** command.

config wlan hotspot {**clear-all** *wlan_id* | **dot11u** | **hs2** | **msap**}

Syntax Description

clear-all	Clears the HotSpot configurations on a WLAN.
wlan_id	Wireless LAN identifier from 1 to 512.
dot11u	Configures an 802.11u HotSpot on a WLAN.
hs2	Configures HotSpot2 on a WLAN.
msap	Configures the Mobility Services Advertisement Protocol (MSAP) on a WLAN.

Command Default

None

Command History

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

Usage Guidelines

You can configure up to 32 HotSpot WLANs.

The following example shows how to configure HotSpot2 for a WLAN:

```
(Cisco Controller) >config wlan hotspot hs2 enable 2
```

config wlan hotspot dot11u

To configure an 802.11u HotSpot on a WLAN, use the **config wlan hotspot dot11u** command.

config wlan hotspot dot11u {**3gpp-info** | **auth-type** | **enable** | **disable** | **domain** | **hessid** | **ipaddr-type** | **nai-realm** | **network-type** | **roam-oi**}

Syntax Description

3gpp-info	Configures 3GPP cellular network information.
auth-type	Configures the network authentication type.
disable	Disables 802.11u on the HotSpot profile.
domain	Configures a domain.
enable	Enables 802.11u on the HotSpot profile. IEEE 802.11u enables automatic WLAN offload for 802.1X devices at the HotSpot of mobile or roaming partners.

hessid	Configures the Homogenous Extended Service Set Identifier (HESSID). The HESSID is a 6-octet MAC address that uniquely identifies the network.
ipaddr-type	Configures the IPv4 address availability type.
nai-realm	Configures a realm for 802.11u enabled WLANs.
network-type	Configures the 802.11u network type and Internet access.
roam-oi	Configures the roaming consortium Organizational Identifier (OI) list.

Command Default

None.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports only IPv4 address format.

The following example shows how to enable 802.11u on a HotSpot profile:

```
(Cisco Controller) >config wlan hotspot dot11u enable 6
```

config wlan hotspot dot11u ipaddr-type

To configure the type of IP address available on an 802.11u HotSpot WLAN, use the **config wlan hotspot dot11u ipaddr-type** command.

config wlan hotspot dot11u ipaddr-type *IPv4Type* {*0 - 7*} *IPv6Type* {*0 - 2*} *wlan_id*

Syntax Description

IPv4Type	IPv4 type address. Enter one of the following values: 0—IPv4 address not available. 1—Public IPv4 address available. 2—Port restricted IPv4 address available. 3—Single NAT enabled private IPv4 address available. 4—Double NAT enabled private IPv4 address available. 5—Port restricted IPv4 address and single NAT enabled IPv4 address available. 6—Port restricted IPv4 address and double NAT enabled IPv4 address available. 7— Availability of the IPv4 address is not known.
IPv6Type	IPv6 type address. Enter one of the following values: 0—IPv6 address not available. 1—IPv6 address available. 2—Availability of the IPv6 address is not known.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default The default values for IPv4 type address is 1.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports only IPv4 address format.

The following example shows how to configure the IP address availability type on an 802.11u HotSpot WLAN:

```
(Cisco Controller) >config wlan hotspot dot11u ipaddr-type 6 2 6
```

Related Commands **show wlan**

config wlan hotspot dot11u 3gpp-info

To configure 3GPP cellular network information on an 802.11u HotSpot WLAN, use the **config wlan hotspot dot11u 3gpp-info** command.

config wlan hotspot dot11u 3gpp-info {**add** | **delete**} *index country_code network_code wlan_id*

Syntax Description

add	Adds mobile cellular network information.
delete	Deletes mobile cellular network information.
index	Cellular index. The range is from 1 to 32.
country_code	Mobile Country Code (MCC) in Binary Coded Decimal (BCD) format. The country code can be up to 3 characters. For example, the MCC for USA is 310.
network_code	Mobile Network Code (MNC) in BCD format. An MNC is used in combination with a Mobile Country Code (MCC) to uniquely identify a mobile phone operator or carrier. The network code can be up to 3 characters. For example, the MNC for T- Mobile is 026.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default None

Command History

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

Usage Guidelines Number of mobile network codes supported is 32 per WLAN.

The following example shows how to configure 3GPP cellular network information on a WLAN:

```
(Cisco Controller) >config wlan hotspot dot11u 3gpp-info add
```

config wlan hotspot dot11u auth-type

To configure the network authentication type on an 802.11u HotSpot WLAN, use the **config wlan hotspot dot11u auth-type** command.

config wlan hotspot dot11u auth-type *network-auth wlan_id*

Syntax Description

network-auth	Network authentication that you would like to configure on the WLAN. The available values are as follows: • 0—Acceptance of terms and conditions • 1—On-line enrollment • 2—HTTP/HTTPS redirection • 3—DNS Redirection • 4—Not Applicable
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None

Command History

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

Usage Guidelines

The DNS redirection option is not supported in Release 7.3.

The following example shows how to configure HTTP/HTTPS redirection as the network authentication type on an 802.11u HotSpot WLAN:

```
(Cisco Controller) >config wlan hotspot dot11u auth-type 2 1
```

config wlan hotspot dot11u disable

To disable an 802.11u HotSpot on a WLAN, use the **config wlan hotspot dot11u disable** command.

config wlan hotspot dot11u disable *wlan_id*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.

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 disable an 802.11u HotSpot on a WLAN:

```
(Cisco Controller) >config wlan hotspot dot11u disable 6
```

config wlan hotspot dot11u domain

To configure a domain operating in the 802.11 access network, use the **config wlan hotspot dot11u domain** command.

config wlan hotspot dot11u domain {**add** *wlan_id domain-index domain_name* | **delete** *wlan_id domain-index* | **modify** *wlan_id domain-index domain_name*}

Syntax Description

add	Adds a domain.
wlan_id	Wireless LAN identifier between 1 and 512.
domain-index	Domain index in the range 1 to 32.
domain_name	Domain name. The domain name is case sensitive and can be up to 255 alphanumeric characters.
delete	Deletes a domain.
modify	Modifies a domain.

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 add a domain in the 802.11 access network:

```
(Cisco Controller) >config wlan hotspot dot11u domain add 6 30 domain1
```

config wlan hotspot dot11u enable

To enable an 802.11u HotSpot on a WLAN, use the **config wlan hotspot dot11u enable** command.

config wlan hotspot dot11u enable *wlan_id*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.

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 an 802.11u HotSpot on a WLAN:

```
(Cisco Controller) >config wlan hotspot dot11u enable 6
```

config wlan hotspot dot11u hessid

To configure a Homogenous Extended Service Set Identifier (HESSID) on an 802.11u HotSpot WLAN, use the **config wlan hotspot dot11u hessid** command.

config wlan hotspot dot11u hessid *hessid wlan_id*

Syntax Description

hessid	MAC address that can be configured as an HESSID. The HESSID is a 6-octet MAC address that uniquely identifies the network. For example, Basic Service Set Identification (BSSID) of the WLAN can be used as the HESSID.
wlan_id	Wireless LAN identifier between 1 and 512.

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 configure an HESSID on an 802.11u HotSpot WLAN:

```
(Cisco Controller) >config wlan hotspot dot11u hessid 00:21:1b:ea:36:60 6
```

config wlan hotspot dot11u nai-realm

To configure realms for an 802.11u HotSpot WLANs, use the **config wlan hotspot dot11u nai-realm** command.

config wlan hotspot dot11u nai-realm {**add** | **delete** | **modify**} {**auth-method** *wlan_id realm-index eap-index auth-index auth-method auth-parameter* | **eap-method** *wlan_id realm-index eap-index eap-method* | **realm-name** *wlan_id realm-index realm*}

Syntax Description

add	Adds a realm.
delete	Deletes a realm.
modify	Modifies a realm.
auth-method	Specifies the authentication method used.
wlan_id	Wireless LAN identifier from 1 to 512.
realm-index	Realm index. The range is from 1 to 32.
eap-index	EAP index. The range is from 1 to 4.
auth-index	Authentication index value. The range is from 1 to 10.

auth-method	Authentication method to be used. The range is from 1 to 4. The following options are available: • 1—Non-EAP Inner Auth Method • 2—Inner Auth Type • 3—Credential Type • 4—Tunneled EAP Method Credential Type
auth-parameter	Authentication parameter to use. This value depends on the authentication method used. See the following table for more details.
eap-method	Specifies the Extensible Authentication Protocol (EAP) method used.
eap-method	EAP Method. The range is from 0 to 7. The following options are available: • 0—Not Applicable • 1—Lightweight Extensible Authentication Protocol (LEAP) • 2—Protected EAP (PEAP) • 3—EAP-Transport Layer Security (EAP-TLS) • 4—EAP-FAST (Flexible Authentication via Secure Tunneling) • 5—EAP for GSM Subscriber Identity Module (EAP-SIM) • 6—EAP-Tunneled Transport Layer Security (EAP-TTLS) • 7—EAP for UMTS Authentication and Key Agreement (EAP-AKA)
realm-name	Specifies the name of the realm.
realm	Name of the realm. The realm name should be RFC 4282 compliant. For example, Cisco. The realm name is case-sensitive and can be up to 255 alphanumeric characters.

Command Default

None

Command History

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

Usage Guidelines

This table lists the authentication parameters.

Table 5: Authentication Parameters

Non-EAP Inner Method(1)	Inner Authentication EAP Method Type(2)	Credential Type(3)/Tunneled EAP Credential Type(4)
0—Reserved 1—Password authentication protocol (PAP) 2—Challenge-Handshake Authentication Protocol (CHAP) 3—Microsoft Challenge Handshake Authentication Protocol (MS-CHAP) 4—MSCHAPV2	1—LEAP 2—PEAP 3—EAP-TLS 4—EAP-FAST 5—EAP-SIM 6—EAP-TTLS 7—EAP-AKA	1—SIM 2—USIM 3—NFC Secure Element 4—Hardware Token 5—Soft Token 6—Certificate 7—Username/Password 8—Reserver 9—Anonymous 10—Vendor Specific

The following example shows how to add the Tunneled EAP Method Credential authentication method on WLAN 4:

```
(Cisco Controller) >config wlan hotspot dot11u nai-realm add auth-method 4 10 3 5 4 6
```

config wlan hotspot dot11u network-type

To configure the network type and internet availability on an 802.11u HotSpot WLAN, use the **config wlan hotspot dot11u network-type** command.

config wlan hotspot dot11u network-type *wlan_id network-type internet-access*

Syntax Description

wlan_id	Wireless LAN identifier from 1 to 512.
network-type	Network type. The available options are as follows: • 0—Private Network • 1—Private Network with Guest Access • 2—Chargeable Public Network • 3—Free Public Network • 4—Personal Device Network • 5—Emergency Services Only Network • 14—Test or Experimental • 15—Wildcard

internet-access	Internet availability status. A value of zero indicates no Internet availability and 1 indicates Internet availability.

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 configure the network type and Internet availability on an 802.11u HotSpot WLAN:

```
(Cisco Controller) >config wlan hotspot dot11u network-type 2 1
```

config wlan hotspot dot11u roam-oi

To configure a roaming consortium Organizational Identifier (OI) list on a 802.11u HotSpot WLAN, use the **config wlan hotspot dot11u roam-oi** command.

config wlan hotspot dot11u roam-oi {**add** *wlan_id oi-index oi is-beacon* | **modify** *wlan_id oi-index oi is-beacon* | **delete** *wlan_id oi-index*}

Syntax Description

add	Adds an OI.
wlan-id	Wireless LAN identifier from 1 to 512.
oi-index	Index in the range 1 to 32.
oi	Number that must be a valid 6 digit hexadecimal number and 6 bytes in length. For example, 004096 or AABBDF.
is-beacon	Beacon flag used to add an OI to the beacon. 0 indicates disable and 1 indicates enable. You can add a maximum of 3 OIs for a WLAN with this flag set.
modify	Modifies an OI.
delete	Deletes an OI.

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 configure the roaming consortium OI list:

```
(Cisco Controller) >config wlan hotspot dot11u roam-oi add 4 10 004096 1
```

config wlan hotspot hs2

To configure the HotSpot2 parameters, use the **config wlan hotspot hs2** command.

config wlan hotspot hs2 {**disable** *wlan_id* | **enable** *wlan_id* | **operator-name** {**add** *wlan_id index operator_name language-code* | **delete** *wlan_id index* | **modify** *wlan_id index operator-name language-code*} | **port-config** {**add** *wlan_id port_config_index ip-protocol port-number status* | **delete** *wlan_id port-config-index* | **modify** *wlan_id port-config-index ip-protocol port-number status*} | **wan-metrics** *wlan_id link-status symet-link downlink-speed uplink-speed* }

Syntax Description

disable	Disables HotSpot2.
wlan-id	Wireless LAN identifier from 1 to 512.
enable	Enables HotSpot2.
operator-name	Specifies the name of the 802.11 operator.
add	Adds the operator name, port configuration, or WAN metrics parameters to the WLAN configuration.
index	Index of the operator. The range is from 1 to 32.
operator-name	Name of the operator.
language-code	Language used. An ISO-14962-1997 encoded string that defin language. This string is a three character language code. Ente first three letters of the language in English. For example, eng English.
delete	Deletes the operator name, port configuration, or WAN metri parameters from the WLAN.
modify	Modifies the operator name, port configuration, or WAN met parameters of the WLAN.
port-config	Configures the port configuration values.
port_config_index	Port configuration index. The range is from 1 to 32. The defa value is 1.
ip-protocol	Protocol to use. This parameter provides information on the connection status of the most commonly used communication protocols and ports. The following options are available: 1—ICMP 6—FTP/SSH/TLS/PPTP-VPN/VoIP 17—IKEv2 (IPSec-VPN/VoIP/ESP) 50—ESP (IPSec-VPN)

port-number	Port number. The following options are available: 0—ICMP/ESP (IPSec-VPN) 20—FTP 22—SSH 443—TLS-VPN 500—IKEv2 1723—PPTP-VPN 4500—IKEv2 5060—VoIP
status	Status of the IP port. The following options are available: 0—Closed 1—Open 2—Unknown
wan-metrics	Configures the WAN metrics.
link-status	Link status. The following options are available: • 0—Unknown • 1—Link up • 2—Link down • 3—Link in test state
symet-link	Symmetric link status. The following options are available: • 0—Link speed is different for uplink and downlink. For example: ADSL • 1—Link speed is the same for uplink and downlink. For example: DS1
downlink-speed	Downlink speed of the WAN backhaul link in kbps. Maximum valu is 4,194,304 kbps.
uplink-speed	Uplink speed of the WAN backhaul link in kbps. The maximum value is 4,194,304 kbps.

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 configure the WAN metrics parameters:

```
(Cisco Controller) >config wlan hotspot hs2 wan-metrics add 345 1 0 3333
```

config wlan hotspot msap

To configure the Mobility Service Advertisement Protocol (MSAP) parameters on a WLAN, use the **config wlan hotspot msap** command.

config wlan hotspot msap {**enable** | **disable** | **server-id** *server_id*} *wlan_id*

Syntax Description

enable	Enables MSAP on the WLAN.
disable	Disables MSAP on the WLAN.
server-id	Specifies the MSAP server id.
server_id	MSAP server ID. The range is from 1 to 10.
wlan_id	Wireless LAN identifier from 1 to 512.

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 MSAP on a WLAN:

```
(Cisco Controller) >config wlan hotspot msap enable 4
```

Configure Wireless LAN Mobile Concierge Commands

Use the **config wlan mobile-concierge** commands to enable 802.11u on a WLAN and configure the 802.11u parameters.

config wlan mobile-concierge dot11u

To enable or disable 802.11u on a WLAN, use the **config wlan mobile-concierge dot11u** command.

config wlan mobile-concierge dot11u {**3gpp-info** {**add** *index country_code network_code wlan_id* | **delete** *index wlan_id*} | **disable** *wlan_id* **domain** {**add** *wlan_id domain-index domain-name* | **delete** *wlan_id* | **modify** *wlan_id domain-index domain-name*} **enable** *wlan_id* **hessid ip-addr-type** {**add** *ipv4_type ipv6_type wlan_id* | **delete** *wlan_id* | **net-auth-type** *network_auth_type_value wlan_id* **oui** {**add** *wlan_id* | **delete** *wlan_id* | **modify** *wlan_id oui-index oui-name is-beacon* | **params** *wlan_id network-type internet-bit* **realm** {**add** | **delete** | **modify**}}

Syntax Description

3gpp-info	Configures 3GPP cellular information on the network.
add	Adds mobile cellular network information.
index	3GPP index in the range 1 to 32.
country_code	Mobile country code (BCD format).
network_code	Mobile network code (BCD format).
wlan_id	WLAN id.
delete	Deletes mobile cellular network information.
disable	Disables 802.11u.
domain	Configures a domain.
add	Adds a domain.
delete	Deletes a domain.
modify	Modifies a domain.
domain-index	Domain index in the range 1 to 32.
domain-name	Domain name.
enable	Enables 802.11u.
hessid	Configures HESSID
ip-addr-type	Configures IP address availability type.
add	Adds IP address available type information.

ipv4_type	IPv4 type address. Enter one of the following values: 0—IPv4 address not available 1—Public IPv4 address available 2—Port-restricted IPv4 address available 3—Single NAT enabled private IPv4 address available 4—Double NAT enabled private IPv4 address available 5—Port-restricted IPv4 address and single NAT enabled IPv4 address available 6—Port-restricted IPv4 address and double NAT enabled IPv4 address available 7— Availability of the IPv4 address is not known
ipv6_type	IPv6 type address. Enter one of the following values: 0—IPv6 address not available 1—IPv6 address available 2—Availability of the IPv6 address is not known
delete	Deletes the IP address available type information.
net-auth-type	Configures the Network authentication type.
network-auth-type-value	Network authentication that you would like to configure for this WLAN. Enter one of the following values: 0—Acceptance of terms and conditions 1—On-line enrollment 2—HTTP/HTTPS redirection
oui	Configures the Organizational Unique Identifier (OUI).
add	Adds an OUI.
delete	Deletes an OUI.
modify	Modifies an OUI.
oui-index	OUI index in the range 1–32.
oui-name	OUI name. The OUI must be a valid 6 digit number.
is-beacon	OUI presence that should contain the beacon. Valid values are 0 (disable) and 1 (enable).
params	Configures 802.11u parameters.

network-type	Network type. Enter one of the following values: 0—Private Network 1—Private Network with Guest Access 2—Chargeable Public Network 3—Free Public Network 4—Personal Device Network 5—Emergency Services Only Network 14—Test or Experimental 15—Wildcard
internet-bit	If Internet is available. Valid values are 0 (no) and 1 (yes).
realm	Configures the realm.

Command Default None.

This example shows how to configure client management frame protection for WLAN ID 1:

```
> config wlan mobile-concierge dot11u enable 1
```

Related Commands

config wlan mobile-concierge dot11u realm

config wlan mobile-concierge hotspot2

config wlan mobile-concierge msap

config wlan mobile-concierge dot11u realm

To configure realms for your 802.11u enabled WLANs, use the **config wlan mobile-concierge dot11u realm** command.

config wlan mobile-concierge dot11u realm {**add** | **delete** | **modify**} {**auth-method** *wlan_id realm-index eap-index auth-index auth-method auth-parameter* | **eap-method** *wlan_id realm-index eap-index eap-method* | **realm-name** *wlan_id realm-index realm*}

Syntax Description

add	Adds a realm.
delete	Deletes a realm.
modify	Modifies a realm.
auth-method	Specifies the authentication method used.
eap-method	Specifies the EAP method used.
realm-name	Specifies the name of the realm to add, delete, or modify.

wlan_id	WLAN ID.
realm-index	Realm index. The range is 1-32
eap-index	EAP index. The range is 1-4.
auth-index	Authentication index value. The range is 1-10.
auth-method	Authentication method to be used. The range is 1-4. The following options are available: 1—Non-Eap Inner Auth Method 2—Inner Auth Type 3—Credential Type 4—Tunneled EAP Method Credential Type
auth-parameter	Authentication parameter to use. This value depends on the auth-method used.

Command Default None.

This example shows how to add a new realm with EAP-Method and inner authentication type as EAP-TLS for WLAN ID 3:

```
> config wlan mobile-concierge dot11u realm add eap-method 3 22 2 3
```

Related Commands

config wlan mobile-concierge dot11u

config wlan mobile-concierge hotspot2

config wlan mobile-concierge msap

config wlan mobile-concierge hotspot2

To configure the hotspot2 parameters, use the **config wlan mobile-concierge hotspot2** command.

config wlan mobile-concierge hotspot2 {**disable** | **enable** | **operator-name** {**add** *wlan_id index operator_name language-code* | **delete** *wlan_id index-name* | **modify** *wlan_id index operator-name language-code*} | **port-config** {**add** *wlan_id index ip-protocol port-number status* | **delete** *wlan_id port-config-index* | **modify** *wlan_id port-config-index ip-protocol port-number status*} | **wan-metrics** {**add** *wlan_id link-status symet-link downlink-speed uplink-speed* | **delete** *wlan_id*}}

Syntax Description

disable	Disables HotSpot2.
enable	Enables HotSpot2.
operator-name	Specifies the name of the 802.11an operator.
add	Adds the operator-name, port-config, or wan-metrics parameters on the WLAN.

wlan-id	WLAN identifier.
index	Index of the operator. The range is 1-32.
operator-name	Name of the operator.
language-code	Language used. An ISO-14962-1997 encoded string that defines the language. This string is a three character language code. Enter the first three letters of the language in English (for example, eng for English).
delete	Deletes the operator-name, port-config, or wan-metrics parameters on the WLAN.
modify	Modifies the operator-name, port-config, or wan-metrics parameters on the WLAN.
port-config	Configures the port configuration values.
ip-protocol	Protocol to use. The following options are available: 1—ICMP 6—FTP/SSH/TLS/PPTP-VPN/VoIP 17—IKEv2 (IPSec-VPN/VoIP/ESP) 50—ESP (IPSec-VPN)
port-number	Port number. The following options are available: 0—ICMP/ESP (IPSec-VPN) 20—FTP 22—SSH 443—TLS-VPN 500—IKEv2 1723—PPTP-VPN 4500—IKEv2 5060—VoIP
status	Sets the status. The following options are available: 0—Closed 1—Open 2—Unknown
port-config-index	Port config index. The range is 1–10.
wan-metrics	Configures the WAN metrics.

link-status	Link status. The following options are available: • Link up • Link down • Link in test state
symet-link	Specifies the symmetric link status. The following options are available: • 0—link speed is different for the uplink and downlink. For example: ADSL • 1—link speed for the same in uplink and downlink. For example: DS1
downlink-speed	Speed of the WAN backhaul link in kbps. Maximum value is 4,194,304 kbps.
uplink-speed	Speed of the WAN backhaul link in kbps. The maximum value is 4,194,304 kbps.

This example shows how to configure the WAN metrics parameters:

```
> config wlan mobile-concierge hotspot2 wan-metrics add 345 1 0 3333
```

Related Commands

config wlan mobile-concierge dot11u

config wlan mobile-concierge msap

config wlan mobile-concierge msap

To configure the Mobility Service Advertisment Protocol (MSAP) parameters on a WLAN, use the **config wlan mobile-concierge msap** command.

config wlan mobile-concierge msap {**enable** | **disable** | **server-id** *server-id*} *wlan-id*

Syntax Description

enable	Enables MSAP on the WLAN.
disable	Disables MSAP on the WLAN.
server-id	Server ID to assign.
wlan-id	WLAN identifier.

Command Default

None.

This example show how to configure an MSAP server ID for WLAN 331.

```
> config wlan mobile-concierge msap server-id 32 331
```

Related Commands

config wlan mobile-concierge dot11u

config wlan mobile-concierge hotspot2

Configure Wireless LAN Proxy Mobility IPv6 (PMIPv6) Commands

Use the **config wlan pmipv6** commands to configure PMIPv6 on WLANs.

config wlan pmipv6 default-realm

To configure a default realm for a PMIPv6 WLAN, use the **config wlan pmipv6 default-realm** command.

config wlan pmipv6 default-realm { *default-realm-name* | **none** } *wlan_id*

Syntax Description

default-realm-name	Default realm name for the WLAN.
none	Clears the realm name for the WLAN.
wlan_id	Wireless LAN identifier between 1 and 512.

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 configure a default realm name on a PMIPv6 WLAN:

```
(Cisco Controller) >config wlan pmipv6 default-realm XYZ 6
```

config wlan pmipv6 mobility-type

To configure the mobility type on a WLAN, use the **config wlan pmipv6 mobility-type** command.

config wlan pmipv6 mobility-type {**none** | **pmipv6** } { *wlan_id* | **all** }

Syntax Description

none	Configures a WLAN with Simple IP mobility.
pmipv6	Configures a WLAN with PMIPv6 mobility.
all	Enables the specified type of mobility for all WLANs.
wlan_id	WLAN identifier between 1 and 512.

Command Default

None

Command History

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

Usage Guidelines You must disable the WLAN when you configure the mobility type.

The following example shows how to configure the mobility type as PMIPv6 on a WLAN:

```
(Cisco Controller) >config wlan pmipv6 mobility-type pmipv6 16
```

config wlan pmipv6 profile_name

To configure a profile name for the PMIPv6 WLAN, use the **config wlan pmipv6 profile_name** command.

config wlan pmipv6 profile_name *profile_name wlan_id*

Syntax Description

profile_name	Profile name for the PMIPv6 WLAN.
wlan_id	Wireless LAN identifier from 1 to 512.

Command Default None

Command History

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

Usage Guidelines This command binds a profile name to the PMIPv6 WLAN or SSID. Each time that a mobile node associates with the controller, it uses the profile name and NAI in the trigger to the PMIPV6 module. The PMIPV6 module extracts all the profile specific parameters such as LMA IP, APN, and NAI and sends the PBU to the ASR5K.

The following example shows how to create a profile named ABC01 on a PMIPv6 WLAN:

```
(Cisco Controller) >config wlan pmipv6 profile_name ABC01 16
```

Configure WPS Commands

Use the **config wps** commands to configure Wireless Protection System (WPS) settings.

config wps ap-authentication

To configure access point neighbor authentication, use the **config wps ap-authentication** command.

config wps ap-authentication [**enable** | **disable threshold** *threshold_value*]

Syntax Description

enable	(Optional) Enables WMM on the wireless LAN.
disable	(Optional) Disables WMM on the wireless LAN.
threshold	(Optional) Specifies that WMM-enabled clients are on the wireless LAN.
threshold_value	Threshold value (1 to 255).

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 configure the access point neighbor authentication:

```
(Cisco Controller) > config wps ap-authentication threshold 25
```

Related Commands **show wps ap-authentication summary**

config wps auto-immune

To enable or disable protection from Denial of Service (DoS) attacks, use the **config wps auto-immune** command.

config wps auto-immune {**enable** | **disable** | **stop**}

Syntax Description

enable	Enables the auto-immune feature.
disable	Disables the auto-immune feature.
stop	Stops dynamic auto-immune feature.

Command Default Disabled

Command History

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

Usage Guidelines

A potential attacker can use specially crafted packets to mislead the Intrusion Detection System (IDS) into treating a legitimate client as an attacker. It causes the controller to disconnect this legitimate client and launch a DoS attack. The auto-immune feature, when enabled, is designed to protect against such attacks. However, conversations using Cisco 792x phones might be interrupted intermittently when the auto-immune feature is enabled. If you experience frequent disruptions when using 792x phones, you might want to disable this feature.

The following example shows how to configure the auto-immune mode:

```
(Cisco Controller) > config wps auto-immune enable
```

The following example shows how to stop the auto-immune mode:

```
(Cisco Controller) > config wps auto-immune stop
Dynamic Auto Immune by WIPS is stopped
```

Related Commands

show wps summary

config wps cids-sensor

To configure Intrusion Detection System (IDS) sensors for the Wireless Protection System (WPS), use the **config wps cids-sensor** command.

config wps cids-sensor { [**add** *index ip_address username password*] | [**delete** *index*] | [**enable** *index*] | [**disable** *index*] | [**port** *index port*] | [**interval** *index query_interval*] | [**fingerprint sha1** *fingerprint*] }

Syntax Description

add	(Optional) Configures a new IDS sensor.
index	IDS sensor internal index.
ip_address	IDS sensor IP address.
username	IDS sensor username.
password	IDS sensor password.
delete	(Optional) Deletes an IDS sensor.
enable	(Optional) Enables an IDS sensor.
disable	(Optional) Disables an IDS sensor.
port	(Optional) Configures the IDS sensor's port number.

port	Port number.
interval	(Optional) Specifies the IDS sensor's query interval.
query_interval	Query interval setting.
fingerprint	(Optional) Specifies the IDS sensor's TLS fingerprint.
sha1	(Optional) Specifies the TLS fingerprint.
fingerprint	TLS fingerprint.

Command Default

Command defaults are listed below as follows:

Port	443
Query interval	60
Certification fingerprint	00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
Query state	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 configure the intrusion detection system with the IDS index 1, IDS sensor IP address 10.0.0.51, IDS username Sensor_user0doc1, and IDS password passowrd01:

```
(Cisco Controller) > config wps cids-sensor add 1 10.0.0.51 Sensor_user0doc1 password01
```

Related Commands

show wps cids-sensor detail

config wps client-exclusion

To configure client exclusion policies, use the **config wps client-exclusion** command.

config wps client-exclusion {**802.11-assoc** | **802.11-auth** | **802.11x-auth** | **ip-theft** | **web-auth** | **all**} {**enable** | **disable**}

Syntax Description

802.11-assoc	Specifies that the controller excludes clients on the sixth 802.11 association attempt, after five consecutive failures.
802.11-auth	Specifies that the controller excludes clients on the sixth 802.11 authentication attempt, after five consecutive failures.

802.1x-auth	Specifies that the controller excludes clients on the sixth 802.11X authentication attempt, after five consecutive failures.
ip-theft	Specifies that the control excludes clients if the IP address is already assigned to another device.
web-auth	Specifies that the controller excludes clients on the fourth web authentication attempt, after three consecutive failures.
all	Specifies that the controller excludes clients for all of the above reasons.
enable	Enables client exclusion policies.
disable	Disables client exclusion policies.

Command Default

All policies are 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 disable clients on the 802.11 association attempt after five consecutive failures:

```
(Cisco Controller) > config wps client-exclusion 802.11-assoc disable
```

Related Commands

show wps summary

config wps client-exclusion 802.1x-auth

To configure client exclusion policies, use the **config wps client-exclusion 802.1x-auth** command.

config wps client-exclusion 802.11x-auth {**enable** | **disable** | **max-1x-aaa-fail-attempts**}

Syntax Description

802.1x-auth	Specifies that the controller excludes clients on the fourth 802.11X authentication attempt, after five three failures.
enable	Enables client exclusion policies.
disable	Disables client exclusion policies.

max-1x-aaa-fail-attempts	Specifies the controller to exclude clients that reaches the maximum failure 802.1X authentication attempt with the RADIUS server. The maximum failure 802.1X authentication attempt is from 1 to 3 and the default value is 3.

Command Default All policies are 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 disable clients on the 802.11 association attempt after five consecutive failures:

```
(Cisco Controller) > config wps client-exclusion 802.1x-auth max-1x-aaa-fail-attempts 2
```

Related Commands **show wps summary**

config wps mfp

To configure Management Frame Protection (MFP), use the **config wps mfp** command.

config wps mfp {**infrastructure** | **ap-impersonation**} {**enable** | **disable**}

Syntax Description

infrastructure	Configures the MFP infrastructure.
ap-impersonation	Configures ap impersonation detection by MFP.
enable	Enables the MFP feature.
disable	Disables the MFP feature.

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 infrastructure MFP:

```
(Cisco Controller) > config wps mfp infrastructure enable
```

Related Commands **show wps mfp**

config wps shun-list re-sync

To force the controller to synchronization with other controllers in the mobility group for the shun list, use the **config wps shun-list re-sync** command.

config wps shun-list re-sync

Syntax Description

This command has no arguments or keywords.

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 configure the controller to synchronize with other controllers for the shun list:

```
(Cisco Controller) > config wps shun-list re-sync
```

Related Commands

show wps shun-list

config wps signature

To enable or disable Intrusion Detection System (IDS) signature processing, or to enable or disable a specific IDS signature, use the **config wps signature** command.

config wps signature {**standard** | **custom**} **state** *signature_id* {**enable** | **disable**}

Syntax Description

standard	Configures a standard IDS signature.
custom	Configures a standard IDS signature.
state	Specifies the state of the IDS signature.
signature_id	Identifier for the signature to be enabled or disabled.
enable	Enables the IDS signature processing or a specific IDS signature.
disable	Disables IDS signature processing or a specific IDS signature.

Command Default

IDS signature processing is enabled by default.

Command History

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

Usage Guidelines

If IDS signature processing is disabled, all signatures are disabled, regardless of the state configured for individual signatures.

The following example shows how to enable IDS signature processing, which enables the processing of all IDS signatures:

```
(Cisco Controller) >config wps signature enable
```

The following example shows how to disable a standard individual IDS signature:

```
(Cisco Controller) > config wps signature standard state 15 disable
```

Related Commands

config wps signature frequency

config wps signature interval

config wps signature mac-frequency

config wps signature quiet-time

config wps signature reset

show wps signature events

show wps signature summary

show wps summary

config wps signature frequency

To specify the number of matching packets per interval that must be identified at the individual access point level before an attack is detected, use the **config wps signature frequency** command.

config wps signature frequency *signature_id frequency*

Syntax Description

signature_id	Identifier for the signature to be configured.
frequency	Number of matching packets per interval that must be at the individual access point level before an attack is detected. The range is 1 to 32,000 packets per interval.

Command Default

The *frequency* default value varies per signature.

Command History

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

Usage Guidelines

If IDS signature processing is disabled, all signatures are disabled, regardless of the state configured for individual signatures.

The following example shows how to set the number of matching packets per interval per access point before an attack is detected to 1800 for signature ID 4:

```
(Cisco Controller) > config wps signature frequency 4 1800
```

Related Commands

config wps signature frequency

config wps signature interval

config wps signature quiet-time

config wps signature reset

show wps signature events

show wps signature summary

show wps summary

config wps signature interval

To specify the number of seconds that must elapse before the signature frequency threshold is reached within the configured interval, use the **config wps signature interval** command.

config wps signature interval *signature_id interval*

Syntax Description

signature_id	Identifier for the signature to be configured.
interval	Number of seconds that must elapse before the signature frequency threshold is reached. The range is 1 to 3,600 seconds.

Command Default

The default value of *interval* varies per signature.

Command History

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

Usage Guidelines

If IDS signature processing is disabled, all signatures are disabled, regardless of the state configured for individual signatures.

The following example shows how to set the number of seconds to elapse before reaching the signature frequency threshold to 200 for signature ID 1:

```
(Cisco Controller) > config wps signature interval 1 200
```

Related Commands

config wps signature frequency

config wps signature

config wps signature mac-frequency

config wps signature quiet-time

config wps signature reset

show wps signature events

show wps signature summary

show wps summary

config wps signature mac-frequency

To specify the number of matching packets per interval that must be identified per client per access point before an attack is detected, use the **config wps signature mac-frequency** command.

config wps signature mac-frequency *signature_id mac_frequency*

Syntax Description

signature_id	Identifier for the signature to be configured.
mac_frequency	Number of matching packets per interval that must be identified per client per access point before an attack is detected. The range is 1 to 32,000 packets per interval.

Command Default

The *mac_frequency* default value varies per signature.

Command History

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

Usage Guidelines

If IDS signature processing is disabled, all signatures are disabled, regardless of the state configured for individual signatures.

The following example shows how to set the number of matching packets per interval per client before an attack is detected to 50 for signature ID 3:

```
(Cisco Controller) > config wps signature mac-frequency 3 50
```

Related Commands

config wps signature frequency

config wps signature interval

config wps signature

config wps signature quiet-time

config wps signature reset

show wps signature events

show wps signature summary

show wps summary

config wps signature quiet-time

To specify the length of time after which no attacks have been detected at the individual access point level and the alarm can stop, use the **config wps signature quiet-time** command.

config wps signature quiet-time *signature_id quiet_time*

Syntax Description

signature_id	Identifier for the signature to be configured.
quiet_time	Length of time after which no attacks have been detected at the individual access point level and the alarm can stop. The range is 60 to 32,000 seconds.

Command Default

The default value of *quiet_time* varies per signature.

Command History

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

Usage Guidelines

If IDS signature processing is disabled, all signatures are disabled, regardless of the state configured for individual signatures.

The following example shows how to set the number of seconds after which no attacks have been detected per access point to 60 for signature ID 1:

```
(Cisco Controller) > config wps signature quiet-time 1 60
```

Related Commands

config wps signature

config wps signature frequency

config wps signature interval

config wps signature mac-frequency

config wps signature reset

show wps signature events

show wps signature summary

show wps summary

config wps signature reset

To reset a specific Intrusion Detection System (IDS) signature or all IDS signatures to default values, use the **config wps signature reset** command.

config wps signature reset {*signature_id* | **all**}

Syntax Description

signature_id	Identifier for the specific IDS signature to be reset.

all	Resets all IDS signatures.

Command Default

None

Command History

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

Usage Guidelines

If IDS signature processing is disabled, all signatures are disabled, regardless of the state configured for individual signatures.

The following example shows how to reset the IDS signature 1 to default values:

```
(Cisco Controller) > config wps signature reset 1
```

Related Commands

config wps signature

config wps signature frequency

config wps signature interval

config wps signature mac-frequency

config wps signature quiet-time

show wps signature events

show wps signature summary

show wps summary

Other Config Commands

This section lists the other **config** commands to configure the controller settings.

config aaa auth

To configure the AAA authentication search order for management users, use the **config aaa auth** command.

config aaa auth mgmt [*aaa_server_type1* | *aaa_server_type2*]

Syntax Description

mgmt	Configures the AAA authentication search order for controller management users by specifying up to three AAA authentication server types. The order that the server types are entered specifies the AAA authentication search order.
aaa_server_type	(Optional) AAA authentication server type (**local**, **radius**, or **tacacs**). The **local** setting specifies the local database, the **radius** setting specifies the RADIUS server, and the **tacacs** setting specifies the TACACS+ server.

Command Default

None

Command History

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

Usage Guidelines

You can enter two AAA server types as long as one of the server types is **local**. You cannot enter **radius** and **tacacs** together.

The following example shows how to configure the AAA authentication search order for controller management users by the authentication server type local:

```
(Cisco Controller) > config aaa auth radius local
```

Related Commands

show aaa auth

config aaa auth mgmt

To configure the order of authentication when multiple databases are configured, use the **config aaa auth mgmt** command.

config aaa auth mgmt [**radius** | **tacacs**]

Syntax Description		
	radius	(Optional) Configures the order of authentication for RADIUS servers.
	tacacs	(Optional) Configures the order of authentication for TACACS servers.

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 configure the order of authentication for the RADIUS server:

```
(Cisco Controller) > config aaa auth mgmt radius
```

The following example shows how to configure the order of authentication for the TACACS server:

```
(Cisco Controller) > config aaa auth mgmt tacacs
```

Related Commands **show aaa auth order**

config acl apply

To apply an access control list (ACL) to the data path, use the **config acl apply** command.

config acl apply *rule_name*

Syntax Description		
	rule_name	ACL name that contains up to 32 alphanumeric characters.

Command Default None

Command History

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

Example

The following example shows how to apply an ACL to the data path:

```
(Cisco Controller) > config acl apply acl01
```

config acl counter

To see if packets are hitting any of the access control lists (ACLs) configured on your controller, use the **config acl counter** command.

config acl counter {**start** | **stop**}

Syntax Description

start	Enables ACL counters on your controller.
stop	Disables ACL counters on your controller.

Command Default

None

Command History

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

Usage Guidelines

ACL counters are available only on the following controllers: 4400 series, Cisco WiSM, and Catalyst 3750G Integrated Wireless LAN Controller Switch.

The following example shows how to enable ACL counters on your controller:

```
(Cisco Controller) > config acl counter start
```

Related Commands

clear acl counters

show acl detailed

config acl cpu

To create a new access control list (ACL) rule that restricts the traffic reaching the CPU, use the **config acl cpu** command.

config acl cpu *rule_name* {**wired** | **wireless** | **both**}

Syntax Description

rule_name	Specifies the ACL name.
wired	Specifies an ACL on wired traffic.
wireless	Specifies an ACL on wireless traffic.
both	Specifies an ACL on both wired and wireless traffic.

Command Default

None

Command History

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

Usage Guidelines

This command allows you to control the type of packets reaching the CPU.

The following example shows how to create an ACL named acl101 on the CPU and apply it to wired traffic:

```
(Cisco Controller) > config acl cpu acl01 wired
```

Related Commands

show acl cpu

config acl create

To create a new access control list (ACL), use the **config acl create** command.

config acl create *rule_name*

Syntax Description

rule_name	ACL name that contains up to 32 alphanumeric characters.

Command Default

None

Command History

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

Usage Guidelines

For a Cisco 2100 Series Wireless LAN Controller, you must configure a preauthentication ACL on the wireless LAN for the external web server. This ACL should then be set as a wireless LAN preauthentication ACL under Web Policy. However, you do not need to configure any preauthentication ACL for Cisco 4400 Series Wireless LAN Controllers.

The following example shows how to create a new ACL:

```
(Cisco Controller) > config acl create acl01
```

Related Commands

show acl

config acl delete

To delete an access control list (ACL), use the **config acl delete** command.

config acl delete *rule_name*

Syntax Description		
	rule_name	ACL name that contains up to 32 alphanumeric characters.

Command Default None

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

Usage Guidelines For a Cisco 2100 Series Wireless LAN Controller, you must configure a preauthentication ACL on the wireless LAN for the external web server. This ACL should then be set as a wireless LAN preauthentication ACL under Web Policy. However, you do not need to configure any preauthentication ACL for Cisco 4400 Series Wireless LAN Controllers.

The following example shows how to delete an ACL named acl101 on the CPU:

```
(Cisco Controller) > config acl delete acl01
```

Related Commands **show acl**

config acl rule

To configure ACL rules, use the **config acl rule** command.

config acl rule {**action** *rule_name rule_index* {**permit** | **deny**} | **add** *rule_name rule_index* | **change index** *rule_name old_index new_index* | **delete** *rule_name rule_index* | **destination address** *rule_name rule_index ip_address netmask* | **destination port range** *rule_name rule_index start_port end_port* | **direction** *rule_name rule_index* {**in** | **out** | **any**} | **dscp** *rule_name rule_index dscp* | **protocol** *rule_name rule_index protocol* | **source address** *rule_name rule_index ip_address netmask* | **source port range** *rule_name rule_index start_port end_port* | **swap index** *rule_name index_1 index_2*}

Syntax Description		
	action	Configures whether to permit or deny access.
	rule_name	ACL name that contains up to 32 alphanumeric characters.
	rule_index	Rule index between 1 and 32.
	permit	Permits the rule action.
	deny	Denies the rule action.
	add	Adds a new rule.
	change	Changes a rule's index.
	index	Specifies a rule index.
	delete	Deletes a rule.

destination address	Configures a rule's destination IP address and netmask.
destination port range	Configure a rule's destination port range.
ip_address	IP address of the rule.
netmask	Netmask of the rule.
start_port	Start port number (between 0 and 65535).
end_port	End port number (between 0 and 65535).
direction	Configures a rule's direction to in, out, or any.
in	Configures a rule's direction to in.
out	Configures a rule's direction to out.
any	Configures a rule's direction to any.
dscp	Configures a rule's DSCP.
dscp	Number between 0 and 63, or **any**.
protocol	Configures a rule's DSCP.
protocol	Number between 0 and 255, or **any**.
source address	Configures a rule's source IP address and netmask.
source port range	Configures a rule's source port range.
swap	Swaps two rules' indices.

Command Default

None

Command History

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

Usage Guidelines

For a Cisco 2100 Series Wireless LAN Controller, you must configure a preauthentication ACL on the wireless LAN for the external web server. This ACL should then be set as a wireless LAN pre-authentication ACL under Web Policy. However, you do not need to configure any preauthentication ACL for Cisco 4400 Series Wireless LAN Controllers.

The following example shows how to configure an ACL to permit access:

```
(Cisco Controller) > config acl rule action lab1 4 permit
```

Related Commands

show acl

config auth-list add

To create an authorized access point entry, use the **config auth-list add** command.

config auth-list add {**mic** | **ssc**} *AP_MAC* [*AP_key*]

Syntax Description

mic	Specifies that the access point has a manufacture-installed certificate.
ssc	Specifies that the access point has a self-signed certificate.
AP_MAC	MAC address of a Cisco lightweight access point.
AP_key	(Optional) Key hash value that is equal to 20 bytes or 40 digits.

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 create an authorized access point entry with a manufacturer-installed certificate on MAC address 00:0b:85:02:0d:20:

```
(Cisco Controller) > config auth-list add 00:0b:85:02:0d:20
```

Related Commands

config auth-list delete

config auth-list ap-policy

config auth-list delete

To delete an access point entry, use the **config auth-list delete** command.

config auth-list delete *AP_MAC*

Syntax Description

AP_MAC	MAC address of a Cisco lightweight access point.

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 delete an access point entry for MAC address 00:1f:ca:cf:b6:60:

```
(Cisco Controller) > config auth-list delete 00:1f:ca:cf:b6:60
```

Related Commands

config auth-list delete

config auth-list add

config auth-list ap-policy

config auth-list ap-policy

To configure an access point authorization policy, use the **config auth-list ap-policy** command.

config auth-list ap-policy {**authorize-ap** {**enable** | **disable**} | **ssc** {**enable** | **disable**}}

Syntax Description

authorize-ap enable	Enables the authorization policy.
authorize-ap disable	Disables the AP authorization policy.
ssc enable	Allows the APs with self-signed certificates to connect.
ssc disable	Disallows the APs with self-signed certificates to connect.

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 an access point authorization policy:

```
(Cisco Controller) > config auth-list ap-policy authorize-ap enable
```

The following example shows how to enable an access point with a self-signed certificate to connect:

```
(Cisco Controller) > config auth-list ap-policy ssc disable
```

Related Commands

config auth-list delete

config auth-list add

config boot

To change a Cisco wireless LAN controller boot option, use the **config boot** command.

config boot {**primary** | **backup**}

Syntax Description

primary	Sets the primary image as active.
backup	Sets the backup image as active.

Command Default

The default boot option is **primary**.

Command History

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

Usage Guidelines

Each Cisco wireless LAN controller can boot off the primary, last-loaded operating system image (OS) or boot off the backup, earlier-loaded OS image.

The following example shows how to set the primary image as active so that the LAN controller can boot off the primary, last loaded image:

```
(Cisco Controller) > config boot primary
```

The following example shows how to set the backup image as active so that the LAN controller can boot off the backup, earlier loaded OS image:

```
(Cisco Controller) > config boot backup
```

Related Commands

show boot

config cdp

To configure the Cisco Discovery Protocol (CDP) on the controller, use the **config cdp** command.

config cdp {**enable** | **disable** | **advertise-v2** {**enable** | **disable**} | **timer***seconds* | **holdtime** *holdtime_interval*}

Syntax Description

enable	Enables CDP on the controller.
disable	Disables CDP on the controller.
advertise-v2	Configures CDP version 2 advertisements.
timer	Configures the interval at which CDP messages are t be generated.
seconds	Time interval at which CDP messages are to be generated. The range is from 5 to 254 seconds.
holdtime	Configures the amount of time to be advertised as the time-to-live value in generated CDP packets.
holdtime_interval	Maximum hold timer value. The range is from 10 to 2 seconds.

Command Default

The default value for CDP timer is 60 seconds.

The default value for CDP holdtime is 180 seconds.

Command History

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

The following example shows how to configure the CDP maximum hold timer to 150 seconds:

```
(Cisco Controller) > config cdp timer 150
```

Related Commands

config ap cdp

show cdp

show ap cdp

config certificate

To configure Secure Sockets Layer (SSL) certificates, use the **config certificate** command.

config certificate {**generate** {**webadmin** | **webauth**} | **compatibility** {**on** | **off**}}

Syntax Description

generate	Specifies authentication certificate generation settings.
webadmin	Generates a new web administration certificate.
webauth	Generates a new web authentication certificate.
compatibility	Specifies the compatibility mode for inter-Cisco wireless LAN controller IPsec settings.
on	Enables the compatibility mode.
off	Disables the compatibility mode.

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 generate a new web administration SSL certificate:

```
(Cisco Controller) > config certificate generate webadmin
Creating a certificate may take some time. Do you wish to continue? (y/n)
```

The following example shows how to configure the compatibility mode for inter-Cisco wireless LAN controller IPsec settings:

```
(Cisco Controller) > config certificate compatibility
```

Related Commands

config certificate lsc

show certificate compatibility

show certificate lsc

show certificate summary

show local-auth certificates

config certificate lsc

To configure Locally Significant Certificate (LSC) certificates, use the **config certificate lsc** command.

config certificate lsc {**enable** | **disable** | **ca-server** *http://url:port/path* | **ca-cert** {**add** | **delete**} | **subject-params** *country state city orgn dept email* | **other-params** *keysize*} | **ap-provision** {**auth-list** {**add** | **delete**} *ap_mac* | **revert-cert** *retries*}

Syntax Description

enable	Enables LSC certificates on the controller.
disable	Disables LSC certificates on the controller.
ca-server	Specifies the Certificate Authority (CA) server settings.
http://url:port/path	Domain name or IP address of the CA server.
ca-cert	Specifies CA certificate database settings.
add	Obtains a CA certificate from the CA server and adds it to the controller's certificate database.
delete	Deletes a CA certificate from the controller's certificate database.
subject-params	Specifies the device certificate settings.
country state city orgn dept email	Country, state, city, organization, department, and email of the certificate authority. **Note** The common name (CN) is generated automatically on the access point using the current MIC/SSC format *Cxxxx-MacAddr*, where *xxxx* is the product number.
other-params	Specifies the device certificate key size settings.
keysize	Value from 384 to 2048 (in bits); the default value is 2048.
ap-provision	Specifies the access point provision list settings.
auth-list	Specifies the provision list authorization settings.
ap_mac	MAC address of access point to be added or deleted from the provision list.
revert-cert	Specifies the number of times the access point attempts to join the controller using an LSC before reverting to the default certificate.

retries	Value from 0 to 255; the default value is 3.

Note If you set the number of retries to 0 and the access point fails to join the controller using an LSC, the access point does not attempt to join the controller using the default certificate. If you are configuring LSC for the first time, we recommend that you configure a nonzero value.

Command Default

The default value of *keysize* is 2048 bits. The default value of *retries* is 3.

Command History

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

Usage Guidelines

You can configure only one CA server. To configure a different CA server, delete the configured CA server by using the **config certificate lsc ca-server delete** command, and then configure a different CA server.

If you configure an access point provision list, only the access points in the provision list are provisioned when you enable AP provisioning (in Step 8). If you do not configure an access point provision list, all access points with an MIC or SSC certificate that join the controller are LSC provisioned.

The following example shows how to enable the LSC settings:

```
(Cisco Controller) >config certificate lsc enable
```

This example shows how to enable the LSC settings for Certificate Authority (CA) server settings:

```
(Cisco Controller) >config certificate lsc ca-server http://10.0.0.1:8080/caserver
```

The following example shows how to add a CA certificate from the CA server and add it to the controller's certificate database:

```
(Cisco Controller) >config certificate lsc ca-cert add
```

The following example shows how to configure an LSC certificate with the keysize of 2048 bits:

```
(Cisco Controller) >config certificate lsc keysize 2048
```

config certificate ssc

To configure Self Signed Certificates (SSC) certificates, use the **config certificate ssc** command.

config certificate ssc hash validation {**enable** | **disable**}

Syntax Description

hash	Configures the SSC hash key.
validation	Configures hash validation of the SSC certificate.
enable	Enables hash validation of the SSC certificate.
disable	Disables hash validation of the SSC certificate.

Command Default The SSC certificate is enabled by default..

Command History

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

Usage Guidelines When you enable the SSC hash validation, an AP validates the SSC certificate of the virtual controller. When an AP validates the SSC certificate, it checks if the hash key of the virtual controller matches the hash key stored in its flash. If a match is found, the validation passes and the AP moves to the Run state. If a match is not found, the validation fails and the AP disconnects from the controller and restarts the discovery process. By default, hash validation is enabled. Hence, an AP must have the virtual controller hash key in its flash before associating with the virtual controller. If you disable hash validation of the SSC certificate, the AP bypasses the hash validation and directly moves to the Run state.

APs can associate with a physical controller, download the hash keys and then associate with a virtual controller. If the AP is associated to a physical controller and if hash validation is disabled, it joins any virtual controller without hash validation.

The following example shows how to enable hash validation of the SSC certificate:

```
(Cisco Controller) > config certificate ssc hash validation enable
```

Related Commands

show certificate ssc

show mobility group member

config mobility group member hash

config certificate

show certificate compatibility

show certificate lsc

show certificate summary

show local-auth certificates

config certificate use-device-certificate webadmin

To use a device certificate for web administration, use the **config certificate use-device-certificate webadmin** command.

config certificate use-device-certificate webadmin

Syntax Description This command has no arguments or keywords.

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 use a device certificate for web administration:

```
(Cisco Controller) > config certificate use-device-certificate webadmin
Use device certificate for web administration. Do you wish to continue? (y/n) y
Using device certificate for web administration.
Save configuration and restart controller to use new certificate.
```

Related Commands

config certificate

show certificate compatibility

show certificate lsc

show certificate ssc

show certificate summary

show local-auth certificates

config coredump

To enable or disable the controller to generate a core dump file following a crash, use the **config cordump** command.

config coredump {**enable** | **disable**}

Syntax Description

enable	Enables the controller to generate a core dump file.
disable	Disables the controller to generate a core dump file.

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 controller to generate a core dump file following a crash:

```
(Cisco Controller) > config coredump enable
```

Related Commands

config coredump ftp

config coredump username

show coredump summary

config coredump ftp

To automatically upload a controller core dump file to an FTP server after experiencing a crash, use the **config coredump ftp** command.

config coredump ftp *server_ip_address filename*

Syntax Description

server_ip_address	IP address of the FTP server to which the controller sends its core dump file.
filename	Name given to the controller core dump file.

Command Default None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports only IPv4 address format.

Usage Guidelines The controller must be able to reach the FTP server to use this command.

The following example shows how to configure the controller to upload a core dump file named *core_dump_controller* to an FTP server at network address *192.168.0.13*:

```
(Cisco Controller) > config coredump ftp 192.168.0.13 core_dump_controller
```

Related Commands

config coredump

config coredump username

show coredump summary

config coredump username

To specify the FTP server username and password when uploading a controller core dump file after experiencing a crash, use the **config coredump username** command.

config coredump username *ftp_username* **password** *ftp_password*

Syntax Description

ftp_username	FTP server login username.
ftp_password	FTP server login password.

Command Default None

Command History

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

Usage Guidelines The controller must be able to reach the FTP server to use this command.

The following example shows how to specify a FTP server username of *admin* and password *adminpassword* for the core dump file upload:

```
(Cisco Controller) > config coredump username admin password adminpassword
```

Related Commands

config coredump ftp

config coredump

show coredump summary

config country

To configure the controller's country code, use the **config country** command.

config country *country_code*

Syntax Description

country_code	Two-letter or three-letter country code.

Command Default

us (country code of the United States of America).

Command History

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

Usage Guidelines

Controllers must be installed by a network administrator or qualified IT professional and the installer must select the proper country code. Following installation, access to the unit should be password-protected by the installer to maintain compliance with regulatory requirements and ensure proper unit functionality. See the related product guide for the most recent country codes and regulatory domains.

You can use the **show country** command to display a list of supported countries.

The following example shows how to configure the controller's country code to DE:

```
(Cisco Controller) >config country DE
```

config cts sxp

To configure Cisco TrustSec SXP (CTS) connections on the controller, use the **config cts sxp** command.

config cts sxp {**enable** | **disable** | **connection** {**delete** | **peer**} | **default password** *password* | **retry period** *time-in-seconds*}

Syntax Description

enable	Enables CTS connections on the controller.
disable	Disables CTS connections on the controller.
connection	Configures CTS connection on the controller.
delete	Deletes the CTS connection on the controller.

peer	Configures the next hop switch with which the controller is connected.
ip-address	Only IPv4 address of the peer.
default password	Configures the default password for MD5 authentication of SXP messages.
password	Default password for MD5 Authentication of SXP messages. The password should contain a minimum of six characters.
retry period	Configures the SXP retry period.
time-in-seconds	Time after which a CTS connection should be again tried for after a failure to connect.

Command Default None

Command History

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

Usage Guidelines For release 8.0, only IPv4 is supported for TrustSec SXP configuration.

The following example shows how to enable CTS on the controller:

```
(Cisco Controller) > config cts sxp enable
```

The following example shows how to configure a peer for a CTS connection:

```
> config cts sxp connection peer 209.165.200.224
```

Related Commands **debug cts sxp**

config cts sxp connection

To configure the CTS SXP connection on the controller, use the **config cts sxp connection** command.

config cts sxp connection {**delete** | **peer**} *ipv4-addr*

Syntax Description

delete	Deletes the SXP connection
peer	Configures the next hop switch with which the controller is connected
ipv4-addr	IPv4 address of the SXP connection

Command Default None

Command History

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

config cts sxp default password

To configure the default password for CTS SXP, use the **config cts sxp default password** command.

config cts sxp default password *password*

Syntax Description

password	Default password for MD5 Authentication of SXP messages. The password should contain a minimum of six characters.

Command Default

None

Command History

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

config cts sxp retry period

To configure the interval between CTS SXP connection reattempts, use the **config cts sxp retry period** command.

config cts sxp retry period *time-in-seconds*

Syntax Description

time-in-seconds	Time after which a CTS SXP connection should be attempted again for after a failure to connect. Valid range is between 0 and 64000 seconds.

Command Default

None

Command History

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

config custom-web ext-webauth-mode

To configure external URL web-based client authorization for the custom-web authentication page, use the **config custom-web ext-webauth-mode** command.

config custom-web ext-webauth-mode {**enable** | **disable**}

Syntax Description

enable	Enables the external URL web-based client authorization.

disable	Disables the external URL we-based client authentication.

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 external URL web-based client authorization:

```
(Cisco Controller) > config custom-web ext-webauth-mode enable
```

Related Commands

config custom-web redirectUrl

config custom-web weblogo

config custom-web webmessage

config custom-web webtitle

config custom-web ext-webauth-url show custom-web

config custom-web ext-webauth-url

To configure the complete external web authentication URL for the custom-web authentication page, use the **config custom-web ext-webauth-url** command.

config custom-web ext-webauth-url *URL*

Syntax Description

URL	URL used for web-based client authorization.

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 configure the complete external web authentication URL http://www.AuthorizationURL.com/ for the web-based client authorization:

```
(Cisco Controller) > config custom-web ext-webauth-url http://www.AuthorizationURL.com/
```

Related Commands

config custom-web redirectUrl

config custom-web weblogo

config custom-web webmessage

config custom-web webtitle

config custom-web ext-webauth-mode show custom-web

config custom-web ext-webserver

To configure an external web server, use the **config custom-web ext-webserver** command.

config custom-web ext-webserver {**add** *index IP_address* | **delete** *index*}

Syntax Description

add	Adds an external web server.
index	Index of the external web server in the list of external web server. The index must be a number between 1 and 20.
IP_address	IP address of the external web server.
delete	Deletes an external web server.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports only IPv4 address format.

The following example shows how to add the index of the external web server 2 to the IP address of the external web server 192.23.32.19:

```
(Cisco Controller) > config custom-web ext-webserver add 2 192.23.32.19
```

Related Commands

config custom-web redirectUrl

config custom-web weblogo

config custom-web webmessage

config custom-web webtitle

config custom-web ext-webauth-mode

config custom-web ext-webauth-url

show custom-web

config custom-web logout-popup

To enable or disable the custom web authentication logout popup, use the **config custom-web logout-popup** command.

config custom-web logout-popup {**enable** | **disable**}

Syntax Description

enable	Enables the custom web authentication logout popup. This page appears after a successful login or a redirect of the custom web authentication page.

disable	Disables the custom web authentication logout popup.

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 disable the custom web authentication logout popup:

```
(Cisco Controller) > config custom-web logout-popup disable
```

Related Commands

config custom-web redirectUrl

config custom-web weblogo

config custom-web webmessage

config custom-web webtitle

config custom-web ext-webauth-url show custom-web

config custom-web radiusauth

To configure the RADIUS web authentication method, use the **config custom-web radiusauth** command.

config custom-web radiusauth {**chap** | **md5chap** | **pap**}

Syntax Description

chap	Configures the RADIUS web authentication method as Challenge Handshake Authentication Protocol (CHAP).
md5chap	Configures the RADIUS web authentication method as Message Digest 5 CHAP (MD5-CHAP).
pap	Configures the RADIUS web authentication method as Password Authentication Protocol (PAP).

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 configure the RADIUS web authentication method as MD5-CHAP:

```
(Cisco Controller) > config custom-web radiusauth md5chap
```

Related Commands

config custom-web redirectUrl

config custom-web webmessage

config custom-web webtitle

config custom-web ext-webauth-mode

config custom-web ext-webauth-url

show custom-web

config custom-web redirectUrl

To configure the redirect URL for the custom-web authentication page, use the **config custom-web redirectUrl** command.

config custom-web redirectUrl *URL*

Syntax Description

URL	URL that is redirected to the specified address.

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 configure the URL that is redirected to abc.com:

```
(Cisco Controller) > config custom-web redirectUrl abc.com
```

Related Commands

config custom-web weblogo

config custom-web webmessage

config custom-web webtitle

config custom-web ext-webauth-mode

config custom-web ext-webauth-url

show custom-web

config custom-web sleep-client

To delete a web-authenticated sleeping client, use the **config custom-web sleep-client** command.

config custom-web sleep-client delete *mac_address*

Syntax Description

delete	Deletes a web-authenticated sleeping client with the help of the client MAC address.
mac_address	MAC address of the sleeping client.

Command Default

The web-authenticated sleeping client is not deleted.

Command History

Release	Modification
7.5	This command was introduced.

The following example shows how to delete a web-authenticated sleeping client:

```
(Cisco Controller) > config custom-web sleep-client delete 0:18:74:c7:c0:90
```

config custom-web webauth-type

To configure the type of web authentication, use the **config custom-web webauth-type** command.

config custom-web webauth-type {**internal** | **customized** | **external**}

Syntax Description

internal	Configures the web authentication type to internal.
customized	Configures the web authentication type to customized.
external	Configures the web authentication type to external.

Command Default

The default web authentication type is **internal**.

Command History

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

The following example shows how to configure the type of the web authentication type to internal:

```
(Cisco Controller) > config custom-web webauth-type internal
```

Related Commands

config custom-web redirectUrl

config custom-web webmessage

config custom-web webtitle

config custom-web ext-webauth-mode

config custom-web ext-webauth-url

show custom-web

config custom-web weblogo

To configure the web authentication logo for the custom-web authentication page, use the **config custom-web weblogo** command.

config custom-web weblogo {**enable** | **disable**}

Syntax Description

enable	Enables the web authentication logo settings.

disable	Enable or disable the web authentication logo settings.

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 web authentication logo:

```
(Cisco Controller) > config custom-web weblogo enable
```

Related Commands

config custom-web redirectUrl

config custom-web webmessage

config custom-web webtitle

config custom-web ext-webauth-mode

config custom-web ext-webauth-url

show custom-web

config custom-web webmessage

To configure the custom web authentication message text for the custom-web authentication page, use the **config custom-web webmessage** command.

config custom-web webmessage *message*

Syntax Description

message	Message text for web authentication.

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 configure the message text Thisistheplace for webauthentication:

```
(Cisco Controller) > config custom-web webmessage Thisistheplace
```

Related Commands

config custom-web redirectUrl

config custom-web weblogo

config custom-web webtitle

config custom-web ext-webauth-mode

config custom-web ext-webauth-url

show custom-web

config custom-web webtitle

To configure the web authentication title text for the custom-web authentication page, use the **config custom-web webtitle** command.

config custom-web webtitle *title*

Syntax Description

title	Custom title text for web authentication.

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 set the custom title text Helpdesk for web authentication:

```
(Cisco Controller) > config custom-web webtitle Helpdesk
```

Related Commands

config custom-web redirectUrl

config custom-web weblogo

config custom-web webmessage

config custom-web ext-webauth-mode

config custom-web ext-webauth-url

show custom-web

config database size

To configure the local database, use the **config database size** command.

config database size *count*

Syntax Description

count	Database size value between 512 and 2040

Command Default

None

Command History

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

Usage Guidelines

Use the **show database** command to display local database configuration.

The following example shows how to configure the size of the local database:

```
(Cisco Controller) > config database size 1024
```

Related Commands

show database

config dhcp

To configure the internal DHCP, use the **config dhcp** command.

config dhcp {**address-pool** *scope start end* | **create-scope** *scope* | **default-router** *scope router_1* [*router_2*] [*router_3*] | **delete-scope** *scope* | **disable** *scope* | **dns-servers** *scope dns1* [*dns2*] [*dns3*] | **domain** *scope domain* | **enable** *scope* | **lease** *scope lease_duration* | **netbios-name-server** *scope wins1* [*wins2*] [*wins3*] | **network***scope network netmask*}

config dhcpopt-82 remote-id {*ap_mac* | *ap_mac*:*ssid* | *ap-ethmac* | *apname:ssid* | *ap-group-name* | *flex-group-name* | *ap-location* | *apmac-vlan_id* | *apname-vlan_id* | *ap-ethmac-ssid* }

Syntax Description

address-pool *scope start end*	Configures an address range specify the scope name and addresses of the address rang
create-scope *name*	Creates a new DHCP scope. scope name.
default-router *scope router_1* [*router_2*] [*router_3*]	Configures the default routers and specify the IP address o you can specify the IP addre tertiary routers.
delete-scope *scope*	Deletes the specified DHCP
disable *scope*	Disables the specified DHCI
dns-servers *scope dns1* [*dns2*] [*dns3*]	Configures the name servers You must also specify at lea Optionally, you can specify name servers.
domain *scope domain*	Configures the DNS domain specify the scope and domai
enable *scope*	Enables the specified dhcp s
lease *scope lease_duration*	Configures the lease duratio specified scope.

netbios-name-server *scope wins1* [*wins2*] [*wins3*]	Configures the netbios name ser specify the scope name and the I server. Optionally, you can speci of secondary and tertiary name
network *scope network netmask*	Configures the network and net specify the scope name, the netv the network mask.
opt-82 remote-id	Configures the DHCP option 82 format. DHCP option 82 provides additi DHCP is used to allocate netwo controller acts as a DHCP relay DHCP client requests from untr controller adds option 82 inform requests from clients before forw to the DHCP server.
ap_mac	MAC address of the access poin option 82 payload.
*ap_mac***:***ssid*	MAC address and SSID of the a DHCP option 82 payload.
ap-ethmac	Remote ID format as AP Ethern
apname:ssid	Remote ID format as AP name:
ap-group-name	Remote ID format as AP group
flex-group-name	Remote ID format as FlexConn
ap-location	Remote ID format as AP locatio
apmac-vlan_id	Remote ID format as AP radio M address:VLAN_ID.
apname-vlan_id	Remote ID format as AP Name:
ap-ethmac-ssid	Remote ID format as AP Ethern address.

Command Default

The default value for ap-group-name is default-group, and for ap-location, the default value is default location.

If ap-group-name and flex-group-name are null, the system MAC is sent as the remote ID field.

Command History

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

Usage Guidelines

Use the **show dhcp** command to display the internal DHCP configuration.

The following example shows how to configure the DHCP lease for the scope 003:

```
(Cisco Controller) >config dhcp lease 003
```

config dhcp proxy

To specify the level at which DHCP packets are modified, use the **config dhcp proxy** command.

config dhcp proxy {**enable** | **disable** {**bootp-broadcast** [**enable** | **disable**]}

Syntax Description

enable	Allows the controller to modify the DHCP packets without a limit.
disable	Reduces the DHCP packet modification to the level of a relay.
bootp-broadcast	Configures DHCP BootP broadcast option.

Command Default

DHCP is enabled.

Command History

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

Usage Guidelines

Use the **show dhcp proxy** command to display the status of DHCP proxy handling.

To enable third-party WGB support, you must enable the passive-client feature on the wirless LAN by entering the **config wlan passive-client enable** command.

The following example shows how to disable the DHCP packet modification:

```
(Cisco Controller) >config dhcp proxy disable
```

The following example shows how to enable the DHCP BootP broadcast option:

```
(Cisco Controller) >config dhcp proxy disable bootp-broadcast enable
```

config dhcp timeout

To configure a DHCP timeout value, use the **config dhcp timeout** command. If you have configured a WLAN to be in DHCP required state, this timer controls how long the controller will wait for a client to get a DHCP lease through DHCP.

config dhcp timeout *timeout-value*

Syntax Description

timeout-value	Timeout value in the range of 5 to 120 seconds.

Command Default

The default timeout value is 120 seconds.

Command History

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

The following example shows how to set the DHCP timeout to 10 seconds:

```
(Cisco Controller) >config dhcp timeout 10
```

config exclusionlist

To create or delete an exclusion list entry, use the **config exclusionlist** command.

config exclusionlist {**add** *MAC* [*description*] | **delete** *MAC* | **description** *MAC* [*description*]}

Syntax Description

config exclusionlist	Configures the exclusion list.
add	Creates a local exclusion-list entry.
delete	Deletes a local exclusion-list entry
description	Specifies the description for an exclusion-list entry.
MAC	MAC address of the local Excluded entry.
description	(Optional) Description, up to 32 characters, for an excluded entry.

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 create a local exclusion list entry for the MAC address *xx:xx:xx:xx:xx:xx:*

```
(Cisco Controller) > config exclusionlist add xx:xx:xx:xx:xx:xx lab
```

The following example shows how to delete a local exclusion list entry for the MAC address *xx:xx:xx:xx:xx:xx:*

```
(Cisco Controller) > config exclusionlist delete xx:xx:xx:xx:xx:xx lab
```

Related Commands

show exclusionlist

config flexconnect [ipv6] acl

To apply access control lists that are configured on a FlexConnect access point, use the **config flexconnect** [**ipv6**] **acl** command. Use the **ipv6** keyword to configure IPv6 FlexConnect ACLs .

config flexconnect [**ipv6**] **acl** {**apply** | **create** | **delete**} *acl_name*

Syntax Description

ipv6	Use this option to configure IPv6 FlexConnect ACLs. If you don't use this option, then IPv4 FlexConnect ACLs will be configured.
apply	Applies an ACL to the data path.
create	Creates an ACL.
delete	Deletes an ACL.
acl_name	ACL name that contains up to 32 alphanumeric characters.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.8	IPv6 ACL option was introduced.

The following example shows how to apply the IPv4 ACL configured on a FlexConnect access point:

```
(Cisco Controller) >config flexconnect acl apply acl1
```

config flexconnect [ipv6] acl rule

To configure access control list (ACL) rules on a FlexConnect access point, use the **config flexconnect** [**ipv6**] **acl rule** command.

config flexconnect [**ipv6**] **acl rule** {**action** *rule_name rule_index* {**permit** | **deny**} | **add** *rule_name rule_index* | **change index** *rule_name old_index new_index* | **delete** *rule_name rule_index* | **destination address** *rule_name rule_index ip_address netmask* | **destination port range** *rule_name rule_index start_port end_port* | **direction** *rule_name rule_index* {**in** | **out** | **any**} | **dscp** *rule_name rule_index dscp* | **protocol** *rule_name rule_index protocol* | **source address** *rule_name rule_index ip_address netmask* | **source port range** *rule_name rule_index start_port end_port* | **swap index** *rule_name index_1 index_2*}

Syntax Description

ipv6	Use this option to configure IPv6 FlexConnect ACL rules. If you don't use this option, then IPv4 FlexConnect ACL rules will be configured.
action	Configures whether to permit or deny access.
rule_name	ACL name that contains up to 32 alphanumeric characters.
rule_index	Rule index between 1 and 32.
permit	Permits the rule action.
deny	Denies the rule action.
add	Adds a new rule.
change	Changes a rule's index.

index	Specifies a rule index.
delete	Deletes a rule.
destination address	Configures a rule's destination IP address and netmask.
ip_address	IP address of the rule.
netmask	Netmask of the rule.
start_port	Start port number (between 0 and 65535).
end_port	End port number (between 0 and 65535).
direction	Configures a rule's direction to in, out, or any.
in	Configures a rule's direction to in.
out	Configures a rule's direction to out.
any	Configures a rule's direction to any.
dscp	Configures a rule's DSCP.
dscp	Number between 0 and 63, or **any**.
protocol	Configures a rule's DSCP.
protocol	Number between 0 and 255, or **any**.
source address	Configures a rule's source IP address and netmask.
source port range	Configures a rule's source port range.
swap	Swaps two rules' indices.
index_1	The rule first index to swap.
index_2	The rule index to swap the first index with.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.8	IPv6 ACL option was introduced.

This example shows how to configure an ACL to permit access:

```
(Cisco Controller) >config flexconnect acl rule action lab1 4 permit
```

config flexconnect [ipv6] acl url-domain

To configure a URL domain-based rule for a FlexConnect ACL, use the **config flexconnect acl** [**ipv6**] **url-domain** command.

config flexconnect [**ipv6**]**acl url-domain** {**action** *acl-name index action* | **add** *acl-name index* | **delete** *acl-name index* | **url** *acl-name index url-name*}

Syntax Description

ipv6	Use this option to configure URL domain-based rules for IPv6 FlexConnect ACLs. If you don't use this option, then IPv4 FlexConnect ACL rules will be configured.
action *acl-name index action*	Configures the action for the FlexConnect ACL rule, whether to permit or deny access.
add *acl-name index*	Adds URL domain to the FlexConnect ACL.
delete *acl-name index*	Deletes the URL domain from the FlexConnect ACL.
url *acl-name index url-name*	Configures the URL name in the FlexConnect ACL.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.8	IPv6 ACL option was introduced.

This example shows how to configure URL-based rule for an IPv6 FlexConnect ACL:

```
(Cisco Controller) >config flexconnect ipv6 acl url-domain action acls-to-allow 2 permit
```

config flexconnect group vlan

To configure VLAN for a FlexConnect group, use the **config flexconnect group vlan** command.

config flexconnect group *group_name* **vlan** {**add** *vlan-id* **acl** *in-aclname out-aclname* | **delete** *vlan-id*}

Syntax Description

group_name	FlexConnect group name.
add	Adds a VLAN for the FlexConnect group.
vlan-id	VLAN ID.
acl	Specifies an access control list.
in-aclname	In-bound ACL name.
out-aclname	Out-bound ACL name.

delete	Deletes a VLAN from the FlexConnect group.

Command History

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

The following example shows how to add VLAN ID 1 for the FlexConnect group myflexacl where the in-bound ACL name is in-acl and the out-bound ACL is out-acl:

```
(Cisco Controller) >config flexconnect group vlan myflexacl vlan add 1 acl in-acl out-acl
```

config flexconnect group web-auth

To configure Web-Auth ACL for a FlexConnect group, use the **config flexconnect group web-auth** command.

config flexconnect group *group_name* **web-auth wlan** *wlan-id* **acl** *acl-name* {**enable** | **disable**}

Syntax Description

group_name	FlexConnect group name.
wlan-id	WLAN ID.
acl-name	ACL name.
enable	Enables the Web-Auth ACL for a FlexConnect group.
disable	Disables the Web-Auth ACL for a FlexConnect group.

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 Web-Auth ACL webauthacl for the FlexConnect group myflexacl on WLAN ID 1:

```
(Cisco Controller) >config flexconnect group myflexacl web-auth wlan 1 acl webauthacl enable
```

config flexconnect group web-policy

To configure Web Policy ACL for a FlexConnect group, use the **config flexconnect group web-policy** command.

config flexconnect group *group_name* **web-policy acl** {**add** | **delete**} *acl-name*

Syntax Description

group_name	FlexConnect group name.
add	Adds the Web Policy ACL.
delete	Deletes the Web Policy ACL.

acl-name	Name of the Web Policy ACL.

Command History

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

The following example shows how to add the Web Policy ACL mywebpolicyacl to the FlexConnect group myflexacl:

```
(Cisco Controller) >config flexconnect group myflexacl web-policy acl add mywebpolicyacl
```

config flexconnect join min-latency

To enable or disable the access point to choose the controller with the least latency when joining, use the **config flexconnect join min-latency** command.

config flexconnect join min-latency {**enable** | **disable**} *cisco_ap*

Syntax Description

enable	Enables the access point to choose the controller with the least latency when joining.
disable	Disables the access point to choose the controller with the least latency when joining.
cisco_ap	Cisco lightweight access point.

Command Default

The access point cannot choose the controller with the least latency when joining.

Command History

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

Usage Guidelines

When you enable this feature, the access point calculates the time between the discovery request and discovery response and joins the controller that responds first. This command is supported only on the following controller releases:

- Cisco 2500 Series Controller
- Cisco 5500 Series Controller
- Cisco Flex 7500 Series Controllers
- Cisco 8500 Series Controllers
- Cisco Wireless Services Module 2

This configuration overrides the HA setting on the controller, and is applicable only for OEAP access points.

The following example shows how to enable the access point to choose the controller with the least latency when joining:

```
(Cisco Controller) >config flexconnect join min-latency enable CISCO_AP
```

config flexconnect office-extend

To configure FlexConnect mode for an OfficeExtend access point, use the **config flexconnect office-extend** command.

config flexconnect office-extend { { **enable** | **disable** } *cisco_ap* | **clear-personalssid-config** *cisco_ap* }

Syntax Description

enable	Enables the OfficeExtend mode for an access point.
disable	Disables the OfficeExtend mode for an access point.
clear-personalssid-config	Clears only the access point's personal SSID.
cisco_ap	Cisco lightweight access point.

Command Default

OfficeExtend mode is enabled automatically when you enable FlexConnect mode on the access point.

Command History

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

Usage Guidelines

Currently, only Cisco Aironet 1130 series and 1140 series access points that are joined to a Cisco 5500 Series Controller with a WPlus license can be configured to operate as OfficeExtend access points.

Rogue detection is disabled automatically when you enable the OfficeExtend mode for an access point. OfficeExtend access points, which are deployed in a home environment, are likely to detect a large number of rogue devices. You can enable or disable rogue detection for a specific access point or for all access points by using the **config rogue detection** command.

DTLS data encryption is enabled automatically when you enable the OfficeExtend mode for an access point. However, you can enable or disable DTLS data encryption for a specific access point or for all access points by using the **config ap link-encryption** command.

Telnet and SSH access are disabled automatically when you enable the OfficeExtend mode for an access point. However, you can enable or disable Telnet or SSH access for a specific access point by using the **config ap telnet** or **config ap ssh** command.

Link latency is enabled automatically when you enable the OfficeExtend mode for an access point. However, you can enable or disable link latency for a specific access point or for all access points currently associated to the controller by using the **config ap link-latency** command.

The following example shows how to enable the office-extend mode for the access point Cisco_ap:

```
(Cisco Controller) >config flexconnect office-extend enable Cisco_ap
```

The following example shows how to clear only the access point's personal SSID for the access point Cisco_ap:

```
(Cisco Controller) >config flexconnect office-extend clear-personalssid-config Cisco_ap
```

config interface acl

To configure access control list of an interface, use the **config interface acl** command.

config interface acl {**ap-manager** | **management** | *interface_name*} {*ACL* | **none**}

Syntax Description

ap-manager	Configures the access point manager interface.
management	Configures the management interface.
interface_name	Interface name.
ACL	ACL name up to 32 alphanumeric characters.
none	Specifies none.

Command Default

None

Command History

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

Usage Guidelines

For a Cisco 2100 Series Wireless LAN Controller, you must configure a preauthentication ACL on the wireless LAN for the external web server. This ACL should then be set as a wireless LAN preauthentication ACL under Web Policy. However, you do not need to configure any preauthentication ACL for Cisco 4400 Series Wireless LAN Controllers.

The following example shows how to configure an access control list with a value None:

```
(Cisco Controller) > config interface acl management none
```

config interface create

To create a dynamic interface (VLAN) for wired guest user access, use the **config interface create** command.

config interface create *interface_name vlan-id*

Syntax Description

interface_name	Interface name.
vlan-id	VLAN identifier.

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 create a dynamic interface with the interface named lab2 and VLAN ID 6:

```
(Cisco Controller) > config interface create lab2 6
```

config interface delete

To delete a dynamic interface, use the **config interface delete** command.

config interface delete *interface-name*

Syntax Description

interface-name	*interface-name*Interface 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 delete a dynamic interface named VLAN501:

```
(Cisco Controller) > config interface delete VLAN501
```

config interface address

To configure interface addresses, use the **config interface address** command.

config interface address {**dynamic-interface** *dynamic_interface netmask gateway* | **management** | **redundancy-management** *IP_address* **peer-redundancy-management** | **service-port** *netmask* | **virtual**} *IP_address*

Syntax Description

dynamic-interface	Configures the dynamic interface of the controller.
dynamic_interface	Dynamic interface of the controller.
IP_address	IP address of the interface.
netmask	Netmask of the interface.
gateway	Gateway of the interface.
management	Configures the management interface IP address.
redundancy-management	Configures redundancy management interface IP address.
peer-redundancy-management	Configures the peer redundancy management interface IP address.
service-port	Configures the out-of-band service port.
virtual	Configures the virtual gateway interface.

Command Default

None

Command History

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

Usage Guidelines

Ensure that the management interfaces of both controllers are in the same subnet. Ensure that the redundant management IP address for both controllers is the same and that the peer redundant management IP address for both the controllers is the same.

The following example shows how to configure a redundancy management interface on the controller:

```
(Cisco Controller) >config interface address redundancy-management 209.4.120.5
peer-redundancy-management 209.4.120.6
```

The following example shows how to configure a virtual interface:

```
(Cisco Controller) > config interface address virtual 10.10.10.1
```

Related Commands

show interface group summary

show interface summary

config interface ap-manager

To enable or disable access point manager features on the management or dynamic interface, use the **config interface ap-manager** command.

config interface ap-manager {**management** | *interface_name*} {**enable** | **disable**}

Syntax Description

management	Specifies the management interface.
interface_name	Dynamic interface name.
enable	Enables access point manager features on a dynamic interface.
disable	Disables access point manager features on a dynamic interface.

Command Default

None

Command History

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

Usage Guidelines

Use the **management** option to enable or disable dynamic AP management for the management interface. For Cisco 5500 Series Controllers, the management interface acts like an AP-manager interface by default. If desired, you can disable the management interface as an AP-manager interface and create another dynamic interface as an AP manager.

When you enable this feature for a dynamic interface, the dynamic interface is configured as an AP-manager interface (only one AP-manager interface is allowed per physical port). A dynamic interface that is marked as an AP-manager interface cannot be used as a WLAN interface.

The following example shows how to disable an access point manager myinterface:

```
(Cisco Controller) > config interface ap-manager myinterface disable
```

config interface group

To add an interface to the existing interface group, use the **config interface group** command.

config interface group {**create** *interface-group-name interface-group-description*} | {**delete** *interface-group-name*} | {**interface** {**add** | **delete**} *interface-group-name interface-name*} | {**description** *interface-group-name interface-group-description*}

Syntax Description

create	Adds a new interface group.
interface-group-name	Interface group's name.
interface-group-description	Interface group's description to be entered within double quotation marks. You can enter up to 32 characters.
delete	Deletes an interface group.
interface	Edits the list of interface represented by the interface group.
add	Adds a new interface to the interface group.
delete	Deletes an interface from the interface group.
description	Configures the description for an interface group.

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 configure a new interface group with the name int-grp-10:

```
(Cisco Controller) > config interface group create int-grp-10 "for wlan1"
```

config interface group

To add an interface to the existing interface group, use the **config interface group** command.

config interface group {**create** *interface-group-name interface-group-description*} | {**delete** *interface-group-name*} | {**interface** {**add** | **delete**} *interface-group-name interface-name*} | {**description** *interface-group-name interface-group-description*}

Syntax Description

create	Adds a new interface group.
interface-group-name	Interface group's name.
interface-group-description	Interface group's description to be entered within double quotation marks. You can enter up to 32 characters.
delete	Deletes an interface group.
interface	Edits the list of interface represented by the interface group.
add	Adds a new interface to the interface group.
delete	Deletes an interface from the interface group.
description	Configures the description for an interface group.

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 configure a new interface group with the name int-grp-10:

```
(Cisco Controller) > config interface group create int-grp-10 "for wlan1"
```

config interface hostname

To configure the Domain Name System (DNS) hostname of the virtual gateway interface, use the **config interface hostname** command.

config interface hostname virtual *DNS_host*

Syntax Description

virtual	Specifies the virtual gateway interface to use the specified virtual address of the fully qualified DNS name. The virtual gateway IP address is any fictitious, unassigned IP address, such as 192.0.2.1, to be used by Layer 3 security and mobility managers.
DNS_host	DNS hostname.

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 configure virtual gateway interface to use the specified virtual address of the fully qualified DNS hostname DNS_Host:

```
(Cisco Controller) > config interface hostname virtual DNS_Host
```

config interface nat-address

To deploy your Cisco 5500 Series Controller behind a router or other gateway device that is using one-to-one mapping network address translation (NAT), use the **config interface nat-address** command.

config interface nat-address {**management** | **dynamic-interface** *interface_name*} {{**enable** | **disable**} | {**set** *public_IP_address*}}

Syntax Description

management	Specifies the management interface.
dynamic-interface *interface_name*	Specifies the dynamic interface name.
enable	Enables one-to-one mapping NAT on the interface.
disable	Disables one-to-one mapping NAT on the interface.
public_IP_address	External NAT IP address.

Command Default None

Command History

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

Usage Guidelines

These NAT commands can be used only on Cisco 5500 Series Controllers and only if the management interface is configured for dynamic AP management.

These commands are supported for use only with one-to-one-mapping NAT, where each private client has a direct and fixed mapping to a global address. They do not support one-to-many NAT, which uses source port mapping to enable a group of clients to be represented by a single IP address.

The following example shows how to enable one-to-one mapping NAT on the management interface:

```
(Cisco Controller) > config interface nat-address management enable
```

The following example shows how to set the external NAP IP address 10.10.10.10 on the management interface:

```
(Cisco Controller) > config interface nat-address management set 10.10.10.10
```

config interface port

To map a physical port to the interface (if a link aggregation trunk is not configured), use the **config interface port** command.

config interface port {**management** | *interface_name* | **redundancy-management**} *primary_port* [*secondary_port*]

Syntax Description

management	Specifies the management interface.
interface_name	Interface name.
redundancy-management	Specifies the redundancy management interface.
primary_port	Primary physical port number.
secondary_port	(Optional) Secondary physical port number.

Command Default

None

Command History

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

Usage Guidelines

You can use the **management** option for all controllers except the Cisco 5500 Series Controllers.

The following example shows how to configure the primary port number of the LAb02 interface to 3:

```
(Cisco Controller) > config interface port lab02 3
```

config interface quarantine vlan

To configure a quarantine VLAN on any dynamic interface, use the **config interface quarantine vlan** command.

config interface quarantine vlan *interface-name vlan_id*

Syntax Description

interface-name	Interface's name.
vlan_id	VLAN identifier. **Note** Enter 0 to disable quarantine processing.

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 configure a quarantine VLAN on the quarantine interface with the VLAN ID 10:

```
(Cisco Controller) > config interface quarantine vlan quarantine 10
```

config interface vlan

To configure an interface VLAN identifier, use the **config interface vlan** command.

config interface vlan {**ap-manager** | **management** | *interface-name* | **redundancy-management**} *vlan*

Syntax Description

ap-manager	Configures the access point manager interface.
management	Configures the management interface.
interface_name	Interface name.
vlan	VLAN identifier.
redundancy-management	Specifies the redundancy management interface.

Command Default None

Command History

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

Usage Guidelines You cannot change the redundancy management VLAN when the system redundancy management interface is mapped to the redundancy port. You must configure the redundancy management port first.

The following example shows how to configure VLAN ID 10 on the management interface:

```
(Cisco Controller) > config interface vlan management 10
```

config known ap

To configure a known Cisco lightweight access point, use the **config known ap** command.

config known ap {**add** | **alert** | **delete**} *MAC*

Syntax Description

add	Adds a new known access point entry.
alert	Generates a trap upon detection of the access point.
delete	Deletes an existing known access point entry.
MAC	MAC address of the known Cisco lightweight access point.

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 add a new access point entry ac:10:02:72:2f:bf on a known access point:

```
(Cisco Controller) >config known ap add ac:10:02:72:2f:bf 12
```

config lag

To enable or disable link aggregation (LAG), use the **config lag** command.

config lag {**enable** | **disable**}

Syntax Description

enable	Enables the link aggregation (LAG) settings.
disable	Disables the link aggregation (LAG) settings.

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 LAG settings:

```
(Cisco Controller) > config lag enable
Enabling LAG will map your current interfaces setting to LAG interface,
All dynamic AP Manager interfaces and Untagged interfaces will be deleted
All WLANs will be disabled and mapped to Mgmt interface
Are you sure you want to continue? (y/n)
You must now reboot for the settings to take effect.
```

The following example shows how to disable LAG settings:

```
(Cisco Controller) > config lag disable
Disabling LAG will map all existing interfaces to port 1.
Are you sure you want to continue? (y/n)
You must now reboot for the settings to take effect.
```

config ldap

To configure the Lightweight Directory Access Protocol (LDAP) server settings, use the **config ldap** command.

config ldap {**add** | **delete** | **enable** | **disable** | **retransmit-timeout** | **retry** | **user** | **security-mode** | **simple-bind**} *index*

config ldap add *index server_ip_address port user_base user_attr user_type* [**secure**]

config ldap retransmit-timeout *index retransmit-timeout*

config ldap retry *attempts*

config ldap user {**attr** *index user-attr* | **base** *index user-base* | **type***index user-type*}

config ldap security-mode {**enable** | **disable**} *index*

config ldap simple-bind {**anonymous** *index* | **authenticated** *index username password*}

Syntax Description

add	Specifies that an LDAP server is being added.
delete	Specifies that an LDAP server is being deleted.
enable	Specifies that an LDAP serve is enabled.
disable	Specifies that an LDAP server is disabled.
retransmit-timeout	Changes the default retransmit timeout for an LDAP server.
retry	Configures the retry attempts for an LDAP server.
user	Configures the user search parameters.
security-mode	Configures the security mode.
simple-bind	Configures the local authentication bind method.
anonymous	Allows anonymous access to the LDAP server.
authenticated	Specifies that a username and password be entered to secure access to the LDAP server.
index	LDAP server index. The range is from 1 to 17.
server_ip_address	IP address of the LDAP server.

port	Port number.
user_base	Distinguished name for the subtree that contains all of the users.
user_attr	Attribute that contains the username.
user_type	ObjectType that identifies the user.
secure	(Optional) Specifies that Transport Layer Security (TLS) is used.
retransmit-timeout	Retransmit timeout for an LDAP server. The range is from 2 to 30.
attempts	Number of attempts that each LDAP server is retried.
attr	Configures the attribute that contains the username.
base	Configures the distinguished name of the subtree that contains all the users.
type	Configures the user type.
username	Username for the authenticated bind method.
password	Password for the authenticated bind method.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
7.6	The **secure** keyword was added to support secure LDAP.

Usage Guidelines

When you enable secure LDAP, the controller does not validate the server certificate.

The following example shows how to enable LDAP server index 10:

```
(Cisco Controller) > config ldap enable 10
```

Related Commands

config ldap add

config ldap simple-bind

show ldap summary

config ldap add

To configure a Lightweight Directory Access Protocol (LDAP) server, use the **config ldap add** command.

config lap add *index server_ip_address port user_base user_attr user_type* **secure**

Syntax Description

index	LDAP server index.
server_ip_address	IP address of the LDAP server.
port	Port number.
user_base	Distinguished name for the subtree that contains all of the users.
user_attr	Attribute that contains the username.
user_type	ObjectType that identifies the user.
secure	Secure mode.

Command Default None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
7.6	The **secure** keyword was added to support secure LDAP.

The following example shows how to configure a LDAP server with the index10, server IP address 209.165.201.30, port number 2:

```
(Cisco Controller) > config ldap add 10 209.165.201.30 2 base_name attr_name type_name
```

The following example shows how to configure a LDAP server with the index10, server IP address 209.165.201.30, port number 2 with secure mode:

```
(Cisco Controller) > config ldap add 10 209.165.201.30 2 base_name attr_name type_name
secure
```

Related Commands

config ldap

config ldap simple-bind

show ldap summary

config ldap simple-bind

To configure the local authentication bind method for the Lightweight Directory Access Protocol (LDAP) server, use the **config ldap simple-bind** command.

config ldap simple-bind {**anonymous** *index* | **authenticated** *index username password*}

Syntax Description

anonymous	Allows anonymous access to the LDAP server.

index	LDAP server index.
authenticated	Specifies that a username and password be entered to secure access to the LDAP server.
username	Username for the authenticated bind method.
password	Password for the authenticated bind method.

Command Default

The default bind method is **anonymous**.

Command History

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

The following example shows how to configure the local authentication bind method that allows anonymous access to the LDAP server:

```
(Cisco Controller) > config ldap simple-bind anonymous
```

Related Commands

config ldap add

config ldap

show ldap summary

config license agent

To configure the license agent on the Cisco 5500 Series Controller, use the **config license agent** command.

config license agent {**default** {**disable** | **authenticate** [**none**]} } {**listener http** {**disable** | {**plaintext** | **encrypt**} **url authenticate** [**acl** *acl_name*] {**max-message** *size* [**none**]} } {**max-session** *sessions*} {**notify** {**disable** | *url*} *username password*}

Syntax Description

default	Specifies the default license agent.
disable	Disables the feature.
authenticate	Enables authentication.
none	(Optional) Disables authentication.
listener http	Configures the license agent to receive license requests from the Cisco License Manager (CLM).
plaintext	Disables encryption (HTTP).
encrypt	Enables encryption (HTTPS).
url	URL where the license agent receives the requests.

acl	(Optional) Specifies the access control list.
acl_name	Specifies the access control list for license requests.
max-message	Specifies the maximum message size for license requests.
size	Maximum message size for license request is from 0 to 65535.
max-session	Specifies the maximum number of sessions allowed.
sessions	Maximum number of sessions allowed for the license agent is from 1 to 25.
notify	Configures the license agent to send license notifications to the CLM.
username	Username used in license agent notification.
password	Password used in license agent notification.

Command Default

The license agent is **disabled** by default.

The listener is **disabled** by default.

Notify is **disabled** by default.

The default maximum number of sessions is 9.

The default maximum message size is 0.

Command History

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

Usage Guidelines

If your network contains various Cisco licensed devices, you might consider using the CLM to manage all of the licenses using a single application. CLM is a secure client/server application that manages Cisco software licenses network wide.

The license agent is an interface module that runs on the controller and mediates between CLM and the controller's licensing infrastructure. CLM can communicate with the controller using various channels, such as HTTP, Telnet, and so on. If you want to use HTTP as the communication method, you must enable the license agent on the controller.

The license agent receives requests from the CLM and translates them into license commands. It also sends notifications to the CLM. It uses XML messages over HTTP or HTTPS to receive the requests and send the notifications. For example, if the CLM sends a **license clear** command, the agent notifies the CLM after the license expires.

Note You can download the CLM software and access user documentation at this URL: http://www.cisco.com/c/en/us/products/cloud-systems-management/license-manager/index.html

The following example shows how to authenticate the default license agent settings:

```
(Cisco Controller) > config license agent default authenticate
```

The following example shows how to configure the license agent with the number of maximum sessions allowed as 5:

```
(Cisco Controller) > config license agent max-session 5
```

Related Commands

license install

show license agent

clear license agent

config license boot

To specify the license level to be used on the next reboot of the Cisco 5500 Series Controller, use the **config license boot** command.

config license boot {**base** | **wplus** | **auto**}

Syntax Description

base	Specifies the base boot level.
wplus	Specifies the wplus boot level.
auto	Specifies the auto boot level.

Command Default

None

Command History

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

Usage Guidelines

If you enter **auto**, the licensing software automatically chooses the license level to use on the next reboot. It generally chooses permanent licenses over evaluation licenses and wplus licenses over base licenses.

Note If you are considering upgrading from a base license to a wplus license, you can try an evaluation wplus license before upgrading to a permanent wplus license. To activate the evaluation license, you need to set the image level to wplus in order for the controller to use the wplus evaluation license instead of the base permanent license.

Note To prevent disruptions in operation, the controller does not switch licenses when an evaluation license expires. You must reboot the controller in order to return to a permanent license. Following a reboot, the controller defaults to the same feature set level as the expired evaluation license. If no permanent license at the same feature set level is installed, the controller uses a permanent license at another level or an unexpired evaluation license.

The following example shows how to set the license boot settings to wplus:

```
(Cisco Controller) > config license boot wplus
```

Related Commands

license install

show license in-use

license modify priority

config load-balancing

To globally configure aggressive load balancing on the controller, use the **config load-balancing** command.

config load-balancing {**window** *client_count* | **status** {**enable** | **disable**} | **denial** *denial_count*}

config load-balancing uplink-threshold *traffic_threshold*

Syntax Description

window	Specifies the aggressive load balancing client window.
client_count	Aggressive load balancing client window with the number of clients from 1 to 20.
status	Sets the load balancing status.
enable	Enables load balancing feature.
disable	Disables load balancing feature.
denial	Specifies the number of association denials during load balancing.
denial_count	Maximum number of association denials during load balancing. from 0 to 10.
uplink-threshold	Specifies the threshold traffic for an access point to deny new associations.
traffic_threshold	Threshold traffic for an access point to deny new associations. This value is a percentage of the WAN utilization measured over a 90 second interval. For example, the default threshold value of 50 triggers the load balancing upon detecting an utilization of 50% or more on an access point WAN interface.

Command Default

By default, the aggressive load balancing is disabled.

Command History

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

Usage Guidelines

Load-balancing-enabled WLANs do not support time-sensitive applications like voice and video because of roaming delays.

When you use Cisco 7921 and 7920 Wireless IP Phones with controllers, make sure that aggressive load balancing is disabled on the voice WLANs for each controller. Otherwise, the initial roam attempt by the phone might fail, causing a disruption in the audio path.

Clients can only be load balanced across access points joined to the same controller. The WAN utilization is calculated as a percentage using the following formula: (Transmitted Data Rate (per second) + Received Data Rate (per second))/(1000Mbps TX + 1000Mbps RX) * 100

The following example shows how to enable the aggressive load-balancing settings:

```
(Cisco Controller) > config load-balancing aggressive enable
```

Related Commands

show load-balancing

config wlan load-balance

config local-auth active-timeout

To specify the amount of time in which the controller attempts to authenticate wireless clients using local Extensible Authentication Protocol (EAP) after any pair of configured RADIUS servers fails, use the **config local-auth active-timeout** command.

config local-auth active-timeout *timeout*

Syntax Description

timeout	Timeout measured in seconds. The range is from 1 to 3600.

Command Default

The default timeout value is 100 seconds.

Command History

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

The following example shows how to specify the active timeout to authenticate wireless clients using EAP to 500 seconds:

```
(Cisco Controller) > config local-auth active-timeout 500
```

Related Commands

clear stats local-auth

config local-auth eap-profile

config local-auth method fast

config local-auth user-credentials

debug aaa local-auth

show local-auth certificates

show local-auth config

show local-auth statistics

config local-auth eap-profile

To configure local Extensible Authentication Protocol (EAP) authentication profiles, use the **config local-auth eap-profile** command.

config local-auth eap-profile {[**add** | **delete**] *profile_name* | **cert-issuer** {**cisco** | **vendor**} | **method** *method* **local-cert** {**enable** | **disable**} *profile_name* | **method** *method* **client-cert** {**enable** | **disable**} *profile_name* | **method** *method* **peer-verify ca-issuer** {**enable** | **disable**} | **method** *method* **peer-verify cn-verify** {**enable** | **disable**} | **method** *method* **peer-verify date-valid** {**enable** | **disable**}

Syntax Description

add	(Optional) Specifies that an EAP profile or method is being added.
delete	(Optional) Specifies that an EAP profile or method is being deleted.
profile_name	EAP profile name (up to 63 alphanumeric characters). Do not include spaces within a profile name.
cert-issuer	(For use with EAP-TLS, PEAP, or EAP-FAST with certificates) Specifies the issuer of the certificates that will be sent to the client. The supported certificate issuers are Cisco or a third-party vendor.
cisco	Specifies the Cisco certificate issuer.
vendor	Specifies the third-party vendor.
method	Configures an EAP profile method.
method	EAP profile method name. The supported methods are leap, fast, tls, and peap.
local-cert	(For use with EAP-FAST) Specifies whether the device certificate on the controller is required for authentication.
enable	Specifies that the parameter is enabled.
disable	Specifies that the parameter is disabled.
client-cert	(For use with EAP-FAST) Specifies whether wireless clients are required to send their device certificates to the controller in order to authenticate.
peer-verify	Configures the peer certificate verification options.
ca-issuer	(For use with EAP-TLS or EAP-FAST with certificates) Specifies whether the incoming certificate from the client is to be validated against the Certificate Authority (CA) certificates on the controller.

cn-verify	(For use with EAP-TLS or EAP-FAST with certificates) Specifies whether the common name (CN) in the incoming certificate is to be validated against the CA certificates' CN on the controller.
date-valid	(For use with EAP-TLS or EAP-FAST with certificates) Specifies whether the controller is to verify that the incoming device certificate is still valid and has not expired.

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 create a local EAP profile named FAST01:

```
(Cisco Controller) > config local-auth eap-profile add FAST01
```

The following example shows how to add the EAP-FAST method to a local EAP profile:

```
(Cisco Controller) > config local-auth eap-profile method add fast FAST01
```

The following example shows how to specify Cisco as the issuer of the certificates that will be sent to the client for an EAP-FAST profile:

```
(Cisco Controller) > config local-auth eap-profile method fast cert-issuer cisco
```

The following example shows how to specify that the incoming certificate from the client be validated against the CA certificates on the controller:

```
(Cisco Controller) > config local-auth eap-profile method fast peer-verify ca-issuer enable
```

Related Commands

config local-auth active-timeout

config local-auth method fast

config local-auth user-credentials

debug aaa local-auth

show local-auth certificates

show local-auth config

show local-auth statistics

config local-auth method fast

To configure an EAP-FAST profile, use the **config local-auth method fast** command.

config local-auth method fast {**anon-prov** [**enable** | **disable**] | **authority-id** *auth_id* **pac-ttl** *days* | **server-key** *key_value*}

Syntax Description

anon-prov	Configures the controller to allow anonymous provisioning, which allows PACs to be sent automatically to clients that do not have one during Protected Access Credentials (PAC) provisioning.
enable	(Optional) Specifies that the parameter is enabled.
disable	(Optional) Specifies that the parameter is disabled.
authority-id	Configures the authority identifier of the local EAP-FAST server.
auth_id	Authority identifier of the local EAP-FAST server (2 to 32 hexadecimal digits).
pac-ttl	Configures the number of days for the Protected Access Credentials (PAC) to remain viable (also known as the time-to-live [TTL] value).
days	Time-to-live value (TTL) value (1 to 1000 days).
server-key	Configures the server key to encrypt or decrypt PACs.
key_value	Encryption key value (2 to 32 hexadecimal digits).

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 disable the controller to allows anonymous provisioning:

```
(Cisco Controller) > config local-auth method fast anon-prov disable
```

The following example shows how to configure the authority identifier 0125631177 of the local EAP-FAST server:

```
(Cisco Controller) > config local-auth method fast authority-id 0125631177
```

The following example shows how to configure the number of days to 10 for the PAC to remain viable:

```
(Cisco Controller) > config local-auth method fast pac-ttl 10
```

Related Commands

clear stats local-auth

config local-auth eap-profile

config local-auth active-timeout

config local-auth user-credentials

debug aaa local-auth

show local-auth certificates

show local-auth config

show local-auth statistics

config local-auth user-credentials

To configure the local Extensible Authentication Protocol (EAP) authentication database search order for user credentials, use the **config local-auth user credentials** command.

config local-auth user-credentials {**local** [**ldap**] | **ldap** [**local**] }

Syntax Description

local	Specifies that the local database is searched for the user credentials.
ldap	(Optional) Specifies that the Lightweight Directory Access Protocol (LDAP) database is searched for the user credentials.

Command Default

None

Command History

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

Usage Guidelines

The order of the specified database parameters indicate the database search order.

The following example shows how to specify the order in which the local EAP authentication database is searched:

```
(Cisco Controller) > config local-auth user credentials local lda
```

In the above example, the local database is searched first and then the LDAP database.

Related Commands

clear stats local-auth

config local-auth eap-profile

config local-auth method fast

config local-auth active-timeout

debug aaa local-auth

show local-auth certificates

show local-auth config

show local-auth statistics

config location

To configure a location-based system, use the **config location** command.

config location {**algorithm** {**simple** | **rssi-average**} | {**rssi-half-life** | **expiry**} [**client** | **calibrating-client** | **tags** | **rogue-aps**] *seconds* | **notify-threshold** [**client** | **tags** | **rogue-aps**] *threshold* | **interface-mapping** {**add** | **delete**} *location wlan_id interface_name* | **plm** {**client** {**enable** | **disable**} *burst_interval* | **calibrating** {**enable** | **disable**} {**uniband** | **multiband**}}}

Syntax Description

algorithm	**Note**	We recommend that you do not use or modify the **config location algorithm** command. It is set to optimal default values. Configures the algorithm used to average RSSI and SNR values.
simple		Specifies a faster algorithm that requires low CPU overhead but provides less accuracy.
rssi-average		Specifies a more accurate algorithm but requires more CPU overhead.
rssi-half-life	**Note**	We recommend that you do not use or modify the **config location rssi-half-life** command. It is set to optimal default values. Configures the half-life when averaging two RSSI readings.
expiry	**Note**	We recommend that you do not use or modify the **config location expiry** command. It is set to optimal default values. Configures the timeout for RSSI values.
client		(Optional) Specifies the parameter applies to client devices.
calibrating-client		(Optional) Specifies the parameter is used for calibrating client devices.
tags		(Optional) Specifies the parameter applies to radio frequency identification (RFID) tags.
rogue-aps		(Optional) Specifies the parameter applies to rogue access points.
seconds		Time value (0, 1, 2, 5, 10, 20, 30, 60, 90, 120, 180, 300 seconds).
notify-threshold	**Note**	We recommend that you do not use or modify the **config location notify-threshold** command. It is set to optimal default values. Specifies the NMSP notification threshold for RSSI measurements.
threshold		Threshold parameter. The range is 0 to 10 dB, and the default value is 0 dB.
interface-mapping		Adds or deletes a new location, wireless LAN, or interface mapping element.
wlan_id		WLAN identification name.
interface_name		Name of interface to which mapping element applies.

plm	Specifies the path loss measurement (S60) request for normal clients or calibrating clients.
client	Specifies normal, noncalibrating clients.
burst_interval	Burst interval. The range is from 1 to 3600 seconds, and the default value is 60 seconds.
calibrating	Specifies calibrating clients.
uniband	Specifies the associated 802.11a or 802.11b/g radio (uniband).
multiband	Specifies the associated 802.11a/b/g radio (multiband).

Command Default

See the "Syntax Description" section for default values of individual arguments and keywords.

Command History

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

The following example shows how to specify the simple algorithm for averaging RSSI and SNR values on a location-based controller:

```
(Cisco Controller) > config location algorithm simple
```

Related Commands

config location info rogue

clear location rfid

clear location statistics rfid

show location

show location statistics rfid

config logging buffered

To set the severity level for logging messages to the controller buffer, use the **config logging buffered** command.

config logging buffered `security_level`

Syntax Description

security_level	Security level. Choose one of the following: • emergencies—Severity level 0 • alerts—Severity level 1 • critical—Severity level 2 • errors—Severity level 3 • warnings—Severity level 4 • notifications—Severity level 5 • informational—Severity level 6 • debugging—Severity level 7

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 set the controller buffer severity level for logging messages to 4:

```
(Cisco Controller) > config logging buffered 4
```

Related Commands

config logging syslog facility

config logging syslog level

show logging

config logging console

To set the severity level for logging messages to the controller console, use the **config logging console** command.

config logging console *security_level*

Syntax Description

security_level	Severity level. Choose one of the following: • emergencies—Severity level 0 • alerts—Severity level 1 • critical—Severity level 2 • errors—Severity level 3 • warnings—Severity level 4 • notifications—Severity level 5 • informational—Severity level 6 • debugging—Severity level 7

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 set the controller console severity level for logging messages to 3:

```
(Cisco Controller) > config logging console 3
```

Related Commands

config logging syslog facility

config logging syslog level

show logging

config logging debug

To save debug messages to the controller buffer, the controller console, or a syslog server, use the **config logging debug** command.

config logging debug {**buffered** | **console** | **syslog**} {**enable** | **disable**}

Syntax Description

buffered	Saves debug messages to the controller buffer.
console	Saves debug messages to the controller console.
syslog	Saves debug messages to the syslog server.
enable	Enables logging of debug messages.
disable	Disables logging of debug messages.

Command Default The **console** command is enabled and the **buffered** and **syslog** commands are disabled by default.

Command History

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

The following example shows how to save the debug messages to the controller console:

```
(Cisco Controller) > config logging debug console enable
```

Related Commands **show logging**

config logging fileinfo

To cause the controller to include information about the source file in the message logs or to prevent the controller from displaying this information, use the **config logging fileinfo** command.

config logging fileinfo {**enable** | **disable**}

Syntax Description

enable	Includes information about the source file in the message logs.
disable	Prevents the controller from displaying information about the source file in the message logs.

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 controller to include information about the source file in the message logs:

```
(Cisco Controller) > config logging fileinfo enable
```

Related Commands **show logging**

config logging procinfo

To cause the controller to include process information in the message logs or to prevent the controller from displaying this information, use the **config logging procinfo** command.

config logging procinfo {**enable** | **disable**}

Syntax Description

enable	Includes process information in the message logs.
disable	Prevents the controller from displaying process information in the message logs.

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 controller to include the process information in the message logs:

```
(Cisco Controller) > config logging procinfo enable
```

Related Commands **show logging**

config logging syslog facility ap

To configure the syslog facility to AP, use the **config logging syslog facility ap**{ **associate** | **disassociate**}{ **enable** | **disable**} command.

config logging syslog facility *AP*

Syntax Description

AP	Facility AP. Has the following functions: • associate—Association syslog for AP • disassociate—Disassociation syslog for AP

Command Default None

Command History

Release	Modification
7.5	This command was introduced in a release earlier than Release 7.5.

The following example shows how to configure syslog facility for AP:

```
cisco controller config logging syslog facility ap
```

Related Commands **show logging flags ap**

config logging syslog host

To configure a remote host for sending syslog messages, use the **config logging syslog host** command.

config logging syslog host *ip_addr*

Syntax Description

ip_addr	IP address for the remote host.

Command Default None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.

Usage Guidelines

- To configure a remote host for sending syslog messages, use the **config logging syslog host** *ip_addr* command.
- To remove a remote host that was configured for sending syslog messages, use the **config logging syslog host** *ip_addr* **delete** command.
- To display the configured syslog servers on the controller, use the **show logging** command.

The following example shows how to configure two remote hosts 10.92.125.52 and 2001:9:6:40::623 for sending the syslog messages and displaying the configured syslog servers on the controller:

```
(Cisco Controller) > config logging syslog host 10.92.125.52
System logs will be sent to 10.92.125.52 from now on

(Cisco Controller) > config logging syslog host 2001:9:6:40::623
System logs will be sent to 2001:9:6:40::623 from now on

(Cisco Controller) > show logging
Logging to buffer :
- Logging of system messages to buffer :
 - Logging filter level.......................... errors
 - Number of system messages logged.............. 1316
 - Number of system messages dropped............. 6892
- Logging of debug messages to buffer ........... Disabled
 - Number of debug messages logged............... 0
 - Number of debug messages dropped.............. 0
- Cache of logging  ............................. Disabled
- Cache of logging time(mins) ................... 10080
- Number of over cache time log dropped  ........ 0
Logging to console :
- Logging of system messages to console :
 - Logging filter level.......................... disabled
 - Number of system messages logged.............. 0
 - Number of system messages dropped............. 8243
- Logging of debug messages to console .......... Enabled
 - Number of debug messages logged............... 0
 - Number of debug messages dropped.............. 0
Logging to syslog :
- Syslog facility................................ local0
- Logging of system messages to console :
 - Logging filter level.......................... disabled
 - Number of system messages logged.............. 0
 - Number of system messages dropped............. 8208
- Logging of debug messages to console .......... Enabled
 - Number of debug messages logged............... 0
 - Number of debug messages dropped.............. 0
- Logging of system messages to syslog :
 - Logging filter level.......................... errors
 - Number of system messages logged.............. 1316
 - Number of system messages dropped............. 6892
- Logging of debug messages to syslog ........... Disabled
```

```
 - Number of debug messages logged..... 0
 - Number of debug messages dropped..... 0
- Number of remote syslog hosts..... 2
- syslog over tls..... Disabled
  - Host 0..... 10.92.125.52
  - Host 1..... 2001:9:6:40::623
  - Host 2.....
Logging of RFC 5424..... Disabled
Logging of Debug messages to file :
- Logging of Debug messages to file..... Disabled
- Number of debug messages logged..... 0
- Number of debug messages dropped..... 0
Logging of traceback..... Enabled
```

The following example shows how to remove two remote hosts 10.92.125.52 and 2001:9:6:40::623 that were configured for sending syslog messages and displaying that the configured syslog servers were removed from the controller:

```
(Cisco Controller) > config logging syslog host 10.92.125.52 delete
System logs will not be sent to 10.92.125.52 anymore

(Cisco Controller) > config logging syslog host 2001:9:6:40::623 delete
System logs will not be sent to 2001:9:6:40::623 anymore

(Cisco Controller) > show logging

Logging to buffer :
- Logging of system messages to buffer :
 - Logging filter level..... errors
 - Number of system messages logged..... 1316
 - Number of system messages dropped..... 6895
- Logging of debug messages to buffer ..... Disabled
 - Number of debug messages logged..... 0
 - Number of debug messages dropped..... 0
- Cache of logging  ..... Disabled
- Cache of logging time(mins) ..... 10080
- Number of over cache time log dropped  ..... 0
Logging to console :
- Logging of system messages to console :
 - Logging filter level..... disabled
 - Number of system messages logged..... 0
 - Number of system messages dropped..... 8211
- Logging of debug messages to console ..... Enabled
 - Number of debug messages logged..... 0
 - Number of debug messages dropped..... 0
Logging to syslog :
- Syslog facility..... local0
- Logging of system messages to syslog :
 - Logging filter level..... errors
 - Number of system messages logged..... 1316
 - Number of system messages dropped..... 6895
- Logging of debug messages to syslog ..... Disabled
 - Number of debug messages logged..... 0
 - Number of debug messages dropped..... 0
- Number of remote syslog hosts..... 0
- syslog over tls..... Disabled
  - Host 0.....
  - Host 1.....
  - Host 2.....
Logging of RFC 5424..... Disabled
Logging of Debug messages to file :
- Logging of Debug messages to file..... Disabled
- Number of debug messages logged..... 0
```

```
- Number of debug messages dropped.............. 0
Logging of traceback........................... Enabled
- Traceback logging level...................... errors
Logging of source file informational.............. Enabled
Timestamping of messages.......................
- Timestamping of system messages................ Enabled
 - Timestamp format............................. Date and Time
```

config logging syslog level

To set the severity level for filtering syslog messages to the remote host, use the **config logging syslog level** command.

config logging syslog level *severity_level*

Syntax Description

severity_level	Severity level. Choose one of the following: • emergencies—Severity level 0 • alerts—Severity level 1 • critical—Severity level 2 • errors—Severity level 3 • warnings—Severity level 4 • notifications—Severity level 5 • informational—Severity level 6 • debugging—Severity level 7

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 set the severity level for syslog messages to 3:

```
(Cisco Controller) > config logging syslog level 3
```

Related Commands

config logging syslog host

config logging syslog facility

show logging

config loginsession close

To close all active Telnet sessions, use the **config loginsession close** command.

config loginsession close {*session_id* | **all**}

Syntax Description

session_id	ID of the session to close.
all	Closes all Telnet sessions.

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 close all active Telnet sessions:

```
(Cisco Controller) > config loginsession close all
```

Related Commands **show loginsession**

config lsc mesh

To enable the locally significant certificate (LSC) on mesh access points, use the **config lsc mesh** command.

config lsc mesh {**enable** | **disable**}

Syntax Description

enable	Enables LSC on mesh access points.
disable	Disabes LSC on mesh access points.

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 LSC on mesh access point:

```
(Cisco Controller) >config lsc mesh enable
```

config nmsp notify-interval measurement

To modify the Network Mobility Services Protocol (NMSP) notification interval value on the controller to address latency in the network, use the **config nmsp notify-interval measurement** command.

config nmsp notify-interval measurement {**client** | **rfid** | **rogue**} *interval*

Syntax Description

client	Modifies the interval for clients.
rfid	Modifies the interval for active radio frequency identification (RFID) tags.

rogue	Modifies the interval for rogue access points and rogue clients.
interval	Time interval. The range is from 1 to 30 seconds.

Command Default None

Command History

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

Usage Guidelines The TCP port (16113) that the controller and location appliance communicate over must be open (not blocked) on any firewall that exists between the controller and the location appliance for NMSP to function.

The following example shows how to modify the NMSP notification interval for the active RFID tags to 25 seconds:

```
(Cisco Controller) > config nmsp notify-interval measurement rfid 25
```

Related Commands

clear locp statistics

clear nmsp statistics

show nmsp notify-interval summary

show nmsp statistics

show nmsp status

config paging

To enable or disable scrolling of the page, use the **config paging** command.

config paging {**enable** | **disable**}

Syntax Description

enable	Enables the scrolling of the page.
disable	Disables the scrolling of the page.

Command Default By default, scrolling of the page is enabled.

Usage Guidelines Commands that produce a huge number of lines of output with the scrolling of the page disabled might result in the termination of SSH/Telnet connection or user session on the console.

The following example shows how to enable scrolling of the page:

```
(Cisco Controller) > config paging enable
```

Related Commands

show run-config

config passwd-cleartext

To enable or disable temporary display of passwords in plain text, use the **config passwd-cleartext** command.

config passwd-cleartext {**enable** | **disable**}

Syntax Description

enable	Enables the display of passwords in plain text.
disable	Disables the display of passwords in plain text.

Command Default

By default, temporary display of passwords in plain text is disabled.

Command History

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

Usage Guidelines

This command must be enabled if you want to see user-assigned passwords displayed in clear text when using the **show run-config** command.

To execute this command, you must enter an admin password. This command is valid only for this particular session. It is not saved following a reboot.

The following example shows how to enable display of passwords in plain text:

```
(Cisco Controller) > config passwd-cleartext enable
The way you see your passwds will be changed
You are being warned.
Enter admin password:
```

Related Commands

show run-config

config prompt

To change the CLI system prompt, use the **config prompt** command.

config prompt *prompt*

Syntax Description

prompt	New CLI system prompt enclosed in double quotes. The prompt can be up to 31 alphanumeric characters and is case sensitive.

Command Default

The system prompt is configured using the startup wizard.

Command History

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

Usage Guidelines

Because the system prompt is a user-defined variable, it is omitted from the rest of this documentation.

The following example shows how to change the CLI system prompt to Cisco 4400:

```
(Cisco Controller) > config prompt "Cisco 4400"
```

config rfid auto-timeout

To configure an automatic timeout of radio frequency identification (RFID) tags, use the **config rfid auto-timeout** command.

config rfid auto-timeout {**enable** | **disable**}

Syntax Description

enable	Enables an automatic timeout.
disable	Disables an automatic timeout.

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 an automatic timeout of RFID tags:

```
(Cisco Controller) > config rfid auto-timeout enable
```

Related Commands

show rfid summary

config rfid status

config rfid timeout

config rfid status

To configure radio frequency identification (RFID) tag data tracking, use the **config rfid status** command.

config rfid status {**enable** | **disable**}

Syntax Description

enable	Enables RFID tag tracking.
disable	Enables RFID tag tracking.

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 configure RFID tag tracking settings:

```
(Cisco Controller) > config rfid status enable
```

Related Commands

show rfid summary

config rfid auto-timeout

config rfid timeout

config rfid timeout

To configure a static radio frequency identification (RFID) tag data timeout, use the **config rfid timeout** command.

config rfid timeout *seconds*

Syntax Description

seconds	Timeout in seconds (from 60 to 7200).

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 configure a static RFID tag data timeout of 60 seconds:

```
(Cisco Controller) > config rfid timeout 60
```

Related Commands

show rfid summary

config rfid statistics

config route add

To configure a network route from the service port to a dedicated workstation IP address range, use the **config route add** command.

config route add *ip_address netmask gateway*

Syntax Description

ip_address	Network IP address.
netmask	Subnet mask for the network.
gateway	IP address of the gateway for the route network.

Command Default

None

Usage Guidelines

As on release 7.6, *IP_address* supports only IPv4 addresses.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6. This command supports only IPv4 address format.

The following example shows how to configure a network route to a dedicated workstation IP address 10.1.1.0, subnet mask 255.255.255.0, and gateway 10.1.1.1:

```
(Cisco Controller) > config route add 10.1.1.0 255.255.255.0 10.1.1.1
```

config route delete

To remove a network route from the service port, use the **config route delete** command.

config route delete *ip_address*

Syntax Description

ip_address	Network IP address.

Command Default

None

Usage Guidelines

As on release 7.6, *IP_address* supports only IPv4 addresses.

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports only IPv6 address format.

The following example shows how to delete a route from the network IP address 10.1.1.0:

```
(Cisco Controller) > config route delete 10.1.1.0
```

config serial baudrate

To set the serial port baud rate, use the **config serial baudrate** command.

config serial baudrate {**1200** | **2400** | **4800** | **9600** | **19200** | **38400** | **57600**}

Syntax Description

1200	Specifies the supported connection speeds to 1200.
2400	Specifies the supported connection speeds to 2400.
4800	Specifies the supported connection speeds to 4800.
9600	Specifies the supported connection speeds to 9600.

19200	Specifies the supported connection speeds to 19200.
38400	Specifies the supported connection speeds to 38400.
57600	Specifies the supported connection speeds to 57600.

Command Default

The default serial port baud rate is 9600.

Command History

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

The following example shows how to configure a serial baud rate with the default connection speed of 9600:

```
(Cisco Controller) > config serial baudrate 9600
```

config serial timeout

To set the timeout of a serial port session, use the **config serial timeout** command.

config serial timeout *minutes*

Syntax Description

minutes	Timeout in minutes from 0 to 160. A value of 0 indicates no timeout.

Command Default

0 (no timeout)

Command History

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

Usage Guidelines

Use this command to set the timeout for a serial connection to the front of the Cisco wireless LAN controller from 0 to 160 minutes where 0 is no timeout.

The following example shows how to configure the timeout of a serial port session to 10 minutes:

```
(Cisco Controller) > config serial timeout 10
```

config service timestamps

To enable or disable time stamps in message logs, use the **config service timestamps** command.

config service timestamps {**debug** | **log**} {**datetime** | **disable**}

Syntax Description

debug	Configures time stamps in debug messages.
log	Configures time stamps in log messages.
datetime	Specifies to time-stamp message logs with the standard date and time.
disable	Specifies to prevent message logs being time-stamped.

Command Default

By default, the time stamps in message logs are 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 configure time-stamp message logs with the standard date and time:

```
(Cisco Controller) > config service timestamps log datetime
```

The following example shows how to prevent message logs being time-stamped:

```
(Cisco Controller) > config service timestamps debug disable
```

Related Commands

show logging

config sessions maxsessions

To configure the number of Telnet CLI sessions allowed by the controller, use the **config sessions maxsessions** command.

config sessions maxsessions *session_num*

Syntax Description

session_num	Number of sessions from 0 to 5.

Command Default

The default number of Telnet CLI sessions allowed by the controller is 5.

Command History

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

Usage Guidelines

Up to five sessions are possible while a setting of zero prohibits any Telnet CLI sessions.

The following example shows how to configure the number of allowed CLI sessions to 2:

```
(Cisco Controller) > config sessions maxsessions 2
```

Related Commands

show sessions

config slot

To configure various slot parameters, use the **config slot** command.

config slot *slot_id* {**enable** | **disable** | **channel ap** | **chan_width** | **txpower ap** | **antenna extAntGain** *antenna_gain* | **rts**} *cisco_ap*

Syntax Description

slot_id	Slot downlink radio to which the channel is assigned. Beginning in Release 7.5 and later releases, you can configure 802.11a on slot 1 and 802.11ac/ax on slot 2.
enable	Enables the slot.
disable	Disables the slot.
channel	Configures the channel for the slot.
ap	Configures one 802.11a Cisco access point.
chan_width	Configures channel width for the slot.
txpower	Configures Tx power for the slot.
antenna	Configures the 802.11a antenna.
extAntGain	Configures the 802.11a external antenna gain.
antenna_gain	External antenna gain value in .5 dBi units (such as 2.5 dBi = 5).
rts	Configures RTS/CTS for an access point.
cisco_ap	Name of the Cisco access point on which the channel is configured.

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 slot 3 for the access point abc:

```
(Cisco Controller) >config slot 3 enable abc
```

The following example shows how to configure RTS for the access point abc:

```
(Cisco Controller) >config slot 2 rts abc
```

config switchconfig boot-break

To enable or disable the breaking into boot prompt by pressing the Esc key at system startup, use the **config switchconfig boot-break** command.

config switchconfig boot-break {**enable** | **disable**}

Syntax Description		
	enable	Enables the breaking into boot prompt by pressing the Esc key at system startup.
	disable	Disables the breaking into boot prompt by pressing the Esc key at system startup.

Command Default By default, the breaking into boot prompt by pressing the Esc key at system startup is disabled.

Usage Guidelines You must enable the features that are prerequisites for the Federal Information Processing Standard (FIPS) mode before enabling or disabling the breaking into boot prompt.

The following example shows how to enable the breaking into boot prompt by pressing the Esc key at system startup:

```
(Cisco Controller) > config switchconfig boot-break enable
```

Related Commands

show switchconfig

config switchconfig flowcontrol

config switchconfig mode

config switchconfig secret-obfuscation

config switchconfig fips-prerequisite

config switchconfig strong-pwd

config switchconfig fips-prerequisite

To configure Federal Information Processing Standard (FIPS) on the controller, use the **config switchconfig wlancc** command.

config switchconfig fips-prerequisite {**enable** | **disable**}

Syntax Description		
	enable	Enables FIPS on the controller.
	disable	Disables FIPS on the controller.

Command Default None

Command History	Release	Modification
	8.0	This command was introduced.

The following example shows how to enable FIPS on the controller:

```
(Cisco Controller) > config switchconfig fips-prerequisite enable
```

config switchconfig flowcontrol

To enable or disable 802.3x flow control, use the **config switchconfig flowcontrol** command.

config switchconfig flowcontrol {**enable** | **disable**}

Syntax Description

enable	Enables 802.3x flow control.
disable	Disables 802.3x flow control.

Command Default By default, 802.3x flow control is disabled.

The following example shows how to enable 802.3x flow control on Cisco wireless LAN controller parameters:

```
(Cisco Controller) > config switchconfig flowcontrol enable
```

Related Commands **show switchconfig**

config switchconfig mode

To configure Lightweight Access Port Protocol (LWAPP) transport mode for Layer 2 or Layer 3, use the **config switchconfig mode** command.

config switchconfig mode {**L2** | **L3**}

Syntax Description

L2	Specifies Layer 2 as the transport mode.
L3	Specifies Layer 3 as the transport mode.

Command Default The default transport mode is L3.

Command History

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

The following example shows how to configure LWAPP transport mode to Layer 3:

```
(Cisco Controller) > config switchconfig mode L3
```

Related Commands **show switchconfig**

config switchconfig secret-obfuscation

To enable or disable secret obfuscation, use the **config switchconfig secret-obfuscation** command.

config switchconfig secret-obfuscation {**enable** | **disable**}

Syntax Description

enable	Enables secret obfuscation.
disable	Disables secret obfuscation.

Command Default Secrets and user passwords are obfuscated in the exported XML configuration file.

Command History

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

Usage Guidelines To keep the secret contents of your configuration file secure, do not disable secret obfuscation. To further enhance the security of the configuration file, enable configuration file encryption.

The following example shows how to enable secret obfuscation:

```
(Cisco Controller) > config switchconfig secret-obfuscation enable
```

Related Commands **show switchconfig**

config switchconfig ucapl

To configure US Department of Defense (DoD) Unified Capabilities Approved Product List (APL) certification on the controller, use the **config switchconfig wlancc** command.

config switchconfig ucapl {**enable** | **disable**}

Syntax Description

enable	Enables UCAPL on the controller.
disable	Disables UCAPL on the controller.

Command Default None

Command History

Release	Modification
8.0	This command was introduced.

The following example shows how to enable UCAPL on the controller:

```
(Cisco Controller) > config switchconfig ucapl enable
```

config switchconfig ucapl

To configure US Department of Defense (DoD) Unified Capabilities Approved Product List (APL) certification on the controller, use the **config switchconfig wlancc** command.

config switchconfig ucapl {**enable** | **disable**}

Syntax Description

enable	Enables UCAPL on the controller.
disable	Disables UCAPL on the controller.

Command Default None

Command History

Release	Modification
8.0	This command was introduced.

The following example shows how to enable UCAPL on the controller:

```
(Cisco Controller) > config switchconfig ucapl enable
```

config switchconfig wlancc

To configure WLAN Common Criteria (CC) on the controller, use the **config switchconfig wlancc** command.

config switchconfig wlancc {**enable** | **disable**}

Syntax Description

enable	Enables WLAN CC on the controller.
disable	Disables WLAN CC on the controller.

Command Default None

Command History

Release	Modification
8.0	This command was introduced.

The following example shows how to enable WLAN CC on the controller:

```
(Cisco Controller) > config switchconfig wlancc enable
```

config switchconfig password-encryption

To configure type-6 password encryption with a master key, use the **config switchconfig password-encryption** command.

config switchconfig password-encryption {**enable** | **disable**}

Syntax Description

enable	Enables type-6 password encryption with a master key.
disable	Disables type-6 password encryption with a master key.

Command Default Disabled

Usage Guidelines Ensure that you have configured a master key before you enable password encryption.

Command History

Release	Modification
8.10	This command was introduced.

The following example shows how to enable type-6 password encryption with a master key:

```
(Cisco Controller) > config switchconfig password-encryption enable
```

config switchconfig password-encryption key

To configure the master key that is used to encrypt all secrets, use the **config switchconfig password-encryption key** command.

config switchconfig password-encryption key *master-key-value*

Syntax Description

master-key-value	Enables type-6 password encryption with a master key. Use at least three of the following four classes in the password: letters, uppercase letters, digits, or special characters. The master key length should be between 16 to 127 alphanumeric characters.

Command Default

None

Command History

Release	Modification
8.10	This command was introduced.

The following example shows how to configure the master key that is used to encrypt all secrets:

```
(Cisco Controller) > config switchconfig password-encryption key Te5tPa$$w0rd123456
```

config switchconfig strong-pwd

To enable or disable your controller to check the strength of newly created passwords, use the **config switchconfig strong-pwd** command.

config switchconfig strong-pwd { **case-check** | **consecutive-check** | **default-check** | **username-check** | **position-check** | **case-digit-check** | **minimum** { **upper-case** | **lower-case** | **digits** | **special-chars** } *no._of_characters* | **min-length** | *password_length* | **lockout** { **mgmtuser** | **snmpv3user** | **time** | **attempts** } | **lifetime** { **mgmtuser** | **snmpv3user** } *lifetime* | **all-checks** } { **enable** | **disable** }

Syntax Description

case-check	Checks at least three combinations: lowercase characters, uppercase characters, digits, or special characters.

consecutive-check	Checks the occurrence of the same character three times.
default-check	Checks for default values or use of their variants.
username-check	Checks whether the username is specified or not.
position-check	Checks whether the password has a four-character change from the old password.
case-digit-check	Checks whether the password has all the four combinations: lower, upper, digits, or special characters.
minimum	Checks whether the password has a minimum number of upper case and lower case characters, digits, or special characters.
upper-case	Checks whether the password has a minimum number of upper case characters.
lower-case	Checks whether the password has a minimum number of lower case characters.
digits	Checks whether the password has a minimum number of digits.
special-chars	Checks whether the password has a minimum number of special characters.
min-length	Configures the minimum length for the password.
password_length	Minimum length for the password. The range is from 3 to 24 case-sensitive characters.
lockout	Configures the lockout feature for a management user or Simple Network Management Protocol version 3 (SNMPv3) user.
mgmtuser	Locks out a management user when the number of successive failed attempts exceed the management user lockout attempts.
snmpv3user	Locks out a SNMPv3 user when the number of successive failed attempts exceeds the SNMPv3 user lockout attempts.
time	Configures the time duration after the lockout attempts when the management user or SNMPv3 user is locked.
attempts	Configures the number of successive incorrect password attempts after which the management user or SNMPv3 user is locked.

lifetime	Configures the number of days before the management user or SNMPv3 user requires a change of password due to the age of the password.
mgmtuser	Configures the number of days before the management user requires a change of password due to the password age.
snmpv3user	Configures the number of days before the SNMPv3 user requires a change of password due to the age of the password.
lifetime	Number of days before the management user or SNMPv3 user requir*lifetime*es a change of password due to the age of the password.
all-checks	Checks all the cases.
enable	Enables a strong password check for the access point and controller.
disable	Disables a strong password check for the access point and controller.

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 Strong Password Check feature:

```
(Cisco Controller) > config switchconfig strong-pwd case-check enable
```

Related Commands

show switchconfig

config switchconfig flowcontrol

config switchconfig mode

config switchconfig secret-obfuscation

config switchconfig fips-prerequisite

config switchconfig boot-break

config switchconfig restore-password

To configure restore password option for management users, use the **config switchconfig restore-password** command.

config switchconfig restore-password { **enable** | **disable** }

Syntax Description

enable	Enables password of management users to be restored.
disable	Disables password of management users from being restored.

Command Default

By default, this feature is in enabled state.

Usage Guidelines

Before Release 8.10, this feature was enabled by default and was nonconfigurable. In 8.10 and later releases, you are given the option to enable or disable it.

Command History

Release	Modification
8.10	This command was introduced.

Examples

The following example shows how to disable password of management users from being restored:

```
(Cisco Controller) > config switchconfig restore-password disable

Warning! By disabling this option, there would be no way to
restore the access to the box without clearing the configuration.
Are you sure you want to continue? (y/n)
```

config sysname

To set the Cisco wireless LAN controller system name, use the **config sysname** command.

config sysname *name*

Syntax Description

name	System name. The name can contain up to 24 alphanumeric characters.

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 configure the system named Ent_01:

```
(Cisco Controller) > config sysname Ent_01
```

Related Commands

show sysinfo

config time manual

To set the system time, use the **config time manual** command.

config time manual *MM* | *DD* | *YY HH* **:** *MM* **:** *SS*

Syntax Description

MM/DD/YY	Date.
HH:MM:SS	Time.

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 configure the system date to 04/04/2010 and time to 15:29:00:

```
(Cisco Controller) > config time manual 04/04/2010 15:29:00
```

Related Commands **show time**

config time ntp

To set the Network Time Protocol (NTP), use the **config time ntp** command.

config time ntp {**auth** {**enable** *server-index key-index* | **disable** *server-index*} | **interval** *interval* | **key-auth** {**add** *key-index* **md5** {**ascii** | **hex**} *key*} | **delete** *key-index*} | **pollinterval** *maxpoll minpollserver-index* | **server** *index IP Address*}

Syntax Description

auth	Configures the NTP authentication.
enable	Enables the NTP authentication.
server-index	NTP server index.
key-index	Key index between 1 and 4294967295.
disable	Disables the NTP authentication.
interval	Configures the NTP version 3 polling interval.
interval	NTP polling interval in seconds. The range is from 3600 and 604800 seconds.
key-auth	Configures the NTP authentication key.
add	Adds an NTP authentication key.
md5	Specifies the authentication protocol.
ascii	Specifies the ASCII key type.
hex	Specifies the hexadecimal key type.
key	Specifies the ASCII key format with a maximum of 16 characters or the hexadecimal key format with a maximum of 32 digits.

delete	Deletes an NTP server.
pollinterval	Configures the Network Time Protocol version 4 Polling Interval.
maxpoll | *minpoll*	Enter maximum and minimum NTP polling interval in (power of 2) seconds.
server-index	Enter the NTP server index number.
server	Configures the NTP servers.
IP Address	NTP server's IP address. Use 0.0.0.0 or :: to delete entry.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.
8.0	This command supports both IPv4 and IPv6 address formats.
8.6	This command was enhanced in this release. The new keywords added are pollinterval, maxpoll, minpoll.
8.6	The NTP server delete option is available with **config time ntp delete** *server-index*

Usage Guidelines

- To add the NTP server to the controller, use the **config time ntp server** *index IP Address* command.
- To display configured NTP server on the controller, use the **show time** command.

The following example shows how to configure the NTP polling interval to 7000 seconds:

```
(Cisco Controller) > config time ntp interval 7000
```

The following example shows how to enable NTP authentication where the server index is 4 and the key index is 1:

```
(Cisco Controller) > config time ntp auth enable 4 1
```

The following example shows how to add an NTP authentication key of value ff where the key format is in hexadecimal characters and the key index is 1:

```
(Cisco Controller) > config time ntp key-auth add 1 md5 hex ff
```

The following example shows how to add an NTP authentication key of value ff where the key format is in ASCII characters and the key index is 1:

```
(Cisco Controller) > config time ntp key-auth add 1 md5 ascii ciscokey
```

The following example shows how to add NTP servers and display the servers configured to controllers:

```
(Cisco Controller) > config time ntp server  1 10.92.125.52
(Cisco Controller) > config time ntp server  2 2001:9:6:40::623
(Cisco Controller) > show time
Time..................................... Fri May 23 12:04:18 2014

Timezone delta.............................. 0:0
Timezone location........................... (GMT +5:30) Colombo, New Delhi, Chennai,
 Kolkata

NTP Servers
NTP Polling Interval........................ 3600

Index NTP Key Index  NTP Server NTP    Msg Auth Status
------- ------------------------------------------------
1            1      10.92.125.52       AUTH SUCCESS
2            1      2001:9:6:40::623   AUTH SUCCESS
```

The following example shows how to delete an NTP server:

```
(Cisco Controller) > config time ntp delete 1
```

config time timezone

To configure the system time zone, use the **config time timezone** command.

config time timezone {**enable** | **disable**} *delta_hours delta_mins*

Syntax Description

enable	Enables daylight saving time.
disable	Disables daylight saving time.
delta_hours	Local hour difference from the Universal Coordinated Time (UCT).
delta_mins	Local minute difference from UCT.

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 daylight saving time:

```
(Cisco Controller) > config time timezone enable 2 0
```

Related Commands

show time

config time timezone location

To set the location of the time zone in order to have daylight saving time set automatically when it occurs, use the **config time timezone location** command.

config time timezone location *location_index*

Syntax Description

location_index	Number representing the time zone required. The time zones are as follows: • (GMT-12:00) International Date Line West • (GMT-11:00) Samoa • (GMT-10:00) Hawaii • (GMT-9:00) Alaska • (GMT-8:00) Pacific Time (US and Canada) • (GMT-7:00) Mountain Time (US and Canada) • (GMT-6:00) Central Time (US and Canada) • (GMT-5:00) Eastern Time (US and Canada) • (GMT-4:00) Atlantic Time (Canada) • (GMT-3:00) Buenos Aires (Argentina) • (GMT-2:00) Mid-Atlantic • (GMT-1:00) Azores • (GMT) London, Lisbon, Dublin, Edinburgh (default value) • (GMT +1:00) Amsterdam, Berlin, Rome, Vienna • (GMT +2:00) Jerusalem • (GMT +3:00) Baghdad • (GMT +4:00) Muscat, Abu Dhabi • (GMT +4:30) Kabul • (GMT +5:00) Karachi, Islamabad, Tashkent • (GMT +5:30) Colombo, Kolkata, Mumbai, New Delhi • (GMT +5:45) Katmandu • (GMT +6:00) Almaty, Novosibirsk • (GMT +6:30) Rangoon • (GMT +7:00) Saigon, Hanoi, Bangkok, Jakatar • (GMT +8:00) Hong Kong, Bejing, Chongquing • (GMT +9:00) Tokyo, Osaka, Sapporo • (GMT +9:30) Darwin • (GMT+10:00) Sydney, Melbourne, Canberra • (GMT+11:00) Magadan, Solomon Is., New Caledonia • (GMT+12:00) Kamchatka, Marshall Is., Fiji • (GMT+12:00) Auckland (New Zealand)

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 set the location of the time zone in order to set the daylight saving time to location index 10 automatically:

```
(Cisco Controller) > config time timezone location 10
```

Related Commands **show time**

config wgb vlan

To configure the Workgroup Bridge (WGB) VLAN client support, use the **config wgb vlan** command.

config wgb vlan {**enable** | **disable**}

Syntax Description

enable	Enables wired clients behind a WGB to connect to an anchor controller in a Data Management Zone (DMZ).
disable	Disables wired clients behind a WGB from connecting to an anchor controller in a DMZ.

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 WGB VLAN client support:

```
(Cisco Controller) >config wgb vlan enable
```