CLI Commands

The Cisco Wireless LAN solution command-line interface (CLI) enables operators to connect an ASCII console to the Cisco Wireless LAN Controller and configure the controller and its associated access points.

This chapter contains the commands available in the Cisco Wireless LAN Controller release 7.2. The controllers currently covered are as follows:

- Cisco 5500 and Flex 7500 Series Wireless LAN Controllers
- Cisco Wireless Services Modules (WiSMs)
- Cisco Wireless LAN Controller Network Modules
- Catalyst 3750G Integrated Wireless LAN Controller Switches

This chapter contains the following sections:

Show Commands for Viewing the Configuration

To display Cisco Wireless LAN Controller options and settings, use the **show** commands.

Show 802.11 Commands

Use the **show 802.11** commands to display more detailed 802.11a, 802.11b/g, or other supported 802.11 network settings.

show 802.11

To display basic 802.11a, 802.11b/g, or 802.11h network settings, use the **show 802.11** command.

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

Syntax Description

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

Command Default

None.

Examples

This example shows to display basic 802.11a network settings:

```
> show 802.11 a

802.11a Network.............................. Enabled
11nSupport................................... Enabled
      802.11a Low Band....................... Enabled
      802.11a Mid Band....................... Enabled
      802.11a High Band...................... Enabled
802.11a Operational Rates
    802.11a 6M Rate.......................... Mandatory
    802.11a 9M Rate.......................... Supported
    802.11a 12M Rate......................... Mandatory
    802.11a 18M Rate......................... Supported
    802.11a 24M Rate......................... Mandatory
    802.11a 36M Rate......................... Supported
    802.11a 48M Rate......................... Supported
    802.11a 54M Rate......................... Supported
802.11n MCS Settings:
    MCS 0.................................... Supported
    MCS 1.................................... Supported
    MCS 2.................................... Supported
    MCS 3.................................... Supported
    MCS 4.................................... Supported
    MCS 5.................................... Supported

--More-- or (q)uit
    MCS 6.................................... Supported
    MCS 7.................................... Supported
    MCS 8.................................... Supported
    MCS 9.................................... Supported
    MCS 10................................... Supported
    MCS 11................................... Supported
    MCS 12................................... Supported
    MCS 13................................... Supported
    MCS 14................................... Supported
    MCS 15................................... Supported
802.11n Status:
    A-MPDU Tx:
        Priority 0........................... Enabled
        Priority 1........................... Disabled
        Priority 2........................... Disabled
        Priority 3........................... Disabled
```

```
        Priority 4.............................. Disabled
        Priority 5.............................. Disabled
        Priority 6.............................. Disabled
        Priority 7.............................. Disabled
Beacon Interval................................. 100
CF Pollable mandatory........................... Disabled
CF Poll Request mandatory....................... Disabled

--More-- or (q)uit
CFP Period...................................... 4
CFP Maximum Duration............................ 60
Default Channel................................. 36
Default Tx Power Level.......................... 0
DTPC Status..................................... Enabled
Fragmentation Threshold......................... 2346
TI Threshold.................................... -50
Legacy Tx Beamforming setting................... Disabled
Traffic Stream Metrics Status................... Enabled
Expedited BW Request Status..................... Disabled
World Mode...................................... Enabled
EDCA profile type............................... default-wmm
Voice MAC optimization status................... Disabled
Call Admission Control (CAC) configuration
Voice AC:
   Voice AC - Admission control (ACM)............ Disabled
   Voice max RF bandwidth....................... 75
   Voice reserved roaming bandwidth.............. 6
   Voice load-based CAC mode..................... Disabled
   Voice tspec inactivity timeout................ Disabled
   Voice Stream-Size............................. 84000
   Voice Max-Streams............................. 2
Video AC:

--More-- or (q)uit
   Video AC - Admission control (ACM)............ Disabled
   Video max RF bandwidth....................... Infinite
   Video reserved roaming bandwidth.............. 0
```

This example shows how to display basic 802.11h network settings:

```
> show 802.11h

802.11h ..................................... powerconstraint : 0
802.11h ..................................... channelswitch : Disable
802.11h ..................................... channelswitch mode : 0
```

Related Commands

show ap stats
show ap summary
show client summary
show interface
show network
show network summary
show port
show wlan

show 802.11 cleanair

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

show 802.11{a | b} cleanair config

Syntax Description

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

Command Default

None.

Examples

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

```
> show 802.11a cleanair config

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

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

Related Commands

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

show 802.11 cleanair air-quality summary

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

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

Syntax Description

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

Command Default

None.

Examples

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

```
> show 802.11a cleanair air-quality summary

AQ = Air Quality
DFS = Dynamic Frequency Selection

AP Name            Channel Avg AQ Min AQ Interferers DFS
------------------ ------- ------ ------ ----------- ---
CISCO_AP3500       36          95   70         0
CISCO_AP3500       40          93   75         0
```

Related Commands

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

show 802.11 cleanair air-quality worst

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

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

Syntax Description

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

Command Default

None.

Examples

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

```
> show 802.11a cleanair air-quality worst

AQ = Air Quality
DFS = Dynamic Frequency Selection

AP Name            Channel Avg AQ Min AQ Interferers DFS
------------------ ------- ------ ------ ----------- ---
CISCO_AP3500       1           83   57         3        5
```

Related Commands

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

show 802.11 cleanair device ap

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

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

Syntax Description

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

Command Default

None.

Examples

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

```
> show 802.11a cleanair device ap AP_3500

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

No  ClusterID           DevID  Type        AP Name       ISI  RSSI  DC   Channel
--- ------------------ ------ ---------- --------------- ---- ----- ---- -------------
1   c2:f7:40:00:00:03  0x8001 DECT phone CISCO_AP3500 1    -43   3   149,153,157,161
2   c2:f7:40:00:00:51  0x8002 Radar      CISCO_AP3500 1    -81   2   153,157,161,165
3   c2:f7:40:00:00:03  0x8005 Canopy     CISCO_AP3500 2    -62   2   153,157,161,165
```

Related Commands

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

show 802.11 cleanair device type

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

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

Syntax Description

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

Command Default

None.

Examples

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

```
> show 802.11a cleanair device type Canopy

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

No  ClusterID          DevID  Type       AP Name      ISI  RSSI  DC   Channel
--- ------------------ ------ ---------- ------------- ---- ----- ---- -------------
1c2:f7:40:00:00:03  0x8005 Canopy     CISCO_AP3500 2    -62   2   153,157,161,165
```

show 802.11 cu-metrics

To display access point channel utilization metrics, use the **show 802.11 cu-metrics** command.

show 802.11{a | b} cu-metrics *cisco_ap*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
cisco_ap	Access point name.

Command Default

None.

Examples

This example shows how to display AP channel utilization metrics of the AP myAP1:

```
> show 802.11a cu-metrics myAP1

AP Interface Mac:           30:37:a6:c8:8a:50
Measurement Duration:       90sec

 Timestamp               Thu Jan 27 09:08:48 2011

   Channel Utilization stats
   ================
     Picc (50th Percentile)..................... 0
     Pib (50th Percentile)...................... 76
     Picc (90th Percentile)..................... 0
     Pib (90th Percentile)...................... 77

 Timestamp               Thu Jan 27 09:34:34 2011
```

show 802.11 extended

To display access point radio extended configurations, use the **show 802.11 extended** command.

show 802.11{a | b} extended

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
extended	Displays the 802.11a/b radio extended configurations.

Command Default

None.

Examples

This example shows how to display radio extended configurations:

```
> show 802.11a extended

Default 802.11a band radio extended configurations:
    beacon period 300, range 60;
    multicast buffer 45, rate 200;
    RX SOP -80; CCA threshold -90;

AP0022.9090.b618 00:24:97:88:99:60
    beacon period 300, range 60; multicast buffer 45, rate 200;
    RX SOP -80; CCA threshold -77
AP0022.9090.bb3e 00:24:97:88:c5:d0
    beacon period 300, range 0; multicast buffer 0, rate 0;
    RX SOP -80; CCA threshold -0
ironRap.ddbf 00:17:df:36:dd:b0
    beacon period 300, range 0; multicast buffer 0, rate 0;
    RX SOP  -80; CCA threshold -0
```

show 802.11 l2roam

To display 802.11a or 802.11b/g Layer 2 client roaming information, use the **show 802.11 l2roam** command.

show 802.11{**a** | **b**} **l2roam** {**rf-param** | **statistics** *mac_address*}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
rf-param	Specifies the Layer 2 frequency parameters.
statistics	Specifies the Layer 2 client roaming statistics.
mac_address	MAC address of the client.

Command Default

None.

Examples

This example shows how to display 802.11b Layer 2 client roaming information, enter this command:

```
> show 802.11b l2roam rf-param

L2Roam 802.11bg RF Parameters.....................
    Config Mode................................. Default
    Minimum RSSI................................ -85
    Roam Hysteresis............................. 2
    Scan Threshold.............................. -72
    Transition time............................. 5
```

Related Commands

config 802.11 l2roam rf-params

show 802.11 media-stream

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

show 802.11{**a** | **b**} **media-stream** *media-stream_name*

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
media_stream_name	Specified media stream name.

Command Default

None.

Examples

This example shows how to display the media-stream configuration:

```
> show 802.11a media-stream rrc

Multicast-direct................................ Enabled
Best Effort..................................... Disabled
Video Re-Direct................................. Enabled
Max Allowed Streams Per Radio................... Auto
Max Allowed Streams Per Client.................. Auto
Max Video Bandwidth............................. 0
Max Voice Bandwidth............................. 75
Max Media Bandwidth............................. 85
Min PHY Rate.................................... 6000
Max Retry Percentage............................ 80
```

Related Commands

Show Mesh Commands
show media-stream group summary

Show ACL Commands

Use the **show acl** commands to display system access control lists.

show aaa auth

To display the configuration settings for the AAA authentication server database, use the **show aaa auth** command.

show aaa auth

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the configuration settings for the AAA authentication server database:

```
> show aaa auth

Management authentication server order:
    1..................................... local
    2..................................... tacacs
```

Related Commands

config aaa auth
config aaa auth mgmt

show acl

To display the access control lists (ACLs) that are configured on the controller, use the **show acl** command.

show acl {**summary** | **detailed** *acl_name*}

Syntax Description

summary	Displays a summary of all ACLs configured on the controller.
detailed	Displays detailed information about a specific ACL.
acl_name	ACL name. The name can be up to 32 alphanumeric characters.

Command Default

None.

Examples

This example shows how to display a summary of the access control lists:

```
> show acl summary

ACL Counter Status              Disabled
-----------------------------------------
IPv4 ACL Name                    Applied
-------------------------------- -------
acl1                           Yes
acl2                           Yes
acl3                           Yes
-----------------------------------------
IPv6 ACL Name                    Applied
-------------------------------- -------
acl6                            No
```

This example shows how to display the detailed information of the access control lists:

```
> show acl detailed acl_name

      Source              Destination        Source Port Dest Port
I Dir IP Address/Netmask  IP Address/Netmask Prot   Range    Range     DSCP Action Counter
- --- ------------------ ------------------ ---- --------- --------- ----- ------ -------
1 Any 0.0.0.0/0.0.0.0    0.0.0.0/0.0.0.0    Any  0-65535   0-65535   0    Deny         0
2 In  0.0.0.0/0.0.0.0    200.200.200.0/     6      80-80   0-65535   Any  Permit       0
                         255.255.255.0
DenyCounter :     0
```

Note The Counter field increments each time a packet matches an ACL rule, and the DenyCounter field increments each time a packet does not match any of the rules.

Related Commands

clear acl counters
config acl apply
config acl counter

config acl cpu
config acl create
config acl delete

Configure Interface Group Commands
config acl rule
show acl cpu

show acl cpu

To display the access control lists (ACLs) configured on the central processing unit (CPU), use the **show acl cpu** command.

show acl cpu

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the access control lists on the CPU:

```
> show acl cpu
CPU Acl Name.............................
Wireless Traffic.......................... Disabled
Wired Traffic............................. Disabled
Applied to NPU............................ No
```

Related Commands

clear acl counters
config acl apply
config acl counter
config acl cpu
config acl create
config acl delete
config acl rule
Configure Interface Group Commands
show acl

Show Advanced 802.11 Commands

Use the show advanced 802.11 commands to display more detailed or advanced 802.11a, 802.11b/g, or other supported 802.11 network settings.

show advanced 802.11 channel

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

show advanced 802.11{a | b} channel

Syntax Description

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

Command Default

None.

Examples

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

```
> show advanced 802.11a channel

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

  DCA Outdoor AP option......................... Enabled
```

Related Commands

config advanced 802.11 channel add
config advanced 802.11 channel cleanair-event
config advanced 802.11 channel dca anchor-time
config advanced 802.11 channel dca chan-width-11n
config advanced 802.11 channel dca interval
config advanced 802.11 channel dca sensitivity
config advanced 802.11 channel foreign
config advanced 802.11 channel load
config advanced 802.11 channel noise

config advanced 802.11 channel update
show advanced 802.11 channel

show advanced 802.11 coverage

To display the configuration and statistics for coverage hole detection, use the **show advanced 802.11 coverage** command.

show advanced 802.11{a | b} coverage

Syntax Description

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

Command Default

None.

Examples

This example shows how to display the statistics for coverage hole detection:

```
> show advanced 802.11a coverage

Coverage Hole Detection
  802.11a Coverage Hole Detection Mode.......... Enabled
  802.11a Coverage Voice Packet Count........... 100 packets
  802.11a Coverage Voice Packet Percentage...... 50%
  802.11a Coverage Voice RSSI Threshold......... -80 dBm
  802.11a Coverage Data Packet Count............ 50 packets
  802.11a Coverage Data Packet Percentage....... 50%
  802.11a Coverage Data RSSI Threshold.......... -80 dBm
  802.11a Global coverage exception level....... 25 %
  802.11a Global client minimum exception lev.... 3 clients
```

Related Commands

config advanced 802.11 coverage
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
show advanced 802.11 coverage

show advanced 802.11 group

To display 802.11a or 802.11b Cisco radio RF grouping, use the **show advanced 802.11 group** command.

show advanced 802.11{a | b} group

Syntax Description

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

Command Default

None.

Examples

This example shows how to display Cisco radio RF group settings:

```
> show advanced 802.11a group

Radio RF Grouping
  802.11a Group Mode..............................  AUTO
  802.11a Group Update Interval...................  600 seconds
  802.11a Group Leader............................  xx:xx:xx:xx:xx:xx
    802.11a Group Member..........................  xx:xx:xx:xx:xx:xx
  802.11a Last Run................................  133 seconds ago
```

Related Commands

config advanced 802.11 group-mode

show advanced 802.11 logging

To display 802.11a or 802.11b RF event and performance logging, use the **show advanced 802.11 logging** command.

show advanced 802.11{a | b} logging

Syntax Description

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

Command Default

None.

Examples

This example shows how to display 802.11b RF event and performance logging:

```
> show advanced 802.11b logging

RF Event and Performance Logging
  Channel Update Logging..... Off
  Coverage Profile Logging..... Off
  Foreign Profile Logging..... Off
  Load Profile Logging..... Off
  Noise Profile Logging..... Off
  Performance Profile Logging..... Off
  TxPower Update Logging..... Off
```

Related Commands

config advanced 802.11 logging channel
config advanced 802.11 logging coverage
config advanced 802.11 logging foreign
config advanced 802.11 logging load
config advanced 802.11 logging noise
config advanced 802.11 logging performance
config advanced 802.11 logging txpower
show advanced 802.11 channel

show advanced 802.11 monitor

To display the 802.11a or 802.11b default Cisco radio monitoring, use the **show advanced 802.11 monitor** command.

show advanced 802.11{a | b} monitor

Syntax Description

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

Command Default

None.

Examples

This example shows how to display the radio monitoring for the 802.11b network:

```
> show advanced 802.11b monitor

Default 802.11b AP monitoring
  802.11b Monitor Mode.......................... enable
  802.11b Monitor Channels...................... Country channels
  802.11b RRM Neighbor Discovery Type........... Transparent
  802.11b AP Coverage Interval.................. 180 seconds
  802.11b AP Load Interval...................... 60 seconds
  802.11b AP Noise Interval..................... 180 seconds
  802.11b AP Signal Strength Interval........... 60 seconds
```

Related Commands

config advanced 802.11 monitor load
config advanced 802.11 monitor mode
config advanced 802.11 monitor noise
config advanced 802.11 monitor signal

show advanced 802.11 profile

To display the 802.11a or 802.11b lightweight access point performance profiles, use the **show advanced 802.11 profile** command.

show advanced 802.11{**a** | **b**} **profile** {**global** | *cisco_ap*}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
global	Specifies all Cisco lightweight access points.
cisco_ap	Name of a specific Cisco lightweight access point.

Command Default

None.

Examples

This example shows how to display the global configuration and statistics of an 802.11a profile:

```
> show advanced 802.11a profile global

Default 802.11a AP performance profiles
  802.11a Global Interference threshold.............. 10%
  802.11a Global noise threshold..................... -70 dBm
  802.11a Global RF utilization threshold............ 80%
  802.11a Global throughput threshold................ 1000000 bps
  802.11a Global clients threshold................... 12 clients
```

This example shows how to display the configuration and statistics of a specific access point profile:

```
> show advanced 802.11a profile AP1

Cisco AP performance profile not customized
```

This response indicates that the performance profile for this lightweight access point is using the global defaults and has not been individually configured.

Related Commands

config advanced 802.11 profile clients
config advanced 802.11 profile customize
config advanced 802.11 profile foreign
config advanced 802.11 profile noise

show advanced 802.11 receiver

To display the configuration and statistics of the 802.11a or 802.11b receiver, use the **show advanced 802.11 receiver** command.

show advanced 802.11{a | b} receiver

Syntax Description

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

Command Default

None.

Examples

This example shows how to display the configuration and statistics of the 802.11a network settings:

```
> show advanced 802.11a receiver

802.11a Receiver Settings
  RxStart    : Signal Threshold..........................  15
  RxStart    : Signal Lamp Threshold.....................  5
  RxStart    : Preamble Power Threshold..................  2
  RxReStart  : Signal Jump Status........................  Enabled
  RxReStart  : Signal Jump Threshold.....................  10
  TxStomp  : Low RSSI Status.............................  Enabled
  TxStomp  : Low RSSI Threshold..........................  30
  TxStomp  : Wrong BSSID Status..........................  Enabled
  TxStomp  : Wrong BSSID Data Only Status................  Enabled
  RxAbort  : Raw Power Drop Status.......................  Disabled
  RxAbort  : Raw Power Drop Threshold....................  10
  RxAbort  : Low RSSI Status.............................  Disabled
  RxAbort  : Low RSSI Threshold..........................  0
  RxAbort  : Wrong BSSID Status..........................  Disabled
  RxAbort  : Wrong BSSID Data Only Status................  Disabled
```

Related Commands

config advanced 802.11 profile clients

show advanced 802.11 summary

To display the 802.11a or 802.11b Cisco lightweight access point name, channel, and transmit level summary, use the **show advanced 802.11 summary** command.

show advanced 802.11{a | b} summary

Syntax Description

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

Command Default

None.

Examples

This example shows how to display a summary of the 802.11b access point settings:

```
> show advanced 802.11b summary

AP Name      MAC Address        Admin State  Operation State   Channel TxPower
------------ ------------------ ------------ ----------------- ------- --------
CJ-1240      00:21:1b:ea:36:60    ENABLED          UP            161      1( )
CJ-1130      00:1f:ca:cf:b6:60    ENABLED          UP            56*      1(*)
```

Note An asterisk (*) next to a channel number or power level indicates that it is being controlled by the global algorithm settings.

Related Commands

config advanced 802.11 7920VSIEConfig
config advanced 802.11 channel add
show advanced 802.11 channel

show advanced 802.11 txpower

To display the 802.11a or 802.11b automatic transmit power assignment, use the **show advanced 802.11 txpower** command.

show advanced 802.11{a | b} txpower

Syntax Description

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

Command Default

None.

Examples

This example shows how to display the configuration and statistics of the 802.11b transmit power cost:

```
> show advanced 802.11b txpower

Automatic Transmit Power Assignment
  Transmit Power Assignment Mode................. AUTO
  Transmit Power Update Interval................. 600 seconds
  Transmit Power Threshold....................... -65 dBm
  Transmit Power Neighbor Count.................. 3 APs
  Transmit Power Update Contribution............. SN.
  Transmit Power Assignment Leader............... xx:xx:xx:xx:xx:xx
  Last Run....................................... 384 seconds ago
```

Related Commands

config advanced 802.11 txpower-update

show advanced backup-controller

To display a list of primary and secondary backup controllers, use the **show advanced backup-controller** command.

show advanced backup-controller

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the backup controller information:

```
> show advanced backup-controller

AP primary Backup Controller .....................  controller 10.10.10.10
AP secondary Backup Controller ...................  0.0.0.0
```

Related Commands

config advanced backup-controller primary
config advanced backup-controller secondary

show advanced client-handoff

To display the number of automatic client handoffs after retries, use the **show advanced client-handoff** command.

show advanced client-handoff

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the client auto handoff mode after excessive retries:

```
> show advanced client-handoff

Client auto handoff after retries.............  130
```

Related Commands

config advanced client-handoff
show advanced 802.11 summary

show advanced dot11-padding

To display the state of over-the-air frame padding on a wireless LAN controller, use the **show advanced dot11-padding** command.

show advanced dot11-padding

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to view the state of over-the-air frame padding:

```
> show advanced dot11-padding

dot11-padding..................................... Disabled
```

Related Commands

config advanced dot11-padding
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 eap

To display Extensible Authentication Protocol (EAP) settings, use the **show advanced eap** command.

show advanced eap

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the EAP settings:

```
> show advanced eap

EAP-Identity-Request Timeout (seconds)..... 1
EAP-Identity-Request Max Retries.......... 20
EAP Key-Index for Dynamic WEP............. 0
EAP Max-Login Ignore Identity Response..... enable
EAP-Request Timeout (seconds)............. 1
EAP-Request Max Retries................... 20
EAPOL-Key Timeout (milliseconds).......... 1000
EAPOL-Key Max Retries..................... 2
```

Related Commands

config advanced eap
config advanced timers eap-identity-request-delay
config advanced timers eap-timeout

show advanced max-1x-sessions

To display the maximum number of simultaneous 802.1X sessions allowed per access point, use the **show advanced max-1x-sessions** command.

show advanced max-1x-sessions

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the maximum 802.1X sessions per access point:

```
> show advanced max-1x-sessions

Max 802.1x session per AP at a given time........ 0
```

Related Commands

show advanced statistics

show advanced probe

To display the number of probes sent to the WLAN controller per access point per client and the probe interval in milliseconds, use the **show advanced probe** command.

show advanced probe

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the probe settings for the WLAN controller:

```
> show advanced probe

Probe request filtering..........................  Enabled
Probes fwd to controller per client per radio....  12
Probe request rate-limiting interval.............  100 msec
```

Related Commands

config advanced probe filter
config advanced probe limit

show advanced rate

To display whether control path rate limiting is enabled or disabled, use the **show advanced rate** command.

show advanced rate

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the switch control path rate limiting mode:

```
> show advanced rate

Control Path Rate Limiting.....................  Disabled
```

Related Commands

config advanced rate
config advanced eap

show advanced sip-preferred-call-no

To display the list of preferred call numbers, use the **show advanced sip-preferred-call-no** command.

show advanced sip-preferred-call-no

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the list of preferred call numbers:

```
> show advanced sip-preferred-call-no

Preferred Call Numbers List

Call Index            Preferred Call No
-----------           ------------------
1                      911
2                      100
3                      101
4                      102
5                      103
6                      104
```

show advanced statistics

To display whether or not the Cisco wireless LAN controller port statistics are enabled or disabled, use the **show advanced statistics** command.

show advanced statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display switch port statistics mode:

```
> show advanced statistics

Switch port statistics.......................  Enabled
```

Related Commands

config advanced statistics

show advanced timers

To display the mobility anchor, authentication response, and rogue access point entry timers, use the **show advanced timers** command.

show advanced timers

Syntax Description

This command has no arguments or keywords.

Command Default

The defaults are shown in the "Examples" section.

Examples

This example shows how to display the system timers setting:

```
> show advanced timers

Authentication Response Timeout (seconds)........ 10
Rogue Entry Timeout (seconds)..................... 1200
AP Heart Beat Timeout (seconds)................... 30
AP Discovery Timeout (seconds).................... 10
AP Local mode Fast Heartbeat (seconds)........... disable
AP flexconnect mode Fast Heartbeat (seconds)............ disable
AP Primary Discovery Timeout (seconds)........... 120
```

Related Commands

config advanced timers ap-discovery-timeout
config advanced timers ap-fast-heartbeat
config advanced timers ap-heartbeat-timeout
config advanced timers ap-primary-discovery-timeout
config advanced timers auth-timeout
config advanced timers eap-identity-request-delay
config advanced timers eap-timeout

Show Access Point Commands

Use the **show ap** commands to show access point settings.

show ap auto-rf

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

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

Syntax Description

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

Command Default

None.

Examples

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

```
> show ap auto-rf 802.11a AP1

Number Of Slots.................................. 2
AP Name.......................................... AP03
MAC Address...................................... 00:0b:85:01:18:b7
  Radio Type..................................... RADIO_TYPE_80211a
  Noise Information
    Noise Profile................................ PASSED
    Channel 36...................................  -88 dBm
    Channel 40...................................  -86 dBm
    Channel 44...................................  -87 dBm
    Channel 48...................................  -85 dBm
    Channel 52...................................  -84 dBm
    Channel 56...................................  -83 dBm
    Channel 60...................................  -84 dBm
    Channel 64...................................  -85 dBm
  Interference Information
    Interference Profile......................... PASSED
    Channel 36...................................  -66 dBm @  1% busy
    Channel 40................................... -128 dBm @  0% busy
    Channel 44................................... -128 dBm @  0% busy
    Channel 48................................... -128 dBm @  0% busy
    Channel 52................................... -128 dBm @  0% busy
    Channel 56...................................  -73 dBm @  1% busy
    Channel 60...................................  -55 dBm @  1% busy
    Channel 64...................................  -69 dBm @  1% busy
  Rogue Histogram (20/40_ABOVE/40_BELOW)
    Channel 36................................... 16/ 0/ 0
    Channel 40................................... 28/ 0/ 0
    Channel 44...................................  9/ 0/ 0
    Channel 48...................................  9/ 0/ 0
    Channel 52...................................  3/ 0/ 0
    Channel 56...................................  4/ 0/ 0
    Channel 60...................................  7/ 1/ 0
    Channel 64...................................  2/ 0/ 0
  Load Information
    Load Profile................................. PASSED
    Receive Utilization.......................... 0%
    Transmit Utilization......................... 0%
    Channel Utilization.......................... 1%
    Attached Clients............................. 1 clients
```

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

show ap ccx rm

To display an access point's Cisco Client eXtensions (CCX) radio management status information, use the **show ap ccx rm** command.

show ap ccx rm *ap_name* **status**

Syntax Description

ap_name	Specified access point name.
status	Displays the CCX radio management status information for an access point.

Command Default

None.

Examples

This example shows how to display the status of the CCX radio management:

```
> show ap ccx rm AP1240-21ac status

A Radio
    Channel Load Request ..................... Disabled
    Noise Histogram Request .................. Disabled
    Beacon Request ........................... Disabled
    Frame Request ............................ Disabled
    Interval ................................. 60
    Iteration ................................ 10

G Radio
    Channel Load Request ..................... Disabled
    Noise Histogram Request .................. Disabled
    Beacon Request ........................... Disabled
    Frame Request ............................ Disabled
    Interval ................................. 60
    Iteration ................................ 10
```

Related Commands

config ap
show ap ccx rm

show ap cdp

To display the Cisco Discovery Protocol (CDP) information for an access point, use the **show ap cdp** command.

show ap cdp {**all** | **ap-name** *cisco_ap* | **neighbors** {**all** | **ap-name** *cisco_ap* | **detail** *cisco_ap*}}

Syntax Description

all	Displays the CDP status on all access points.
ap-name	Displays the CDP status for a specified access point.
neighbors	Displays neighbors using CDP.
detail	Displays details about a specific access point neighbor using CDP.
cisco_ap	Specified access point name.

Command Default

None.

Examples

This example shows how to display the CDP status of all access points:

```
> show ap cdp all

AP CDP State
AP Name             AP CDP State
------------------  ----------
SB_RAP1              enable
SB_MAP1              enable
SB_MAP2              enable
SB_MAP3              enable
```

This example shows how to display the CDP status of a specified access point:

```
> show ap cdp ap-name SB_RAP1

AP CDP State
AP Name             AP CDP State
------------------  ----------
AP CDP State.....................Enabled
AP Interface-Based CDP state
    Ethernet 0.....................Enabled
    Slot 0.....................Enabled
    Slot 1.....................Enabled
```

This example shows how to display details about all neighbors using CDP:

```
> show ap cdp neighbors all

AP Name     AP IP           Neighbor Name       Neighbor IP      Neighbor Port
---------   --------------  ------------------  --------------  -------------
SB_RAP1     192.168.102.154  sjc14-41a-sw1       192.168.102.2    GigabitEthernet1/0/13
SB_RAP1     192.168.102.154  SB_MAP1             192.168.102.137  Virtual-Dot11Radio0
SB_MAP1     192.168.102.137  SB_RAP1             192.168.102.154  Virtual-Dot11Radio0
SB_MAP1     192.168.102.137  SB_MAP2             192.168.102.138  Virtual-Dot11Radio0
SB_MAP2     192.168.102.138  SB_MAP1             192.168.102.137  Virtual-Dot11Radio1
SB_MAP2     192.168.102.138  SB_MAP3             192.168.102.139  Virtual-Dot11Radio0
SB_MAP3     192.168.102.139  SB_MAP2             192.168.102.138  Virtual-Dot11Radio1
```

This example shows how to display details about a specific neighbor with a specified access point using CDP:

```
> show ap cdp neighbors ap-name SB_MAP2

AP Name      AP IP            Neighbor Name    Neighbor IP      Neighbor Port
-----------  ---------------  ---------------  --------------  -------------
SB_MAP2      192.168.102.138  SB_MAP1          192.168.102.137  Virtual-Dot11Radio1
SB_MAP2      192.168.102.138  SB_MAP3          192.168.102.139  Virtual-Dot11Radio0
```

This example shows how to display details about neighbors using CDP:

```
> show ap cdp neighbors detail SB_MAP2

AP Name:SB_MAP2
AP IP address:192.168.102.138
-------------------------
Device ID: SB_MAP1
Entry address(es): 192.168.102.137
Platform: cisco AIR-LAP1522AG-A-K9  ,  Cap
Interface:Virtual-Dot11Radio0, Port ID (outgoing port):Virtual-Dot11Radio1
Holdtime : 180 sec

Version :
Cisco IOS Software, C1520 Software (C1520-K9W8-M), Experimental Version 12.4(200
81114:084420) [BLD-v124_18a_ja_throttle.20081114 208] Copyright (c) 1986-2008 by
 Cisco Systems, Inc. Compiled Fri 14-Nov-08 23:08 by

advertisement version: 2

-------------------------
Device ID: SB_MAP3
Entry address(es): 192.168.102.139
Platform: cisco AIR-LAP1522AG-A-K9  ,  Capabilities: Trans-Bridge
Interface: Virtual-Dot11Radio1,  Port ID (outgoing port): Virtual-Dot11Radio0
Holdtime : 180 sec

Version :
Cisco IOS Software, C1520 Software (C1520-K9W8-M), Experimental Version 12.4(200
81114:084420) [BLD-v124_18a_ja_throttle.20081114 208] Copyright (c) 1986-2008 by
 Cisco Systems, Inc. Compiled Fri 14-Nov-08 23:08 by

advertisement version: 2
```

Related Commands

config ap cdp
config cdp timer

show ap channel

To display the available channels for a specific mesh access point, use the **show ap channel** command.

show ap channel *ap_name*

Syntax Description		
	ap_name	Name of the mesh access point.

Command Default None.

Examples This example shows how to display the available channels for a particular access point:

```
> show ap channel AP47

    802.11b/g Current Channel ...........1
Allowed Channel List.....................1,2,3,4,5,6,7,8,9,10,11
802.11a Current Channel .................161
Allowed Channel List.....................36,40,44,48,52,56,60,64,100,
.........................................104,108,112,116,132,136,140,
.........................................149,153,157,161
```

Related Commands
config 802.11-a channel ap
config 802.11h channelswitch
config 802.11h setchannel

show ap config

To display the detailed configuration for a lightweight access point, use the **show ap config** command.

show ap config {**802.11**{**a** | **b**}} [**summary**] *cisco_ap*

Syntax Description

802.11a	Specifies the 802.11a or 802.11b/g network.
802.11b	Specifies the 802.11b/g network.
summary	Displays radio summary of all APs
cisco_ap	Lightweight access point name.

Command Default

None.

Examples

This example shows how to display the detailed configuration for an access point:

```
> show ap config 802.11a AP02

Cisco AP Identifier.............................. 0
Cisco AP Name.................................... AP02
Country code..................................... US  - United States
Regulatory Domain allowed by Country............. 802.11bg:-A     802.11a:-A
AP Regulatory Domain............................. Unconfigured
Switch Port Number .............................. 1
MAC Address...................................... 00:0b:85:18:b6:50
IP Address Configuration......................... DHCP
IP Address....................................... 1.100.49.240
IP NetMask....................................... 255.255.255.0
Gateway IP Addr.................................. 1.100.49.1
CAPWAP Path MTU.................................. 1485
Telnet State..................................... Disabled
Ssh State........................................ Disabled
Cisco AP Location................................ default-location
Cisco AP Group Name.............................. default-group
Primary Cisco Switch............................. Cisco_32:ab:63
Primary Cisco Switch IP Address.................. Not Configured
Secondary Cisco Switch...........................
Secondary Cisco Switch IP Address................ Not Configured
Tertiary Cisco Switch............................
Tertiary Cisco Switch IP Address................. Not Configured
Administrative State ............................ ADMIN_ENABLED
Operation State ................................. REGISTERED
Mirroring Mode .................................. Disabled
AP Mode ......................................... Sniffer
Public Safety ................................... Global: Disabled, Local: Disabled
AP SubMode ...................................... Not Configured
Remote AP Debug ................................. Disabled
Logging trap severity level ..................... informational
Logging syslog facility ......................... kern
S/W  Version .................................... 7.0.110.6
Boot  Version ................................... 12.4.18.0
Mini IOS Version ................................ 3.0.51.0
Stats Reporting Period .......................... 180

Stats Re--More-- or (q)uit
```

```
LED State..................................... Enabled
PoE Pre-Standard Switch....................... Enabled
PoE Power Injector MAC Addr................... Disabled
Power Type/Mode............................... Power injector / Normal mode
Number Of Slots............................... 2
AP Model...................................... AIR-LAP1142N-A-K9
AP Image...................................... C1140-K9W8-M
IOS Version................................... 12.4(20100502:031212)
Reset Button.................................. Enabled
AP Serial Number.............................. FTX1305S180
AP Certificate Type........................... Manufacture Installed
AP User Mode.................................. AUTOMATIC
AP User Name.................................. Not Configured
AP Dot1x User Mode............................ Not Configured
AP Dot1x User Name............................ Not Configured
Cisco AP system logging host.................. 255.255.255.255
AP Up Time.................................... 47 days, 23 h 47 m 47 s
AP LWAPP Up Time.............................. 47 days, 23 h 10 m 37 s
Join Date and Time............................ Tue May  4 16:05:00 2010
Join Taken Time............................... 0 days, 00 h 01 m 37 s
Attributes for Slot  1
    Radio Type................................ RADIO_TYPE_80211n-5
    Radio Subband............................. RADIO_SUBBAND_ALL
    Administrative State ..................... ADMIN_ENABLED
    Operation State .......................... UP
    Radio Role ............................... ACCESS
    CellId ................................... 0
Station Configuration
      Configuration ........................... AUTOMATIC
      Number Of WLANs ......................... 2
      Medium Occupancy Limit .................. 100
      CFP Period .............................. 4
      CFP MaxDuration ......................... 60
      BSSID ................................... 00:24:97:88:99:60
Operation Rate Set
        6000 Kilo Bits......................... MANDATORY
        9000 Kilo Bits......................... SUPPORTED
        12000 Kilo Bits........................ MANDATORY
        18000 Kilo Bits........................ SUPPORTED
        24000 Kilo Bits........................ MANDATORY
        36000 Kilo Bits........................ SUPPORTED
        48000 Kilo Bits........................ SUPPORTED
        54000 Kilo Bits........................ SUPPORTED
      MCS Set
        MCS 0.................................. SUPPORTED
        MCS 1.................................. SUPPORTED
        MCS 2.................................. SUPPORTED
        MCS 3.................................. SUPPORTED
        MCS 4.................................. SUPPORTED
        MCS 5.................................. SUPPORTED
        MCS 6.................................. SUPPORTED
        MCS 7.................................. SUPPORTED
        MCS 8.................................. SUPPORTED
        MCS 9.................................. SUPPORTED
        MCS 10................................. SUPPORTED
        MCS 11................................. SUPPORTED
        MCS 12................................. SUPPORTED
        MCS 13................................. SUPPORTED
        MCS 14................................. SUPPORTED
        MCS 15................................. SUPPORTED
      Beacon Period ........................... 100
      Fragmentation Threshold ................. 2346
      Multi Domain Capability Implemented ..... TRUE
      Multi Domain Capability Enabled ......... TRUE
```

```
      Country String ..................................... US
Multi Domain Capability
      Configuration ...................................... AUTOMATIC
      First Chan Num ..................................... 36
      Number Of Channels ................................. 21
MAC Operation Parameters
      Configuration ...................................... AUTOMATIC
      Fragmentation Threshold ............................ 2346
      Packet Retry Limit ................................. 64
Tx Power
      Num Of Supported Power Levels ...................... 6
      Tx Power Level 1 ................................... 14 dBm
      Tx Power Level 2 ................................... 11 dBm
      Tx Power Level 3 ................................... 8 dBm
      Tx Power Level 4 ................................... 5 dBm
      Tx Power Level 5 ................................... 2 dBm
      Tx Power Level 6 ................................... -1 dBm
      Tx Power Configuration ............................. AUTOMATIC
      Current Tx Power Level ............................. 0
Phy OFDM parameters
      Configuration ...................................... AUTOMATIC
      Current Channel .................................... 36
      Extension Channel .................................. NONE
      Channel Width.......................................... 20 Mhz
      Allowed Channel List................................... 36,40,44,48,52,56,60,64,100,
        ..................................... 104,108,112,116,132,136,140,
        ..................................... 149,153,157,161,165
      TI Threshold ....................................... -50
      Legacy Tx Beamforming Configuration ..... AUTOMATIC
      Legacy Tx Beamforming ..... DISABLED
      Antenna Type.......................... INTERNAL_ANTENNA
      Internal Antenna Gain (in .5 dBi units).... 6
      Diversity.............................. DIVERSITY_ENABLED
      802.11n Antennas
        Tx
         A.................................... ENABLED
         B.................................... ENABLED
        Rx
         A.................................... ENABLED
         B.................................... ENABLED
         C.................................... ENABLED
Performance Profile Parameters
      Configuration ...................................... AUTOMATIC
      Interference threshold..... 10 %
      Noise threshold.....  -70 dBm
      RF utilization threshold..... 80 %
      Data-rate threshold..... 1000000 bps
      Client threshold..... 12 clients
      Coverage SNR threshold..... 16 dB
      Coverage exception level..... 25 %
      Client minimum exception level..... 3 clients
Rogue Containment Information
    Containment Count..... 0
CleanAir Management Information
        CleanAir Capable..... No
Radio Extended Configurations:
        Buffer size ..........30
        Data-rate..........0
        Beacon strt ..........90 ms
       Rx-Sensitivity SOP threshold ..... -80 dB
       CCA threshold ..... -60 dB
```

This example shows how to display the detailed configuration for another access point:

```
> show ap config 802.11b AP02

Cisco AP Identifier.............................. 0
Cisco AP Name.................................... AP02
AP Regulatory Domain............................. Unconfigured
Switch Port Number .............................. 1
MAC Address...................................... 00:0b:85:18:b6:50
IP Address Configuration......................... DHCP
IP Address....................................... 1.100.49.240
IP NetMask....................................... 255.255.255.0
Gateway IP Addr.................................. 1.100.49.1
Cisco AP Location................................ default-location
Cisco AP Group Name.............................. default-group
Primary Cisco Switch............................. Cisco_32:ab:63
Secondary Cisco Switch.......................... 
Tertiary Cisco Switch............................ 
Administrative State ............................ ADMIN_ENABLED
Operation State ................................. REGISTERED
Mirroring Mode .................................. Disabled
AP Mode ......................................... Local
Remote AP Debug ................................. Disabled
S/W  Version .................................... 3.1.61.0
Boot  Version ................................... 1.2.59.6
Stats Reporting Period .......................... 180
LED State........................................ Enabled
ILP Pre Standard Switch.......................... Disabled
ILP Power Injector............................... Disabled
Number Of Slots.................................. 2
AP Model......................................... AS-1200
AP Serial Number................................. 044110223A
AP Certificate Type.............................. Manufacture Installed

Attributes for Slot  1
    Radio Type................................... RADIO_TYPE_80211g
    Administrative State ........................ ADMIN_ENABLED
    Operation State ............................. UP
    CellId ...................................... 0

    Station Configuration
      Configuration ............................. AUTOMATIC
      Number Of WLANs ........................... 1
      Medium Occupancy Limit .................... 100
      CFP Period ................................ 4
      CFP MaxDuration ........................... 60
      BSSID ..................................... 00:0b:85:18:b6:50
      Operation Rate Set
        1000 Kilo Bits........................... MANDATORY
        2000 Kilo Bits........................... MANDATORY
        5500 Kilo Bits........................... MANDATORY
        11000 Kilo Bits.......................... MANDATORY
        6000 Kilo Bits........................... SUPPORTED
        9000 Kilo Bits........................... SUPPORTED
        12000 Kilo Bits.......................... SUPPORTED
        18000 Kilo Bits.......................... SUPPORTED
        24000 Kilo Bits.......................... SUPPORTED
        36000 Kilo Bits.......................... SUPPORTED
        48000 Kilo Bits.......................... SUPPORTED
        54000 Kilo Bits.......................... SUPPORTED
      Beacon Period ............................. 100
      DTIM Period ............................... 1
      Fragmentation Threshold ................... 2346
      Multi Domain Capability Implemented ....... TRUE
      Multi Domain Capability Enabled ........... TRUE
      Country String ............................ US
```

```
Multi Domain Capability
  Configuration ..............................  AUTOMATIC
  First Chan Num .............................  1
  Number Of Channels .........................  11

MAC Operation Parameters
  Configuration ..............................  AUTOMATIC
  RTS Threshold ..............................  2347
  Short Retry Limit ..........................  7
  Long Retry Limit ...........................  4
  Fragmentation Threshold ....................  2346
  Maximum Tx MSDU Life Time ..................  512
  Maximum Rx Life Time........................  512

Tx Power
  Num Of Supported Power Levels...............  5
  Tx Power Level 1 ...........................  17 dBm
  Tx Power Level 2............................  14 dBm
  Tx Power Level 3............................  11 dBm
  Tx Power Level 4............................  8 dBm
  Tx Power Level 5............................  5 dBm
  Tx Power Configuration......................  CUSTOMIZED
  Current Tx Power Level......................  5

Phy OFDM parameters
  Configuration...............................  CUSTOMIZED
  Current Channel.............................  1
  TI Threshold................................  -50
  Legacy Tx Beamforming Configuration ........  CUSTOMIZED
  Legacy Tx Beamforming ......................  ENABLED
  Antenna Type................................  INTERNAL_ANTENNA
  Internal Antenna Gain (in5 dBm units).......  11
  Diversity...................................  DIVERSITY_ENABLED

Performance Profile Parameters
  Configuration...............................  AUTOMATIC
  Interference threshold......................  10%
  Noise threshold.............................   -70 dBm
  RF utilization threshold....................  80%
  Data-rate threshold.........................  1000000 bps
  Client threshold............................  12 clients
  Coverage SNR threshold......................  12 dB
  Coverage exception level....................  25%
  Client minimum exception level..............  3 clients
Rogue Containment Information
Containment Count............................  0
```

This example shows how to display the general configuration of a Cisco access point:

```
> show ap config general cisco-ap

Cisco AP Identifier.............................  9
Cisco AP Name...................................  cisco-ap
Country code....................................  US - United States
Regulatory Domain allowed by Country............  802.11bg:-A 802.11a:-A
AP Country code.................................  US - United States
AP Regulatory Domain............................  802.11bg:-A 802.11a:-A
Switch Port Number .............................  1
MAC Address.....................................  12:12:12:12:12:12
IP Address Configuration........................  DHCP
IP Address......................................  10.10.10.21
IP NetMask......................................  255.255.255.0
CAPWAP Path MTU.................................  1485
```

```
Domain.....................................
Name Server................................
Telnet State.................................. Disabled
Ssh State..................................... Disabled
Cisco AP Location............................. default location
Cisco AP Group Name........................... default-group
Primary Cisco Switch Name..................... 4404
Primary Cisco Switch IP Address.................. 10.10.10.32
Secondary Cisco Switch Name.....................
Secondary Cisco Switch IP Address................ Not Configured
Tertiary Cisco Switch Name..................... 4404
Tertiary Cisco Switch IP Address.................. 3.3.3.3
Administrative State ......................... ADMIN_ENABLED
Operation State .............................. REGISTERED
Mirroring Mode ............................... Disabled
AP Mode ...................................... Local
Public Safety ................................ Global: Disabled, Local: Disabled
AP subMode ................................... WIPS
Remote AP Debug .............................. Disabled
S/W  Version ................................. 5.1.0.0
Boot  Version ................................ 12.4.10.0
Mini IOS Version ............................. 0.0.0.0
Stats Reporting Period ....................... 180
LED State..................................... Enabled
PoE Pre-Standard Switch....................... Enabled
PoE Power Injector MAC Addr................... Disabled
Power Type/Mode............................... PoE/Low Power (degraded mode)
Number Of Slots............................... 2
AP Model...................................... AIR-LAP1252AG-A-K9
IOS Version................................... 12.4(10:0)
Reset Button.................................. Enabled
AP Serial Number.............................. serial_number
AP Certificate Type........................... Manufacture Installed
Management Frame Protection Validation........... Enabled (Global MFP Disabled)
AP User Mode.................................. CUSTOMIZED
AP username................................... maria
AP Dot1x User Mode............................ Not Configured
AP Dot1x username............................. Not Configured
Cisco AP system logging host.................. 255.255.255.255
AP Up Time.................................... 4 days, 06 h 17 m 22 s
AP LWAPP Up Time.............................. 4 days, 06 h 15 m 00 s
Join Date and Time............................ Mon Mar 3 06:19:47 2008

Ethernet Port Duplex.......................... Auto
Ethernet Port Speed........................... Auto
AP Link Latency............................... Enabled
 Current Delay................................ 0 ms
 Maximum Delay................................ 240 ms
 Minimum Delay................................ 0 ms
 Last updated (based on AP Up Time)........... 4 days, 06 h 17 m 20 s
Rogue Detection............................... Enabled
AP TCP MSS Adjust............................. Disabled
Mesh preferred parent......................... 00:24:13:0f:92:00
```

Related Commands

config ap
show ap config global

show ap config global

To display the global syslog server settings for all access points that join the controller, use the **show ap config global** command.

show ap config global

Syntax Description

The command has no arguments and keywords.

Command Default

None.

Examples

This example shows how to display global syslog server settings:

```
> show ap config global

AP global system logging host.............................. 255.255.255.255
```

Related Commands

config ap
show ap config

show ap core-dump

To display the memory core dump information for a lightweight access point, use the **show ap core-dump** command.

show ap core-dump *cisco_ap*

Syntax Description

cisco_ap	Cisco lightweight access point name.

Command Default None.

Examples This example shows how to display memory core dump information:

```
> show ap core-dump AP02

Memory core dump is disabled.
```

Related Commands

config ap core-dump
show ap crash-file

show ap crash-file

To display the list of both crash and radio core dump files generated by lightweight access points, use the **show ap crash-file** command.

show ap crash-file

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the crash file generated by the access point:

```
> show ap crash-file
```

Related Commands

config ap crash-file clear-all
config ap crash-file delete
config ap crash-file get-crash-file
config ap crash-file get-radio-core-dump

show ap data-plane

To display the data plane status for all access points or a specific access point, use the **show ap data-plane** command.

show ap data-plane {all | *cisco_ap*}

Syntax Description

all	Specifies all Cisco lightweight access points.
cisco_ap	Name of a Cisco lightweight access point.

Command Default

None.

Examples

This example shows how to display the data plane status of all access points:

```
> show ap data-plane all

Min Data          Data          Max Data     Last
AP Name              Round Trip      Round Trip      Round Trip    Update
------------------  --------------  --------------  --------------  ------
1130                       0.000s          0.000s       0.002s     18:51:23
1240                       0.000s          0.000s       0.000s     18:50:45
```

show ap eventlog

To display the contents of the event log file for an access point that is joined to the controller, use the **show ap eventlog** command.

show ap eventlog *ap_name*

Syntax Description

ap_name	Event log for the specified access point.

Command Default None.

Examples This example shows how to display the event log of an access point:

```
> show ap eventlog CiscoAP
AP event log download has been initiated
Waiting for download to complete

AP event log download completed.
======================= AP Event log Contents =====================
*Feb 13 11:54:17.146: %CAPWAP-3-CLIENTEVENTLOG: AP event log has been cleared from the
contoller 'admin'
*Feb 13 11:54:32.874: *** Access point reloading. Reason: Reload Command ***
*Mar 1 00:00:39.134: %CDP_PD-4-POWER_OK: Full power - NEGOTIATED inline power source
*Mar 1 00:00:39.174: %LINK-3-UPDOWN: Interface Dot11Radio1, changed state to up
*Mar 1 00:00:39.211: %LINK-3-UPDOWN: Interface Dot11Radio0, changed state to up
*Mar 1 00:00:49.947: %CAPWAP-3-CLIENTEVENTLOG: Did not get vendor specific options from
DHCP.
...
```

show ap image

To display the detailed information about the predownloaded image for specified access points, use the **show ap image** command.

show ap image {*cisco_ap* | ***all***}

Syntax Description

cisco_ap	Name of the lightweight access point.
all	Specifies all access points.

Note If you have an AP that has the name *all*, it conflicts with the keyword **all** that specifies all access points. In this scenario, the keyword **all** takes precedence over the AP that is named *all*.

Command Default

None.

Examples

This example shows how to display images present on all access points:

```
> show ap image all

Total number of APs.............................. 7
Number of APs
Initiated........................................ 4
Predownloading................................... 0
Completed predownloading......................... 3
Not Supported.................................... 0
Failed to Predownload............................ 0

AP Name Primary Image Backup Image   Status      Version Next Retry Time  Retry Count
----------------- ------------- -------------- --------------- -------------- ----------
AP1140-1 7.0.56.0       6.0.183.38 Complete        6.0.183.38 NA           NA
AP1140-2 7.0.56.0       6.0.183.58 Initiated       6.0.183.38 23:46:43     1
AP1130-2 7.0.56.0       6.0.183.38 Complete        6.0.183.38 NA           NA
AP1130-3 7.0.56.0       6.0.183.58 Initiated       6.0.183.38 23:43:25     1
AP1130-4 7.0.56.0       6.0.183.38 Complete        6.0.183.38 NA           NA
AP1130-5 7.0.56.0       6.0.183.58 Initiated       6.0.183.38 23:43:00     1
AP1130-6 7.0.56.0       6.0.183.58 Initiated       6.0.183.38 23:41:33
```

Related Commands

config ap image predownload
config ap image swap

show ap inventory

To display inventory information for an access point, use the **show ap inventory** command.

show ap inventory *ap_name*

Syntax Description

ap_name	Specifies the inventory for the specified access point.

Command Default

None.

Examples

This example shows how to display the inventory of an access point:

```
> show ap inventory test101

NAME: "test101"    , DESCR: "Cisco Wireless Access Point"
PID: AIR-LAP1131AG-A-K9  ,  VID: V01,  SN: FTX1123T2XX
```

show ap join stats detailed

To display all join-related statistics collected for a specific access point, use the **show ap join stats detailed** command.

show ap join stats detailed *ap_mac*

Syntax Description

ap_mac	Access point Ethernet MAC address or the MAC address of the 802.11 radio interface.

Command Default None.

Examples This example shows how to display join information for a specific access point trying to join the controller:

```
> show ap join stats detailed 00:0b:85:02:0d:20
Discovery phase statistics
- Discovery requests received..................... 2
- Successful discovery responses sent............. 2
- Unsuccessful discovery request processing....... 0
- Reason for last unsuccessful discovery attempt.... Not applicable
- Time at last successful discovery attempt....... Aug 21 12:50:23:335
- Time at last unsuccessful discovery attempt..... Not applicable

Join phase statistics
- Join requests received.......................... 1
- Successful join responses sent.................. 1
- Unsuccessful join request processing............ 1
- Reason for last unsuccessful join attempt.....RADIUS authorization is pending
for the AP
- Time at last successful join attempt............ Aug 21 12:50:34:481
- Time at last unsuccessful join attempt.......... Aug 21 12:50:34:374

Configuration phase statistics
- Configuration requests received................. 1
- Successful configuration responses sent......... 1
- Unsuccessful configuration request processing... 0
- Reason for last unsuccessful configuration attempt... Not applicable
- Time at last successful configuration attempt.... Aug 21 12:50:34:374
- Time at last unsuccessful configuration attempt.... Not applicable

Last AP message decryption failure details
- Reason for last message decryption failure....... Not applicable

Last AP disconnect details
- Reason for last AP connection failure............ Not applicable

Last join error summary
- Type of error that occurred last................. Lwapp join request rejected
- Reason for error that occurred last.............. RADIUS authorization is pending
for the AP
- Time at which the last join error occurred....... Aug 21 12:50:34:374
```

Related Commands

show ap join stats detailed
show ap join stats summary
show ap join stats summary all

show ap join stats summary

To display the last join error detail for a specific access point, use the **show ap join stats summary** command.

show ap join stats summary *ap_mac*

Syntax Description

ap_mac	Access point Ethernet MAC address or the MAC address of the 802.11 radio interface.

Command Default

None.

Usage Guidelines

To obtain the MAC address of the 802.11 radio interface, enter the show interface command on the access point.

Examples

This example shows how to display specific join information for an access point:

```
> show ap join stats summary 00:0b:85:02:0d:20

Is the AP currently connected to controller..... No
Time at which the AP joined this controller last time..... Aug 21 12:50:36:061
Type of error that occurred last..... Lwapp join request
rejected
Reason for error that occurred last..... RADIUS authorization
is pending for the AP
Time at which the last join error occurred..... Aug 21 12:50:34:374
```

Related Commands

show ap join stats detailed
show ap join stats summary all

show ap join stats summary all

To display the MAC addresses of all the access points that are joined to the controller or that have tried to join, use the **show ap join stats summary all** command.

show ap join stats summary all

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of join information for all access points:

```
> show ap join stats summary all
Number of APs.......................................... 4
Base Mac             AP EthernetMac         AP Name          IP Address         Status
00:0b:85:57:bc:c0     00:0b:85:57:bc:c0     AP1130          10.10.163.217     Joined
00:1c:0f:81:db:80     00:1c:63:23:ac:a0     AP1140          10.10.163.216     Not joined
00:1c:0f:81:fc:20     00:1b:d5:9f:7d:b2     AP1              10.10.163.215     Joined
00:21:1b:ea:36:60     00:0c:d4:8a:6b:c1     AP2              10.10.163.214     Not joined
```

Related Commands

show ap join stats detailed
show ap join stats summary

show ap led-state

To view the LED state of all access points or a specific access point, use the **show ap led-state** command.

show ap led-state {all | *cisco_ap*}

Syntax Description

all	Shows the LED state for all access points.
cisco_ap	Name of the access point whose LED state is to be shown.

Command Default

Enabled.

Examples

This example shows how to get the LED state of all access points:

```
> show ap led-state all

Global LED State: Enabled (default)
```

Related Commands

config ap led-state

show ap link-encryption

To display the MAC addresses of all the access points that are joined to the controller or that have tried to join, use the **show ap link-encryption** command.

show ap link-encryption {all | *cisco_ap***}**

Syntax Description

all	Specifies all access points.
cisco_ap	Name of the lightweight access point.

Command Default

None.

Examples

This example shows how to display the link encryption status of all access points:

```
> show ap link-encryption all

             Encryption  Dnstream  Upstream    Last
AP Name           State     Count     Count  Update
------------------  ---  --------  --------  ------
1240                Dis       4406    237553   Never
1130                 En       2484    276308   19:31
```

Related Commands

config ap link-encryption
config ap link-latency

show ap monitor-mode summary

To display the current channel-optimized monitor mode settings, use the **show ap monitor-mode summary** command.

show ap monitor-mode summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display current channel-optimized monitor mode settings:

```
> show ap monitor-mode summary

AP Name          Ethernet MAC      Status     Scanning Channel List
---------------- ----------------- ---------- ---------------------
AP_004           xx:xx:xx:xx:xx:xx Tracking   1, 6, 11, 4
```

Related Commands

config ap mode
config ap monitor-mode

show ap retransmit

To display access point control packet retransmission parameters, use the **show ap retransmit** command.

show ap retransmit {**all** | *cisco_ap*}

Syntax Description

all	Specifies all access points.
cisco_ap	Specifies the name of the access point.

Command Default

None.

Examples

This example shows how to display the control packet retransmission parameters of all access points on a network:

```
> show ap retransmit all

Global control packet retransmit interval: 3 (default)
Global control packet retransmit count: 5 (default)

AP Name             Retransmit Interval  Retransmit count
------------------  -------------------  -------------------
AP_004                   3 (default)      5 (WLC default),5 (AP default)
```

Related Commands

config ap retransmit interval

show ap stats

To display the statistics for a Cisco lightweight access point, use the **show ap stats** command.

show ap stats {**802.11**{**a** | **b**} | **wlan**} *cisco_ap* [***tsm*** {*client_mac* | **all**}]

Syntax Description

802.11a	Specifies the 802.11a network
802.11b	Specifies the 802.11b/g network.
wlan	Specifies WLAN statistics.
cisco_ap	Specifies the name of the lightweight access point.
tsm	Specifies the traffic stream metrics.
client_mac	MAC address of the client.
all	Specifies all access points.

Command Default

None.

Examples

This example shows how to display statistics of an access point for the 802.11b network:

```
> show ap stats 802.11b AP02

Number Of Slots.................................. 2
AP Name.......................................... 1140_LAP_1
MAC Address...................................... c4:7d:4f:3a:35:53
Radio Type....................................... RADIO_TYPE_80211b/g
Stats Information
  Number of Users................................ 3
  TxFragmentCount................................ 232095
  MulticastTxFrameCnt............................ 3834
  FailedCount.................................... 347196
  RetryCount..................................... 683429
  MultipleRetryCount............................. 21416
  FrameDuplicateCount............................ 0
  RtsSuccessCount................................ 20
  RtsFailureCount................................ 0
  AckFailureCount................................ 439834
  RxIncompleteFragment........................... 0
  MulticastRxFrameCnt............................ 0
  FcsErrorCount.................................. 5845734
  TxFrameCount................................... 232095
  WepUndecryptableCount.......................... 0
  TxFramesDropped................................ 22
Call Admission Control (CAC) Stats
  Voice Bandwidth in use(% of config bw)......... 50
    Total channel MT free........................ 0
    Total voice MT free.......................... 0
    Na Direct.................................... 0
    Na Roam...................................... 0
  Video Bandwidth in use(% of config bw)......... 0
WMM TSPEC CAC Call Stats
  Total num of voice calls in progress........... 1
  Num of roaming voice calls in progress......... 1
  Total Num of voice calls since AP joined....... 13
  Total Num of roaming calls since AP joined..... 13
```

```
  Total Num of exp bw requests received..... 0
  Total Num of exp bw requests admitted..... 0
  Num of voice calls rejected since AP joined.... 0
  Num of roam calls rejected since AP joined..... 1
  Num of calls rejected due to insufficent bw.... 0
  Num of calls rejected due to invalid params.... 0
  Num of calls rejected due to PHY rate..... 0
  Num of calls rejected due to QoS policy........ 0
SIP CAC Call Stats
  Total Num of calls in progress.................. 1
  Num of roaming calls in progress............... 0
Total Num of calls since AP joined.............. 29
  Total Num of roaming calls since AP joined..... 2
Total Num of Preferred calls received..... 0
  Total Num of Preferred calls accepted..... 0
  Total Num of ongoing Preferred calls..... 0
  Total Num of calls rejected(Insuff BW)..... 0
  Total Num of roam calls rejected(Insuff BW).... 0
Band Select Stats
  Num of dual band client ....................... 0
  Num of dual band client added.................. 0
  Num of dual band client expired ............... 0
  Num of dual band client replaced............... 0
  Num of dual band client detected .............. 0
  Num of suppressed client ...................... 0
  Num of suppressed client expired............... 0
  Num of suppressed client replaced.............. 0
```

Related Commands

config ap static-ip
config ap stats-timer

show ap summary

To display a summary of all lightweight access points attached to the controller, use the **show ap summary** command.

show ap summary [*cisco_ap*]

Syntax Description

cisco_ap	(Optional) Type sequence of characters that make up the name of a specific AP or a group of APs, or enter a wild character search pattern.

Command Default

None.

Usage Guidelines

A list that contains each lightweight access point name, number of slots, manufacturer, MAC address, location, and the controller port number appears. When you specify

Examples

This example shows how to display a summary of all connected access points:

```
> show ap summary
Number of APs.................................. 2
Global AP username............................. user
Global AP Dot1x username....................... Not Configured

Number of APs.................................. 2
Global AP username............................. user
Global AP Dot1x username....................... Not Configured

AP Name   Slots  AP Model            Ethernet MAC       Location    Port Country  Priority
--------  -----  ----------------    -----------------  ----------  ---- -------  --------
wolverine 2      AIR-LAP1252AG-A-K9  00:1b:d5:13:39:74  Reception   1    US       3
ap:1120   1      AIR-LAP1121G-A-K9   00:1b:d5:a9:ad:08  Hall 235    1    US       1
```

Related Commands

config ap

show ap tcp-mss-adjust

To display the Transmission Control Protocol (TCP) maximum segment size (MSS) information of access points, use the **show ap tcp-mss-adjust** command.

show ap tcp-mss-adjust {*cisco_ap* | **all**}

Syntax Description

cisco_ap	Specified lightweight access point name.
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.

Examples

This example shows how to display Transmission Control Protocol (TCP) maximum segment size (MSS) information of all access points:

```
> show ap tcp-mss-adjust all

AP Name            TCP State MSS Size
------------------ --------- -------
AP-1140            enabled   536
AP-1240            disabled  -
AP-1130            disabled  -
```

Related Commands

config ap tcp-adjust-mss

show ap wlan

To display the Basic Service Set Identifier (BSSID) value for each WLAN defined on an access point, use the **show ap wlan** command.

show ap wlan 802.11{**a** | **b**} *cisco_ap*

Syntax Description

802.11a	Specifies the 802.11a network.
802.11b	Specifies the 802.11b/g network.
ap_name	Lightweight access point name.

Command Default

None.

Examples

This example shows how to display BSSIDs of an access point for the 802.11b network:

```
> show ap wlan 802.11b AP01

Site Name..................................... MY_AP_GROUP1
Site Description.............................. MY_AP_GROUP1

WLAN ID          Interface          BSSID
-------         -----------        --------------------------
1               management           00:1c:0f:81:fc:20
2               dynamic              00:1c:0f:81:fc:21
```

Related Commands

config ap wlan

show arp kernel

To display the kernel Address Resolution Protocol (ARP) cache information, use the **show arp kernel** command.

show arp kernel

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display kernel ARP cache information:

```
> show arp kernel

IP address       HW type     Flags       HW address            Mask     Device
192.0.2.1        0x1         0x2         00:1A:6C:2A:09:C2     *        dtl0
192.0.2.8        0x1         0x6         00:1E:E5:E6:DB:56     *        dtl0
```

Related Commands

clear arp
debug arp
show route kernel

show arp switch

To display the Cisco wireless LAN controller MAC addresses, IP addresses, and port types, use the **show arp switch** command.

show arp switch

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display Address Resolution Protocol (ARP) cache information for the switch:

```
> show arp switch

MAC Address          IP Address         Port      VLAN      Type
-------------------- ---------------- ------------ ---- --------------------
xx:xx:xx:xx:xx:xx   xxx.xxx.xxx.xxx  service port    1
xx:xx:xx:xx:xx:xx   xxx.xxx.xxx.xxx  service port
xx:xx:xx:xx:xx:xx   xxx.xxx.xxx.xxx  service port
```

Related Commands

clear arp
debug arp
show arp kernel

show auth-list

To display the access point authorization list, use the **show auth-list** command.

show auth-list

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the access point authorization list:

```
> show auth-list

Authorize APs against AAA..................... disabled
Allow APs with Self-signed Certificate (SSC)... disabled

Mac Addr                  Cert Type    Key Hash
-----------------------   ----------   ----------------------------------------
xx:xx:xx:xx:xx:xx         MIC
```

Related Commands

clear tacacs auth statistics
clear stats local-auth
config auth-list add
config auth-list ap-policy
config auth-list delete

show boot

To display the primary and backup software build numbers with an indication of which is active, use the **show boot** command.

show boot

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Usage Guidelines

Each Cisco wireless LAN controller retains one primary and one backup operating system software load in nonvolatile RAM to allow controllers to boot off the primary load (default) or revert to the backup load when desired.

Examples

This example shows how to display the default boot image information:

```
> show boot

Primary Boot Image.............................. 3.2.13.0 (active)
Backup Boot Image.............................. 3.2.15.0
```

Related Commands

config boot

show cac voice summary

To view the list of all AP with brief voice statistics (which includes bandwidth used, maximum bandwidth available, and the number of calls information), use the **show cac voice summary** command.

show cac voice { **summary** | **stats 802.11** {**a** | **b**} *AP_name*}

Syntax Description

summary	Summary of Voice CAC details.
stats	Voice CAC Statistics
802.11a	Specifies the 802.11a network.
802.11b	Specifies the 802.11b/g network.
ap_name	Lightweight access point name.

Command Default

None.

Examples

This example shows how to display the list of all AP with brief voice statistics:

```
> show cac voice summary

    AP Name          Slot#   Radio  BW Used/Max  Calls
-----------------  -------  -----  -----------  -----
APc47d.4f3a.3547     0      11b/g     0/23437    0
                    1      11a    1072/23437    1
```

Related Commands

show mesh cac

show call-control ap

Note The **show call-control ap** command is applicable only for SIP based calls.

To see the metrics for successful calls or the traps generated for failed calls, use the **show call-control ap** command.

show call-control ap {**802.11a** | **802.11b**} *cisco_ap* {**metrics** | **traps**}

Syntax Description

802.11a	Specifies the 802.11a network
802.11b	Specifies the 802.11b/g network.
cisco_ap	Cisco access point name.
metrics	Specifies the call metrics information.
traps	Specifies the trap information for call control.

Command Default

None.

Examples

This example shows how to display the metrics for successful calls generated for an access point:

```
> show call-control ap 802.11a Cisco_AP metrics
Total Call Duration in Seconds..................... 120
Number of Calls.................................... 10

Number of calls for given client is................. 1
```

This example shows how to display the metrics for the traps generated for an access point:

```
> show call-control ap 802.11a Cisco_AP traps
Number of traps sent in one min.................... 2
Last SIP error code................................ 404
Last sent trap timestamp...................... Jun 20 10:05:06
```

Usage Guidelines

To aid in troubleshooting, the output of this command shows an error code for any failed calls. Table 2-1 explains the possible error codes for failed calls.

Table 2-1 Error Codes for Failed VoIP Calls

Error Code	Integer	Description
1	unknown	Unknown error.
400	badRequest	The request could not be understood because of malformed syntax.
401	unauthorized	The request requires user authentication.
402	paymentRequired	Reserved for future use.
403	forbidden	The server understood the request but refuses to fulfill it.

Table 2-1 Error Codes for Failed VoIP Calls (continued)

Error Code	Integer	Description
404	notFound	The server has information that the user does not exist at the domain specified in the Request-URI.
405	methodNotallowed	The method specified in the Request-Line is understood but not allowed for the address identified by the Request-URI.
406	notAcceptable	The resource identified by the request is only capable of generating response entities with content characteristics that are not acceptable according to the Accept header field sent in the request.
407	proxyAuthenticationRequired	The client must first authenticate with the proxy.
408	requestTimeout	The server could not produce a response within a suitable amount of time.
409	conflict	The request could not be completed due to a conflict with the current state of the resource.
410	gone	The requested resource is no longer available at the server, and no forwarding address is known.
411	lengthRequired	The server is refusing to process a request because the request entity-body is larger than the server is willing or able to process.
413	requestEntityTooLarge	The server is refusing to process a request because the request entity-body is larger than the server is willing or able to process.
414	requestURITooLarge	The server is refusing to service the request because the Request-URI is longer than the server is willing to interpret.
415	unsupportedMediaType	The server is refusing to service the request because the message body of the request is in a format not supported by the server for the requested method.
420	badExtension	The server did not understand the protocol extension specified in a Proxy-Require or Require header field.
480	temporarilyNotAvailable	The callee's end system was contacted successfully, but the callee is currently unavailable.
481	callLegDoesNotExist	The UAS received a request that does not match any existing dialog or transaction.
482	loopDetected	The server has detected a loop.
483	tooManyHops	The server received a request that contains a Max-Forwards header field with the value zero.
484	addressIncomplete	The server received a request with a Request-URI that was incomplete.
485	ambiguous	The Request-URI was ambiguous.
486	busy	The callee's end system was contacted successfully, but the callee is currently not willing or able to take additional calls at this end system.

Table 2-1 Error Codes for Failed VoIP Calls (continued)

Error Code	Integer	Description
500	internalServerError	The server encountered an unexpected condition that prevented it from fulfilling the request.
501	notImplemented	The server does not support the functionality required to fulfill the request.
502	badGateway	The server, while acting as a gateway or proxy, received an invalid response from the downstream server it accessed in attempting to fulfill the request.
503	serviceUnavailable	The server is temporarily unable to process the request because of a temporary overloading or maintenance of the server.
504	serverTimeout	The server did not receive a timely response from an external server it accessed in attempting to process the request.
505	versionNotSupported	The server does not support or refuses to support the SIP protocol version that was used in the request.
600	busyEverywhere	The callee's end system was contacted successfully, but the callee is busy or does not want to take the call at this time.
603	decline	The callee's machine was contacted successfully, but the user does not want to or cannot participate.
604	doesNotExistAnywhere	The server has information that the user indicated in the Request-URI does not exist anywhere.
606	notAcceptable	The user's agent was contacted successfully, but some aspects of the session description (such as the requested media, bandwidth, or addressing style) were not acceptable.

show call-control client

To see call information for a call-aware client when Voice-over-IP (VoIP) snooping is enabled and the call is active, use the **show call-control client** command

show call-control client callInfo *client_MAC_address*

Syntax Description

callInfo	Specifies the call-control information.
client_MAC_address	Client MAC address.

Command Default

None.

Examples

This example shows how to display the call information such as the IP port for calls related to the client:

```
> show call-control client callInfo 10.10.10.10.10.10

Uplink IP/port................................. 0.0.0.0 /   0
Downlink  IP/port.............................. 9.47.96.107 / 5006
UP..............................................   6
Calling Party.................................. sip:1021
Called Party................................... sip:1000
Call ID........................................ 38423970c3fca477
Call on hold: ................................. FALSE
Number of calls for given client is.............. 1
```

Related Commands

show call-control ap

show certificate compatibility

To display whether or not certificates are verified as compatible in the Cisco wireless LAN controller, use the **show certificate compatibility** command.

show certificate compatibility

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the status of the compatibility mode:

```
> show certificate compatibility

Certificate compatibility mode:.............. off
```

Related Commands

config certificate
config certificate lsc
show certificate lsc
show certificate summary
show local-auth certificates

show certificate lsc

To verify that the controller has generated a Locally Significant Certificate (LSC), use the **show certificate lsc summary** command.

show certificate lsc {**summary** | **ap-provision**}

Syntax Description

summary	Displays a summary of LSC certificate settings and certificates.
ap-provision	Displays details about the access points that are provisioned using the LSC.

Command Default

None.

Examples

This example shows how to display a summary of the LSC:

```
> show certificate lsc summary

LSC Enabled..................................... Yes
LSC CA-Server................................... http://10.0.0.1:8080/caserver
LSC AP-Provisioning............................. Yes
Provision-List.................................. Not Configured
LSC Revert Count in AP reboots.................. 3
LSC Params:
Country......................................... 4
State........................................... ca
City............................................ ss
Orgn............................................ org
Dept............................................ dep
Email........................................... dep@co.com
KeySize......................................... 390
LSC Certs:
CA Cert......................................... Not Configured
RA Cert......................................... Not Configured
```

This example shows how to display the details about the access points that are provisioned using the LSC:

```
> show certificate lsc ap-provision

LSC AP-Provisioning............................. Yes
Provision-List.................................. Present

Idx Mac Address
--- -------------
1 00:18:74:c7:c0:90
```

Related Commands

config certificate
config certificate lsc
show certificate compatibility
show certificate summary
show local-auth certificates

show certificate summary

To verify that the controller has generated a certificate, use the **show certificate summary** command.

show certificate summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of the certificate:

```
> show certificate summary

Web Administration Certificate................. Locally Generated
Web Authentication Certificate................. Locally Generated
Certificate compatibility mode:................ off
```

Related Commands

config certificate
config certificate lsc
show certificate compatibility
show certificate lsc
show local-auth certificates

show route kernel

To display the kernel route cache information, use the **show route kernel** command.

show route kernel

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the kernel route cache information:

```
> show route kernel

Iface   Destination   Gateway   Flags    RefCnt Use   Metric    Mask    MTU    Window    IRTT
dtl0     14010100     00000000  0001       0      0      0     FFFFFF00  0      0         0
dtl0     28282800     00000000  0001       0      0      0     FFFFFF00  0      0         0
dtl0     34010100     00000000  0001       0      0      0     FFFFFF00  0      0         0
eth0     02020200     00000000  0001       0      0      0     FFFFFF00  0      0         0
dtl0     33010100     00000000  0001       0      0      0     FFFFFF00  0      0         0
dtl0     0A010100     00000000  0001       0      0      0     FFFFFF00  0      0         0
dtl0     32010100     00000000  0001       0      0      0     FFFFFF00  0      0         0
dtl0     0A000000     0202020A  0003       0      0      0     FF000000  0      0         0
lo       7F000000     00000000  0001       0      0      0     FF000000  0      0         0
dtl0     00000000     0A010109  0003       0      0      0     00000000  0      0         0
```

Related Commands

clear arp
debug arp
show arp kernel
config route add
config route delete

Show Client Commands

Use the **show client** commands to display client settings.

show client ap

To display the clients on a Cisco lightweight access point, use the **show client ap** command.

show client ap 802.11{a | b} *cisco_ap*

Syntax Description

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

Command Default

None.

Usage Guidelines

The **show client ap** command may list the status of automatically disabled clients. Use the show exclusionlist command to view clients on the exclusion list (blacklisted).

Examples

This example shows how to display client information on an access point:

```
> show client ap 802.11b AP1

MAC Address        AP Id   Status         WLAN Id    Authenticated
-----------------  ------  -------------  ---------  -------------
xx:xx:xx:xx:xx:xx      1   Associated     1          No
```

Related Commands

show client detail
show client summary
show client username
show country
show exclusionlist

show client calls

To display the total number of active or rejected calls on the controller, use the **show client calls** command.

show client calls {**active** | **rejected**} {**802.11a** | **802.11bg** | **all**}

Syntax Description

active	Displays active calls.
rejected	Displays rejected calls.
802.11a	Specifies the 802.11a network.
802.11bg	Specifies the 802.11b/g network.
all	Specifies both the 802.11a and 802.11b/g network.

Command Default

None.

Examples

This example shows how to display the active client calls on an 802.11a network:

```
> show client calls active 802.11a

Client MAC               Username         Total Call            AP Name         Radio Type
                                          Duration (sec)
--------------------    ---------         ----------       ---------------      ----------
00:09: ef: 02:65:70        abc               45            VJ-1240C-ed45cc        802.11a
00:13: ce: cc: 51:39       xyz               45                AP1130-a416        802.11a
00:40:96: af: 15:15        def               45                AP1130-a416        802.11a
00:40:96:b2:69: df         def               45                AP1130-a416        802.11a

Number of Active Calls ----------------------------------- 4
```

Related Commands

debug voice-diag

show client ccx client-capability

To display the client's capability information, use the **show client ccx client-capability** command.

show client ccx client-capability *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

Command Default

None.

Usage Guidelines

This command displays the client's available capabilities, not the current settings for the capabilities.

Examples

This example shows how to display the client's capability:

```
> show client ccx client-capability 00:40:96:a8:f7:98

Service Capability..................................... Voice, Streaming(uni-directional)
Video, Interactive(bi-directional) Video
Radio Type............................................. DSSS OFDM(802.11a) HRDSSS(802.11b)
ERP(802.11g)

Radio Type............................................. DSSS
    Radio Channels..................................... 1 2 3 4 5 6 7 8 9 10 11
    Tx Power Mode...................................... Automatic
    Rate List(MB)...................................... 1.0 2.0

Radio Type............................................. HRDSSS(802.11b)
    Radio Channels..................................... 1 2 3 4 5 6 7 8 9 10 11
    Tx Power Mode...................................... Automatic
    Rate List(MB)...................................... 5.5 11.0

Radio Type............................................. ERP(802.11g)
    Radio Channels..................................... 1 2 3 4 5 6 7 8 9 10 11
    Tx Power Mode...................................... Automatic
    Rate List(MB)...................................... 6.0 9.0 12.0 18.0 24.0 36.0 48.0 54.0

Are you sure you want to start? (y/N)y Are you sure you want to start? (y/N)
```

Related Commands

config client ccx get-client-capability
config client ccx get-operating-parameters
config client ccx get-profiles
config client ccx stats-request
show client ccx operating-parameters
show client ccx profiles
show client ccx stats-report

show client ccx frame-data

To display the data frames sent from the client for the last test, use the **show client ccx frame-data** command.

show client ccx frame-data *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

Command Default None.

Examples This example shows how to display the data frame sent from the client for the last test:

```
> show client ccx frame-data xx:xx:xx:xx:xx:xx
```

show client ccx last-response-status

To display the status of the last test response, use the **show client ccx last-response-status** command.

show client ccx last-response-status *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

Command Default

None.

Examples

This example shows how to display the status of the last test response:

```
> show client ccx last-response-status
Test Status ..................... Success

Response Dialog Token.............. 87
Response Status.................... Successful
Response Test Type................. 802.1x Authentication Test
Response Time...................... 3476 seconds since system boot
```

Related Commands

config client ccx clear-reports
config client ccx clear-results
config client ccx default-gw-ping
config client ccx dhcp-test
config client ccx log-request
show client ccx last-response-status
show client ccx last-test-status

show client ccx last-test-status

To display the status of the last test, use the **show client ccx last-test-status** command.

show client ccx last-test-status *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

Command Default

None.

Examples

This example shows how to display the status of the last test of the client:

```
> show client ccx last-test-status

Test Type ....................... Gateway Ping Test
Test Status ..................... Pending/Success/Timeout
Dialog Token .................... 15
Timeout ......................... 15000 ms
Request Time .................... 1329 seconds since system boot
```

Related Commands

config client ccx clear-reports
config client ccx clear-results
config client ccx default-gw-ping
config client ccx dhcp-test
config client ccx log-request
show client ccx last-response-status

show client ccx log-response

To display a log response, use the **show client ccx log-response** command.

show client ccx log-response {**roam** | **rsna** | **syslog**} *client_mac_address*

Syntax Description

roam	(Optional) Displays the CCX client roaming log response.
rsna	(Optional) Displays the CCX client RSNA log response.
syslog	(Optional) Displays the CCX client system log response.
client_mac_address	Inventory for the specified access point.

Command Default

None.

Examples

This example shows how to display the system log response:

```
> show client ccx log-response syslog 00:40:96:a8:f7:98
Tue Jun 26 18:07:48 2007  Syslog Response LogID=131: Status=Successful
                          Event Timestamp=0d 00h 19m 42s 278987us
                          Client SysLog = '<11> Jun 19 11:49:47 unraval13777 Mandatory
elements missing in the OID response'
                          Event Timestamp=0d 00h 19m 42s 278990us
                          Client SysLog = '<11> Jun 19 11:49:47 unraval13777 Mandatory
elements missing in the OID response'
Tue Jun 26 18:07:48 2007  Syslog Response LogID=131: Status=Successful
                          Event Timestamp=0d 00h 19m 42s 278987us
                          Client SysLog = '<11> Jun 19 11:49:47 unraval13777 Mandatory
elements missing in the OID response'
                          Event Timestamp=0d 00h 19m 42s 278990us
                          Client SysLog = '<11> Jun 19 11:49:47 unraval13777 Mandatory
elements missing in the OID response'
```

This example shows how to display the client roaming log response:

```
> show client ccx log-response roam 00:40:96:a8:f7:98

Thu Jun 22 11:55:14 2007  Roaming Response LogID=20: Status=Successful
                          Event Timestamp=0d 00h 00m 13s 322396us
                          Source BSSID=00:40:96:a8:f7:98, Target BSSID=00:0b:85:23:26:70,
                          Transition Time=100(ms)
                          Transition Reason: Normal roam, poor link
                          Transition Result: Success
Thu Jun 22 11:55:14 2007  Roaming Response LogID=133: Status=Successful
                          Event Timestamp=0d 00h 00m 16s 599006us
                          Source BSSID=00:0b:85:81:06:c2, Target BSSID=00:0b:85:81:06:c2,
                          Transition Time=3235(ms)
                          Transition Reason: Normal roam, poor link
                          Transition Result: Success
Thu Jun 22 18:28:48 2007  Roaming Response LogID=133: Status=Successful
                          Event Timestamp=0d 00h 00m 08s 815477us
                          Source BSSID=00:0b:85:81:06:c2, Target BSSID=00:0b:85:81:06:d2,
                          Transition Time=3281(ms)
                          Transition Reason: First association to WLAN
                          Transition Result: Success
```

Related Commands config client ccx log-request

show client ccx manufacturer-info

To display the client manufacturing information, use the **show client ccx manufacturer-info** command.

show client ccx manufacturer-info *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

Command Default

None.

Examples

This example shows how to display the client manufacturing information:

```
> show client ccx manufacturer-info 00:40:96:a8:f7:98

Manufacturer OUI ............................. 00:40:96
Manufacturer ID .............................. Cisco
Manufacturer Model ........................... Cisco Aironet 802.11a/b/g Wireless Adapter
Manufacturer Serial .......................... FOC1046N3SX
Mac Address .................................. 00:40:96:b2:8d:5e
Radio Type ................................... DSSS OFDM(802.11a) HRDSSS(802.11b)
  ERP(802.11g)
Antenna Type ................................. Omni-directional diversity
Antenna Gain ................................. 2 dBi

Rx Sensitivity:
Radio Type ................................... DSSS
Rx Sensitivity ............................... Rate:1.0 Mbps, MinRssi:-95, MaxRss1:-30
Rx Sensitivity ............................... Rate:2.0 Mbps, MinRssi:-95, MaxRss1:-30
Radio Type ................................... HRDSSS(802.11b)
Rx Sensitivity ............................... Rate:5.5 Mbps, MinRssi:-95, MaxRss1:-30
Rx Sensitivity ............................... Rate:11.0 Mbps, MinRssi:-95, MaxRss1:-30
Radio Type ................................... ERP(802.11g)
Rx Sensitivity ............................... Rate:6.0 Mbps, MinRssi:-95, MaxRss1:-30
Rx Sensitivity ............................... Rate:9.0 Mbps, MinRssi:-95, MaxRss1:-30
Rx Sensitivity ............................... Rate:12.0 Mbps, MinRssi:-95, MaxRss1:-30
Rx Sensitivity ............................... Rate:18.0 Mbps, MinRss1:-95, MaxRss1:-30
```

Related Commands

config client ccx get-client-capability
config client ccx get-manufacturer-info
config client ccx get-operating-parameters
config client ccx get-profiles

show client ccx operating-parameters

To display the client operating-parameters, use the **show client ccx operating-parameters** command.

show client ccx operating-parameters *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

Command Default

None.

Examples

This example shows how to display the client operating parameters:

```
> show client ccx operating-parameters 00:40:96:a8:f7:98

Client Mac ..................................... 00:40:96:b2:8d:5e
Radio Type ..................................... OFDM(802.11a)

Radio Type ..................................... OFDM(802.11a)
    Radio Channels ............................. 36 40 44 48 52 56 60 64 100 104 108
112 116 120 124 128 132 136 140 149 153 157 161 165
    Tx Power Mode .............................. Automatic
    Rate List(MB)............................... 6.0 9.0 12.0 18.0 24.0 36.0 48.0 54.0

Power Save Mode ................................ Normal Power Save
SSID ........................................... wifi
Security Parameters[EAP Method, Credential]..... None
Auth Method .................................... None
Key Management.................................. None
Encryption ..................................... None
Device Name .................................... Wireless Network Connection 15
Device Type .................................... 0
OS Id .......................................... Windows XP
OS Version ..................................... 5.1.6.2600 Service Pack 2
IP Type ........................................ DHCP address
IPv4 Address ................................... Available
IP Address ..................................... 70.0.4.66
Subnet Mask .................................... 255.0.0.0
Default Gateway ................................ 70.1.0.1
IPv6 Address ................................... Not Available
IPv6 Address ................................... 0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:
IPv6 Subnet Mask ............................... 0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:
DNS Servers .................................... 103.0.48.0
WINS Servers ...................................
System Name .................................... URAVAL3777
Firmware Version ............................... 4.0.0.187
Driver Version ................................. 4.0.0.187
```

Related Commands

config client ccx get-client-capability
config client ccx get-manufacturer-info
config client ccx get-operating-parameters
config client ccx get-profiles

show client ccx profiles

To display the client profiles, use the **show client ccx profiles** command.

show client ccx profiles *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

Command Default

None.

Examples

This example shows how to display the client profiles:

```
> show client ccx profiles 00:40:96:a8:f7:98

Number of Profiles ................................ 1
Current Profile ................................... 1

Profile ID ........................................ 1
Profile Name ...................................... wifiEAP
SSID .............................................. wifiEAP
Security Parameters [EAP Method, Credential]..... EAP-TLS, Host OS Login Credentials
Auth Method ....................................... EAP
Key Management ................................... WPA2+CCKM
Encryption ........................................ AES-CCMP
Power Save Mode ................................... Constantly Awake
Radio Configuration:
Radio Type..................................... DSSS
    Preamble Type.................................. Long preamble
    CCA Method..................................... Energy Detect + Carrier
Detect/Correlation
    Data Retries................................... 6
    Fragment Threshold............................. 2342
    Radio Channels................................. 1 2 3 4 5 6 7 8 9 10 11
    Tx Power Mode.................................. Automatic
    Rate List (MB)................................. 1.0 2.0

Radio Type..................................... HRDSSS(802.11b)
    Preamble Type.................................. Long preamble
    CCA Method..................................... Energy Detect + Carrier
Detect/Correlation
    Data Retries................................... 6
    Fragment Threshold............................. 2342
    Radio Channels................................. 1 2 3 4 5 6 7 8 9 10 11
    Tx Power Mode.................................. Automatic
    Rate List(MB).................................. 5.5 11.0

Radio Type..................................... ERP(802.11g)
    Preamble Type.................................. Long preamble
    CCA Method..................................... Energy Detect + Carrier
Detect/Correlation
    Data Retries................................... 6
    Fragment Threshold............................. 2342
    Radio Channels................................. 1 2 3 4 5 6 7 8 9 10 11
    Tx Power Mode.................................. Automatic
    Rate List (MB)................................. 6.0 9.0 12.0 18.0 24.0 36.0 48.0
54.0
```

```
Radio Type..................................... OFDM(802.11a)
    Preamble Type.............................. Long preamble
    CCA Method................................. Energy Detect + Carrier
Detect/Correlation
    Data Retries............................... 6
    Fragment Threshold......................... 2342
    Radio Channels............................. 36 40 44 48 52 56 60 64 149 153 157
161 165
    Tx Power Mode.............................. Automatic
    Rate List (MB)............................. 6.0 9.0 12.0 18.0 24.0 36.0 48.0
54.0
```

Related Commands

config client ccx get-client-capability
config client ccx get-manufacturer-info
config client ccx get-operating-parameters
config client ccx get-profiles

show client ccx results

To display the results from the last successful diagnostic test, use the **show client ccx results** command.

show client ccx results *client_mac_address*

Syntax Description

client_mac_address	MAC address of the client.

Command Default

None.

Examples

This example shows how to display the results from the last successful diagnostic test:

```
> show client ccx results xx.xx.xx.xx

dot1x Complete..................................... Success
EAP Method......................................... *1,Host OS Login Credentials
dot1x Status....................................... 255
```

Related Commands

config client ccx test-abort
config client ccx test-association
config client ccx test-dot1x
config client ccx test-profile
config client ccx clear-reports
config client ccx clear-results

show client ccx rm

To display Cisco Client eXtension (CCX) client radio management report information, use the **show client ccx rm** commands.

show client ccx rm *client_MAC* {**status**} | {**report {chan-load | noise-hist | frame | beacon | pathloss**}}

Syntax Description

client_MAC	Client MAC address.
status	Displays the client CCX radio management status information.
report	Displays the client CCX radio management report.
chan-load	Displays radio management channel load reports.
noise-hist	Displays radio management noise histogram reports.
beacon	Displays radio management beacon load reports.
frame	Displays radio management frame reports.
pathloss	Displays radio management path loss reports.

Command Default

None.

Examples

This example shows how to display the client radio management status information:

```
> show client ccx rm 00:40:96:15:21:ac status

Client Mac Address.............................. 00:40:96:15:21:ac
Channel Load Request............................ Enabled
Noise Histogram Request......................... Enabled
Beacon Request.................................. Enabled
Frame Request................................... Enabled
Interval........................................ 30
Iteration....................................... 10
```

This example shows how to display the client radio management load reports:

```
> show client ccx rm 00:40:96:15:21:ac report chan-load
Channel Load Report
Client Mac Address.............................. 00:40:96:ae:53:bc
Timestamp....................................... 788751121
Incapable Flag.................................. On
Refused Flag.................................... On
Chan CCA Busy Fraction
-----------------------
1   194
2   86
3   103
4   0
5   178
6   82
7   103
8   95
9   13
10  222
11  75
```

This example shows how to display the client radio management noise histogram reports:

```
> show client ccx rm 00:40:96:15:21:ac report noise-hist
Noise Histogram Report
Client Mac Address.............................. 00:40:96:15:21:ac
Timestamp....................................... 4294967295
Incapable Flag.................................. Off
Refused Flag.................................... Off
Chan RPI0 RPI1 RPI2 RPI3 RPI4 RPI5 RPI6 RPI7
```

Related Commands

config client ccx default-gw-ping
config client ccx dhcp-test

show client ccx stats-report

To display the Cisco Client eXtensions (CCX) statistics report from a specified client device, use the **show client ccx stats-report** command.

show client ccx stats-report *client_mac_address*

Syntax Description

client_mac_address	Client MAC address.

Command Default

None.

Examples

This example shows how to displays the statistics report:

```
> show client ccx stats-report 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
```

Related Commands

config client ccx default-gw-ping
config client ccx dhcp-test
config client ccx dns-ping

show client detail

To display detailed information for a client on a Cisco lightweight access point, use the **show client detail** command.

show client detail *mac_address*

Syntax Description

mac_address	Client MAC address.

Command Default

None.

Usage Guidelines

The show client ap command may list the status of automatically disabled clients. Use the show exclusionlist command to display clients on the exclusion list (blacklisted).

Examples

This example shows how to display the client detailed information:

```
> show client detail 00:0c:41:07:33:a6
Client MAC Address.............................. 00:0c:41:07:33:a6
Client Username ................................ example
AP MAC Address.................................. 28:93:fe:d3:37:e0
AP Name......................................... AP68ef.bdf4.0ae4
Client State.................................... Associated
Client NAC OOB State............................ Access
Wireless LAN Id................................. 4
802.11u......................................... Not Supported
BSSID........................................... 28:93:fe:d3:37:ec
Connected For .................................. 57351 secs
Channel......................................... 36
IP Address...................................... Unknown
IPv6 Address.................................... 2010:DB8:95:0000:0000:0000:0000:0001
IPv6 Address.................................... 2010:DB8:96:0000:0000:0000:0000:0001
IPv6 Address.................................... 2010:DB8:97:0000:0000:0000:0000:0001
IPv6 Address.................................... 2010:DB8:98:0000:0000:0000:0000:0001
Association Id.................................. 2
Authentication Algorithm........................ Open System
Reason Code..................................... 1
Status Code..................................... 0
Client CCX version.............................. No CCX support
Re-Authentication Timeout....................... 267
QoS Level....................................... Silver
802.1P Priority Tag............................. disabled
CTS Security Group Tag.......................... Not Applicable
KTS CAC Capability.............................. No
WMM Support..................................... Enabled
Power Save...................................... ON
Current Rate.................................... 48.0
Supported Rates................................. 6.0,9.0,12.0,18.0,24.0,36.0,
    ........................................... 48.0,54.0
Mobility State.................................. Local
Mobility Move Count............................. 2
Security Policy Completed....................... Yes
Policy Manager State............................ RUN
Policy Manager Rule Created..................... Yes
```

```
Audit Session ID.............................. 09095b0a000000044f3063fc
IPv4 ACL Name................................. none
IPv4 ACL Applied Status....................... Unavailable
IPv6 ACL Name................................. none
IPv6 ACL Applied Status....................... Unavailable
Policy Type................................... WPA2
Authentication Key Management................. FT-802.1x
Encryption Cipher............................. CCMP (AES)
Management Frame Protection................... No
EAP Type...................................... EAP-FAST
Interface..................................... dyn-95
VLAN.......................................... 95
Quarantine VLAN............................... 0
Access VLAN................................... 95
Client Capabilities:
      CF Pollable............................. Not implemented
      CF Poll Request......................... Not implemented
      Short Preamble.......................... Not implemented
      PBCC.................................... Not implemented
      Channel Agility......................... Not implemented
      Listen Interval......................... 1
      Fast BSS Transition..................... Not implemented
Client Wifi Direct Capabilities:
      WFD capable............................. No
      Manged WFD capable...................... No
      Cross Connection Capable................ No
      Support Concurrent Operation............ No
Fast BSS Transition Details:
Client Statistics:
      Number of Bytes Received................ 8261489
      Number of Bytes Sent.................... 7293596
      Number of Packets Received.............. 122333
      Number of Packets Sent.................. 60229
      Number of Interim-Update Sent........... 0
      Number of EAP Id Request Msg Timeouts...... 0
      Number of EAP Request Msg Timeouts......... 0
      Number of EAP Key Msg Timeouts.......... 0
      Number of Data Retries.................. 17262
      Number of RTS Retries................... 0
      Number of Duplicate Received Packets.... 299
      Number of Decrypt Failed Packets........ 0
      Number of Mic Failured Packets.......... 0
      Number of Mic Missing Packets........... 0
      Number of RA Packets Dropped............ 0
      Number of Policy Errors................. 0
      Radio Signal Strength Indicator......... -27 dBm
      Signal to Noise Ratio................... 73 dB
Nearby AP Statistics:
      AP5475.d011.3ea4(slot 1)
        antenna1: 57360 secs ago.............. -23 dBm
      AP68ef.bdf4.0ae4(slot 1)
antenna0: 29 secs ago..................... -25 dBm
        antenna1: 29 secs ago................. -34 dBm
      AP68ef.bd4d.352a(slot 1)
        antenna0: 338 secs ago................ -82 dBm
        antenna1: 338 secs ago................ -87 dBm
```

Related Commands show client summary

show client location-calibration summary

To display client location calibration summary information, use the **show client location-calibration summary** command.

show client location-calibration summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the location calibration summary information:

```
> show client location-calibration summary

MAC Address Interval
----------- ----------
10:10:10:10:10:10 60
21:21:21:21:21:21 45
```

Related Commands

show client summary
show client summary guest-lan

show client probing

To display the number of probing clients, use the **show client probing** command.

show client probing

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the number of probing clients:

```
> show client probing

Number of Probing Clients..................... 0
```

Related Commands

show client summary
show client summary guest-lan

show client roam-history

To display the roaming history of a specified client, use the **show client roam-history** command.

show client roam-history *mac_address*

Syntax Description		
	mac_address	Client MAC address.

Command Default None.

Examples This example shows how to display the roaming history of a specified client:

```
> show client roam-history 00:14:6c:0a:57:77
```

show client summary

To display a summary of clients associated with a Cisco lightweight access point, use the **show client summary** command.

show client summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Usage Guidelines

The show client ap command may list the status of automatically disabled clients. Use the show exclusionlist command to display clients on the exclusion list (blacklisted).

Examples

This example shows how to display a summary of the active clients:

```
> show client summary

Number of Clients................................ 24

MAC Address        AP Name            Status         WLAN/GLAN/RLAN  Auth  Protocol  Port
-----------------  -----------------  -------------  ----  --------  --------  ----  ----
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11a    1
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11a    1
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11b    1
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11a    1
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11b    1
xx:xx:xx:xx:xx:xx  AP02               Associated           2          Yes   802.11b    1
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11b    1
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11b    1
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11b    1
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11a    1
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11a    1
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11b    1
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11a    1
xx:xx:xx:xx:xx:xx  AP02               Probing             N/A         No    802.11a    1

Number of Clients................................ 2
```

Related Commands

show client summary guest-lan
show client detail

show client summary guest-lan

To display the active wired guest LAN clients, use the **show client summary guest-lan** command.

show client summary guest-lan

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of the active wired guest LAN clients:

```
> show client summary guest-lan

Number of Clients.............................. 1
MAC Address       AP Name      Status         WLAN  Auth   Protocol  Port Wired
-----------       ---------    ----------     ----  ----   --------  ---- -----
00:16:36:40:ac:58  N/A         Associated        1    No      802.3     1   Yes
```

Related Commands

show client summary

show client tsm

To display the client traffic stream metrics (TSM) statistics, use the **show client tsm** command.

show client tsm 802.11 {**a** | **b**} *client_mac* {*ap_mac* | **all**}

Syntax Description

802.11a	Specifies the 802.11a network.
802.11b	Specifies the 802.11 b/g network.
client_mac	MAC address of the client.
ap_mac	MAC address of the tsm access point.
all	Specifies the list of all access points to which the client has associations.

Command Default

None.

Examples

This example shows how to display the client's TSM for the 802.11a network:

```
> show client tsm 802.11a xx:xx:xx:xx:xx:xx all

AP Interface MAC: 00:0b:85:01:02:03
Client Interface Mac:               00:01:02:03:04:05
Measurement Duration:               90 seconds

  Timestamp                           1st Jan 2006, 06:35:80
    UpLink Stats
    ================
       Average Delay (5sec intervals).............................35
       Delay less than 10 ms......................................20
       Delay bet 10 - 20 ms.......................................20
       Delay bet 20 - 40 ms.......................................20
       Delay greater than 40 ms...................................20
      Total packet Count..........................................80
      Total packet lost count (5sec)..............................10
      Maximum Lost Packet count(5sec).............................5
      Average Lost Packet count(5secs)............................2
    DownLink Stats
    ================
       Average Delay (5sec intervals).............................35
       Delay less than 10 ms......................................20
       Delay bet 10 - 20 ms.......................................20
       Delay bet 20 - 40 ms.......................................20
       Delay greater than 40 ms...................................20
      Total packet Count..........................................80
      Total packet lost count (5sec)..............................10
      Maximum Lost Packet count(5sec).............................5
      Average Lost Packet count(5secs)............................2
```

Related Commands

show client ap
show client detail
show client summary

show client username

To display the client data by the username, use the **show client username** command.

show client username *username*

Syntax Description		
	username	Client's username.

Command Default None.

Examples This example shows how to display the detailed information for a client by name:

```
> show client username IT_007

MAC Address        AP ID   Status         WLAN Id    Authenticated
-----------------  ------  -------------  ---------  -------------
xx:xx:xx:xx:xx:xx  1       Associated     1          No
```

Related Commands

show client ap
show client detail
show client summary

show client voice-diag

To display voice diagnostics statistics, use the **show client voice-diag** command.

show client voice-diag {quos-map | roam-history | rssi | status | tspec}

Syntax Description

quos-map	Displays information about the QoS/DSCP mapping and packet statistics in each of the four queues: VO, VI, BE, BK. The different DSCP values are also displayed.
roam-history	Displays information about the last 3 roaming history. The output contains the Timestamp, access point associated with roaming, roaming reason, and if there is a roaming failure, reason for roaming-failure.
rssi	Display the client's RSSI values in the last 5 seconds when voice diagnostics is enabled.
status	Displays status of voice diagnostics for clients.
tspec	Displays TSPEC for voice diagnostic clients.

Command Default

None.

Examples

This example shows how to display the status of voice diagnostics for clients:

```
> show client voice-diag status

Voice Diagnostics Status: FALSE
```

Related Commands

show client ap
show client detail
show client summary
debug voice-diag

show country

To display the configured country and the radio types supported, use the **show country** command.

show country

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the configured countries and supported radio types:

```
> show country

Configured Country............................. United States
Configured Country Codes
    US  - United States............................ 802.11a / 802.11b / 802.11g
```

Related Commands

config country
show country channels
show country supported

show country channels

To display the radio channels supported in the configured country, use the **show country channels** command.

show country channels

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the auto-RF channels for the configured countries:

```
> show country channels

Configured Country............................ United States
      KEY: * = Channel is legal in this country and may be configured manually.
           A = Channel is the Auto-RF default in this country.
           . = Channel is not legal in this country.
           C = Channel has been configured for use by Auto-RF.
           x = Channel is available to be configured for use by Auto-RF.
---------:-+-+-+-+-+-+-+-+-+-+-+-+-+-
802.11BG :
Channels :                   1 1 1 1 1
         : 1 2 3 4 5 6 7 8 9 0 1 2 3 4
---------:-+-+-+-+-+-+-+-+-+-+-+-+-+-
     US  : A * * * * A * * * * A . . .
---------:-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-
 802.11A :  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Channels : 3 3 3 4 4 4 4 4 5 5 6 6 0 0 0 1 1 2 2 2 3 3 4 4 5 5 6 6
         : 4 6 8 0 2 4 6 8 2 6 0 4 0 4 8 2 6 0 4 8 2 6 0 9 3 7 1 5
---------:-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-
     US  : . A . A . A . A A A A A * * * * * . . . * * * A A A A *
---------:-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-
```

Related Commands

config country
show country
show country supported

show country supported

To display a list of the supported country options, use the **show country supported** command.

show country supported

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a list of all the supported countries:

```
> show country supported

Configured Country..............................  United States
Supported Country Codes
    AR  - Argentina.................................  802.11a / 802.11b / 802.11g
    AT  - Austria...................................  802.11a / 802.11b / 802.11g
    AU  - Australia.................................  802.11a / 802.11b / 802.11g
    BR  - Brazil....................................  802.11a / 802.11b / 802.11g
    BE  - Belgium...................................  802.11a / 802.11b / 802.11g
    BG  - Bulgaria..................................  802.11a / 802.11b / 802.11g
    CA  - Canada....................................  802.11a / 802.11b / 802.11g
    CH  - Switzerland...............................  802.11a / 802.11b / 802.11g
    CL  - Chile.....................................            802.11b / 802.11g
    CN  - China.....................................  802.11a / 802.11b / 802.11g
    CO  - Colombia..................................            802.11b / 802.11g
    CY  - Cyprus....................................  802.11a / 802.11b / 802.11g
    CZ  - Czech Republic............................  802.11a / 802.11b
    DE  - Germany...................................  802.11a / 802.11b / 802.11g
    DK  - Denmark...................................  802.11a / 802.11b / 802.11g
    EE  - Estonia...................................  802.11a / 802.11b / 802.11g
    ES  - Spain.....................................  802.11a / 802.11b / 802.11g
    FI  - Finland...................................  802.11a / 802.11b / 802.11g
    FR  - France....................................  802.11a / 802.11b / 802.11g
    GB  - United Kingdom............................  802.11a / 802.11b / 802.11g
    GI  - Gibraltar.................................  802.11a / 802.11b / 802.11g
    GR  - Greece....................................  802.11a / 802.11b / 802.11g
    HK  - Hong Kong.................................  802.11a / 802.11b / 802.11g
    HU  - Hungary...................................  802.11a / 802.11b / 802.11g
    ID  - Indonesia.................................            802.11b / 802.11g
    IE  - Ireland...................................  802.11a / 802.11b / 802.11g
    IN  - India.....................................  802.11a / 802.11b / 802.11g
    IL  - Israel....................................  802.11a / 802.11b / 802.11g
    ILO - Israel (outdoor)..........................            802.11b / 802.11g
    IS  - Iceland...................................  802.11a / 802.11b / 802.11g
    IT  - Italy.....................................  802.11a / 802.11b / 802.11g
    JP  - Japan (J).................................  802.11a / 802.11b / 802.11g
    J2  - Japan 2(P)................................  802.11a / 802.11b / 802.11g
    J3  - Japan 3(U)................................  802.11a / 802.11b / 802.11g
    KR  - Korea Republic (C)........................  802.11a / 802.11b / 802.11g
    KE  - Korea Extended (K)........................  802.11a / 802.11b / 802.11g
    LI  - Liechtenstein.............................  802.11a / 802.11b / 802.11g
    LT  - Lithuania.................................  802.11a / 802.11b / 802.11g
    LU  - Luxembourg................................  802.11a / 802.11b / 802.11g
    LV  - Latvia....................................  802.11a / 802.11b / 802.11g
```

```
MC  - Monaco..................................... 802.11a / 802.11b / 802.11g
MT  - Malta...................................... 802.11a / 802.11b / 802.11g
MX  - Mexico..................................... 802.11a / 802.11b / 802.11g
MY  - Malaysia................................... 802.11a / 802.11b / 802.11g
NL  - Netherlands................................ 802.11a / 802.11b / 802.11g
NZ  - New Zealand................................ 802.11a / 802.11b / 802.11g
NO  - Norway..................................... 802.11a / 802.11b / 802.11g
PA  - Panama.....................................           802.11b / 802.11g
PE  - Peru.......................................           802.11b / 802.11g
PH  - Philippines................................ 802.11a / 802.11b / 802.11g
PL  - Poland..................................... 802.11a / 802.11b / 802.11g
PT  - Portugal................................... 802.11a / 802.11b / 802.11g
RU  - Russian Federation......................... 802.11a / 802.11b / 802.11g
RO  - Romania.................................... 802.11a / 802.11b / 802.11g
SA  - Saudi Arabia............................... 802.11a / 802.11b / 802.11g
SE  - Sweden..................................... 802.11a / 802.11b / 802.11g
SG  - Singapore.................................. 802.11a / 802.11b / 802.11g
SI  - Slovenia................................... 802.11a / 802.11b / 802.11g
SK  - Slovak Republic............................ 802.11a / 802.11b / 802.11g
TH  - Thailand...................................           802.11b / 802.11g
TR  - Turkey.....................................           802.11b / 802.11g
TW  - Taiwan..................................... 802.11a / 802.11b / 802.11g
UA  - Ukraine.................................... 802.11a / 802.11b / 802.11g
US  - United States.............................. 802.11a / 802.11b / 802.11g
USL - United States (Legacy)..................... 802.11a / 802.11b / 802.11g
USX - United States (US + chan165)............... 802.11a / 802.11b / 802.11g
VE  - Venezuela..................................           802.11b / 802.11g
ZA  - South Africa............................... 802.11a / 802.11b / 802.11g
```

Related Commands

config country
show country
show country channels

show coredump summary

To display a summary of the controller's core dump file, use the **show coredump summary** command.

show coredump summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the core dump summary:

```
> show coredump summary

Core Dump is enabled
FTP Server IP..................................... 10.10.10.17
FTP Filename...................................... file1
FTP Username...................................... ftpuser
FTP Password...................................... *********
```

Related Commands

config coredump
config coredump ftp
config coredump username

show cpu

To display current WLAN controller CPU usage information, use the **show cpu** command.

show cpu

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the current CPU usage information:

```
> show cpu

Current CPU load: 2.50%
```

show custom-web

To display web authentication customization information, use the **show custom-web** command.

show custom-web

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the web authentication customization information:

```
> show custom-web

Radius Authentication Method..................... PAP
Cisco Logo....................................... Enabled
CustomLogo....................................... None
Custom Title..................................... None
Custom Message................................... None
Custom Redirect URL.............................. None
External web authentication Mode................. Disabled
External web authentication URL.................. None
```

Related Commands

config custom-web ext-webauth-mode
config custom-web ext-webauth-url
config custom-web ext-webserver
config custom-web redirectUrl
config custom-web webauth-type
config custom-web weblogo
config custom-web webmessage
config custom-web webtitle

show database summary

To display the maximum number of entries in the database, use the **show database summary** command.

show database summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

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

```
> show database summary

Maximum Database Entries..................... 2048
Maximum Database Entries On Next Reboot...... 2048
Database Contents
    MAC Filter Entries....................... 2
    Exclusion List Entries................... 0
    AP Authorization List Entries............ 1
    Management Users......................... 1
    Local Network Users...................... 1
        Local Users.......................... 1
        Guest Users.......................... 0
    Total.................................... 5
```

Related Commands

config database size

show debug

To determine if the MAC address and other flag debugging is enabled or disabled, sse the **show debug** command.

show debug

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display if debugging is enabled:

```
> show debug

MAC debugging.............................. disabled

Debug Flags Enabled:
  arp error enabled.
  bcast error enabled.
```

Related Commands

debug mac

show dhcp

To display the internal Dynamic Host Configuration Protocol (DHCP) server configuration, use the **show dhcp** command.

show dhcp {**leases** | **summary** | *scope*}

Syntax Description

leases	Displays allocated DHCP leases.
summary	Displays DHCP summary information.
scope	Name of a scope to display the DHCP information for that scope.

Command Default

None.

Examples

This example shows how to display the allocated DHCP leases:

```
> show dhcp leases

No leases allocated.
```

This example shows how to display the DHCP summary information:

```
> show dhcp summary

Scope Name            Enabled           Address Range
003                     No            0.0.0.0 -> 0.0.0.0
```

This example shows how to display the DHCP information for the scope 003:

```
> show dhcp 003

Enabled..................................... No
Lease Time.................................. 0
Pool Start.................................. 0.0.0.0
Pool End.................................... 0.0.0.0
Network..................................... 0.0.0.0
Netmask..................................... 0.0.0.0
Default Routers............................. 0.0.0.0 0.0.0.0 0.0.0.0
DNS Domain.................................
DNS......................................... 0.0.0.0 0.0.0.0 0.0.0.0
Netbios Name Servers........................ 0.0.0.0 0.0.0.0 0.0.0.0
```

Related Commands

config dhcp
config dhcp proxy
config interface dhcp
config wlan dhcp_server
debug dhcp
debug dhcp service-port
debug disable-all
show dhcp proxy

show dtls connections

To display the Datagram Transport Layer Security (DTLS) server status, use the **show dtls connections** command.

show dtls connections

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the established DTLS connections:

```
> show dtls connections

AP Name         Local Port    Peer IP         Peer Port     Ciphersuite
--------------- ------------- --------------- ------------- -----------------------
1130            Capwap_Ctrl   1.100.163.210   23678         TLS_RSA _WITH_AES_128_CBC_SHA
1130            Capwap_Data   1.100.163.210   23678         TLS_RSA _WITH_AES_128_CBC_SHA
1240            Capwap_Ctrl   1.100.163.209   59674         TLS_RSA _WITH_AES_128_CBC_SHA
```

show dhcp proxy

To display the status of DHCP proxy handling, use the **show dhcp proxy** command.

show dhcp proxy

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the status of dhcp proxy information:

```
> show dhcp proxy

DHCP Proxy Behavior: enabled
```

Related Commands

config dhcp
config dhcp proxy
config interface dhcp
config wlan dhcp_server
debug dhcp
debug dhcp service-port
debug disable-all
show dhcp

show dhcp timeout

To display the DHCP timeout value, use the **show dhcp timeout** command.

show dhcp timeout

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the DHCP timeout value:

```
> show dhcp timeout

DHCP Timeout (seconds)..... 10
```

Related Commands

config dhcp
config dhcp timeout
config interface dhcp
config wlan dhcp_server
debug dhcp
debug dhcp service-port
debug disable-all
show dhcp

show eventlog

To display the event log, use the **show eventlog** command.

show eventlog

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the event log entries:

```
> show eventlog
                                                    Time
       File     Line TaskID   Code        d  h  m  s
EVENT> bootos.c  788 125CEBCC AAAAAAAA    0  0  0  6
EVENT> bootos.c  788 125CEBCC AAAAAAAA    0  0  0  6
EVENT> bootos.c  788 125C597C AAAAAAAA    0  0  0  6
EVENT> bootos.c  788 125C597C AAAAAAAA    0  0  0  6
EVENT> bootos.c  788 125C597C AAAAAAAA    0  0  0  6
EVENT> bootos.c  788 125C597C AAAAAAAA    0  0  0  6
EVENT> bootos.c  788 125C597C AAAAAAAA    0  0  0  6
EVENT> bootos.c  788 125C597C AAAAAAAA    0  0  0  6
EVENT> bootos.c  788 1216C36C AAAAAAAA    0  0  0  6
EVENT> bootos.c  788 1216C36C AAAAAAAA    0  0  0  6
EVENT> bootos.c  788 1216C36C AAAAAAAA    0  0  0  6
EVENT> bootos.c  788 1216C36C AAAAAAAA    0  0  0 11
```

show exclusionlist

To display a summary of all clients on the manual exclusion list (blacklisted) from associating with this Cisco wireless LAN controller, use the **show exclusionlist** command.

show exclusionlist

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Usage Guidelines

This command displays all manually excluded MAC addresses.

Examples

This example shows how to display the exclusion list:

```
> show exclusionlist

No manually disabled clients.

Dynamically Disabled Clients
----------------------------
  MAC Address             Exclusion Reason        Time Remaining (in secs)
  -----------             ----------------        ------------------------

00:40:96:b4:82:55         802.1X Failure          51
```

Related Commands

config exclusionlist

show flexconnect acl detailed

To display a detailed summary of FlexConnect access control lists, use the show flexconnect acl detailed command.

show flexconnect acl detailed *acl-name*

Syntax Description

acl-name	Name of the access control list.

Command Default

None.

Examples

This example shows how to display the flexconnect detailed acls:

> **show flexconnect acl detailed acl-2**

show flexconnect acl summary

To display a summary of all access control lists on FlexConnect access points, use the **show flexconnect acl summary** command.

show flexconnect acl summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the flexconnect acl summary:

```
> show flexconnect acl summary
ACL Name                          Status
-------------------------------- -------
acl1                             Modified
acl10                            Modified
acl1100                          Modified
acl1101                          Modified
acl1102                          Modified
acl1103                          Modified
acl1104                          Modified
acl1105                          Modified
acl1106                          Modified
```

show guest-lan

To display the configuration of a specific wired guest LAN, use the **show guest-lan** command.

show guest-lan *guest_lan_id*

Syntax Description

guest_lan_id	ID of selected wired guest LAN.

Command Default

None.

Usage Guidelines

To display all wired guest LANs configured on the controller, use the **show guest-lan summary** command.

Examples

This example shows how to display the guest LAN configuration:

```
> show guest-lan 2

Guest LAN Identifier..................................... 1
Profile Name............................................. guestlan
Network Name (SSID)...................................... guestlan
Status................................................... Enabled
AAA Policy Override...................................... Disabled
Number of Active Clients................................. 1
Exclusionlist Timeout.................................... 60 seconds
Session Timeout.......................................... Infinity
Interface................................................ wired
Ingress Interface........................................ wired-guest
WLAN ACL................................................. unconfigured
DHCP Server.............................................. 10.20.236.90
DHCP Address Assignment Required......................... Disabled
Quality of Service....................................... Silver (best effort)
Security
    Web Based Authentication............................. Enabled
    ACL.................................................. Unconfigured
    Web-Passthrough...................................... Disabled
    Conditional Web Redirect............................. Disabled
    Auto Anchor.......................................... Disabled
Mobility Anchor List
GLAN ID IP Address Status
```

Related Commands

config guest-lan
config guest-lan custom-web ext-webauth-url
config guest-lan custom-web global disable
config guest-lan custom-web login_page
config guest-lan nac
config guest-lan security

show flexconnect group detail

To display the details for a specific FlexConnect group, use the **show flexconnect group detail** command.

show flexconnect group detail *group_name*

Syntax Description

group_name	IP address of the FlexConnect group.

Command Default

None.

Examples

This example shows how to display the detailed information for a specific FlexConnect group:

```
> show flexconnect group detail 192.12.1.2

Number of Ap's in Group: 1
00:0a:b8:3b:0b:c2  AP1200  Joined

Group Radius Auth Servers:
    Primary Server Index ..................... Disabled
    Secondary Server Index ................... Disabled
```

Related Commands

config flexconnect group
show flexconnect group summary

show flexconnect group summary

To display the current list of FlexConnect groups, use the **show flexconnect group summary** command.

show flexconnect group summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the current list of FlexConnect groups:

```
> show flexconnect group summary

flexconnect Group Summary: Count 1

Group Name             # APs
Group 1                1
```

Related Commands

config flexconnect group
show flexconnect group detail

show flexconnect office-extend

To display FlexConnect OfficeExtend access point information, use the **show flexconnect office-extend** command.

show flexconnect office-extend {**summary** | **latency**}

Syntax Description

summary	Displays a list of all OfficeExtend access points.
latency	Displays the link delay for OfficeExtend access points.

Command Default

None.

Examples

This example shows how to display information about the list of FlexConnect officeExtend access points:

```
> show flexconnect office-extend summary

Summary of OfficeExtend AP
AP Name             Ethernet MAC       Encryption  Join-Mode   Join-Time
------------------- -----------------  ----------  ----------- ----------
AP1130              00:22:90:e3:37:70   Enabled    Latency     Sun Jan 4 21:46:07 2009
AP1140              01:40:91:b5:31:70   Enabled    Latency     Sat Jan 3 19:30:25 2009
```

This example shows how to display the FlexConnect officeExtend access point's link delay:

```
> show flexconnect office-extend latency

Summary of OfficeExtend AP link latency
AP Name               Status  Current   Maximum   Minimum
------------------------------------------------------------------------------
AP1130                Enabled 15 ms      45 ms     12 ms
AP1140                Enabled 14 ms     179 ms     12 ms
```

Related Commands

config flexconnect group
show flexconnect group detail

show ike

To display active Internet Key Exchange (IKE) security associations (SAs), use the **show ike** command.

show ike {**brief** | **detailed**} *IP_or_MAC_address*

Syntax Description

brief	Displays a brief summary of all active IKE SAs.
detailed	Displays a detailed summary of all active IKE SAs.
IP_or_MAC_address	IP or MAC address of active IKE SA.

Command Default

None.

Examples

This example shows how to display the active Internet Key Exchange security associations:

```
> show ike brief 10.10.10.10
```

show interface

To display details of the system interfaces, use the **show interface** command:

show interface {**summary** | **detailed** *interface_name*}

Syntax Description

summary	Displays a summary of the local interfaces.
detailed	Displays detailed interface information.
interface_name	Interface name for detailed display.

Command Default

None.

Examples

This example shows how to display a summary of the local interfaces:

```
> show interface summary

Interface Name       Port Vlan Id    IP Address        Type    Ap Mgr Guest
-------------------  ----   ---------   ----------------  ------ ------ ------

ap-manager           1    untagged   xxx.xxx.xxx.xxx  Static   Yes No
management           1    untagged    xxx.xxx.xxx.xxx  Static    No No
service-port         N/A     N/A     xxx.xxx.xxx.xxx  Static   No  No
virtual              N/A     N/A     xxx.xxx.xxx.xxx  Static   No  No
```

This example shows how to display the detailed interface information:

```
> show interface detailed management

Interface Name................................. management
MAC Address.................................... 00:0b:85:32:ab:60
IP Address..................................... 1.100.49.30
IP Netmask..................................... 255.255.255.0
IP Gateway..................................... 1.100.49.1
VLAN........................................... 149
Active Physical Port........................... 1
Primary Physical Port.......................... 1
Backup Physical Port........................... Unconfigured
Primary DHCP Server............................ 1.100.2.15
Secondary DHCP Server.......................... Unconfigured
ACL............................................ Unconfigured
AP Manager..................................... No
```

Note Some WLAN controllers may have only one physical port listed because they have only one physical port.

Related Commands

show interface group

show interface group

To display details of system interface groups, use the **show interface group** command:

show interface group {**summary** | **detailed** *interface_group_name*}

Syntax Description

summary	Displays a summary of the local interface groups.
detailed	Displays detailed interface group information.
interface_group_name	Interface group name for a detailed display.

Command Default

None.

Examples

This example shows how to display a summary of local interface groups:

```
> show interface group summary

Interface Group Name    Total Interfaces   Total WLANs     Total AP Groups     Quarantine
--------------------    ----------------    ---------      ---------------      ---------
mygroup1                       1                0                  0               No
mygroup2                       1                0                  0               No
mygroup3                       5                1                  0               No
```

This example shows how to display the detailed interface group information:

```
> show interface group detailed mygroup1

Interface Group Name.............................. mygroup1
Quarantine ....................................... No
Number of Wlans using the Interface Group........ 0
Number of AP Groups using the Interface Group.... 0
Number of Interfaces Contained.................... 1
Interface Group Description..................... My Interface Group
Next interface for allocation to client.......... testabc
Interfaces Contained in this group .............. testabc

Interface marked with * indicates DHCP dirty interface
```

Related Commands

show interface
config interface group

show invalid-config

To see any ignored commands or invalid configuration values in an edited configuration file, use the **show invalid-config** command.

show invalid-config

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Usage Guidelines

You can execute this command only before the clear config or save config command.

Examples

This example shows how to display a list of any ignored commands or invalid configuration values in a configuration file:

```
> show invalid-config

config wlan peer-blocking drop 3
config wlan dhcp_server 3 192.168.0.44 required
```

show inventory

To display a physical inventory of the Cisco wireless LAN controller, use the **show inventory** command.

show inventory

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Usage Guidelines

Some wireless LAN controllers may have no crypto accelerator (VPN termination module) or power supplies listed because they have no provisions for VPN termination modules or power supplies.

Examples

This example shows how to display a physical inventory of the controller:

```
> show inventory

Switch Description.............................. Cisco Controller
Machine Model................................... WLC4404-100
Serial Number................................... FLS0923003B
Burned-in MAC Address........................... 00:0B:85:32:AB:60
Crypto Accelerator 1............................ Absent
Crypto Accelerator 2............................ Absent
Power Supply 1.................................. Absent
Power Supply 2.................................. Present, OK
```

Related Commands

show ap inventory

show IPsec

To display active Internet Protocol Security (IPsec) security associations (SAs), use the **show IPsec** command.

show IPsec {**brief** | **detailed**} *IP_or_MAC_address*

Syntax Description

brief	Displays a brief summary of active IPsec SAs.
detailed	Displays a detailed summary of active IPsec SAs.
IP_or_MAC_address	IP address or MAC address of a device.

Command Default

None.

Examples

This example shows how to display brief information about the active Internet Protocol Security (IPsec) security associations (SAs):

```
> show IPsec brief 10.10.10.10
```

Related Commands

config radius acct ipsec authentication
config radius acct ipsec disable
config radius acct ipsec enable
config radius acct ipsec encryption
config radius acct ipsec ike
config radius auth IPsec authentication
config radius auth IPsec disable
config radius auth IPsec encryption
config radius auth IPsec ike
config trapflags IPsec
config wlan security IPsec disable
config wlan security IPsec enable
config wlan security IPsec authentication
config wlan security IPsec encryption
config wlan security IPsec config
config wlan security IPsec ike authentication
config wlan security IPsec ike dh-group
config wlan security IPsec ike lifetime
config wlan security IPsec ike phase1
config wlan security IPsec ike contivity

show lag eth-port-hash

To display the physical port used for specific MAC addresses, use the **show lag eth-port-hash** command.

show lag eth-port-hash *dest_MAC* [*source_MAC*]

Syntax Description

dest_MAC	MAC address to determine output port for non-IP packets.
source_MAC	(Optional) MAC address to determine output port for non-IP packets.

Command Default

None.

Examples

This example shows how to display the physical port used for a specific MAC address:

```
> show lag eth-port-hash 11:11:11:11:11:11

Destination MAC 11:11:11:11:11:11 currently maps to port 1
```

Related Commands

config lag

show lag ip-port-hash

To display the physical port used for specific IP addresses, use the **show lag ip-port-hash** command.

show lag ip-port-hash *dest_IP* [*source_IP*]

Syntax Description

dest_IP	IP address to determine the output port for IP packets.
source_IP	(Optional) IP address to determine the output port for IP packets.

Command Default

None.

Usage Guidelines

For CAPWAP packets, enter the AP's IP address. For EOIP packets, enter the WLC's IP address. For WIRED_GUEST packets, enter its IP address. For nontunneled IP packets from WLC, enter the destination IP address. For other nontunneled IP packets, enter both destination and source IP addresses.

Examples

This example shows how to display the physical port used for a specific IP address:

```
> show lag ip-port-hash 192.168.102.138

Destination IP 192.168.102.138 currently maps to port 1
```

Related Commands

config lag

show lag summary

To display the current link aggregation (LAG) status, use the **show lag summary** command.

show lag summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the current status of the LAG configuration:

```
> show lag summary

LAG Enabled
```

Related Commands

config lag

show ldap

To display the Lightweight Directory Access Protocol (LDAP) server information for a particular LDAP server, use the **show ldap** command.

show ldap *index*

Syntax Description

index	LDAP server index. Valid values are from 1 to 17.

Command Default

None.

Examples

This example shows how to display the detailed LDAP server information:

```
> show ldap 1
Server Index..................................... 1
Address.......................................... 2.3.1.4
Port............................................. 389
Enabled.......................................... Yes
User DN.......................................... name1
User Attribute................................... attr1
User Type........................................ username1
Retransmit Timeout............................... 3 seconds
Bind Method ..................................... Anonymous
```

Related Commands

config ldap
config ldap add
config ldap simple-bind
show ldap statistics
show ldap summary

show ldap statistics

To display all Lightweight Directory Access Protocol (LDAP) server information, use the **show ldap statistics** command.

show ldap statistics

Syntax Description

This command has no arguments or keywords:

Examples

This example shows how to display the LDAP server statistics:

```
> show ldap statistics

Server Index..................................... 1
Server statistics:
  Initialized OK................................. 0
  Initialization failed.......................... 0
  Initialization retries......................... 0
  Closed OK...................................... 0
Request statistics:
  Received....................................... 0
  Sent........................................... 0
  OK............................................. 0
  Success........................................ 0
  Authentication failed.......................... 0
  Server not found............................... 0
  No received attributes......................... 0
  No passed username............................. 0
  Not connected to server........................ 0
  Internal error................................. 0
  Retries........................................ 0

Server Index..................................... 2
...
```

Related Commands

config ldap
config ldap add
config ldap simple-bind
show ldap
show ldap summary

show ldap summary

To display the current Lightweight Directory Access Protocol (LDAP) server status, use the **show ldap summary** command.

show ldap summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of configured LDAP servers:

```
> show ldap summary

Idx  Server Address   Port  Enabled
---  ---------------  ----  -------
1    2.3.1.4          389   Yes
2    10.10.20.22      389   Yes
```

Related Commands

config ldap
config ldap add
config ldap simple-bind
show ldap
show ldap statistics

show license agent

To display the license agent counter and session information on the Cisco 5500 Series Controller, use the **show license agent** command.

show license agent {**counters** | **sessions**}

Syntax Description

counters	Displays license agent counter information.
sessions	Display session information.

Command Default

None.

Examples

This example shows how to display the license agent counters information:

```
> show license agent counters

License Agent Counters
Request Messages Received:0: Messages with Errors:0
Request Operations Received:0: Operations with Errors:0
Notification Messages Sent:0: Transmission Errors:0: Soap Errors:0
```

This example shows how to display the license agent sessions information:

```
> show license agent sessions

License Agent Sessions: 0 open, maximum is 9
```

Related Commands

config license agent
clear license agent
show license all
show license detail
show license feature
show license image-level
show license summary

show license all

To display information for all licenses on the Cisco 5500 Series Controller, use the **show license all** command.

show license all

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display all the licenses:

```
> show license all
License Store: Primary License Storage
StoreIndex:  0  Feature: wplus-ap-count   Version: 1.0
        License Type: Permanent
        License State: Inactive
        License Count: 12/0/0
        License Priority: Medium
StoreIndex:  1  Feature: base   Version: 1.0
        License Type: Permanent
        License State: Active, Not in Use
        License Count: Non-Counted
        License Priority: Medium
StoreIndex:  2  Feature: wplus   Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
License Store: Evaluation License Storage
StoreIndex:  0  Feature: wplus   Version: 1.0
        License Type: Evaluation
        License State: Inactive
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  6 weeks  6 days
        License Count: Non-Counted
        License Priority: Low
StoreIndex:  1  Feature: wplus-ap-count   Version: 1.0
        License Type: Evaluation
        License State: Active, In Use
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  2 weeks  3 days
            Expiry date: Thu Jun 25 18:09:43 2009
        License Count: 250/250/0
        License Priority: High
StoreIndex:  2  Feature: base   Version: 1.0
        License Type: Evaluation
        License State: Inactive
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  8 weeks  4 days
        License Count: Non-Counted
        License Priority: Low
StoreIndex:  3  Feature: base-ap-count   Version: 1.0
        License Type: Evaluation
        License State: Active, Not in Use, EULA accepted
```

```
    Evaluation total period:  8 weeks  4 days
    Evaluation period left:  8 weeks  3 days
License Count: 250/0/0
License Priority: Low
```

Related Commands

license install
license modify priority
show license agent
show license detail
show license feature
show license image-level
show license summary

show license capacity

To display the maximum number of access points allowed for this license on the Cisco 5500 Series Controller, the number of access points currently joined to the controller, and the number of access points that can still join the controller, use the **show license capacity** command.

show license capacity

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the license capacity:

```
> show license capacity

Licensed Feature    Max Count         Current Count     Remaining Count
------------------------------------------------------------------------
AP Count            250               47                203
```

Related Commands

license install
license modify priority
show license agent
show license all
show license detail
show license feature
show license image-level
show license summary

show license detail

To display details of a specific license on the Cisco 5500 Series Controller, use the **show license detail** command.

show license detail *license_name*

Syntax Description

license-name	Name of a specific license.

Command Default

None.

Examples

This example shows how to display the license details:

```
> show license detail wplus
Feature: wplus           Period left: Life time
Index:  1       Feature: wplus   Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
        Store Index: 2
        Store Name: Primary License Storage
Index:  2       Feature: wplus   Version: 1.0
        License Type: Evaluation
        License State: Inactive
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  6 weeks  6 days
        License Count: Non-Counted
        License Priority: Low
        Store Index: 0
```

Related Commands

license install
license modify priority
show license agent
show license all
show license feature
show license image-level
show license summary

show license expiring

To display details of expiring licenses on the Cisco 5500 Series Controller, use the **show license expiring** command.

show license expiring

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the details of the expiring licenses:

```
> show license expiring
StoreIndex:  0  Feature: wplus   Version: 1.0
        License Type: Evaluation
        License State: Inactive
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  6 weeks  6 days
        License Count: Non-Counted
        License Priority: Low
StoreIndex:  1  Feature: wplus-ap-count   Version: 1.0
        License Type: Evaluation
        License State: Active, In Use
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  2 weeks  3 days
            Expiry date: Thu Jun 25 18:09:43 2009
        License Count: 250/250/0
        License Priority: High
StoreIndex:  2  Feature: base   Version: 1.0
        License Type: Evaluation
        License State: Inactive
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  8 weeks  4 days
        License Count: Non-Counted
        License Priority: Low
StoreIndex:  3  Feature: base-ap-count   Version: 1.0
        License Type: Evaluation
        License State: Active, Not in Use, EULA accepted
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  8 weeks  3 days
        License Count: 250/0/0
        License Priority: Low
```

Related Commands

license install
license modify priority
show license all
show license detail
show license evaluation
show license in-use
show license summary

show license evaluation

To display details of evaluation licenses on the Cisco 5500 Series Controller, use the **show license evaluation** command.

show license evaluation

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the details of the evaluation licenses:

```
> show license evaluation
StoreIndex:  0  Feature: wplus   Version: 1.0
        License Type: Evaluation
        License State: Inactive
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  6 weeks  6 days
        License Count: Non-Counted
        License Priority: Low
StoreIndex:  1  Feature: wplus-ap-count   Version: 1.0
        License Type: Evaluation
        License State: Active, In Use
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  2 weeks  3 days
            Expiry date: Thu Jun 25 18:09:43 2009
        License Count: 250/250/0
        License Priority: High
StoreIndex:  2  Feature: base   Version: 1.0
        License Type: Evaluation
        License State: Inactive
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  8 weeks  4 days
        License Count: Non-Counted
        License Priority: Low
StoreIndex:  3  Feature: base-ap-count   Version: 1.0
        License Type: Evaluation
        License State: Active, Not in Use, EULA accepted
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  8 weeks  3 days
        License Count: 250/0/0
        License Priority: Low
```

Related Commands

license install
license modify priority
show license all
show license detail
show license expiring
show license in-use
show license summary

show license feature

To display a summary of license-enabled features on the Cisco 5500 Series Controller, use the **show license feature** command.

show license feature

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the license-enabled features:

```
> show license feature
        Feature name Enforcement  Evaluation  Clear Allowed  Enabled
               wplus         yes         yes            yes      yes
      wplus-ap-count         yes         yes            yes      yes
                base          no         yes            yes       no
       base-ap-count         yes         yes            yes       no
```

Related Commands

license install
license modify priority
show license all
show license detail
show license expiring
show license evaluation
show license image-level
show license in-use
show license summary

show license file

To display a summary of license-enabled features on the Cisco 5500 Series Controller, use the **show license file** command.

show license file

Syntax Description

This command has no arguments or keywords.

Examples

This example shows how to display the license files:

```
> show license file
License Store: Primary License Storage
  Store Index: 0
    License: 11 wplus-ap-count 1.0 LONG NORMAL STANDALONE EXCL 12_KEYS INFINIT
             E_KEYS NEVER NEVER NiL SLM_CODE CL_ND_LCK NiL *1AR5NS7M5AD8PPU400
              NiL NiL NiL 5_MINS <UDI><PID>AIR-CT5508-K9</PID><SN>RFD000P2D27<
             /SN></UDI> Pe0L7tv8KDUqo:zlPe423S5wasgM8G,tTs0i,7zLyA3VfxhnIe5aJa
             m63lR5l8JM3DPkr4O2DI43iLlKn7jomo3RFl1LjMRqLkKhiLJ2tOyuftQSq2bCAO6
             nR3wIb38xKi3t$<WLC>AQEBIQAB//++mCzRUbOhw28vz0czAY0iAm7ocDLUMb9ER0
             +BD3w2PhNEYwsBN/T3xXBqJqfC+oKRqwInXo3s+nsLU7rOtdOxoIxYZAo3LYmUJ+M
             FzsqlhKoJVlPyEvQ8H21MNUjVbhoN0gyIWsyiJaM8AQIkVBQFzhr10GYolVzdzfJf
             EPQIx6tZ++/Vtc/q3SF/5Ko8XCY=</WLC>
    Comment:
       Hash: iOGjuLlXgLhcTB113ohIzxVioHA=

. . .
```

Related Commands

license install
show license all
show license detail
show license expiring
show license feature
show license image-level
show license in-use
show license summary

show license handle

To display the license handles on the Cisco 5500 Series Controller, use the **show license handle** command.

show license handle

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the license handles:

```
> show license handle

Feature: wplus                          , Handle Count: 1
    Units: 01( 0), ID: 0x5e000001, NotifyPC: 0x1001e8f4 LS-Handle (0x00000001),
Units: ( 1)

    Registered clients: 1
        Context 0x1051b610, epID 0x10029378
Feature: base                           , Handle Count: 0
    Registered clients: 1
        Context 0x1053ace0, epID 0x10029378
Feature: wplus-ap-count                 , Handle Count: 1
    Units: 250( 0), ID: 0xd4000002, NotifyPC: 0x1001e8f4        LS-Handle (0x000
00002), Units: (250)

    Registered clients: None
Feature: base-ap-count                  , Handle Count: 0
    Registered clients: None
Global Registered clients: 2
                Context 0x10546270, epID 0x100294cc
                Context 0x1053bae8, epID 0x100294cc
```

Related Commands

license install
show license all
show license detail
show license expiring
show license feature
show license image-level
show license in-use
show license summary

show license image-level

To display the license image level that is in use on the Cisco 5500 Series Controller, use the **show license image-level** command.

show license image-level

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the image level license settings:

```
> show license image-level
Module name  Image level  Priority  Configured  Valid license
wnbu         wplus        1         YES         wplus
             base         2         NO

 NOTE: wplus includes two additional features: Office Extend AP, Mesh AP.
```

Related Commands

license install
license modify priority
show license all
show license detail
show license expiring
show license feature
show license in-use
show license summary

show license in-use

To display the licenses that are in use on the Cisco 5500 Series Controller, use the **show license in-use** command.

show license in-use

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the licenses that are in use:

```
> show license in-use
StoreIndex:  2  Feature: wplus   Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
StoreIndex:  1  Feature: wplus-ap-count   Version: 1.0
        License Type: Evaluation
        License State: Active, In Use
            Evaluation total period:  8 weeks  4 days
            Evaluation period left:  2 weeks  3 days
            Expiry date: Thu Jun 25 18:09:43 2009
        License Count: 250/250/0
        License Priority: High
```

Related Commands

license install
license modify priority
show license all
show license detail
show license evaluation
show license expiring
show license feature
show license image-level
show license permanent
show license summary

show license permanent

To display the permanent licenses on the Cisco 5500 Series Controller, use the **show license permanent** command.

show license permanent

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the permanent license's information:

```
> show license permanent
StoreIndex:  0  Feature: wplus-ap-count   Version: 1.0
        License Type: Permanent
        License State: Inactive
        License Count: 12/0/0
        License Priority: Medium
StoreIndex:  1  Feature: base   Version: 1.0
        License Type: Permanent
        License State: Active, Not in Use
        License Count: Non-Counted
        License Priority: Medium
StoreIndex:  2  Feature: wplus   Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
```

Related Commands

license install
license modify priority
show license all
show license detail
show license evaluation
show license expiring
show license feature
show license image-level
show license in-use
show license summary

show license status

To display the license status on the Cisco 5500 Series Controller, use the **show license status** command.

show license status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the license status:

```
> show license status
                License Type Supported
        permanent  Non-expiring node locked license
        extension  Expiring node locked license
        evaluation Expiring non node locked license

                License Operation Supported
        install    Install license
        clear      Clear license
        annotate   Comment license
        save       Save license
        revoke     Revoke license

                Device status
        Device Credential type: DEVICE
        Device Credential Verification: PASS
        Rehost Type: DC_OR_IC
```

Related Commands

license install
license modify priority
show license all
show license detail
show license evaluation
show license expiring
show license feature
show license image-level
show license permanent
show license summary

show license statistics

To display license statistics on the Cisco 5500 Series Controller, use the **show license statistics** command.

show license statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the license statistics:

```
> show license statistics
                Administrative statistics
        Install success count:       0
        Install failure count:       0
        Install duplicate count:     0
        Comment add count:           0
        Comment delete count:        0
        Clear count:                 0
        Save count:                  0
        Save cred count:             0

                Client status
        Request success count     2
        Request failure count     0
        Release count             0
        Global Notify count       0
```

Related Commands

license install
license modify priority
show license all
show license detail
show license evaluation
show license expiring
show license feature
show license image-level
show license permanent
show license summary

show license summary

To display a brief summary of all licenses on the Cisco 5500 Series Controller, use the **show license summary** command.

show license summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a brief summary of all licenses:

```
> show license summary
Index 1 Feature: wplus
        Period left: Life time
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
Index 2 Feature: wplus-ap-count
        Period left:  2 weeks  3 days
        License Type: Evaluation
        License State: Active, In Use
        License Count: 250/250/0
        License Priority: High
Index 3 Feature: base
        Period left: Life time
        License Type: Permanent
        License State: Active, Not in Use
        License Count: Non-Counted
        License Priority: Medium
Index 4 Feature: base-ap-count
        Period left:  8 weeks  3 days
        License Type: Evaluation
        License State: Active, Not in Use, EULA accepted
        License Count: 250/0/0
        License Priority: Low
```

Related Commands

license install
license modify priority
show license all
show license detail
show license evaluation
show license expiring
show license feature
show license image-level
show license permanent
show license summary

show license udi

To display unique device identifier (UDI) values for licenses on the Cisco 5500 Series Controller, use the **show license udi** command.

show license udi

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the UDI values for licenses:

```
> show license udi

Device# PID                   SN                    UDI
------------------------------------------------------------------------------------
*0      AIR-CT5508-K9         RFD000P2D27           AIR-CT5508-K9:RFD000P2D27
```

Related Commands

license install
license modify priority
show license all
show license detail
show license evaluation
show license expiring
show license feature
show license image-level
show license permanent
show license summary

show load-balancing

To display the status of the load-balancing feature, use the **show load-balancing** command.

show load-balancing

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the load-balancing status:

```
> show load-balancing

Aggressive Load Balancing..................... Enabled
Aggressive Load Balancing Window.............. 0 clients
Aggressive Load Balancing Denial Count........... 3
Statistics
Total Denied Count............................ 10 clients
Total Denial Sent............................. 20 messages
Exceeded Denial Max Limit Count.............. 0 times
None 5G Candidate Count....................... 0 times
None 2.4G Candidate Count..................... 0 times
```

Related Commands

config load-balancing

show local-auth certificates

To display local authentication certificate information, use the **show local-auth certificates** command:

show local-auth certificates

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the authentication certificate information stored locally:

```
> show local-auth certificates

Certificates available for Local EAP authentication:

Certificate issuer ............................. vendor
    CA certificate:
        Subject: C=AU, ST=NSW, L=Sydney, O=Cisco Systems
        OU=WNBU Sydney, CN=wnbu-syd-acs-a.cisco.com
        Issuer: C=AU, ST=NSW, L=Sydney, O=Cisco Systems
        OU=WNBU Sydney, CN=wnbu-syd-acs-a.cisco.com
        Valid: 2005 Jun 15th, 04:53:49 GMT to 2008 Jun 15th, 05:03:34 GMT
        Device certificate:
        Subject: MAILTO=test@test.net, C=AU, ST=NSW, L=Sydney
        O=Cisco Systems, OU=WNBU Sydney, CN=concannon
        Issuer: C=AU, ST=NSW, L=Sydney, O=Cisco Systems
        OU=WNBU Sydney, CN=wnbu-syd-acs-a.cisco.com
        Valid: 2006 Aug 9th, 05:14:16 GMT to 2007 Aug 9th, 05:24:16 GMT

Certificate issuer ............................. cisco
    CA certificate:
        Subject: C=US, ST=California, L=San Jose, O=airespace Inc
        OU=none, CN=ca, MAILTO=support@airespace.com
        Issuer: C=US, ST=California, L=San Jose, O=airespace Inc
        OU=none, CN=ca, MAILTO=support@airespace.com
        Valid: 2003 Feb 12th, 23:38:55 GMT to 2012 Nov 11th, 23:38:55 GMT
        Device certificate:
        Subject: C=US, ST=California, L=San Jose, O=airespace Inc
        CN=000b85335340, MAILTO=support@airespace.com
        Issuer: C=US, ST=California, L=San Jose, O=airespace Inc
        OU=none, CN=ca, MAILTO=support@airespace.com
        Valid: 2005 Feb 22nd, 10:52:58 GMT to 2014 Nov 22nd, 10:52:58 GMT

Certificate issuer ............................. legacy
    CA certificate:
        Subject: C=US, ST=California, L=San Jose, O=airespace Inc
        OU=none, CN=ca, MAILTO=support@airespace.com
        Issuer: C=US, ST=California, L=San Jose, O=airespace Inc
        OU=none, CN=ca, MAILTO=support@airespace.com
        Valid: 2003 Feb 12th, 23:38:55 GMT to 2012 Nov 11th, 23:38:55 GMT

        Device certificate:
        Subject: C=US, ST=California, L=San Jose, O=airespace Inc
        CN=000b85335340, MAILTO=support@airespace.com
```

```
Issuer: C=US, ST=California, L=San Jose, O=airespace Inc
OU=none, CN=ca, MAILTO=support@airespace.com
Valid: 2005 Feb 22nd, 10:52:58 GMT to 2014 Nov 22nd, 10:52:58 GMT
```

Related Commands

clear stats local-auth
config local-auth active-timeout
config local-auth eap-profile
config local-auth method fast
config local-auth user-credentials
debug aaa local-auth
show local-auth config
show local-auth statistics

show local-auth config

To display local authentication configuration information, use the **show local-auth config** command.

show local-auth config

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the local authentication configuration information:

```
> show local-auth config

User credentials database search order:
    Primary ..................................... Local DB

Configured EAP profiles:
    Name ........................................ fast-test
        Certificate issuer ..................... default
        Enabled methods ......................... fast
        Configured on WLANs ..................... 2

EAP Method configuration:
    EAP-TLS:
        Certificate issuer ..................... default
        Peer verification options:
            Check against CA certificates ..... Enabled
            Verify certificate CN identity .... Disabled
            Check certificate date validity ... Enabled
    EAP-FAST:
        TTL for the PAC ......................... 3 600
        Initial client message ................. <none>
        Local certificate required ............. No
        Client certificate required ............ No
        Vendor certificate required ............ No
        Anonymous provision allowed ............ Yes
        Authenticator ID ....................... 7b7fffffff00000000000000000000000
        Authority Information .................. Test

EAP Profile..................................... tls-prof
    Enabled methods for this profile .......... tls
    Active on WLANs ........................... 1 3
EAP Method configuration:
    EAP-TLS:
        Certificate issuer used ............... cisco
        Peer verification options:
            Check against CA certificates ..... disabled
            Verify certificate CN identity .... disabled
            Check certificate date validity ... disabled
```

Related Commands

clear stats local-auth
config local-auth active-timeout
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 statistics

show local-auth statistics

To display local Extensible Authentication Protocol (EAP) authentication statistics, use the **show local-auth statistics** command:

show local-auth statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the local authentication certificate statistics:

```
> show local-auth statistics

Local EAP authentication DB statistics:
Requests received ............................... 14
Responses returned .............................. 14
Requests dropped (no EAP AVP) ................... 0
Requests dropped (other reasons) ................ 0
Authentication timeouts ......................... 0

Authentication statistics:
  Method          Success         Fail
  ------------------------------------
  Unknown               0            0
  LEAP                  0            0
  EAP-FAST              2          0
  EAP-TLS               0            0
  PEAP                  0            0

Local EAP credential request statistics:
Requests sent to LDAP DB ........................ 0
Requests sent to File DB ........................ 2
Requests failed (unable to send) ................ 0
Authentication results received:
  Success ....................................... 2
  Fail .......................................... 0
Certificate operations:
Local device certificate load failures .......... 0
Total peer certificates checked ................. 0
Failures:
  CA issuer check ............................... 0
  CN name not equal to identity .................. 0
  Dates not valid or expired ..................... 0
```

Related Commands

clear stats local-auth
config local-auth active-timeout
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 location

To display location system information, use the **show location** command.

show location [**detail** *mac_address* | **summary**]

Syntax Description

detail	(Optional) Displays detailed location information.
mac_address	MAC address of a client.
summary	(Optional) Displays summary location information.

Command Default

None.

Examples

This example shows how to display the location summary information:

```
> show location summary

Location Summary

Algorithm used:                 Average
Client
       RSSI expiry timeout:     5 sec
       Half life:               0 sec
       Notify Threshold:        0 db
Calibrating Client
       RSSI expiry timeout:     5 sec
       Half life:               0 sec
Rogue AP
       RSSI expiry timeout:     5 sec
       Half life:               0 sec
       Notify Threshold:        0 db
RFID Tag
       RSSI expiry timeout:     5 sec
       Half life:               0 sec
       Notify Threshold:        0 db
```

Related Commands

clear location rfid
clear location statistics rfid
config location
show location statistics rfid

show location statistics rfid

To see any radio frequency identification (RFID)-related errors, use the **show location statistics rfid** command.

show location statistics rfid

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the detailed location RFID statistics:

```
> show location statistics rfid

    RFID Statistics

    Database Full :          0        Failed Delete:          0
    Null Bufhandle:          0        Bad Packet:             0
    Bad LWAPP Data:          0        Bad LWAPP Encap:        0
    Off Channel:             0        Bad CCX Version:        0
    Bad AP Info :            0
    Above Max RSSI:          0        Below Max RSSI:         0
    Invalid RSSI:            0        Add RSSI Failed:        0
    Oldest Expired RSSI:     0        Smallest Overwrite:     0
```

Related Commands

clear location rfid
clear location statistics rfid
config location
show location

show logging

To display the syslog facility logging parameters and buffer contents, use the **show logging** command.

show logging

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the current settings and buffer content details:

```
> show logging

Logging to buffer :
- Logging of system messages to buffer :
 - Logging filter level.......................... errors
 - Number of system messages logged.............. 67227
 - Number of system messages dropped............. 21136
- Logging of debug messages to buffer ........... Disabled
 - Number of debug messages logged............... 0
 - Number of debug messages dropped.............. 0
Logging to console :
- Logging of system messages to console :
 - Logging filter level.......................... errors
 - Number of system messages logged.............. 0
 - Number of system messages dropped............. 88363
- 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.............. 67227
--More-- or (q)uit
 - Number of system messages dropped............. 21136
- 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
  - Host 0....................................... Not Configured
  - Host 1....................................... Not Configured
  - Host 2....................................... Not Configured
Logging of traceback............................ Disabled
Logging of process information................... Disabled
Logging of source file informational............ Enabled
Timestamping of messages.......................
- Timestamping of system messages................ Enabled
 - Timestamp format............................. Date and Time
- Timestamping of debug messages................. Enabled
 - Timestamp format............................. Date and Time

 Logging buffer (67227 logged, 21136 dropped)

*Apr 03 09:48:01.728: %MM-3-INVALID_PKT_RECVD: mm_listen.c:5508 Received an invalid
```

```
packet from 1.100.163.51. Source member:0.0.0.0. source member unknown.
*Apr 03 09:47:34.194: %LWAPP-3-DECODE_ERR: spam_lrad.c:1271 Error decoding discovery
request from AP 00:13:5f:0e:d4:20
*Apr 03 09:47:34.194: %LWAPP-3-DISC_OTAP_ERR: spam_lrad.c:5554 Ignoring OTAP discovery
request from AP 00:13:5f:0e:d4:20, OTAP is disabled
Previous message occurred 2 times.
```

Related Commands

config logging syslog host
config logging syslog facility
config logging syslog level

show loginsession

To display the existing sessions, use the **show loginsession** command.

show loginsession

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the current session details:

```
> show loginsession

ID    username     Connection From   Idle Time    Session Time
-- ---------------  ---------------  ------------  ------------
00 admin            EIA-232          00:00:00      00:19:04
```

Related Commands

config loginsession close

show macfilter

To display the MAC filter parameters, use the **show macfilter** command.

show macfilter {**summary** | **detail** *MAC*}

Syntax Description

summary	Displays a summary of all MAC filter entries.
detail *MAC*	Detailed display of a MAC filter entry.

Command Default

None.

Usage Guidelines

The MAC delimiter (none, colon, or hyphen) for MAC addresses sent to RADIUS servers is displayed. The MAC filter table lists the clients that are always allowed to associate with a wireless LAN.

Examples

This example shows how to display the detailed display of a MAC filter entry:

```
> show macfilter detail xx:xx:xx:xx:xx:xx

MAC Address..................................... xx:xx:xx:xx:xx:xx
WLAN Identifier................................. Any
Interface Name.................................. management
Description..................................... RAP
```

This example shows how to display a summary of the MAC filter parameters:

```
> show macfilter summary

MAC Filter RADIUS Compatibility mode.............. Cisco ACS
MAC Filter Delimiter............................. None

Local Mac Filter Table

MAC Address               WLAN Id          Description
------------------------  ---------------  --------------------------------
xx:xx:xx:xx:xx:xx         Any              RAP
xx:xx:xx:xx:xx:xx         Any              PAP2 (2nd hop)
xx:xx:xx:xx:xx:xx         Any              PAP1 (1st hop)
```

Related Commands

config macfilter
config macfilter description
config macfilter interface
config macfilter ip-address
config macfilter mac-delimiter
config macfilter radius-compat
config macfilter wlan-id

show memory monitor

To display a summary of memory analysis settings and any discovered memory issues, use the **show memory monitor** command.

show memory monitor [**detail**]

Syntax Description

detail	(Optional) Displays details of any memory leaks or corruption.

Command Default

None.

Usage Guidelines

Be careful when 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.

Examples

This example shows how to display a summary of memory monitoring settings and a summary of test results:

```
> show memory monitor

Memory Leak Monitor Status:
low_threshold(10000), high_threshold(30000), current status(disabled)
-----------------------------------------
Memory Error Monitor Status:
Crash-on-error flag currently set to (disabled)
No memory error detected.
```

This example shows how to display the monitor test results:

```
> show memory monitor detail


Memory error detected. Details:
-----------------------------------------------
- Corruption detected at pmalloc entry address:        (0x179a7ec0)
- Corrupt entry:headerMagic(0xdeadf00d),trailer(0xabcd),poison(0xreadceef),
entrysize(128),bytes(100),thread(Unknown task name,task id = (332096592)),
file(pmalloc.c),line(1736),time(1027)

Previous 1K memory dump from error location.
-----------------------------------------------
(179a7ac0): 00000000 00000000 00000000 ceeff00d readf00d 00000080 00000000 00000000
(179a7ae0): 17958b20 00000000 1175608c 00000078 00000000 readceef 179a7afc 00000001
(179a7b00): 00000003 00000006 00000001 00000004 00000001 00000009 00000009 0000020d
(179a7b20): 00000001 00000002 00000002 00000001 00000004 00000000 00000000 5d7b9aba
(179a7b40): cbddf004 192f465e 7791acc8 e5032242 5365788c a1b7cee6 00000000 00000000
(179a7b60): 00000000 00000000 00000000 00000000 00000000 ceeff00d readf00d 00000080
(179a7b80): 00000000 00000000 17958dc0 00000000 1175608c 00000078 00000000 readceef
(179a7ba0): 179a7ba4 00000001 00000003 00000006 00000001 00000004 00000001 00003763
(179a7c00): 1722246c 1722246c 00000000 00000000 00000000 00000000 00000000 ceeff00d
(179a7c20): readf00d 00000080 00000000 00000000 179a7b78 00000000 1175608c 00000078
...
```

Related Commands

config memory monitor errors
config memory monitor leaks
debug memory

show reset

To display the scheduled system reset parameters, use the **show reset** command.

show reset

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the scheduled system reset parameters:

```
> show reset

System reset is scheduled for Mar 27 01 :01 :01 2010
Current local time and date is Mar 24 02:57:44 2010
A trap will be generated 10 minutes before each scheduled system reset.
Use 'reset system cancel' to cancel the reset.
Configuration will be saved before the system reset.
```

Related Commands

reset system at
reset system in
reset system cancel
reset system notify-time

show remote-lan

To display information about remote LAN configuration, use the **show remote-lan** command.

show remote-lan { **summary** | *remote-lan-id* }

Syntax Description

summary	Displays a summary of all remote LANs.
remote-lan-id	Remote LAN identifier.

Command Default

None.

Examples

This example shows how to display a summary of all remote LANs:

```
> show remote-lan summary

Number of Remote LANS.......................... 2

RLAN ID  RLAN Profile Name                     Status    Interface Name
-------  ------------------------------------  --------  --------------------
2        remote                                Disabled  management
8        test                                  Disabled  management
```

This example shows configuration information about the remote LAN with the *remote-lan-id* 2:

```
> show remote-lan 2

Remote LAN Identifier.......................... 2
Profile Name................................... remote
Status......................................... Disabled
MAC Filtering.................................. Disabled
AAA Policy Override............................ Disabled
Network Admission Control

  Radius-NAC State............................. Disabled
  SNMP-NAC State............................... Disabled
  Quarantine VLAN.............................. 0
Maximum number of Associated Clients.............. 0
Number of Active Clients....................... 0
Exclusionlist.................................. Disabled
Session Timeout................................ Infinity
CHD per Remote LAN............................. Enabled
Webauth DHCP exclusion......................... Disabled
Interface...................................... management
Remote LAN ACL................................. unconfigured
DHCP Server.................................... Default
DHCP Address Assignment Required............... Disabled
Static IP client tunneling..................... Disabled
Radius Servers
   Authentication.............................. Global Servers
   Accounting.................................. Global Servers
   Dynamic Interface........................... Disabled
Security

   Web Based Authentication..................... Enabled
        ACL..................................... Unconfigured
        Web Authentication server precedence:
```

```
        1..................................................... local
        2..................................................... radius
        3..................................................... ldap
  Web-Passthrough.............................. Disabled
  Conditional Web Redirect..................... Disabled
  Splash-Page Web Redirect..................... Disabled
```

Related Commands

config memory monitor errors
config memory monitor leaks
debug memory

Show IPv6 Commands

Use the **show ipv6** commands to display the IPv6 settings and information.

show ipv6 acl

To display the IPv6 access control lists (ACLs) that are configured on the controller, use the **show ipv6 acl** command.

show ipv6 acl detailed *acl_name* | **summary**

Syntax Description

acl_name	IPv6 ACL name. The name can be up to 32 alphanumeric characters.
detailed	Displays detailed information about a specific ACL.

Command Default

None.

Examples

This example shows how to display the detailed information of the access control lists:

```
> show ipv6 acl detailed acl6

Rule Index..................................... 1
Direction...................................... Any
IPv6 source prefix............................. ::/0
IPv6 destination prefix........................ ::/0
Protocol....................................... Any
Source Port Range.............................. 0-65535
Destination Port Range......................... 0-65535
DSCP........................................... Any
Flow label..................................... 0
Action......................................... Permit
Counter........................................ 0


Deny Counter................................... 0
```

Related Commands

config ipv6 acl

show ipv6 neighbor-binding

To display the IPv6 Neigbhor Binding data that are configured on the controller, use the **show ipv6 neighbor-binding** command.

show ipv6 neighbor-binding {**capture-policy** | **counters** | **detailed** { **mac** | **port** | **vlan** } | **features** | **policies** | **ra-throttle** { **statistics** *vlan_id* | **routers** *vlan_id* } | **summary** }

Syntax Description

capture-policy	Display IPv6 next-hop message capture policies.
counters	Display IPv6 next-hop counters.
detailed	Display the IPv6 Neighbor Binding Table.
features	Display IPv6 next-hop registered features.
policies	Display IPv6 next-hop policies.
ra-throttle	Display RA Throttle Infomration.
statistics	Display RA Throttle statistics.
vlan_id	VLAN identifier.
routers	Display RA Throttle Routers.
summary	Display the IPv6 Neighbor Binding Table.

Command Default

None.

Examples

This example shows how to display the IPv6 Neigbor Binding data summary:

```
> show ipv6 neigbor-binding summary
Binding Table has 6 entries, 5 dynamic
Codes: L - Local, S - Static, ND - Neighbor Discovery, DH - DDCP
Preflevel flags (prlvl):
0001:MAC and LLA match     0002:Orig trunk            0004:Orig access
0008:Orig trusted access   0010:Orig trusted trunk    0020:DHCP assigned
0040:Cga authenticated     0080:Cert authenticated    0100:Statically assigned

    IPv6 address                              MAC Address       Port VLAN Type     prlvl
age  state     Time left
-- ----------------------------------------  ----------------- ---- ---- -------- -----
---- --------- ----------
ND  fe80::216:46ff:fe43:eb01                 00:16:46:43:eb:01    1  980 wired     0005
2 REACHABLE  157
ND  fe80::9cf9:b009:b1b4:1ed9                70:f1:a1:dd:cb:d4   AP  980 wireless  0005
2 REACHABLE  157
ND  fe80::6233:4bff:fe05:25ef                60:33:4b:05:25:ef   AP  980 wireless  0005
2 REACHABLE  203
ND  fe80::250:56ff:fe8b:4a8f                 00:50:56:8b:4a:8f   AP  980 wireless  0005
2 REACHABLE  157
ND  2001:410:0:1:51be:2219:56c6:a8ad         70:f1:a1:dd:cb:d4   AP  980 wireless  0005
5 REACHABLE  157
S   2001:410:0:1::9                          00:00:00:00:00:08   AP  980 wireless  0100
1 REACHABLE  205
```

This example shows how to display the detailed IPv6 Neigbor Binding data:

```
>show ipv6 neighbor-binding detailed mac 60:33:4b:05:25:ef
```

```
macDB has 3 entries for mac 60:33:4b:05:25:ef, 3 dynamic
Codes: L - Local, S - Static, ND - Neighbor Discovery, DH - DDCP
Preflevel flags (prlvl):
0001:MAC and LLA match     0002:Orig trunk            0004:Orig access
0008:Orig trusted access   0010:Orig trusted trunk    0020:DHCP assigned
0040:Cga authenticated     0080:Cert authenticated    0100:Statically assigned


    IPv6 address                              MAC Address       Port VLAN Type     prlvl
age  state     Time left
-- ---------------------------------------  ----------------- ---- ---- -------- -----
---- --------- ----------
ND  fe80::6233:4bff:fe05:25ef               60:33:4b:05:25:ef   AP  980 wireless  0009
0 REACHABLE  303
ND  2001:420:0:1:6233:4bff:fe05:25ef        60:33:4b:05:25:ef   AP  980 wireless  0009
0 REACHABLE  300
ND  2001:410:0:1:6233:4bff:fe05:25ef        60:33:4b:05:25:ef   AP  980 wireless  0009
0 REACHABLE  301
```

Related Commands

config ipv6 neighbor-binding

show ipv6 ra-guard

To display the RA guard statistics, use the **show ipv6 ra-guard** command.

show ipv6 ra-guard{**ap** | **wlc**} **summary**

Syntax Description

ap	Displays Cisco access point details.
wlc	Displays Cisco controller details.
summary	Displays RA Guard statistics.

Command Default

None.

Examples

This example shows how to display the RA guard statistics for an Access Point:

```
> show ipv6 ra-guard ap summary
IPv6 RA Guard on AP..................... Enabled

RA Dropped per client:

MAC Address       AP Name           WLAN/GLAN      Number of RA Dropped
----------------- ----------------- -------------- ---------------------

00:40:96:b9:4b:89 Bhavik_1130_1_p13 2              19
----------------- ----------------- -------------- ---------------------

Total RA Dropped on AP.....................      19
```

This example shows how to display the RA guard statistics for an Controller:

```
> show ipv6 ra-guard wlc summary

IPv6 RA Guard on WLC.................... Enabled
```

Related Commands

config ipv6 ra-guard

show ipv6 summary

To display the IPv6 Configuration settings, use the **show ipv6 summary** command.

show ipv6 summary

Syntax Description The command has no arguments and keywords.

Command Default None.

Examples This example shows how to display the IPv6 Configuration Settings:

```
> show ipv6 summary
Reachable-lifetime value..................... 300
Stale-lifetime value......................... 86400
Down-lifetime value.......................... 86400
RA Throttling................................ Enabled
RA Throttling allow at-least................. 1
RA Throttling allow at-most.................. no-limit
RA Throttling max-through.................... no-limit
RA Throttling throttle-period................ 60
RA Throttling interval-option................ throttle
NS Mulitcast CacheMiss Forwarding............ Disabled
```

Related Commands **show ipv6 acl**

Show Media-Stream Commands

Use the **show media-stream** commands to display the multicast-direct configuration state.

show media-stream client

To display the details for a specific media-stream client or a set of clients, use the **show media-stream client** command.

show media-stream client *media-stream_name* | **summary**

Syntax Description

media-stream_name	Name of the media-stream client of which the details is to be displayed.
summary	Displays the details for a set of media-stream clients.

Command Default

None.

Examples

This example shows how to display a summary media-stream clients:

```
> show media-stream client summary

Number of Clients............................... 1

Client Mac         Stream Name  Stream Type  Radio WLAN  QoS    Status
-----------------  -----------  -----------  ----  ----  ------ -------
00:1a:73:dd:b1:12  mountainview  MC-direct    2.4   2     Video  Admitted
```

Related Commands

show media-stream group summary

show media-stream group detail

To display the details for a specific media-stream group, use the **show media-stream group detail** command.

show media-stream group detail *media-stream_name*

Syntax Description

media-stream_name	Name of the media-stream group.

Command Default

None.

Examples

This example shows how to display media-stream group configuration details:

```
> show media-stream group detail abc

Media Stream Name.............................. abc
Start IP Address............................... 227.8.8.8
End IP Address................................. 227.9.9.9
 RRC Parameters
 Avg Packet Size(Bytes)......................... 1200
 Expected Bandwidth(Kbps)....................... 300
 Policy......................................... Admit
 RRC re-evaluation.............................. periodic
 QoS............................................ Video
 Status......................................... Multicast-direct
 Usage Priority................................. 5
 Violation...................................... drop
```

Related Commands

show media-stream group summary

show media-stream group summary

To display the summary of the media stream and client information, use the **show media-stream group summary** command.

show media-stream group summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of the media-stream group:

```
> show media-stream group summary

Stream Name   Start IP       End IP         Operation Status
------------- -------------- -------------- ----------------
abc           227.8.8.8      227.9.9.9      Multicast-direct
```

Related Commands

Show Mesh Commands

Show Mesh Commands

To display settings for outdoor and indoor mesh access points, use the **show mesh** commands.

show mesh ap

To display settings for mesh access points, use the **show mesh ap** command.

show mesh ap {**summary** | **tree**}

Syntax Description

summary	Displays a summary of mesh access point information including the name, model, bridge virtual interface (BVI) MAC address, United States Computer Emergency Response Team (US-CERT) MAC address, hop, and bridge group name.
tree	Displays a summary of mesh access point information in a tree configuration, including the name, hop counter, link signal-to-noise ratio (SNR), and bridge group name.

Command Default

None.

Examples

This example shows how to display a summary format:

```
> show mesh ap summary

AP Name AP Model             BVI MAC              CERT MAC        Hop    Bridge Group Name
------------------  -------------------  -----------------  ------------------   -----  --
SB_RAP1 AIR-LAP1522AG-A-K9   00:1d:71:0e:d0:00  00:1d:71:0e:d0:00   0      sbox
SB_MAP1 AIR-LAP1522AG-A-K9   00:1d:71:0e:85:00  00:1d:71:0e:85:00   1      sbox
SB_MAP2 AIR-LAP1522AG-A-K9   00:1b:d4:a7:8b:00  00:1b:d4:a7:8b:00   2      sbox
SB_MAP3 AIR-LAP1522AG-A-K9   00:1d:71:0d:ee:00  00:1d:71:0d:ee:00   3      sbox

Number of Mesh APs.............................. 4
Number of RAPs.................................. 1
Number of MAPs.................................. 3
```

This example shows how to display settings in a hierarchical (tree) format:

```
> show mesh ap tree

 ========================================================
||  AP Name [Hop Counter, Link SNR, Bridge Group Name] ||
 ========================================================

[Sector 1]
----------
SB_RAP1[0,0,sbox]
  |-SB_MAP1[1,32,sbox]
    |-SB_MAP2[2,27,sbox]
      |-SB_MAP3[3,30,sbox]

--------------------------------------------------
Number of Mesh APs.............................. 4
Number of RAPs.................................. 1
Number of MAPs.................................. 3
--------------------------------------------------
```

Related Commands

config mesh alarm
config mesh astools
config mesh battery-state

show mesh astools stats

To display antistranding statistics for outdoor mesh access points, use the **show mesh astools stats** command.

show mesh astools stats [*cisco_ap*]

Syntax Description

cisco_ap	(Optional) Antistranding feature statistics for a designated mesh access point.

Command Default None.

Examples This example shows how to display anti-stranding statistics on all outdoor mesh access points:

```
> show mesh astools stats

Total No of Aps stranded : 0
```

This example shows how to display anti-stranding statistics for access point *sb_map1*:

```
> show mesh astools stats sb_map1

Total No of Aps stranded : 0
```

Related Commands

config mesh astools
show mesh config
show mesh stats

show mesh backhaul

To check the current backhaul, use the **show mesh backhaul** command.

show mesh backhaul *cisco_ap*

Syntax Description

cisco_ap	Name of the access point.

Command Default

None.

Examples

This example shows how to display the current backhaul:

```
> show mesh backhaul ap_abc
```

If the current backhaul is 5 GHz, the output is as follows:

```
Basic Basic Attributes for Slot  0
    Radio Type..................................... RADIO_TYPE_80211g
    Radio Role..................................... DOWNLINK ACCESS
    Administrative State .......................... ADMIN_ENABLED
    Operation State ............................... UP
      Current Tx Power Level ..................... 1

If the current backhaul is 2.4 GHz, the output is as follows:
Basic Attributes for Slot  1
    Radio Type..................................... RADIO_TYPE_80211a
    Radio Subband.................................. RADIO_SUBBAND_ALL
    Radio Role..................................... DOWNLINK ACCESS
    Administrative State .......................... ADMIN_ENABLED
    Operation State ............................... UP
      Current Tx Power Level ..................... 1
      Current Channel ............................ 165
      Antenna Type................................ EXTERNAL_ANTENNA
      External Antenna Gain (in .5 dBm units).... 0
Current Channel.................................6
Antenna Type....................................Externa_ANTENNA
External Antenna Gain (in .5 dBm units)...........0
```

Related Commands

config mesh battery-state
show mesh config
show mesh stats

show mesh cac

To display call admission control (CAC) topology and the bandwidth used or available in a mesh network, use the **show mesh cac** command.

show mesh cac {**summary** | {**bwused** {**voice** | **video**} | **access** | **callpath** | **rejected**} *cisco_ap*}

Syntax Description

summary	Displays the total number of voice calls and voice bandwidth used for each mesh access point.
bwused	Displays the bandwidth for a selected access point in a tree topology.
voice	Displays the mesh topology and the voice bandwidth used or available.
video	Displays the mesh topology and the video bandwidth used or available.
access	Displays access voice calls in progress in a tree topology.
callpath	Displays the call bandwidth distributed across the mesh tree.
rejected	Displays voice calls rejected for insufficient bandwidth in a tree topology.
cisco_ap	Mesh access point name.

Command Default

None.

Examples

This example shows how to display a summary of the call admission control settings:

```
> show mesh cac summary

AP Name            Slot#   Radio  BW Used/Max  Calls
-----------------  -------  -----  -----------  -----
SB_RAP1              0        11b/g   0/23437      0
                     1        11a     0/23437      0
SB_MAP1              0        11b/g   0/23437      0
                     1        11a     0/23437      0
SB_MAP2              0        11b/g   0/23437      0
                     1        11a     0/23437      0
SB_MAP3              0        11b/g   0/23437      0
                     1        11a     0/23437      0
```

This example shows how to display the mesh topology and the voice bandwidth used or available:

```
> show mesh cac bwused voice SB_MAP1

AP Name             Slot#   Radio     BW Used/Max
-------------       -------  -----     -----------
    SB_RAP1              0      11b/g       0/23437
                         1      11a         0/23437
|   SB_MAP1              0      11b/g       0/23437
                         1      11a         0/23437
||  SB_MAP2              0      11b/g       0/23437
                         1      11a         0/23437
||| SB_MAP3              0      11b/g       0/23437
                         1      11a         0/23437
```

This example shows how to display the access voice calls in progress in a tree topology:

```
> show mesh cac access 1524_Map1

    AP Name              Slot#   Radio     Calls
    -------------       -------  -----    -----
    1524_Rap              0      11b/g      0
                          1      11a        0
                          2      11a        0
|   1524_Map1             0      11b/g      0
                          1      11a        0
                          2      11a        0
||  1524_Map2             0      11b/g      0
                          1      11a        0
                          2      11a        0
```

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 video tspec-inactivity-timeout
config 802.11 cac voice acm
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 cac voice load-based
debug cac

show mesh client-access

To display the backhaul client access configuration setting, use the **show mesh client-access** command.

show mesh client-access

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display backhaul client access configuration settings for a mesh access point:

```
> show mesh client-access

Backhaul with client access status: enabled
Backhaul with client access extended status(3 radio AP): disabled
```

Related Commands

config mesh client-access

show mesh config

To display mesh configuration settings, use the **show mesh config** command.

show mesh config

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display global mesh configuration settings:

```
> show mesh config

Mesh Range....................................... 12000
Mesh Statistics update period.................... 3 minutes
Backhaul with client access status............... disabled
Backhaul with extended client access status...... disabled
Background Scanning State........................ enabled
Backhaul Amsdu State............................. disabled

Mesh Security
   Security Mode................................. EAP
   External-Auth................................. disabled
   Use MAC Filter in External AAA server......... disabled
   Force External Authentication................. disabled

Mesh Alarm Criteria
   Max Hop Count................................. 4
   Recommended Max Children for MAP.............. 10
   Recommended Max Children for RAP.............. 20
   Low Link SNR.................................. 12
   High Link SNR................................. 60
   Max Association Number........................ 10
   Association Interval.......................... 60 minutes
   Parent Change Numbers......................... 3

Parent Change Interval....................... 60 minutes

Mesh Multicast Mode.............................. In-Out
Mesh Full Sector DFS............................. enabled

Mesh Ethernet Bridging VLAN Transparent Mode..... disabled

Mesh DCA channels for serial backhaul APs........ enabled
Mesh Slot Bias................................... enabled
```

Related Commands

show mesh stats
show mgmtuser
config mesh alarm

show mesh env

To display global or specific environment summary information for mesh networks, use the **show mesh env** command.

show mesh env {**summary** | *cisco_ap*}

Syntax Description

summary	Displays global environment summary information.
cisco_ap	Name of access point for which environment summary information is requested.

Command Default

None.

Examples

This example shows how to display global environment summary information:

```
> show mesh env summary

AP Name             Temperature(C)  Heater   Ethernet  Battery
------------------  --------------  ------   --------  -------
ap1130:5f:be:90      N/A             N/A      DOWN     N/A
AP1242:b2.31.ea      N/A             N/A      DOWN     N/A
AP1131:f2.8d.92      N/A             N/A      DOWN     N/A
AP1131:46f2.98ac     N/A             N/A      DOWN     N/A
ap1500:62:39:70      -36             OFF      UP       N/A
```

This example shows how to display an environment summary for an access point:

```
> show mesh env SB_RAP1

AP Name..................................... SB_RAP1
AP Model.................................... AIR-LAP1522AG-A-K9
AP Role..................................... RootAP

Temperature................................. 21 C, 69 F
Heater...................................... OFF
Backhaul.................................... GigabitEthernet0

GigabitEthernet0 Status..................... UP
    Duplex.................................. FULL
    Speed................................... 100
    Rx Unicast Packets...................... 114754
    Rx Non-Unicast Packets.................. 1464
    Tx Unicast Packets...................... 9630
    Tx Non-Unicast Packets.................. 3331
GigabitEthernet1 Status..................... DOWN
  POE Out................................... OFF

Battery..................................... N/A
```

Related Commands

show mesh stats

show mesh neigh

To display summary or detailed information about the mesh neighbors for a specific mesh access point, use the **show mesh neigh** command.

show mesh neigh {**detail** | **summary**} {*cisco_ap* | **all**}

Syntax Description

detail	Displays the channel and signal-to-noise ratio (SNR) details between the designated mesh access point and its neighbor.
summary	Displays the mesh neighbors for a designated mesh access point.
cisco_ap	Cisco lightweight access point name.
all	Displays 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'.

Examples

This example shows how to display a neighbor summary of an access point:

```
> show mesh neigh summary RAP1

AP Name/Radio Mac Channel Rate  Link-Snr  Flags      State
----------------- ------- ----- -------- ---------   --------
00:1D:71:0F:CA:00 157      54     6        0x0         BEACON
00:1E:14:48:25:00 157      24     1        0x0         BEACON
MAP1-BB00         157      54     41       0x11        CHILD BEACON
```

This example shows how to display the detailed neighbor statistics of an access point:

```
> show mesh neigh detail RAP1

AP MAC : 00:1E:BD:1A:1A:00 AP Name: HOR1522_MINE06_MAP_S_Dyke
backhaul rate 54
FLAGS : 860 BEACON
worstDv 255, Ant 0, channel 153, biters 0, ppiters 0
Numroutes 0, snr 0, snrUp 8, snrDown 8, linkSnr 8
adjustedEase 0, unadjustedEase 0
txParent 0, rxParent 0
poorSnr 0
lastUpdate 2483353214 (Sun Aug 4 23:51:58 1912)
parentChange 0
Per antenna smoothed snr values: 0 0 0 0
Vector through 00:1E:BD:1A:1A:00
```

Table 2-2 lists the output flags displayed for the **config mesh linktest** command.

Table 2-2 Output Flags for the Config Mesh Linktest Command

Output Flag	Description
AP MAC	MAC address of a mesh neighbor for a designated mesh access point.
AP Name	Name of the mesh access point.

Table 2-2 Output Flags for the Config Mesh Linktest Command (continued)

Output Flag	Description
FLAGS	Describes adjacency. The possible values are as follows: • UPDATED—Recently updated neighbor. • NEIGH—One of the top neighbors. • EXCLUDED—Neighbor is currently excluded. • WASEXCLUDED—Neighbor was recently removed from the exclusion list. • PERMSNR—Permanent SNR neighbor. • CHILD—A child neighbor. • PARENT—A parent neighbor. • NEEDUPDATE—Not a current neighbor and needs an update. • BEACON—Heard a beacon from this neighbor. • ETHER—Ethernet neighbor.
worstDv	Worst distance vector through the neighbor.
Ant	Antenna on which the route was received.
channel	Channel of the neighbor.
biters	Number of black list timeouts left.
ppiters	Number of potential parent timeouts left.
Numroutes	Number of distance routes.
snr	Signal to Noise Ratio.
snrUp	SNR of the link to the AP.
snrDown	SNR of the link from the AP.
linkSnr	Calculated SNR of the link.
adjustedEase	Ease to the root AP through this AP. It is based on the current SNR and threshold SNR values.
unadjustedEase	Ease to the root AP through this AP after applying correct for number of hops.
txParent	Packets sent to this node while it was a parent.
rxparent	Packets received from this node while it was a parent.
poorSnr	Packets with poor SNR received from a node.
lastUpdate	Timestamp of the last received message for this neighbor
parentChange	When this node last became parent.
per antenna smoother SNR values	SNR value is populated only for antenna 0.

Related Commands

show mesh config
show mesh env

show mesh path

To display the channel and signal-to-noise ratio (SNR) details for a link between a mesh access point and its neighbor, use the **show mesh path** command.

show mesh path *cisco_ap*

Syntax Description

cisco_ap	Mesh access point name.

Command Default

None.

Examples

This example shows how to display channel and SNR details for a designated link path:

```
> show mesh path mesh-45-rap1

AP Name/Radio Mac Channel Rate  Link-Snr  Flags      State
----------------- ------- ----- -------- --------   --------
MAP1-BB00         157      54     32       0x0       UPDATED NEIGH PARENT BEACON
RAP1              157      54     37       0x0        BEACON
```

Related Commands

config mesh battery-state
config mesh client-access
config mesh linktest
config mesh range
show mesh config
show mesh neigh
show mesh stats

show mesh per-stats

To display the percentage of packet errors for packets transmitted by the neighbors of a specified mesh access point, use the **show mesh per-stats** command.

show mesh per-stats summary {*cisco_ap* | **all**}

Syntax Description

summary	Displays the packet error rate stats summary.
cisco_ap	Name of mesh access point.
all	Displays all mesh 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.

Usage Guidelines

The packet error rate percentage equals 1, which is the number of successfully transmitted packets divided by the number of total packets transmitted.

Examples

This example shows how to display the percentage of packet errors for packets transmitted by the neighbors to a mesh access point:

```
> show mesh per-stats summary ap_12

Neighbor MAC Address 00:0B:85:5F:FA:F0
Total Packets transmitted:              104833
Total Packets transmitted successfully: 104833
Total Packets retried for transmission: 33028
RTS Attempts:                           0
RTS Success:                            0
Neighbor MAC Address:                   00:0B:85:80:ED:D0
Total Packets transmitted:              0
Total Packets transmitted successfully: 0
Total Packets retried for transmission: 0
Neighbor MAC Address:                   00:17:94:FE:C3:5F
Total Packets transmitted:              0
Total Packets transmitted successfully: 0
Total Packets retried for transmission: 0
RTS Attempts:                           0
RTS Success:                            0
```

Related Commands

config mesh linktest
config mesh range
show mesh config
show mesh neigh
show mesh stats

show mesh queue-stats

To display the number of packets in a client access queue by type for a particular mesh access point, use the **show mesh queue-stats** command.

show mesh queue-stats {*cisco_ap* | **all**}

Syntax Description

cisco_ap	Name of access point for which you want packet queue statistics.
all	Displays 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.

Examples

This example shows how to display packet queue statistics for access point ap417:

```
> show mesh queue-stats ap417

Queue Type Overflows Peak length Average length
---------- --------- ----------- --------------
Silver     0         1           0.000
Gold       0         4           0.004
Platinum   0         4           0.001
Bronze     0         0           0.000
Management 0         0           0.000
```

Related Commands

config mesh client-access
config mesh multicast
show mesh client-access
show mesh config
show mesh stats
show mgmtuser

show mesh public-safety

To display 4.8-GHz public safety settings, use the **show mesh public-safety** command.

show mesh public-safety

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to view 4.8-GHz public safety settings:

```
> show mesh public-safety

Global Public Safety status: disabled
```

Related Commands

config 802.11-a
config 802.11-a antenna extAntGain
config 802.11-a channel ap
config 802.11-a txpower ap
config mesh public-safety
config mesh security
show mesh ap
show mesh security-stats
show mesh stats

show mesh security-stats

To display packet error statistics for a specific access point, use the **show mesh security-stats** command.

show mesh security-stats {*cisco_ap* | **all**}

Syntax Description

cisco_ap	Name of access point for which you want packet error statistics.
all	Displays 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.

Usage Guidelines

This command shows packet error statistics and a count of failures, timeouts, and successes with respect to associations and authentications as well as reassociations and reauthentications for the specified access point and its child.

Examples

This example shows how to display packet error statistics for access point ap417:

```
> show mesh security-stats ap417

AP MAC : 00:0B:85:5F:FA:F0
Packet/Error Statistics:
----------------------------
x Packets 14, Rx Packets 19, Rx Error Packets 0
Parent-Side Statistics:
-------------------------
Unknown Association Requests 0
Invalid Association Requests 0
Unknown Re-Authentication Requests 0
Invalid Re-Authentication Requests 0
Unknown Re-Association Requests 0
Invalid Re-Association Requests 0
Child-Side Statistics:
-------------------------
Association Failures 0
Association Timeouts 0
Association Successes 0
Authentication Failures 0
Authentication Timeouts 0
Authentication Successes 0
Re-Association Failures 0
Re-Association Timeouts 0
Re-Association Successes 0
Re-Authentication Failures 0
Re-Authentication Timeouts 0
Re-Authentication Successes 0
```

Related Commands

config mesh alarm
config mesh linkdata
config mesh linktest
config mesh security

show mesh stats

To display the mesh statistics for a Cisco lightweight access point, use the **show mesh stats** command.

show mesh stats *cisco_ap*

Syntax Description

cisco_ap	Cisco lightweight access point name.

Command Default

None.

Examples

This example shows how to display statistics of an access point:

```
> show mesh stats RAP_ap1

RAP in state Maint
rxNeighReq 759978, rxNeighRsp 568673
txNeighReq 115433, txNeighRsp 759978
rxNeighUpd 8266447 txNeighUpd 693062
tnextchan 0, nextant 0, downAnt 0, downChan 0, curAnts 0
tnextNeigh 0, malformedNeighPackets 244, poorNeighSnr 27901
blacklistPackets 0, insufficientMemory 0
authenticationFailures 0
Parent Changes 1, Neighbor Timeouts 16625
```

Related Commands

config mesh alarm
config mesh client-access
config mesh ethernet-bridging vlan-transparent
config mesh linkdata
config mesh linktest
config mesh security
show mesh per-stats
show mesh queue-stats
show mesh security-stats

show mgmtuser

To display the local management user accounts on the Cisco wireless LAN controller, use the **show mgmtuser** command.

show mgmtuser

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a list of management users:

```
> show mgmtuser

User Name                 Permissions    Description            Password Strength
------------------------  ------------   --------------         ------------------
admin                     read-write                                    Weak
```

Related Commands

config mgmtuser add
config mgmtuser delete
config mgmtuser description
config mgmtuser password

Show Mobility Commands

Use the **show mobility** commands to display mobility settings.

show mobility anchor

To display the wireless LAN anchor export list for the Cisco wireless LAN controller mobility groups or to display a list and status of controllers configured as mobility anchors for a specific WLAN or wired guest LAN, use the **show mobility anchor** command.

show mobility anchor [**wan** *wlan_id* | **guest-lan** *guest_lan_id*]

Syntax Description

wlan	(Optional) Displays wireless LAN mobility group settings.
wlan_id	Wireless LAN identifier between 1 and 512 (inclusive).
guest-lan	(Optional) Displays guest LAN mobility group settings.
guest_lan_id	Guest LAN identifier between 1 and 5 (inclusive).

Command Default

None.

Usage Guidelines

The status field display (see example) shows one of the following values:

- UP—The controller is reachable and able to pass data.
- CNTRL_PATH_DOWN—The mpings failed. The controller cannot be reached through the control path and is considered failed.
- DATA_PATH_DOWN—The epings failed. The controller cannot be reached and is considered failed.
- CNTRL_DATA_PATH_DOWN—Both the mpings and epings failed. The controller cannot be reached and is considered failed.

Examples

This example shows how to display a mobility wireless LAN anchor list:

```
> show mobility anchor

Mobility Anchor Export List

 WLAN ID     IP Address            Status
 -------     ---------------       ------
 12           192.168.0.15         UP

 GLAN ID     IP Address            Status
 -------     ---------------       -------
 1           192.168.0.9           CNTRL_DATA_PATH_DOWN
```

Related Commands

config guest-lan mobility anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility multicast-mode

config mobility secure-mode
config mobility statistics reset
config wlan mobility anchor
debug mobility
show mobility anchor
show mobility foreign-map
show mobility statistics
show mobility summary

show mobility foreign-map

To display a mobility wireless LAN foreign map list, use the **show mobility foreign-map** command.

show mobility foreign-map wlan *wlan_id*

Syntax Description

wlan	Displays the mobility WLAN foreign-map list.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None.

Examples

This example shows how to get a mobility wireless LAN foreign map list:

```
> show mobility foreign-map wlan 2

Mobility Foreign Map List

 WLAN ID              Foreign MAC Address               Interface
 -------              -------------------               ---------
   2                   00:1b:d4:6b:87:20                dynamic-105
```

Related Commands

config wlan mobility foreign-map
config mobility group member
config wlan mobility anchor
debug mobility
show mobility anchor
show mobility summary

show mobility statistics

To display the statistics information for the Cisco wireless LAN controller mobility groups, use the **show mobility statistics** command.

show mobility statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display statistics of the mobility manager:

```
> show mobility statistics

Global Mobility Statistics
   Rx Errors..................................... 0
   Tx Errors..................................... 0
   Responses Retransmitted....................... 0
   Handoff Requests Received..................... 0
   Handoff End Requests Received................. 0
   State Transitions Disallowed.................. 0
   Resource Unavailable.......................... 0
Mobility Initiator Statistics
   Handoff Requests Sent......................... 0
   Handoff Replies Received...................... 0
   Handoff as Local Received..................... 2
   Handoff as Foreign Received................... 0
   Handoff Denys Received........................ 0
   Anchor Request Sent........................... 0
   Anchor Deny Received.......................... 0
   Anchor Grant Received......................... 0
   Anchor Transfer Received...................... 0
Mobility Responder Statistics
   Handoff Requests Ignored...................... 0
   Ping Pong Handoff Requests Dropped............ 0
   Handoff Requests Dropped...................... 0
   Handoff Requests Denied....................... 0
   Client Handoff as Local....................... 0
   Client Handoff as Foreign  ................... 0
   Client Handoff Inter Group ................... 0
   Anchor Requests Received...................... 0
   Anchor Requests Denied........................ 0
   Anchor Requests Granted....................... 0
   Anchor Transferred............................ 0
```

Related Commands

config mobility group anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address

config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
debug mobility
show mobility anchor
show mobility summary

show mobility summary

To display the summary information for the Cisco wireless LAN controller mobility groups, use the **show mobility summary** command.

show mobility summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Usage Guidelines

Some WLAN controllers may list no mobility security mode.

Examples

This example shows how to display a summary of the mobility manager:

```
> show mobility summary

Symmetric Mobility Tunneling (current) .......... Disabled
Symmetric Mobility Tunneling (after reboot) ..... Disabled
Mobility Protocol Port........................... 16666
Mobility Security Mode........................... Disabled
Default Mobility Domain.......................... snmp_gui
Multicast Mode .................................. Disabled
Mobility Domain ID for 802.11r................... 0x66bd
Mobility Keepalive Interval...................... 10
Mobility Keepalive Count......................... 3
Mobility Group Members Configured................ 1
Mobility Control Message DSCP Value.............. 0

Controllers configured in the Mobility Group
MAC Address        IP Address       Group Name         Multicast IP Status
00:1b:d4:6b:87:20    1.100.163.70     snmp_gui         0.0.0.0       Up
```

Related Commands

config guest-lan mobility anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
config wlan mobility anchor
debug mobility
show mobility anchor
show mobility statistics

show msglog

To display the message logs written to the Cisco wireless LAN controller database, use the **show msglog** command.

show msglog

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Usage Guidelines

If there are more that 15 entries, you are prompted to display the messages shown in the example.

Examples

This example shows how to display message logs:

```
> show msglog

Message Log Severity Level..................... ERROR
Thu Aug  4 14:30:08 2005  [ERROR] spam_lrad.c 1540: AP 00:0b:85:18:b6:50 associated. Last
AP failure was due to Link Failure
Thu Aug  4 14:30:08 2005  [ERROR] spam_lrad.c 13840: Updating IP info for AP 00:
0b:85:18:b6:50 -- static 0, 1.100.49.240/255.255.255.0, gtw 1.100.49.1
Thu Aug  4 14:29:32 2005  [ERROR] dhcpd.c 78: dhcp server: binding to 0.0.0.0
Thu Aug  4 14:29:32 2005  [ERROR] rrmgroup.c 733: Airewave Director: 802.11a switch group
reset
Thu Aug  4 14:29:32 2005  [ERROR] rrmgroup.c 733: Airewave Director: 802.11bg sw
itch group reset
Thu Aug  4 14:29:22 2005  [ERROR] sim.c 2841: Unable to get link state for primary port 0
of interface ap-manager
Thu Aug  4 14:29:22 2005  [ERROR] dtl_l2_dot1q.c 767: Unable to get USP
Thu Aug  4 14:29:22 2005  Previous message occurred 2 times
Thu Aug  4 14:29:14 2005  [CRITICAL] osapi_sem.c 794: Error!  osapiMutexTake called with
NULL pointer: osapi_bsntime.c:927
Thu Aug  4 14:29:14 2005  [CRITICAL] osapi_sem.c 794: Error!  osapiMutexTake called with
NULL pointer: osapi_bsntime.c:919
Thu Aug  4 14:29:14 2005  [CRITICAL] hwutils.c 1861: Security Module not found
Thu Aug  4 14:29:13 2005  [CRITICAL] bootos.c 791: Starting code...
```

show nac statistics

To display detailed Network Access Control (NAC) information about a Cisco wireless LAN controller, use the **show nac statistics** command.

show nac statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display detailed statistics of network access control settings:

```
> show nac statistics

Server Index..................................................... 1
Server Address................................................... xxx.xxx.xxx.xxx
Number of requests sent.......................................... 0
Number of retransmissions........................................ 0
Number of requests received...................................... 0
Number of malformed requests received............................ 0
Number of bad auth requests received............................. 0
Number of pending requests....................................... 0
Number of timed out requests..................................... 0
Number of misc dropped request received.......................... 0
Number of requests sent.......................................... 0
```

Related Commands

show nac summary
config guest-lan nac
config wlan nac
debug nac

show nac summary

To display NAC summary information for a Cisco wireless LAN controller, use the **show nac summary** command.

show nac summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary information of network access control settings:

```
> show nac summary

NAC ACL Name ..............................................
Index  Server Address                          Port     State
-----  ---------------------------------------  ----     -----
1      xxx.xxx.xxx.xxx                          13336    Enabled
```

Related Commands

show nac statistics
config guest-lan nac
config wlan nac
debug nac

show netuser

To display the configuration of a particular user in the local user database, use **show netuser** command.

show netuser {**detail** *user_name* | **guest-roles** | **summary**}

Syntax Description

detail	Displays detailed information about the specified network user.
user_name	Network user.
guest_roles	Displays configured roles for guest users.
summary	Displays a summary of all users in the local user database.

Command Default

None.

Examples

This example shows how to display a summary of all users in the local user database:

```
> show netuser summary

Maximum logins allowed for a given username ........Unlimited
```

This example shows how to display detailed information on the specified network user:

```
> show netuser detail john10

username..................................... abc
WLAN Id...................................... Any
Lifetime..................................... Permanent
Description.................................. test user
```

Related Commands

config netuser add
config netuser delete
config netuser description
config netuser guest-role apply
config netuser wlan-id
show netuser guest-roles

show netuser guest-roles

To display a list of the current quality of service (QoS) roles and their bandwidth parameters, use the **show netuser guest-roles** command.

show netuser guest-roles

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a QoS role for the guest network user:

```
> show netuser guest-roles

Role Name............................. Contractor
    Average Data Rate................. 10
    Burst Data Rate................... 10
    Average Realtime Rate............. 100
    Burst Realtime Rate............... 100

Role Name............................. Vendor
    Average Data Rate................. unconfigured
    Burst Data Rate................... unconfigured
    Average Realtime Rate............. unconfigured
    Burst Realtime Rate............... unconfigured
```

Related Commands

config netuser add
config netuser delete
config netuser description
config netuser guest-role apply
config netuser wlan-id
show netuser guest-roles
show netuser

show network

To display the current status of 802.3 bridging for all WLANs, use the **show network** command.

show network

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the network details:

```
> show network
```

Related Commands

Configure Network Commands
show network summary
show network multicast mgid detail
show network multicast mgid summary

show network summary

To display the network configuration of the Cisco wireless LAN controller, use the **show network summary** command.

show network summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary configuration:

```
> show network summary

RF-Network Name............................. RF
Web Mode.................................... Disable
Secure Web Mode............................. Enable
Secure Web Mode Cipher-Option High.......... Disable
Secure Web Mode Cipher-Option SSLv2......... Disable
Secure Shell (ssh).......................... Enable
Telnet...................................... Enable
Ethernet Multicast Mode..................... Disable   Mode: Ucast
Ethernet Broadcast Mode..................... Disable
IGMP snooping............................... Disabled
IGMP timeout................................ 60 seconds
User Idle Timeout........................... 300 seconds
ARP Idle Timeout............................ 300 seconds
ARP Unicast Mode............................ Disabled
Cisco AP Default Master..................... Disable
Mgmt Via Wireless Interface................. Disable
Mgmt Via Dynamic Interface.................. Disable
Bridge MAC filter Config.................... Enable
Bridge Security Mode........................ EAP
Over The Air Provisioning of AP's........... Enable
Apple Talk ................................. Disable
```

Related Commands

Configure Network Commands
show network
show network multicast mgid detail
show network multicast mgid summary

show network multicast mgid detail

To display all the clients joined to the multicast group in a specific multicast group identification (MGID), use the **show network multicast mgid detail** command.

show network multicast mgid detail ***mgid_value***

Syntax Description

mgid_value	Number between 550 and 4095.

Command Default

None.

Examples

This example shows how to display details of the multicast database:

```
> show network multicast mgid detail

Mgid ............................... 550
Multicast Group Address ............ 239.255.255.250
Vlan ............................... 0
Rx Packet Count .................... 807399588
No of clients ...................... 1
Client List .......................
        Client MAC         Expire TIme (mm:ss)
        00:13:02:23:82:ad  0:20
```

Related Commands

show network
show network summary
show network multicast mgid summary

show network multicast mgid summary

To display all the multicast groups and their corresponding multicast group identifications (MGIDs), use the **show network multicast mgid summary** command.

show network multicast mgid summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of multicast groups and their MGIDs:

```
> show network multicast mgid summary

Layer2 MGID Mapping:
--------------------
InterfaceName               vlanId    MGID
--------------------------- ------ -----
management                  0         0
test                        0         9
wired                       20        8

Layer3 MGID Mapping:
--------------------
Number of Layer3 MGIDs ..... 1

    Group address      Vlan    MGID
    ------------------ -----  ------
    239.255.255.250    0      550
```

Related Commands

show network
show network summary
show network multicast mgid detail

show nmsp statistics

To display Network Mobility Services Protocol (NMSP) counters, use the **show nmsp statistics** command.

show nmsp statistics {**summary** | **connection all**}

Syntax Description

summary	Displays common NMSP counters.
connection all	Displays all connection-specific counters.

Command Default

None.

Examples

This example shows how to display a summary of common NMSP counters:

```
> show nmsp statistics summary

Send RSSI with no entry:               0
Send too big msg:                      0
Failed SSL write:                      0
Partial SSL write:                     0
SSL write attempts to want write:
Transmit Q full:0
Max Measure Notify Msg:                0
Max Info Notify Msg:                   0
Max Tx Q Size:                         2
Max Rx Size:                           1
Max Info Notify Q Size:                0

Max Client Info Notify Delay:          0
Max Rogue AP Info Notify Delay:        0
Max Rogue Client Info Notify Delay:    0
Max Client Measure Notify Delay:       0
Max Tag Measure Notify Delay:          0
Max Rogue AP Measure Notify Delay:     0
Max Rogue Client Measure Notify Delay: 0
Max Client Stats Notify Delay:         0
Max Tag Stats Notify Delay:            0
RFID Measurement Periodic :            0
RFID Measurement Immediate :           0
Reconnect Before Conn Timeout:         0
```

This example shows how to display all the connection-specific NMSP counters:

```
> show nmsp statistics connection all

NMSP Connection Counters
Connection 1 :
 Connection status:  UP
 Freed Connection:    0
 Nmsp Subscr Req:     0          NMSP Subscr Resp:   0
 Info Req:            1          Info Resp:          1
 Measure Req:         2          Measure Resp:        2
 Stats Req:           2          Stats Resp:          2
 Info Notify:         0          Measure Notify:      0
 Loc Capability:      2
```

```
Location Req:          0          Location Rsp:          0
Loc Subscr Req:        0          Loc Subscr Rsp:        0
Loc Notif:             0
Loc Unsubscr Req:      0          Loc Unsubscr Rsp:      0
IDS Get Req:           0          IDS Get Resp:          0
IDS Notif:             0
IDS Set Req:           0          IDS Set Resp:          0
```

Related Commands

clear nmsp statistics
show nmsp status

show nmsp status

To display the status of active Network Mobility Services Protocol (NMSP) connections, use the **show nmsp status** command.

show nmsp status

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the status of the active NMSP connections:

```
>show nmsp status

LocServer IP   TxEchoResp  RxEchoReq TxData  RxData
-------------- ----------- --------- ------- -------
171.71.132.158 21642       21642     51278   21253
```

Related Commands

clear locp statistics
clear nmsp statistics
show nmsp statistics

show nmsp subscription

To display the Network Mobility Services Protocol (NMSP) services that are active on the controller, use the **show nmsp subscription** command.

show nmsp subscription {**summary** | **detail** *ip_addr*}

Syntax Description

summary	Displays all of the NMSP services to which the controller is subscribed.
detail	Displays details for all of the NMSP services to which the controller is subscribed.
ip_addr	Details only for the NMSP services subscribed to by a specific IP address.

Command Default

None.

Examples

This example shows how to display a summary of all the NMSP services to which the controller is subscribed:

```
> show nmsp subscription summary

Mobility Services Subscribed:

Server IP          Services
---------          --------
10.10.10.31        RSSI, Info, Statistics
```

This example shows how to display details of all the NMSP services:

```
> show nmsp subscription detail 10.10.10.31

Mobility Services Subscribed by 10.10.10.31

Services           Sub-services
--------           ------------
RSSI               Mobile Station, Tags,
Info               Mobile Station,
Statistics         Mobile Station, Tags,
```

Related Commands

clear locp statistics
clear nmsp statistics
show nmsp statistics

show ntp-keys

To display network time protocol authentication key details, use the **show ntp-keys** command.

show ntp-keys

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display NTP authentication key details:

```
> show ntp-keys

Ntp Authentication Key Details...................

      Key Index
     -----------
         1
         3
```

Related Commands

config time ntp

show pmk-cache

To display information about the pairwise master key (PMK) cache, use the **show pmk-command** command.

show pmk-cache {**all** | *MAC*}

Syntax Description

all	Displays information about all entries in the PMK cache.
MAC	Information about a single entry in the PMK cache.

Command Default

None.

Examples

This example shows how to display information about a single entry in the PMK cache:

```
> show pmk-cache xx:xx:xx:xx:xx:xx
```

This example shows how to display information about all entries in the PMK cache:

```
> show pmk-cache all

PMK Cache
                    Entry
Station             Lifetime   VLAN Override          IP Override
-----------------   --------   --------------------   ---------------
```

Related Commands

test pmk-cache delete

show port

To display the Cisco wireless LAN controller port settings on an individual or global basis, use the **show port** command.

show port {*port* | **summary**}

Syntax Description

port	Information on the individual ports.
summary	Displays all ports.

Command Default

None.

Examples

This example shows how to display information about an individual wireless LAN controller port:

```
> show port 1

            STP   Admin    Physical    Physical   Link   Link    Mcast
Pr  Type    Stat   Mode      Mode       Status    Status  Trap   Appliance   POE
-- ------- ---- ------- ---------- ---------- ------ ------- --------- -------
1  Normal  Disa Enable  Auto       1000 Full  Down   Enable  Enable     N/A
```

Note Some WLAN controllers may not have multicast or Power over Ethernet (PoE) listed because they do not support those features.

This example shows how to display a summary of all ports:

```
> show port summary

            STP   Admin    Physical    Physical   Link   Link    Mcast
Pr  Type    Stat   Mode      Mode       Status    Status  Trap   Appliance   POE SFPType
-- ------- ---- ------- ---------- ---------- ------ ------- --------- -------------
1  Normal  Forw Enable  Auto       1000 Full  Up     Enable  Enable     N/A NotPresent
2  Normal  Disa Enable  Auto       1000 Full  Down   Enable  Enable     N/A NotPresent
3  Normal  Disa Enable  Auto       1000 Full  Down   Enable  Enable     N/A NotPresent
4  Normal  Disa Enable  Auto       1000 Full  Down   Enable  Enable     N/A NotPresent
```

Note Some WLAN controllers may have only one port listed because they have only one physical port.

Related Commands

clear stats port
config ap port
config interface port
config network web-auth port
Configure Port Commands
config spanningtree port mode
config spanningtree port pathcost
config spanningtree port priority
show stats port

show process

To display how various processes in the system are using the CPU at that instant in time, use the **show process** command.

show process {**cpu** | **memory**}

Syntax Description

cpu	Displays how various system tasks are using the CPU at that moment.
memory	Displays the allocation and deallocation of memory from various processes in the system at that moment.

Command Default

None.

Usage Guidelines

This command is helpful in understanding if any single task is monopolizing the CPU and preventing other tasks from being performed.

Examples

This example shows how to display various tasks in the system that are using the CPU at a given moment:

```
> show process cpu

Name            Priority    CPU Use     Reaper
 reaperWatcher  ( 3/124)    0 %         ( 0/ 0)%    I
 osapiReaper    (10/121)    0 %         ( 0/ 0)%    I
 TempStatus     (255/ 1)    0 %         ( 0/ 0)%    I
 emWeb          (255/ 1)    0 %         ( 0/ 0)%    T 300
 cliWebTask     (255/ 1)    0 %         ( 0/ 0)%    I
 UtilTask       (255/ 1)    0 %         ( 0/ 0)%    T 300
```

This example shows how to display the allocation and deallocation of memory from various processes at a given moment:

```
> show process memory

Name            Priority    BytesinUse  Reaper
 reaperWatcher  ( 3/124)    0           ( 0/ 0)%    I
 osapiReaper    (10/121)    0           ( 0/ 0)%    I
 TempStatus     (255/ 1)    308         ( 0/ 0)%    I
 emWeb          (255/ 1)    294440      ( 0/ 0)%    T 300
 cliWebTask     (255/ 1)    738         ( 0/ 0)%    I
 UtilTask       (255/ 1)    308         ( 0/ 0)%    T 300
```

Related Commands

debug memory
transfer upload datatype

show qos

To display quality of service (QoS) information, use the **show qos** command.

show qos {**bronze** | **gold** | **platinum** | **silver**}

Syntax Description

bronze	Displays QoS information for the bronze profile of the WLAN.
gold	Displays QoS information for the gold profile of the WLAN.
platinum	Displays QoS information for the platinum profile of the WLAN.
silver	Displays QoS information for the silver profile of the WLAN.

Command Default

None.

Examples

This example shows how to display QoS information for the silver profile:

```
> show qos silver

Description..................................... For Best Effort
Maximum Priority................................ video
Unicast Default Priority........................ besteffort
Multicast Default Priority...................... besteffort
Average Data Rate..............................   0
Burst Data Rate................................   0
Average Realtime Data Rate.....................   0
Realtime Burst Data Rate.......................   0
protocol........................................ dot1p
dot1p........................................... 5
```

Related Commands

config qos protocol-type

Show RADIUS Commands

Use the **show radius** commands to display RADIUS settings.

show radius acct statistics

To display the RADIUS accounting server statistics for the Cisco wireless LAN controller, use the **show radius acct statistics** command.

show radius acct statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display RADIUS accounting server statistics:

```
> show radius acct statistics

Accounting Servers:
Server Index..................................... 1
Server Address................................... 10.1.17.10
Msg Round Trip Time.............................. 0 (1/100 second)
First Requests................................... 0
Retry Requests................................... 0
Accounting Responses............................. 0
Malformed Msgs................................... 0
Bad Authenticator Msgs........................... 0
Pending Requests................................. 0
Timeout Requests................................. 0
Unknowntype Msgs................................. 0
Other Drops...................................... 0
```

Related Commands

config radius acct
config radius acct ipsec authentication
config radius acct ipsec disable
config radius acct network
show radius auth statistics
show radius summary

show radius auth statistics

To display the RADIUS authentication server statistics for the Cisco wireless LAN controller, use the **show radius auth statistics** command.

show radius auth statistics

Syntax Description

This command has no arguments or keyword.

Command Default

None.

Examples

This example shows how to display RADIUS authentication server statistics:

```
> show radius auth statistics

Authentication Servers:
  Server Index..................................... 1
  Server Address................................... 1.1.1.1
  Msg Round Trip Time.............................. 0 (1/100 second)
  First Requests................................... 0
  Retry Requests................................... 0
  Accept Responses................................. 0
  Reject Responses................................. 0
  Challenge Responses.............................. 0
  Malformed Msgs................................... 0
  Bad Authenticator Msgs........................... 0
  Pending Requests................................. 0
  Timeout Requests................................. 0
  Unknowntype Msgs................................. 0
  Other Drops...................................... 0
```

Related Commands

config radius auth
config radius auth management
config radius auth network
show radius summary

show radius rfc3576 statistics

To display the RADIUS rfc3576 server statistics for the Cisco wireless LAN controller, use the **show radius rfc3576 statistics** command.

show radius rfc3576 statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Usage Guidelines

RFC 3576, an extension to the RADIUS protocol, allows dynamic changes to a user session, which includes support for disconnecting users and changing authorizations applicable to a user session; that is, it provides support for Disconnect and Change-of-Authorization (CoA) messages. Disconnect messages cause a user session to be terminated immediately. CoA messages modify session authorization attributes such as data filters.

Examples

This example shows how to display the RADIUS RFC-3576 server statistics:

```
> show radius rfc3576 statistics

RFC-3576 Servers:
Server Index..................................... 1
Server Address................................... 10.1.17.10
Msg Round Trip Time.............................. 0 (1/100 second)
First Requests................................... 0
Retry Requests................................... 0
Accounting Responses............................. 0
Malformed Msgs................................... 0
Bad Authenticator Msgs........................... 0
Pending Requests................................. 0
Timeout Requests................................. 0
Unknown type Msgs................................ 0
Other Drops...................................... 0
```

Related Commands

config radius auth rfc3576
show radius auth statistics
show radius summary

show radius summary

To display the RADIUS authentication and accounting server summary, use the **show radius summary** command.

show radius summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a RADIUS authentication server summary:

```
> show radius summary

Vendor Id Backward Compatibility..................... Disabled
Credentials Caching.................................. Disabled
Call Station Id Type................................. IP Address
Administrative Authentication via RADIUS......... Enabled

Authentication Servers

Index  Type  Server Address    Port    State     Tout  RFC-3576  IPsec - AuthMod
e/Phase1/Group/Lifetime/Auth/Encr
-----  ----  ----------------  ------  --------  ----  --------  ---------------
---------------------------------

Accounting Servers

Index  Type  Server Address    Port    State     Tout  RFC-3576  IPsec - AuthMod
e/Phase1/Group/Lifetime/Auth/Encr
-----  ----  ----------------  ------  --------  ----  --------  ---------------
---------------------------------
```

Related Commands

show radius acct statistics
show radius auth statistics

Show Radio Frequency ID Commands

Use the **show rfid** commands to display radio frequency ID settings.

show rfid client

To display the radio frequency identification (RFID) tags that are associated to the controller as clients, use the **show rfid client** command.

show rfid client

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Usage Guidelines

When the RFID tag is not in client mode, the above fields are blank.

Examples

This example shows how to display the RFID tag that is associated to the controller as clients:

```
> show rfid client

------------------ -------- --------- ----------------- ------ ----------------
                             Heard
   RFID Mac         VENDOR   Sec Ago    Associated AP    Chnl    Client State
------------------ -------- --------- ----------------- ------ ----------------

00:14:7e:00:0b:b1   Pango      35    AP0019.e75c.fef4   1      Probing
```

Related Commands

config rfid status
config rfid timeout
show rfid config
show rfid detail
show rfid summary

show rfid config

To display the current radio frequency identification (RFID) configuration settings, use the **show rfid config** command.

show rfid config

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the current RFID configuration settings:

```
> show rfid config

RFID Tag Data Collection ............................. Enabled
RFID Tag Auto-Timeout ................................ Enabled
RFID Client Data Collection .......................... Disabled
RFID Data Timeout .................................... 200 seconds
```

Related Commands

config rfid status
config rfid timeout
show rfid client
show rfid detail
show rfid summary

show rfid detail

To display detailed radio frequency identification (RFID) information for a specified tag, use the **show rfid detail** command.

show rfid detail *mac_address*

Syntax Description

mac_address	MAC address of an RFID tag.

Command Default

None.

Examples

This example shows how to display detailed RFID information:

```
> show rfid detail 32:21:3a:51:01:02

    RFID address..................................... 00:12:b8:00:20:52
    Vendor........................................... G2
    Last Heard....................................... 51 seconds ago
    Packets Received................................. 2
    Bytes Received................................... 324
    Cisco Type.....................................

    Content Header
    ==================
    Version.......................................... 0
    Tx Power......................................... 12 dBm
    Channel.......................................... 1
    Reg Class........................................ 12
    Burst Length..................................... 1

    CCX Payload
    ===========
    Last Sequence Control............................ 0
    Payload length................................... 127
    Payload Data Hex Dump

    01 09 00 00 00 00 0b 85 52 52 52 02 07 4b ff ff
    7f ff ff ff 03 14 00 12 7b 10 48 53 c1 f7 51 4b
    50 ba 5b 97 27 80 00 67 00 01 03 05 01 42 34 00
    00 03 05 02 42 5c 00 00 03 05 03 42 82 00 00 03
    05 04 42 96 00 00 03 05 05 00 00 00 55 03 05 06
    42 be 00 00 03 02 07 05 03 12 08 10 00 01 02 03
    04 05 06 07 08 09 0a 0b 0c 0d 0e 0f 03 0d 09 03
    08 05 07 a8 02 00 10 00 23 b2 4e 03 02 0a 03

    Nearby AP Statistics:
         lap1242-2(slot 0, chan 1) 50 seconds ag.... -76 dBm
         lap1242(slot 0, chan 1) 50 seconds ago..... -65 dBm
```

Related Commands

config rfid status
config rfid timeout
show rfid config
show rfid client
show rfid summary

show rfid summary

To display a summary of the radio frequency identification (RFID) information for a specified tag, use the **show rfid summary** command.

show rfid summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of RFID information:

```
> show rfid summary

Total Number of RFID   : 5
----------------- -------- ------------------ ------ ---------------------
     RFID ID      VENDOR       Closest AP      RSSI  Time Since Last Heard
----------------- -------- ------------------ ------ ---------------------

00:04:f1:00:00:04 Wherenet ap:1120             -51      858 seconds ago
00:0c:cc:5c:06:d3 Aerosct  ap:1120             -51       68 seconds ago
00:0c:cc:5c:08:45 Aerosct  AP_1130             -54      477 seconds ago
00:0c:cc:5c:08:4b Aerosct  wolverine           -54      332 seconds ago
00:0c:cc:5c:08:52 Aerosct  ap:1120             -51      699 seconds ago
```

Related Commands

config rfid status
config rfid timeout
show rfid client
show rfid config
show rfid detail

Show RF-Profile Commands

Use the **show RF-Profile** commands to display RF profiles details.

show rf-profile summary

To display a summary of RF profiles in the controller, use the **show rf-profile summary** command.

show rf-profile summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the summary of RF profile:

```
> show rf-profile summary
Number of RF Profiles.......................... 3

RF Profile Name                  Band     Description
-------------------------------  -------  -----------------------------------
RFGroup1                         2.4 GHz  <none>
RFGroup1Test                     5 GHz    <none>
RFTest2                          2.4 GHz  <none>
```

Related Commands

config rogue adhoc
config rogue rule
show rogue adhoc summary
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

show rf-profile details

To display the RF profile details in the Cisco wireless LAN controller, use the **show rf-profile details** command.

show rf-profile details *rf-profile-name*

Syntax Description

rf-profile-name	Name of the RF profile.

Command Default

None.

Examples

This example shows how to display the list of RF profile:

```
> show rf-profile details
Number of RF Profiles.......................... 3

RF Profile Name                   Band     Description
--------------------------------  -------  ----------------------------------
RFGroup1                          2.4 GHz  <none>
RFGroup1Test                      5 GHz    <none>
RFTest2                           2.4 GHz  <none>
```

Related Commands

config rogue adhoc
config rogue rule
show rogue adhoc summary
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

Show Rogue Commands

Use the **show rogue** commands to display unverified (rogue) device settings.

show rogue adhoc detailed

To display details of an ad-hoc rogue access point detected by the Cisco wireless LAN controller, use the **show rogue adhoc client detailed** command.

show rogue adhoc detailed *MAC*

Syntax Description

MAC	Ad-hoc rogue MAC address.

Command Default

None.

Examples

This example shows how to display detailed ad-hoc rogue MAC address information:

```
> show rogue adhoc detailed 02:61:ce:8e:a8:8c

Adhoc Rogue MAC address..................... 02:61:ce:8e:a8:8c
Adhoc Rogue BSSID........................... 02:61:ce:8e:a8:8c
State....................................... Alert
First Time Adhoc Rogue was Reported......... Tue Dec 11 20:45:45 2007
Last Time Adhoc Rogue was Reported.......... Tue Dec 11 20:45:45 2007
Reported By
AP 1
MAC Address......................... 00:14:1b:58:4a:e0
Name................................ AP0014.1ced.2a60
Radio Type.......................... 802.11b
SSID................................ rf4k3ap
Channel............................. 3
RSSI................................ -56 dBm
SNR................................. 15 dB
Encryption.......................... Disabled
ShortPreamble....................... Disabled
WPA Support......................... Disabled
Last reported by this AP............ Tue Dec 11 20:45:45 2007
```

Related Commands

config rogue adhoc
config rogue rule
show rogue adhoc summary
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

show rogue adhoc summary

To display a summary of the ad-hoc rogue access points detected by the Cisco wireless LAN controller, use the **show rogue adhoc summary** command.

show rogue adhoc summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of all ad-hoc rogues:

```
> show rogue adhoc summary
Detect and report Ad-Hoc Networks..... Enabled

Client MAC Address   Adhoc BSSID    State  # APs       Last Heard
------------------   -----------    -----    ---       -------
xx:xx:xx:xx:xx:xx    super          Alert    1         Sat Aug  9 21:12:50 2004
xx:xx:xx:xx:xx:xx                   Alert    1         Aug  9 21:12:50 2003
xx:xx:xx:xx:xx:xx                   Alert    1         Sat Aug  9 21:10:50 2003
```

Related Commands

config rogue adhoc
config rogue rule
show rogue adhoc detailed
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

show rogue ap clients

To display details of rogue access point clients detected by the Cisco wireless LAN controller, use the **show rogue ap clients** command.

show rogue ap clients *ap_mac_address*

Syntax Description

ap_mac_address	Rogue access point MAC address.

Command Default

None.

Examples

This example shows how to display details of rogue access point clients:

```
> show rogue ap clients xx:xx:xx:xx:xx:xx
MAC Address State # APs Last Heard
----------------- ------------------ ----- -------------------------
00:bb:cd:12:ab:ff Alert 1 Fri Nov 30 11:26:23 2007
```

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
config rogue rule
config trapflags rogueap
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 ap detailed

To display details of a rogue access point detected by the Cisco wireless LAN controller, use the **show rogue-ap detailed** command.

show rogue ap detailed *ap_mac_address*

Syntax Description

ap_mac_address	Rogue access point MAC address.

Command Default

None.

Examples

This example shows how to display detailed information of a rogue access point:

```
> show rogue ap detailed xx:xx:xx:xx:xx:xx

Rogue BSSID..................................... 00:0b:85:63:d1:94
Is Rogue on Wired Network....................... No
Classification.................................. Unclassified
State........................................... Alert
First Time Rogue was Reported................... Fri Nov 30 11:24:56 2007
Last Time Rogue was Reported.................... Fri Nov 30 11:24:56 2007
Reported By
    AP 1
        MAC Address............................. 00:12:44:bb:25:d0
        Name.................................... flexconnect
        Radio Type.............................. 802.11g
        SSID.................................... edu-eap
        Channel................................. 6
        RSSI.................................... -61 dBm
        SNR..................................... -1 dB
        Encryption.............................. Enabled
        ShortPreamble........................... Enabled
        WPA Support............................. Disabled
        Last reported by this AP.............. Fri Nov 30 11:24:56 2007
```

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
config rogue rule
show rogue ap clients
show rogue ap summary
show rogue ap friendly summary
show rogue ap malicious summary
show rogue ap unclassified summary

show rogue ap summary

To display a summary of the rogue access points detected by the Cisco wireless LAN controller, use the **show rogue-ap summary** command.

show rogue ap summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of all rogue access points:

```
> show rogue ap summary

Rogue Location Discovery Protocol.................  Disabled
Rogue ap timeout..............................  1200

MAC Address        Classification     # APs # Clients Last Heard
-----------------  ------------------ ----- --------- ----------------------
xx:xx:xx:xx:xx:xx  friendly           1     0         Thu Aug  4 18:57:11 2005
xx:xx:xx:xx:xx:xx  malicious          1     0         Thu Aug  4 19:00:11 2005
xx:xx:xx:xx:xx:xx  malicious          1     0         Thu Aug  4 18:57:11 2005
xx:xx:xx:xx:xx:xx  malicious          1     0         Thu Aug  4 18:57:11 2005
```

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
config rogue rule
show rogue ap clients
show rogue ap detailed
show rogue ap friendly summary
show rogue ap malicious summary
show rogue ap unclassified summary

show rogue ap friendly summary

To display a list of the friendly rogue access points detected by the controller, use the **show rogue-ap friendly summary** command.

show rogue ap friendly summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of all friendly rogue access points:

```
> show rogue ap friendly summary

Number of APs.................................... 1
MAC Address        State          # APs # Clients Last Heard
-----------------  -----------------  -----  ---------  --------------------------
XX:XX:XX:XX:XX:XX Internal           1       0  Tue Nov 27 13:52:04 2007
```

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
config rogue rule
config trapflags rogueap
show rogue ap clients
show rogue ap detailed
show rogue ap summary
show rogue ap malicious summary
show rogue ap unclassified summary

show rogue ap malicious summary

To display a list of the malicious rogue access points detected by the controller, use the **show rogue ap malicious summary** command.

show rogue ap malicious summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of all malicious rogue access points:

```
> show rogue ap malicious summary

Number of APs.................................... 2
MAC Address        State          # APs # Clients Last Heard
-----------------  -----------------  -----  ---------  -------------------------
XX:XX:XX:XX:XX:XX Alert               1        0  Tue Nov 27 13:52:04 2007
XX:XX:XX:XX:XX:XX Alert               1        0  Tue Nov 27 13:52:04 2007
```

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
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 unclassified summary

show rogue ap unclassified summary

To display a list of the unclassified rogue access points detected by the controller, use the **show rogue ap unclassified summary** command.

show rogue ap unclassified summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a list of all unclassified rogue access points:

```
> show rogue ap unclassified summary

Number of APs.................................... 164
MAC Address    State              # APs # Clients Last Heard
---------------- ----------------- ----- --------- ----------------------
XX:XX:XX:XX:XX:XX Alert           1       0       Fri Nov 30 11:12:52 2007
XX:XX:XX:XX:XX:XX Alert           1       0       Fri Nov 30 11:29:01 2007
XX:XX:XX:XX:XX:XX Alert           1       0       Fri Nov 30 11:26:23 2007
XX:XX:XX:XX:XX:XX Alert           1       0       Fri Nov 30 11:26:23 2007
```

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
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 auto-contain

To display information about rogue auto-containment, use the **show rogue auto-contain** command.

show rogue auto-contain

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display information about rogue auto-containment:

```
> show rogue auto-contain

Containment Level.............................. 3
monitor_ap_only................................ false
```

Related Commands

config rogue adhoc
config rogue auto-contain level

show rogue client detailed

To display details of a rogue client detected by a Cisco wireless LAN controller, use the **show rogue client detailed** command.

show rogue client detailed *MAC*

Syntax Description

MAC	Rogue client MAC address.

Command Default

None.

Examples

This example shows how to display detailed information for a rogue client:

```
> show rogue client detailed xx:xx:xx:xx:xx:xx

Rogue BSSID..................................... 00:0b:85:23:ea:d1
State........................................... Alert
First Time Rogue was Reported................... Mon Dec 3 21:50:36 2007
Last Time Rogue was Reported.................... Mon Dec 3 21:50:36 2007
Rogue Client IP address......................... Not known
Reported By
    AP 1
        MAC Address............................. 00:15:c7:82:b6:b0
        Name.................................... AP0016.47b2.31ea
        Radio Type.............................. 802.11a
        RSSI.................................... -71 dBm
        SNR..................................... 23 dB
        Channel................................. 149
        Last reported by this AP.............. Mon Dec 3 21:50:36 2007
```

Related Commands

show rogue client summary
show rogue ignore-list
config rogue client
config rogue rule

show rogue client summary

To display a summary of the rogue clients detected by the Cisco wireless LAN controller, use the **show rogue client summary** command.

show rogue client summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a list of all rogue clients:

```
> show rogue client summary

MAC Address        State              # APs Last Heard
-----------------  ------------------ ----- ----------------------
xx:xx:xx:xx:xx:xx  Alert              1     Thu Aug  4 19:00:08 2005
xx:xx:xx:xx:xx:xx  Alert              1     Thu Aug  4 19:00:08 2005
xx:xx:xx:xx:xx:xx  Alert              1     Thu Aug  4 19:00:08 2005
xx:xx:xx:xx:xx:xx  Alert              1     Thu Aug  4 19:00:08 2005
xx:xx:xx:xx:xx:xx  Alert              1     Thu Aug  4 19:00:08 2005
xx:xx:xx:xx:xx:xx  Alert              1     Thu Aug  4 19:00:08 2005
xx:xx:xx:xx:xx:xx  Alert              1     Thu Aug  4 19:09:11 2005
xx:xx:xx:xx:xx:xx  Alert              1     Thu Aug  4 19:03:11 2005
xx:xx:xx:xx:xx:xx  Alert              1     Thu Aug  4 19:03:11 2005
xx:xx:xx:xx:xx:xx  Alert              1     Thu Aug  4 19:09:11 2005
xx:xx:xx:xx:xx:xx  Alert              1     Thu Aug  4 18:57:08 2005
xx:xx:xx:xx:xx:xx  Alert              1     Thu Aug  4 19:12:08 2005
```

Related Commands

show rogue client detailed
show rogue ignore-list
config rogue client
config rogue rule

show rogue ignore-list

To display a list of rogue access points that are configured to be ignored, use the **show rogue ignore-list** command.

show rogue ignore-list

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a list of all rogue access points that are configured to be ignored:

```
> show rogue ignore-list

MAC Address
-----------------
xx:xx:xx:xx:xx:xx
```

Related Commands

config rogue adhoc
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
config rogue client
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 client detailed
show rogue client summary
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

show rogue rule detailed

To display detailed information for a specific rogue classification rule, use the **show rogue rule detailed** command.

show rogue rule detailed *rule_name*

Syntax Description

rule_name	Rogue rule name.

Command Default

None.

Examples

This example shows how to display detailed information on a specific rogue classification rule:

```
> show rogue rule detailed Rule2

Priority..................................... 2
Rule Name.................................... Rule2
State........................................ Enabled
Type......................................... Malicious
Match Operation.............................. Any
Hit Count.................................... 352
Total Conditions............................. 2
Condition 1
    type..................................... Client-count
    value.................................... 10
Condition 2
    type..................................... Duration
    value (seconds).......................... 2000
Condition 3
    type..................................... Managed-ssid
    value.................................... Enabled
Condition 4
    type..................................... No-encryption
    value.................................... Enabled
Condition 5
    type..................................... Rssi
    value (dBm).............................. -50
Condition 6
    type..................................... Ssid
    SSID Count............................... 1
    SSID 1................................... test
```

Related Commands

config rogue rule
show rogue ignore-list
show rogue rule summary

show rogue rule summary

To display the rogue classification rules that are configured on the controller, use the **show rogue rule summary** command.

show rogue rule summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a list of all rogue rules that are configured on the controller:

```
> show rogue rule summary

Priority Rule Name                State    Type          Match Hit Count
-------- ---------------------- -------- ------------- ----- ---------
1        mtest                  Enabled  Malicious     All   0
2        asdfasdf               Enabled  Malicious     All   0
```

Related Commands

config rogue rule
show rogue ignore-list
show rogue rule detailed

show route summary

To display the routes assigned to the Cisco wireless LAN controller service port, use the **show route summary** command.

show route summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display all the configured routes:

```
> show route summary

Number of Routes............................. 1

Destination Network          Genmask               Gateway
-------------------    -------------------   -------------------
xxx.xxx.xxx.xxx        255.255.255.0         xxx.xxx.xxx.xxx
```

Related Commands

config route

show rules

To display the active internal firewall rules, use the **show rules** command.

show rules

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display active internal firewall rules:

```
> show rules

-------------------------------------------------------
Rule ID.............: 3
Ref count...........: 0
Precedence..........: 99999999
Flags...............: 00000001 ( PASS )
Source IP range:
        (Local stack)
Destination IP range:
        (Local stack)
-------------------------------------------------------
Rule ID.............: 25
Ref count...........: 0
Precedence..........: 99999999
Flags...............: 00000001 ( PASS )
Service Info
        Service name........: GDB
        Protocol............: 6
        Source port low.....: 0
        Source port high....: 0
        Dest port low.......: 1000
        Dest port high......: 1000
Source IP range:
IP High.............: 0.0.0.0
        Interface...........: ANY
Destination IP range:
        (Local stack)
-------------------------------------------------------
```

show run-config

To display a comprehensive view of the current Cisco wireless LAN controller configuration, use the **show run-config** command.

show run-config [**no ap** | **commands**]

Syntax Description

no-ap	(Optional) Excludes access point configuration settings.
commands	(Optional) Displays a list of user-configured commands on the controller.

Command Default

None.

Usage Guidelines

These commands have replaced the **show running-config** command.

Some WLAN controllers may have no Crypto Accelerator (VPN termination module) or power supplies listed because they have no provisions for VPN termination modules or power supplies.

The **show run-config** command shows only values configured by the user. It does not show system-configured default values.

Examples

This example shows how to display the current controller running configuration:

```
> show run-config

Press Enter to continue...

System Inventory
Switch Description..............................  Cisco Controller
Machine Model...................................
Serial Number...................................  FLS0923003B
Burned-in MAC Address...........................  xx:xx:xx:xx:xx:xx
Crypto Accelerator 1............................  Absent
Crypto Accelerator 2............................  Absent
Power Supply 1..................................  Absent
Power Supply 2..................................  Present, OK

Press Enter to continue Or <Ctl Z> to abort...
```

Related Commands

config passwd-cleartext

show serial

To display the serial (console) port configuration, use the **show serial** command.

show serial

Syntax Description

This command has no arguments or keywords.

Command Default

9600, 8, off, 1, none.

Examples

This example shows how to display EIA-232 parameters and the serial port inactivity timeout:

```
> show serial

Serial Port Login Timeout (minutes)..... 45
Baud Rate.............................. 9600
Character Size......................... 8
Flow Control:.......................... Disable
Stop Bits.............................. 1
Parity Type:........................... none
```

Related Commands

config serial baudrate
config serial timeout

show sessions

To display the console port login timeout and maximum number of simultaneous command-line interface (CLI) sessions, use the **show sessions** command.

show sessions

Syntax Description

This command has no arguments or keywords.

Command Default

5 minutes, 5 sessions.

Examples

This example shows how to display the CLI session configuration setting:

```
> show sessions

CLI Login Timeout (minutes)..... 0
Maximum Number of CLI Sessions..... 5
```

The response indicates that the CLI sessions never time out and that the Cisco wireless LAN controller can host up to five simultaneous CLI sessions.

Related Commands

config sessions maxsessions
config sessions timeout

show snmpcommunity

To display Simple Network Management Protocol (SNMP) community entries, use the **show snmpcommunity** command.

show snmpcommunity

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display SNMP community entries:

```
> show snmpcommunity

SNMP Community Name Client IP Address Client IP Mask    Access Mode Status
------------------- ----------------- ----------------- ----------- --------
public              0.0.0.0           0.0.0.0           Read Only   Enable
**********          0.0.0.0           0.0.0.0           Read/Write  Enable
```

Related Commands

config snmp community accessmode
config snmp community create
config snmp community delete
config snmp community ipaddr
config snmp community mode
config snmp syscontact

show snmpengineID

To display the SNMP engine ID, use the **show snmpengineID** command.

show snmpengineID

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the SNMP engine ID:

```
> show snmpengineID

SNMP EngineId... fffffffffff
```

Related Commands

config snmp engineID

show snmptrap

To display Cisco wireless LAN controller Simple Network Management Protocol (SNMP) trap receivers and their status, use the **show snmptrap** command.

show snmptrap

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display SNMP trap receivers and their status:

```
> show snmptrap

SNMP Trap Receiver Name    IP Address        Status
-------------------------  ----------------- --------
xxx.xxx.xxx.xxx            xxx.xxx.xxx.xxx   Enable
```

Related Commands

config snmp trapreceiver create
config snmp trapreceiver delete
config snmp trapreceiver delete

show snmpv3user

To display Simple Network Management Protocol (SNMP) version 3 configuration, use the **show snmpv3user** command.

show snmpv3user

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display SNMP version 3 configuration information:

```
> show snmpv3user

SNMP v3 username    AccessMode  Authentication Encryption
------------------- ----------- -------------- ----------
default              Read/Write  HMAC-SHA       CFB-AES
```

Related Commands

config snmp v3user create
config snmp v3user delete

show snmpversion

To display which versions of Simple Network Management Protocol (SNMP) are enabled or disabled on your controller, use the **show snmpversion** command.

show snmpversion

Syntax Description

This command has no arguments or keywords.

Command Default

Enable.

Examples

This example shows how to display the SNMP v1/v2/v3 status:

```
> show snmpversion

SNMP v1  Mode..................................... Disable
SNMP v2c Mode..................................... Enable
SNMP v3  Mode..................................... Enable
```

Related Commands

config snmp version

show spanningtree port

To display the Cisco wireless LAN controller spanning tree port configuration, use the **show spanningtree port** command.

show spanningtree port *port*

Syntax Description

port	Physical port number: • 1 through 4 on Cisco 2100 Series Wireless LAN Controller. • 1 or 2 on Cisco 4402 Series Wireless LAN Controller. • 1 through 4 on Cisco 4404 Series Wireless LAN Controller.

Command Default

800C, Disabled, 802.1D, 128, 100, Auto.

Usage Guidelines

When the a Cisco 4400 Series wireless LAN controller is configured for port redundancy, the Spanning Tree Protocol (STP) must be disabled for all ports on the Cisco 4400 Series Wireless LAN Controller. STP can remain enabled on the switch connected to the Cisco 4400 Series Wireless LAN Controller.

Note Some WLAN controllers do not support the spanning tree function.

Examples

This example shows how to display spanning tree values on a per port basis:

```
> show spanningtree port 3

STP Port ID..............................  800C
STP Port State...........................  Disabled
STP Port Administrative Mode.............  802.1D
STP Port Priority........................  128
STP Port Path Cost.......................  100
STP Port Path Cost Mode..................  Auto
```

Related Commands

config spanningtree port mode
config spanningtree port pathcost
config spanningtree port priority
show spanningtree switch

show spanningtree switch

To display the Cisco wireless LAN controller network (DS port) spanning tree configuration, use the **show spanningtree switch** command.

show spanningtree switch

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Usage Guidelines

Some WLAN controllers do not support the spanning tree function.

Examples

This example shows how to display spanning tree values on a per switch basis:

```
> show spanningtree switch

STP Specification..................... IEEE 802.1D
STP Base MAC Address.................. 00:0B:85:02:0D:20
Spanning Tree Algorithm............... Disable
STP Bridge Priority................... 32768
STP Bridge Max. Age (seconds)......... 20
STP Bridge Hello Time (seconds)....... 2
STP Bridge Forward Delay (seconds)..... 15
```

Related Commands

config spanningtree switch bridgepriority
config spanningtree switch forwarddelay
config spanningtree switch hellotime
config spanningtree switch maxage
config spanningtree switch mode

show stats port

To display physical port receive and transmit statistics, use the **show stats port** command.

show stats port {**detailed** *port* | **summary** *port*}

Syntax Description

detailed	Displays detailed port statistics.
summary	Displays port summary statistics.
port	Physical port number: • 1 through 4 on Cisco 2100 Series Wireless LAN Controllers. • 1 or 2 on Cisco 4402 Series Wireless LAN Controllers. • 1 through 4 on Cisco 4404 Series Wireless LAN Controllers. • 1 on Cisco WLCM Series Wireless LAN Controllers.

Command Default

None.

Examples

This example shows how to display the port summary information:

```
> show stats port summary 1

Packets Received Without Error.................. 399958
Packets Received With Error..................... 0
Broadcast Packets Received...................... 8350
Packets Transmitted Without Error............... 106060
Transmit Packets Errors......................... 0
Collisions Frames............................... 0
Time Since Counters Last Cleared................ 2 day 11 hr 16 min 23 sec
```

This example shows how to display the detailed port information:

```
> show stats port detailed 1

PACKETS RECEIVED (OCTETS)
Total Bytes..................................... 267799881
64 byte pkts        :918281
65-127 byte pkts    :354016         128-255 byte pkts   :1283092
256-511 byte pkts   :8406           512-1023 byte pkts  :3006
1024-1518 byte pkts :1184           1519-1530 byte pkts :0
> 1530 byte pkts    :2

PACKETS RECEIVED SUCCESSFULLY
Total........................................... 2567987
Unicast Pkts  :2547844       Multicast Pkts:0          Broadcast Pkts:20143

PACKETS RECEIVED WITH MAC ERRORS
Total........................................... 0
Jabbers   :0              Undersize :0              Alignment :0
FCS Errors:0              Overruns  :0

RECEIVED PACKETS NOT FORWARDED
Total........................................... 0
```

```
Local Traffic Frames:0              RX Pause Frames     :0
Unacceptable Frames :0              VLAN Membership     :0
VLAN Viable Discards:0              MulticastTree Viable:0
ReserveAddr Discards:0
CFI Discards        :0              Upstream Threshold  :0

PACKETS TRANSMITTED (OCTETS)
Total Bytes..................................... 353831
64 byte pkts        :0              65-127 byte pkts    :0
128-255 byte pkts   :0              256-511 byte pkts   :0
512-1023 byte pkts  :0              1024-1518 byte pkts :2
1519-1530 byte pkts :0              Max Info            :1522

PACKETS TRANSMITTED SUCCESSFULLY
Total.......................................... 5875
Unicast Pkts  :5868           Multicast Pkts:0           Broadcast Pkts:7


TRANSMIT ERRORS
Total Errors.................................... 0
FCS Error     :0           TX Oversized  :0           Underrun Error:0

TRANSMIT DISCARDS
Total Discards.................................. 0
Single Coll Frames  :0              Multiple Coll Frames:0
Excessive Coll Frame:0              Port Membership     :0
VLAN Viable Discards:0

PROTOCOL STATISTICS
BPDUs Received      :6              BPDUs Transmitted   :0
802.3x RX PauseFrame:0

Time Since Counters Last Cleared............... 2 day 0 hr 39 min 59 sec
```

Related Commands

config port adminmode
config port autoneg
config port linktrap
config port power
config port linktrap

show stats switch

To display the network (DS port) receive and transmit statistics, use the **show stats switch** command.

show stats switch {**detailed** | **summary**}

Syntax Description

detailed	Displays detailed switch statistics.
summary	Displays switch summary statistics.

Command Default

None.

Examples

This example shows how to display switch summary statistics:

```
> show stats switch summary

Packets Received Without Error.................. 136410
Broadcast Packets Received..................... 18805
Packets Received With Error.................... 0
Packets Transmitted Without Error.............. 78002
Broadcast Packets Transmitted.................. 3340
Transmit Packet Errors......................... 2
Address Entries Currently In Use............... 26
VLAN Entries Currently In Use.................. 1
Time Since Counters Last Cleared............... 2 day 11 hr 22 min 17 sec
```

This example shows how to display detailed switch statistics:

```
> show stats switch detailed

RECEIVE
Octets........................................... 19351718
Total Pkts....................................... 183468
Unicast Pkts..................................... 180230
Multicast Pkts................................... 3219
Broadcast Pkts................................... 19
Pkts Discarded................................... 0

TRANSMIT
Octets........................................... 354251
Total Pkts....................................... 5882
Unicast Pkts..................................... 5875
Multicast Pkts................................... 0
Broadcast Pkts................................... 7
Pkts Discarded................................... 0

ADDRESS ENTRIES
Most Ever Used................................... 1
Currently In Use................................. 1

VLAN ENTRIES
Maximum......................................... 128
Most Ever Used................................... 1
Static In Use.................................... 1
Dynamic In Use................................... 0
VLANs Deleted.................................... 0
Time Since Ctrs Last Cleared..................... 2 day 0 hr 43 min 22 sec
```

Related Commands

config switchconfig mode
config switchconfig secret-obfuscation
show switchconfig

show switchconfig

To display parameters that apply to the Cisco wireless LAN controller, use the **show switchconfig** command.

show switchconfig

Syntax Description

This command has no arguments or keywords.

Command Default

Enabled.

Examples

This example shows how to display parameters that apply to the Cisco wireless LAN controller:

```
> show switchconfig

802.3x Flow Control Mode..................... Disabled
FIPS prerequisite features................... Enabled
Boot Break................................... Enabled
secret obfuscation........................... Enabled

Strong Password Check Features:
         case-check ...........Disabled
         consecutive-check ....Disabled
         default-check .......Disabled
         username-check ......Disabled
```

Related Commands

config switchconfig mode
config switchconfig fips-prerequisite
config switchconfig flowcontrol
config switchconfig strong-pwd
config switchconfig secret-obfuscation
show stats switch

show sysinfo

To display high-level Cisco wireless LAN controller information, use the **show sysinfo** command.

show sysinfo

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display wireless LAN controller information:

```
> show sysinfo

Manufacturer's Name.............................. Cisco Systems Inc.
Product Name..................................... Cisco Controller
Product Version.................................. 6.0.133.0
Build Information................................ Tue Mar 31 11:44:12 PDT 2009
Bootloader Version............................... 0.14.0
Field Recovery Image Version..................... 5.3.38.0-BL-9-16
Firmware Version................................. FPGA 1.0, Env 0.8, USB console 1.27
Build Type....................................... DATA + WPS

System Name...................................... 5500
System Location.................................
System Contact..................................
System ObjectID.................................. 1.3.6.1.4.1.9.1.1
IP Address....................................... 10.10.10.7
Last Reset....................................... Software reset
System Up Time................................... 1 days 15 hrs 17 mins 48 secs
System Timezone Location.....................
Current Boot License Level....................... wplus
Current Boot License Type........................ Permanent
Next Boot License Level.......................... wplus
Next Boot License Type........................... Permanent
Configured Country............................... US  - United States
Operating Environment............................ Commercial (0 to 40 C)
Internal Temp Alarm Limits....................... 0 to 65 C
Internal Temperature............................. +45 C
External Temperature............................. +29 C
Fan Status....................................... OK

State of 802.11b Network......................... Enabled
State of 802.11a Network......................... Disabled
Number of WLANs.................................. 18
3rd Party Access Point Support................... Disabled
Number of Active Clients......................... 1

Burned-in MAC Address............................ 00:00:1B:EE:12:E0
Power Supply 1................................... Not Available
Power Supply 2................................... Not Available
Maximum number of APs supported.................. 250
```

Related Commands

config sysname

Show TACACS Commands

Use the **show tacacs** commands to display Terminal Access Controller Access Control System (TACACS) protocol settings and statistics.

show tacacs acct statistics

To display detailed radio frequency identification (RFID) information for a specified tag, use the **show tacacs acct statistics** command.

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display detailed RFID information:

```
> show tacacs acct statistics

Accounting Servers:

Server Index..................................... 1
Server Address................................... 10.0.0.0
Msg Round Trip Time.............................. 0 (1/100 second)
First Requests................................... 1
Retry Requests................................... 0
Accounting Response.............................. 0
Accounting Request Success....................... 0
Accounting Request Failure....................... 0
Malformed Msgs................................... 0
Bad Authenticator Msgs........................... 0
Pending Requests................................. -1
Timeout Requests................................. 1
Unknowntype Msgs................................. 0
Other Drops...................................... 0
```

Related Commands

config tacacs acct
config tacacs acct
config tacacs athr
config tacacs auth
show tacacs summary
show tacacs summary

show tacacs athr statistics

To display TACACS+ server authorization statistics, use the **show tacacs athr statistics** command.

show tacacs athr statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display TACACS server authorization statistics:

```
> show tacacs athr statistics

Authorization Servers:

Server Index..................................... 3
Server Address................................... 10.0.0.3
Msg Round Trip Time.............................. 0 (1/100 second)
First Requests................................... 0
Retry Requests................................... 0
Received Responses............................... 0
Authorization Success............................ 0
Authorization Failure............................ 0
Challenge Responses.............................. 0
Malformed Msgs................................... 0
Bad Authenticator Msgs........................... 0
Pending Requests................................. 0
Timeout Requests................................. 0
Unknowntype Msgs................................. 0
Other Drops...................................... 0
```

Related Commands

config tacacs acct
config tacacs acct
config tacacs athr
config tacacs auth
show tacacs summary
show tacacs auth statistics
show tacacs summary

show tacacs auth statistics

To display TACACS+ server authentication statistics, use the **show tacacs auth statistics** command.

show tacacs auth statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display TACACS server authentication statistics:

```
> show tacacs auth statistics

Authentication Servers:

Server Index..................................... 2
Server Address................................... 10.0.0.2
Msg Round Trip Time.............................. 0 (msec)
First Requests................................... 0
Retry Requests................................... 0
Accept Responses................................. 0
Reject Responses................................. 0
Error Responses.................................. 0
Restart Responses................................ 0
Follow Responses................................. 0
GetData Responses................................ 0
Encrypt no secret Responses...................... 0
Challenge Responses.............................. 0
Malformed Msgs................................... 0
Bad Authenticator Msgs........................... 0
Pending Requests................................. 0
Timeout Requests................................. 0
Unknowntype Msgs................................. 0
Other Drops...................................... 0
```

Related Commands

config tacacs acct
config tacacs acct
config tacacs athr
config tacacs auth
show tacacs summary
show tacacs summary

show tacacs summary

To display TACACS+ server summary information, use the **show tacacs summary** command.

show tacacs summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display TACACS server summary information:

```
> show tacacs summary

Authentication Servers

Idx  Server Address    Port    State     Tout
---  ----------------  ------  --------  ----
2    10.0.0.2          6       Enabled   30

Accounting Servers

Idx  Server Address    Port    State     Tout
---  ----------------  ------  --------  ----
1    10.0.0.0          10      Enabled   2

Authorization Servers

Idx  Server Address    Port    State     Tout
---  ----------------  ------  --------  ----
3    10.0.0.3          4       Enabled   2
...
```

Related Commands

config tacacs acct
config tacacs acct
config tacacs athr
config tacacs auth
show tacacs summary
show tacacs athr statistics
show tacacs auth statistics

show tech-support

To display Cisco wireless LAN controller variables frequently requested by Cisco Technical Assistance Center (TAC), use the **show tech-support** command.

show tech-support

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display system resource information:

```
> show tech-support

Current CPU Load.............................. 0%

System Buffers
   Max Free Buffers........................... 4608
   Free Buffers............................... 4604
   Buffers In Use............................. 4

Web Server Resources
   Descriptors Allocated...................... 152
   Descriptors Used........................... 3
   Segments Allocated......................... 152
   Segments Used.............................. 3

System Resources
   Uptime..................................... 747040 Secs
   Total Ram.................................. 127552 Kbytes
   Free Ram................................... 19540 Kbytes
   Shared Ram................................. 0 Kbytes
   Buffer Ram................................. 460 Kbytes
```

show time

To display the Cisco wireless LAN controller time and date, use the **show time** command.

show time

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the controller time and date when authentication is not enabled:

```
> show time

Time..................................... Wed Apr 13 09:29:15 2011

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              0           9.2.60.60       AUTH DISABLED
```

This example shows successful authentication of NTP Message results in the AUTH Success:

```
> show time

Time..................................... Thu Apr  7 13:56:37 2011
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           9.2.60.60       AUTH SUCCESS
```

This example shows that if the packet received has errors, then the NTP Msg Auth status will show AUTH Failure:

```
> show time

Time..................................... Thu Apr  7 13:56:37 2011
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              10           9.2.60.60       AUTH FAILURE
```

This example shows that if there is no response from NTP server for the packets, the NTP Msg Auth status will be blank:

```
> show time

Time..................................... Thu Apr  7 13:56:37 2011
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              11           9.2.60.60
```

Related Commands

config time manual
config time ntp
config time timezone
config time timezone location
config time timezone location

show trapflags

To display the Cisco wireless LAN controller Simple Network Management Protocol (SNMP) trap flags, use the **show trapflags** command.

show trapflags

Syntax Description

This command has no arguments and keywords.

Command Default

None.

Examples

This example shows how to display controller SNMP trap flags:

```
> show trapflags

Authentication Flag.......................... Enable
Link Up/Down Flag............................ Enable
Multiple Users Flag.......................... Enable
Spanning Tree Flag........................... Enable

Client Related Traps
        802.11 Disassociation........................ Disable
        802.11 Deauthenticate........................ Disable
        802.11 Authenticate Failure.................. Disable
        802.11 Association Failure................... Disable
        Excluded..................................... Disable

802.11 Security related traps
        WEP Decrypt Error............................ Enable

Cisco AP
        Register..................................... Enable
        InterfaceUp.................................. Enable

Auto-RF Profiles
        Load......................................... Enable
        Noise........................................ Enable
        Interference................................. Enable
        Coverage..................................... Enable

Auto-RF Thresholds
        tx-power..................................... Enable
        channel...................................... Enable
        antenna...................................... Enable

AAA
        auth......................................... Enable
        servers...................................... Enable

rogueap...................................... Enable

wps.......................................... Enable

configsave................................... Enable

IP Security
```

```
esp-auth..................................... Enable
esp-replay................................... Enable
invalidSPI................................... Enable
ike-neg...................................... Enable
suite-neg.................................... Enable
invalid-cookie............................... Enable
```

Related Commands

- config trapflags 802.11-Security
- config trapflags aaa
- config trapflags ap
- config trapflags authentication
- config trapflags client
- config trapflags configsave
- config trapflags IPsec
- config trapflags linkmode

show traplog

To display the Cisco wireless LAN controller Simple Network Management Protocol (SNMP) trap log, use the **show traplog** command.

show traplog

Syntax Description

This command has no arguments and keywords.

Command Default

None.

Examples

This example shows how to display controller SNMP trap log settings:

```
> show traplog

Number of Traps Since Last Reset.......... 2447
Number of Traps Since Log Last Displayed... 2447

Log System Time              Trap
--- ------------------------ ------------------------------------------------
  0 Thu Aug  4 19:54:14 2005 Rogue AP : 00:0b:85:52:62:fe detected on Base Rad
                             io MAC : 00:0b:85:18:b6:50  Interface no:1(802.11
                             b/g) with RSSI: -78 and SNR: 10
  1 Thu Aug  4 19:54:14 2005 Rogue AP : 00:0b:85:52:19:d8 detected on Base Rad
                             io MAC : 00:0b:85:18:b6:50  Interface no:1(802.11
                             b/g) with RSSI: -72 and SNR: 16
  2 Thu Aug  4 19:54:14 2005 Rogue AP : 00:0b:85:26:a1:8d detected on Base Rad
                             io MAC : 00:0b:85:18:b6:50  Interface no:1(802.11
                             b/g) with RSSI: -82 and SNR: 6
  3 Thu Aug  4 19:54:14 2005 Rogue AP : 00:0b:85:14:b3:4f detected on Base Rad
                             io MAC : 00:0b:85:18:b6:50  Interface no:1(802.11
                             b/g) with RSSI: -56 and SNR: 30

Would you like to display more entries? (y/n)
```

Related Commands

show trapflags

show wlan

To display configuration information for a specified wireless LAN or a foreign access point, or to display wireless LAN summary information, use the **show wlan** command.

show wlan {apgroups | *summary* | *wlan_id* | foreignAp}

Syntax Description

apgroups	(Optional) Displays access point group information.
summary	(Optional) Displays a summary of all wireless LANs.
wlan_id	Wireless LAN identifier from 1 to 512.
foreignAp	(Optional) Displays the configuration for support of foreign access points.

Command Default

None.

Examples

This example shows how to display a summary of wireless LANs for wlan_id 1:

```
> show wlan 1
WLAN Identifier.................................. 1
Profile Name..................................... aicha
Network Name (SSID).............................. aicha
Status........................................... Enabled
MAC Filtering.................................... Disabled
Broadcast SSID................................... Enabled
AAA Policy Override.............................. Disabled
Network Admission Control

  Radius-NAC State............................... Enabled
  SNMP-NAC State................................. Enabled
Quarantine VLAN.................................. 0
Maximum number of Associated Clients............. 0
Number of Active Clients......................... 0
Exclusionlist Timeout............................ 60 seconds
Session Timeout.................................. 1800 seconds
CHD per WLAN..................................... Enabled
Webauth DHCP exclusion........................... Disabled
Interface........................................ management
Multicast Interface.............................. Not Configured
WLAN ACL......................................... unconfigured
DHCP Server...................................... Default
DHCP Address Assignment Required................. Disabled
Static IP client tunneling....................... Enabled
Quality of Service............................... Silver (best effort)
Scan Defer Priority.............................. 4,5,6
Scan Defer Time.................................. 100 milliseconds
WMM.............................................. Allowed
Media Stream Multicast-direct.................... Disabled
CCX - AironetIe Support.......................... Enabled
CCX - Gratuitous ProbeResponse (GPR)............. Disabled
CCX - Diagnostics Channel Capability............. Disabled
Dot11-Phone Mode (7920).......................... Disabled
Wired Protocol................................... None
IPv6 Support..................................... Disabled
Peer-to-Peer Blocking Action..................... Disabled
Radio Policy..................................... All
```

```
DTIM period for 802.11a radio..................... 1
DTIM period for 802.11b radio..................... 1
Radius Servers
   Authentication................................. Global Servers
   Accounting..................................... Global Servers
   Dynamic Interface.............................. Disabled
Local EAP Authentication.......................... Enabled (Profile 'Controller_Local_EAP')
Security

   802.11 Authentication:......................... Open System
   FT Support..................................... Disabled
   Static WEP Keys................................ Disabled
   802.1X......................................... Disabled
   Wi-Fi Protected Access (WPA/WPA2).............. Enabled
      WPA (SSN IE)................................ Enabled
         TKIP Cipher.............................. Disabled
         AES Cipher............................... Enabled
      WPA2 (RSN IE)............................... Enabled
         TKIP Cipher.............................. Disabled
         AES Cipher............................... Enabled
                                                   Auth Key Management
         802.1x................................... Enabled
         PSK...................................... Disabled
         CCKM..................................... Enabled
         FT(802.11r).............................. Disabled
         FT-PSK(802.11r).......................... Disabled
FT Reassociation Timeout.......................... 20
FT Over-The-Air mode.............................. Enabled
FT Over-The-Ds mode............................... Enabled
   CKIP ..........................................  Disabled
   IP Security.................................... Disabled
   IP Security Passthru........................... Disabled
   Web Based Authentication....................... Disabled
   Web-Passthrough................................ Disabled
   Conditional Web Redirect....................... Disabled
   Splash-Page Web Redirect....................... Disabled
   Auto Anchor.................................... Disabled
   FlexConnect Local Switching.................... Enabled
   FlexConnect Local Authentication............... Enabled
   FlexConnect Learn IP Address................... Enabled
   Client MFP..................................... Optional
   Tkip MIC Countermeasure Hold-down Timer........ 60
Call Snooping..................................... Disabled
Roamed Call Re-Anchor Policy...................... Disabled
Band Select....................................... Disabled
Load Balancing.................................... Disabled

 Mobility Anchor List
 WLAN ID     IP Address            Status
 -------     ---------------       ------
```

This example shows how to display a summary of all WLANs:

```
> show wlan summary

Number of WLANs.................................. 2

WLAN ID  WLAN Profile Name / SSID               Status    Interface Name
-------  -----------------------------------  --------  --------------------
1          test / test                        Enabled management
```

This example shows how to display the configuration for support of foreign access points:

```
> show wlan foreignap

Foreign AP support is not enabled.
```

This example shows how to display the AP groups:

```
> show wlan apgroups
Total Number of AP Groups..................... 1

Site Name..................................... APuser
Site Description.............................. <none>
Venue Name.................................... Not configured
Venue Group................................... Unspecified
Venue Type.................................... Unspecified
Language Code................................. Not configured

RF Profile
----------
2.4 GHz band.................................. <none>
5 GHz band.................................... <none>

WLAN ID          Interface          Network Admission Control          Radio Policy
-------          -----------        -------------------------          ------------
 14              int_4                Disabled                          All
```

Related Commands

config wlan
config wlan 7920-support
config wlan acl
config wlan interface
config wlan roamed-voice-client re-anchor
show wlan

Show WPS Commands

Use the **show wps** commands to display Wireless Protection System (WPS) settings.

show wps ap-authentication summary

To display the access point neighbor authentication configuration on the controller, use the **show wps ap-authentication summary** command.

show wps ap-authentication summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of the Wireless Protection System (WPS) access point neighbor authentication:

```
> show wps ap-authentication summary

AP neighbor authentication is <disabled>.

Authentication alarm threshold is 1.
RF-Network Name: <B1>
```

Related Commands

config wps ap-authentication

show wps cids-sensor

To display Intrusion Detection System (IDS) sensor summary information or detailed information on a specified Wireless Protection System (WPS) IDS sensor, use the **show wps cids-sensor** command.

show wps cids-sensor {**summary** | **detail** *index*}

Syntax Description

summary	Displays a summary of sensor settings.
detail	Displays all settings for the selected sensor.
index	IDS sensor identifier.

Command Default

None.

Examples

This example shows how to display all settings for the selected sensor:

```
> show wps cids-sensor detail 1

IP Address..................................... 10.0.0.51
Port........................................... 443
Query Interval................................. 60
Username....................................... Sensor_user1
Cert Fingerprint............................... SHA1: 00:00:00:00:00:00:00:00:
00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
Query State.................................... Disabled
Last Query Result.............................. Unknown
Number of Queries Sent......................... 0
```

Related Commands

config wps cids-sensor

show wps mfp

To display Management Frame Protection (MFP) information, use the **show wps mfp** command.

show wps mfp {**summary** | **statistics**}

Syntax Description

summary	Displays the MFP configuration and status.
statistics	Displays MFP statistics.

Command Default

None.

Examples

This example shows how to display a summary of the MFP configuration and status:

```
> show wps mfp summary

Global Infrastructure MFP state.................. DISABLED (*all infrastructure
settings are overridden)
Controller Time Source Valid..................... False

                                    WLAN       Infra.      Client
WLAN ID  WLAN Name                  Status     Protection  Protection
-------  -------------------------  ---------  ----------  ----------
1        homeap                     Disabled   *Enabled    Optional but inactive
 (WPA2 not configured)
2        7921                       Enabled    *Enabled    Optional but inactive
 (WPA2 not configured)
3        open1                      Enabled    *Enabled    Optional but inactive
 (WPA2 not configured)
4        7920                       Enabled    *Enabled    Optional but inactive
 (WPA2 not configured)

                     Infra.             Operational     --Infra. Capability--
AP Name              Validation  Radio  State           Protection  Validation
-------------------  ----------  -----  --------------  ----------  ----------
AP1252AG-EW          *Enabled    b/g    Down            Full        Full
                                 a      Down            Full        Full
```

This example shows how to display the MFP statistics:

```
> show wps mfp statistics

BSSID             Radio Validator AP         Last Source Addr  Found  Error Type
     Count      Frame Types
----------------- ----- -------------------- ----------------- ------ ----------
---- ---------- -----------
no errors
```

Related Commands

config wps mfp

show wps shun-list

To display the Intrusion Detection System (IDS) sensor shun list, use the **show wps shun-list** command.

show wps shun-list

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the IDS system sensor shun list:

```
> show wps shun-list
```

Related Commands

config wps shun-list re-sync

show wps signature detail

To display installed signatures, use the **show wps signature detail** command.

show wps signature detail *sig-id*

Syntax Description

sig-id	Signature ID of an installed signature.

Command Default

None.

Examples

This example shows how to display information on the attacks detected by standard signature 1:

```
> show wps signature detail 1

Signature-ID..................................... 1
Precedence....................................... 1
Signature Name................................... Bcast deauth
Type............................................. standard
FrameType........................................ management
State............................................ enabled
Action........................................... report
Tracking......................................... per Signature and Mac
Signature Frequency.............................. 500 pkts/interval
Signature Mac Frequency.......................... 300 pkts/interval
Interval......................................... 10 sec
Quiet Time....................................... 300 sec
Description...................................... Broadcast Deauthentication Frame
Patterns:
                0(Header):0x0:0x0
                4(Header):0x0:0x0
```

Related Commands

config wps signature
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 summary
show wps summary

show wps signature events

To display more information about the attacks detected by a particular standard or custom signature, use the **show wps signature events** command.

show wps signature events {**summary** | {**standard** | **custom**} *precedenceID* {**summary** | **detailed**}

Syntax Description

summary	Displays all tracking signature summary information.
standard	Displays Standard Intrusion Detection System (IDS) signature settings.
custom	Displays custom IDS signature settings.
precedenceID	Signature precedence identification value.
detailed	Displays tracking source MAC address details.

Command Default

None.

Examples

This example shows how to display the number of attacks detected by all enabled signatures:

```
> show wps signature events summary

Precedence  Signature Name       Type      # Events
----------  -------------------- --------  --------
1           Bcast deauth         Standard      2
2           NULL probe resp 1    Standard      1
```

This example shows how to display a summary of information on the attacks detected by standard signature 1:

```
> show wps signature events standard 1 summary

Precedence..................................... 1
Signature Name................................. Bcast deauth
Type........................................... Standard
Number of active events........................ 2

Source MAC Addr    Track Method   Frequency # APs Last Heard
-----------------  -------------- --------- ----- ------------------------
00:a0:f8:58:60:dd  Per Signature  50        1     Wed Oct 25 15:03:05 2006
00:a0:f8:58:60:dd  Per Mac        30        1     Wed Oct 25 15:02:53 2006
```

Related Commands

config wps signature
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 summary
show wps summary

show wps signature summary

To see individual summaries of all of the standard and custom signatures installed on the controller, use the **show wps signature summary** command.

show wps signature summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display a summary of all of the standard and custom signatures:

```
> show wps signature summary
Signature-ID..................................... 1
Precedence....................................... 1
Signature Name................................... Bcast deauth
Type............................................. standard
FrameType........................................ management
State............................................ enabled
Action........................................... report
Tracking......................................... per Signature and Mac
Signature Frequency.............................. 50 pkts/interval
Signature Mac Frequency.......................... 30 pkts/interval
Interval......................................... 1 sec
Quiet Time....................................... 300 sec
Description...................................... Broadcast Deauthentication Frame
Patterns:
                0(Header):0x00c0:0x00ff
                4(Header):0x01:0x01
...
```

Related Commands

config wps signature
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 summary

show wps summary

To display Wireless Protection System (WPS) summary information, use the **show wps summary** command.

show wps summary

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display WPS summary information:

```
> show wps summary

Auto-Immune
  Auto-Immune..................................... Disabled

Client Exclusion Policy
  Excessive 802.11-association failures.......... Enabled
  Excessive 802.11-authentication failures....... Enabled
  Excessive 802.1x-authentication................ Enabled
  IP-theft....................................... Enabled
  Excessive Web authentication failure........... Enabled

Trusted AP Policy
  Management Frame Protection.................... Disabled
  Mis-configured AP Action....................... Alarm Only
    Enforced encryption policy................... none
    Enforced preamble policy..................... none
    Enforced radio type policy................... none
    Validate SSID................................ Disabled
  Alert if Trusted AP is missing................. Disabled
  Trusted AP timeout............................. 120

Untrusted AP Policy
  Rogue Location Discovery Protocol.............. Disabled
    RLDP Action.................................. Alarm Only
  Rogue APs
    Rogues AP advertising my SSID................ Alarm Only
    Detect and report Ad-Hoc Networks............ Enabled
  Rogue Clients
    Validate rogue clients against AAA........... Enabled
    Detect trusted clients on rogue APs.......... Alarm Only
  Rogue AP timeout............................... 1300

Signature Policy
  Signature Processing........................... Enabled
...
```

Related Commands

config wps signature
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 wips statistics

To display the current state of the Cisco Wireless Intrusion Prevention System (wIPS) operation on the controller, use the **show wps wips statistics** command.

show wps wips statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to display the statistics of the wIPS operation:

```
> show wps wips statistics

Policy Assignment Requests..... 1
Policy Assignment Responses..... 1
Policy Update Requests..... 0
Policy Update Responses..... 0
Policy Delete Requests..... 0
Policy Delete Responses..... 0
Alarm Updates..... 13572
Device Updates..... 8376
Device Update Requests..... 0
Device Update Responses..... 0
Forensic Updates..... 1001
Invalid WIPS Payloads..... 0
Invalid Messages Received..... 0
NMSP Transmitted Packets..... 22950
NMSP Transmit Packets Dropped..... 0
NMSP Largest Packet..... 1377
```

Related Commands

config 802.11 enable
config ap mode
config ap monitor-mode
show ap config
show ap monitor-mode summary
show wps wips summary

show wps wips summary

To display the adaptive Cisco Wireless Intrusion Prevention System (wIPS) configuration that the Wireless Control System (WCS) forwards to the controller, use the **show wps wips summary** command.

show wps wips summary

Syntax Description This command has no arguments or keywords.

Command Default None.

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

```
> show wps wips summary

Policy Name..................................... Default
Policy Version.................................. 3
```

Related Commands

config 802.11 enable
config ap mode
config ap monitor-mode
show ap config
show ap monitor-mode summary
show wps wips statistics

Configuring Controller Settings

Use the **config** commands to configure Cisco wireless LAN (WLAN) controller options and settings.

Configure 802.11 Network Commands

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

Configure 802.11 Public Safety Commands

Use the **config 802.11-a** commands to configure settings specifically for 4.9-GHz or 5.8-GHz public safety frequencies.

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** commands.

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

Disabled.

Examples

This example shows how to enable the *4.9-GHz* public safety channel on *ap_24* access point:

```
> config 802.11-a49 enable ap_24
```

Related Commands

config 802.11-a antenna extAntGain
config 802.11-a channel ap
config 802.11-a txpower ap
show mesh public-safety

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

Disabled.

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 re-enable the 802.11 Cisco radio.

Examples

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

```
> config 802.11-a49 antenna extAntGain 10 AP1
```

Related Commands

config 802.11-a
config 802.11-a channel ap
config 802.11-a txpower ap
Show 802.11 Commands

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

Disabled.

Examples

This example shows how to set the channel properties:

```
> config 802.11-a49 channel ap
```

Related Commands

config 802.11-a
config 802.11-a antenna extAntGain
config 802.11-a channel ap
config 802.11-a txpower 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. Valid values are 1 through 5, inclusive.

Command Default

Disabled.

Examples

This example shows how to configure an *802.11-a49* transmission power level of *4* for *AP1*:

```
> config 802.11-a49 txpower ap 4 AP1
```

Related Commands

config 802.11-a
config 802.11-a antenna extAntGain
config 802.11-a channel ap
Show 802.11 Commands

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

Enabled.

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.

Examples

This example shows how to enable the 802.11g network:

```
> 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!
```

Related Commands

show sysinfo
show 802.11b
config 802.11b enable
config wlan radio
config 802.11b disable
config 802.11a disable
config 802.11a enable

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 Short.

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.

Examples This example shows how to change the 802.11b preamble to short:

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

Related Commands **show 802.11b**

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 a 802.11h channel switch announcement, use the **config 802.11h channelswitch** command.

config 802.11h channelswitch {**enable** *mode value* | **disable**}

Syntax Description

enable	Enables the 802.11h channel switch announcement.
mode	802.11h channel switch announcement mode.
value	802.11h channel announcement value.
disable	Disables the 802.11h channel switch announcement.

Command Default

None.

Examples

This example shows how to disable the 802.11h switch announcement:

```
> config 802.11h channelswitch disable
```

Related Commands

show 802.11h

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.

Examples This example shows how to configure the 802.11h power constraint to 5:

```
> config 802.11h powerconstraint 5
```

Related Commands **show 802.11h**

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.

Examples This example shows how to configure a new channel using the 802.11h channel:

```
> config 802.11h setchannel ap02
```

Related Commands **show 802.11h**

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.

Examples

This example shows how to enable the 802.11n support on an 802.11a network:

```
> config 802.11a 11nsupport enable
```

Related Commands

config 802.11 11nsupport mcs tx
config 802.11 11nsupport a-mpdu tx priority
config 802.11a disable network
config 802.11a disable
config 802.11a channel ap
config 802.11a txpower ap
config 802.11a chan_width

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

By 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.

Examples

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

```
> config 802.11a 11nsupport a-mpdu tx priority all enable
```

Related Commands

config 802.11 11nsupport mcs tx
config 802.11a disable network
config 802.11a disable
config 802.11a channel ap
config 802.11a txpower ap

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.

Examples

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

```
> config 802.11a 11nsupport a-mpdu tx scheduler timeout rt 100
```

Related Commands

config 802.11 11nsupport mcs tx
config 802.11a disable network
config 802.11a disable
config 802.11a channel ap
config 802.11a txpower ap

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** {**tx** | **rx**} *cisco_ap* {**A** | **B** | **C**} {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
tx	Enables the antenna to transmit.
rx	Enables the antenna to receive.
cisco_ap	Access point.
A	Specifies the right antenna port.
B	Specifies the left antenna port.
C	Specifies the center antenna port.
enable	Enables the configuration.
disable	Disables the configuration.

Command Default

None.

Examples

This example shows how to configure access point AP1 to use the antenna tx to transmit:

```
> config 802.11a 11nsupport antenna tx AP1 C enable
```

Related Commands

config 802.11 11nsupport mcs tx
config 802.11a disable network
config 802.11a disable
config 802.11a channel ap
config 802.11a txpower ap
config 802.11a chan_width

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.

Examples

This example shows how to configure a long guard interval:

```
> config 802.11a 11nsupport guard-interval long
```

Related Commands

config 802.11 11nsupport mcs tx
config 802.11a disable network
config 802.11a disable
config 802.11a channel ap
config 802.11a txpower ap
config 802.11a chan_width

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.

Examples

This example shows how to specify MCS rates:

```
> config 802.11a 11nsupport mcs tx 5 enable
```

Related Commands

config 802.11 11nsupport
config wlan wmm required
config 802.11 11nsupport a-mpdu tx priority

config 802.11a disable network
config 802.11a disable
config 802.11a channel ap
config 802.11a txpower ap
config 802.11a chan_width

config 802.11 11nsupport rifs

To configure the Reduced Interframe Space (RIFS) between data frames and its acknowledgement, 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.

Examples This example shows how to enable RIFS:

```
> config 802.11a 11nsupport rifs enable
```

Related Commands

config 802.11 11nsupport mcs tx
config 802.11a disable network
config 802.11a disable
config 802.11a channel ap
config 802.11a txpower ap
config 802.11a chan_width

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.

Examples

This example shows how to enable antenna diversity for AP01 on an 802.11b network:

```
> config 802.11b antenna diversity enable AP01
```

This 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):

```
> config 802.11a antenna diversity sideA AP01
```

Related Commands

config 802.11 disable
config 802.11 enable
config 802.11 antenna extAntGain
config 802.11 antenna mode
config 802.11 antenna selection
Show 802.11 Commands

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.

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.

Examples

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

```
> config 802.11a antenna extAntGain 1 AP1
```

Related Commands

config 802.11 disable
config 802.11 enable
config 802.11 antenna diversity
config 802.11 antenna mode
config 802.11 antenna selection
Show 802.11 Commands

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.

Examples

This example shows how to configure access point AP01 antennas for a 360-degree omnidirectional pattern on an 802.11b network:

```
> config 802.11b antenna mode omni AP01
```

Related Commands

config 802.11 disable
config 802.11 enable
config 802.11 antenna diversity
config 802.11 antenna extAntGain
config 802.11 antenna selection
Show 802.11 Commands

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.

Examples

This example shows how to configure access point AP02 on an 802.11b network to use the internal antenna:

```
> config 802.11b antenna selection internal AP02
```

Related Commands

config 802.11 disable
config 802.11 enable
config 802.11 antenna diversity
config 802.11 antenna extAntGain
config 802.11 antenna mode
config 802.11 antenna selection
Show 802.11 Commands

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.

Examples

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

```
> config 802.11a 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 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.

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.

Examples

This example shows how to enable beamforming on the 802.11a network:

```
> config 802.11a beamforming global enable
```

Related Commands

show ap config {802.11a | 802.11b}
show 802.11a
config 802.11b beaconperiod
config 802.11a disable
config 802.11a enable

Configure 802.11 CleanAir Commands

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

config 802.11 cleanair

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

config 802.11 cleanair {enable | disable} {*network* | *cisco_ap*}

enable	Enables the CleanAir settings.
disable	Disables the CleanAir settings.
network	5-GHz Cisco APs.
cisco_ap	Name of the access point to which the command applies.

Command Default

Disabled.

Examples

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

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

Related Commands

config 802.11 cleanair device

config 802.11 cleanair device

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

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

Syntax Description

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.
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

Disabled.

Examples

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

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

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

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

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

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

Related Commands

config 802.11 cleanair

config 802.11 cleanair alarm

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

config 802.11 cleanair alarm
{air-quality {disable | enable | threshold *threshold* **}**
device {**disable** [*device_type* | **all**] |
unclassified [enable | disable | threshold *threshold*]
enable [*device_type* | **all**] | **reporting** [**enable** | **disable**]}

Syntax Description

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	Configure the 5-GHz air quality alarm threshold.
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.
unclassified	Configures the 5 GHz air quality alarm on exceeding unclassified category severity.
reporting	Configures the 5-GHz CleanAir interference devices alarm reporting.
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

Enabled.

Examples

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

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

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

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

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

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

Related Commands **config 802.11 cleanair**

Configure 802.11 CAC Commands

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

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

Disabled.

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

Examples

This example shows how to enable the video CAC for the 802.11a network:

```
> config 802.11a cac video acm enable
```

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

```
> config 802.11b 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 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

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 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 wish 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 wish 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.

Examples

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

```
> config 802.11a 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 video roam-bandwidth

To configure the percentage of the maximum allocated bandwidth reserved for roaming video clients on the 802.11a or 802.11b/g network, use the **config 802.11 cac video roam-bandwidth** command.

config 802.11{**a** | **b**} **cac video roam-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

0%.

Usage Guidelines

The controller reserves the specified bandwidth from the maximum allocated bandwidth for roaming video clients.

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

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 wish 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 wish 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.

Examples

This example shows how to specify the percentage of the maximum allocated bandwidth reserved for roaming video clients on the selected radio band:

```
> config 802.11a cac video roam-bandwidth 10
```

Related Commands **config 802.11 cac video acm**
config 802.11 cac video max-bandwidth
config 802.11 cac video tspec-inactivity-timeout

config 802.11 cac video 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 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

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 wish 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 wish 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.

Examples

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

```
> 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:

```
> config 802.11b 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

Disabled.

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 wish 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 wish 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.

Examples

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

```
> config 802.11a cac voice acm enable
```

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

```
> 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

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.

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 wish 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 wish 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.

Examples

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

```
> config 802.11a cac voice max-bandwidth 50
```

Related Commands

config 802.11 cac voice acm
config 802.11 cac voice load-based
config 802.11 cac voice roam-bandwidth
config 802.11 cac voice stream-size
config 802.11 cac voice tspec-inactivity-timeout
config 802.11 exp-bwreq

config 802.11 tsm
config wlan
save config
show wlan
show wlan summary

config 802.11 cac voice roam-bandwidth

To configure the percentage of the 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

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.

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 wish 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 wish 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.

Examples

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

```
> config 802.11a cac voice roam-bandwidth 10
```

Related Commands **config 802.11 cac voice acm**
config 802.11 cac 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

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 wish 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 wish 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.

Examples

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

```
> config 802.11a cac voice tspec-inactivity-timeout enable
```

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

```
> config 802.11b cac voice tspec-inactivity-timeout ignore
```

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 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

Disabled.

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 wish 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 wish 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.

Examples

This example shows how to enable the voice load-based CAC parameters:

```
> config 802.11a cac voice load-based enable
```

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

```
> config 802.11b cac voice load-based disable
```

Related Commands

config 802.11 cac voice acm
config 802.11 cac voice max-bandwidth
config 802.11 cac voice roam-bandwidth
config 802.11 cac voice stream-size
config 802.11 cac voice tspec-inactivity-timeout

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 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

0, which means that there is no maximum limit check for the number of calls.

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 wish 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 wish 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.

Examples

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

```
> config 802.11a cac voice max-calls 10
```

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 bandwidth

Note SIP bandwidth and sample intervals are used to compute per call bandwidth in case of the SIP-based 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

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 wish 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 wish 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.

Examples

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

```
> config 802.11a 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 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

g711.

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 wish 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 wish 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.

Examples

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

```
> config 802.11a cac voice sip codec g729 sample-interval 40
```

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

```
> config 802.11b cac voice sip codec 9711 sample-interval 10
```

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** *number*

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 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 wish 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 wish 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.

Examples

This 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:

```
> config 802.11a 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 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**]} | **ap** {*ap_name* [**global** | *channel*]}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
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.
ap_name	Access point name.
global	Specifies the 802.11a operating channel that is automatically set by RRM and overrides the existing configuration setting.
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.

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.

Examples

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

```
> config 802.11a channel global auto
```

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

```
> config 802.11b channel global once
```

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

```
> config 802.11a channel global off
```

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

```
> config 802.11b channel AP01 global
```

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

```
> config 802.11a channel AP01 36
```

Related Commands

show 802.11a
config 802.11a disable
config 802.11a enable
config 802.11b channel
config country

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.

Examples

This example shows how to enable auto-RF for access point AP01 on an 802.11b network:

```
> config 802.11b channel ap ap01 global
```

Related Commands

show 802.11a
config 802.11b channel
config country

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***}

Syntax Description

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

Command Default

The default channel width is **20**.

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- or 40-MHz mode overrides the globally configured DCA channel width setting (configured by using the config advanced 802.11 channel dca chan-width-11n 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.

Examples

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

```
> config 802.11a chan_width AP01 40
```

Related Commands

config 802.11 11nsupport
config wlan wmm required
config 802.11 11nsupport a-mpdu tx priority
config 802.11a disable network
config 802.11a disable
config 802.11a channel ap

config 802.11b disable
config 802.11b channel ap
config 802.11a txpower ap

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	Specifies the 802.11a network.
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

Note 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.

Examples

This example shows how to disable the entire 802.11a network:

```
> config 802.11a disable network
```

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

```
> config 802.11b disable AP01
```

Related Commands

show sysinfo
show 802.11a
config 802.11a enable
config 802.11b disable
config 802.11b enable
config 802.11a beaconperiod

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

Enabled.

Examples

This example shows how to disable DTPC for an 802.11a network:

```
> config 802.11a dtpc disable
```

Related Commands

show 802.11a
config 802.11a beaconperiod
config 802.11a disable
config 802.11a enable

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	Specifies the 802.11a network.
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

Note Use this command in conjunction 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.

Examples

This example shows how to enable radio transmission for the entire 802.11a network:

```
> config 802.11a enable network
```

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

```
> 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.

Examples

This example shows how to enable the CCX expedited bandwidth settings:

```
> config 802.11a exp-bwreq enable

Cannot change Exp Bw Req mode while 802.11a network is operational.
```

This example shows how to disable the CCX expedited bandwidth settings:

```
> 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.

Examples

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

```
> 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 values.
custom	Configures custom Layer 2 client roaming RF parameters.
min_rssi	Minimum received signal strength indicator (RSSI) that is required for the client to associate to the access point. If the client's average received signal power dips below this threshold, reliable communication is usually impossible. Clients must already have found and roamed to another access point with a stronger signal before the minimum RSSI value is reached. The valid range is –80 to –90 dBm, and the default value is –85 dBm.
roam_hyst	How much greater the signal strength of a neighboring access point must be in order for the client to roam to it. This parameter is intended to reduce the amount of roaming between access points if the client is physically located on or near the border between the two access points. The valid range is 2 to 4 dB, and the default value is 2 dB.
scan_thresh	Minimum RSSI that is allowed before the client should roam to a better access point. When the RSSI drops below the specified value, the client must be able to roam to a better access point within the specified transition time. This parameter also provides a power-save method to minimize the time that the client spends in active or passive scanning. For example, the client can scan slowly when the RSSI is above the threshold and scan more rapidly when the RSSI is below the threshold. The valid range is –70 to –77 dBm, and the default value is –72 dBm.
trans_time	Maximum time allowed for the client to detect a suitable neighboring access point to roam to and to complete the roam, whenever the RSSI from the client's associated access point is below the scan threshold. The valid range is 1 to 10 seconds, and the default value is 5 seconds. **Note** For high-speed client roaming applications in outdoor mesh environments, we recommend that you set the transition time to 1 second.

Command Default

min_rssi	–85
roam_hyst	2
scan_thresh	–72
trans_time	5

Usage Guidelines

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

Examples

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

```
> config 802.11a l2roam rf-params custom -80 2 -70 7
```

Related Commands

show advanced 802.11 logging
show lag eth-port-hash

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. The valid range is 1 to 200.

Command Default

None.

Examples

This example shows how to set the maximum number of clients at 22:

```
> config 802.11b max-clients 22
```

Related Commands

show ap config 802.11a
config 802.11b rate

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.

Examples

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

```
> 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

Disabled.

Examples

This example shows how to enable the video TSM option for the 802.11b/g network:

```
> config 802.11a tsm enable
```

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

```
> 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** [**auto** | **once** | *power_level*]}
config 802.11{**a** | **b**} **txPower** {**ap** *ap_name* [**global** | *power_level*]}

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.

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.

Examples

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

```
> config 802.11a txPower global auto
```

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

```
> config 802.11b txPower global 5
```

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

```
> config 802.11b txPower AP1 global
```

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

```
> config 802.11a txPower AP1 2
```

Related Commands **show ap config 802.11a**
config 802.11b txPower
config country

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_type*]

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.

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.

Examples

This example shows how to configure the AAA authentication search order for controller management users by the authentication server type local:

```
> config aaa auth mgmt 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.

Examples This example shows how to configure the order of authentication for the RADIUS server:

```
> config aaa auth mgmt radius
```

This example shows how to configure the order of authentication for the TACACS server:

```
> config aaa auth mgmt tacacs
```

Related Commands **show aaa auth order**

Config ACL Commands

Use the **config acl** commands to configure the system access control lists.

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.

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.

Examples This example shows how to apply an ACL to the data path:

```
> config acl apply acl01
```

Related Commands **show acl**

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 **config acl counter stop**

Usage Guidelines ACL counters are available only on the following controllers: 4400 series, Cisco WiSM, and Catalyst 3750G Integrated Wireless LAN Controller Switch.

Examples This example shows how to enable ACL counters on your controller:

```
> config acl counter start
```

Related Commands **clear acl counters**

show acl detailed

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.

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.

Examples This example shows how to create a new ACL:

```
> config acl create acl01
```

Related Commands **show acl**

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.

Usage Guidelines

This command allows you to control the type of packets reaching the CPU.

Examples

This example shows how to create an ACL named acl101 on the CPU and apply it to wired traffic:

```
> config acl cpu acl01 wired
```

Related Commands

show acl cpu

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.

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.

Examples This example shows how to delete an ACL named acl101 on the CPU:

```
> 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.
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	Swap's two rules' indices.

Command Default None.

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.

Examples This example shows how to configure an ACL to permit access:

```
> config acl rule action lab1 4 permit
```

Related Commands **show acl**

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**} **802.11b 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.

Examples

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

```
> config advanced 802.11b 7920VSIEConfig call-admission-limit 4
```

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.

Examples

This example shows how to enable the fastpath packet capture:

```
> config advanced fastpath pkt-capture enable
```

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.

Examples This example shows how to enable the fastpath fast cache control:

```
> config advanced fastpath fastcache enable
```

Configure Advanced 802.11 Channel Commands

Use the **config advanced 802.11 channel** commands to configure Dynamic Channel Assignment (DCA) settings on supported 802.11 networks.

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 | delete}** *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.
delete	Deletes a channel from 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.

Examples

This example shows how to add a channel to the 802.11a network auto RF channel list:

```
> config advanced 802.11a channel add 132
```

This example shows how to delete a channel from the 802.11a network auto RF channel list:

```
> config advanced 802.11a channel delete 136
```

Related Commands

show advanced 802.11a channel
config advanced 802.11b channel update

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 [1-99]] | }

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	(Optional) Specifies custom sensitivity.
threshold	Specifies the EDRRM AQ threshold value.
1-99	(Optional) Specifes the number of custom threshold.

Command Default

None.

Examples

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

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

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

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

Related Commands

show advanced 802.11a channel
config advanced 802.11b channel update

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]}**

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

Command Default

None.

Examples

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

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

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

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

Related Commands

show advanced 802.11a channel

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.

Examples

This example shows how to configure the time of delay when the dynamic channel assignment algorithm starts:

```
> config advanced 802.11a channel dca anchor-time 17
```

Related Commands

config advanced 802.11 channel dca interval
config advanced 802.11 channel dca sensitivity
show advanced 802.11 channel

config advanced 802.11 channel dca chan-width-11n

To configures 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**}

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.

Command Default

The channel width is **20**.

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 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.

Examples

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

```
> config advanced 802.11a channel dca chan-width-11n 40
```

Related Commands

config 802.11 chan_width
config advanced 802.11 channel dca interval
config advanced 802.11 channel dca sensitivity
show advanced 802.11 channel

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

0 (10 minutes).

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.

Examples

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

```
> config advanced 802.11a channel dca interval 8
```

Related Commands

config advanced 802.11 channel dca anchor-time
config advanced 802.11 channel dca sensitivity
show advanced 802.11 channel

config advanced 802.11 channel dca min-metric

To configure the minimum5 GHz RSSI energy metric for DCA, use the **config advanced 802.11 channel dca min-metric** command.

config advanced 802.11{**a** | **b**} **channel dca min-metric** *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

–95 dBm.

Examples

This example shows how to configure the minimum 5 GHz RSSI energy metric for DCA:

```
> 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 channel dca anchor-time
config advanced 802.11 channel dca sensitivity
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 dca sensitivity** {**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.

Usage Guidelines

The DCA sensitivity thresholds vary by radio band as shown in Table 2-3.

To aid in troubleshooting, the output of this command shows an error code for any failed calls. Table 2-1 explains the possible error codes for failed calls.

Table 2-3 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

Examples

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

```
> config advanced 802.11a channel dca sensitivity low
```

Related Commands

config advanced 802.11 channel dca anchor-time
config advanced 802.11 channel dca interval
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

Enabled.

Examples

This example shows how to have RRM consider foreign 802.11a interference when making channel selection updates for all 802.11a Cisco lightweight access points:

```
> 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

Disabled.

Examples

This example shows how to have RRM consider the traffic load when making channel selection updates for all 802.11a Cisco lightweight access points:

```
> config advanced 802.11a 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

Disabled.

Examples

This example shows how to have RRM consider non-802.11a noise when making channel selection updates for all 802.11a Cisco lightweight access points:

```
> config advanced 802.11a 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-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

Disabled.

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.

Examples

This example shows how to enable the 802.11a dca list option for outdoor access point:

```
> 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 propogation of persistent devices, use the **config advanced 802.11 channel pda-prop** command.

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

Syntax Description

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

Command Default

Disabled.

Examples

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

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

config advanced 802.11 channel update

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

config advanced 802.11{a | b} channel update

Syntax Description

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

Command Default None.

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

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

Related Commands
show advanced 802.11a channel
config advanced 802.11b channel update

Configure Advanced 802.11 Coverage Commands

Use the **config advanced 802.11 coverage** commands to configure coverage hole detection settings on supported 802.11 networks.

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

Enabled.

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.

Examples

This example shows how to enable coverage hole detection on 802.11a network:

```
> 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
show 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

25%.

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.

Examples

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

```
> config advanced 802.11a coverage exception global 50
```

Related Commands

config advanced 802.11 coverage
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
show advanced 802.11 coverage

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

20.

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.

Examples

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

```
> config advanced 802.11a coverage data fail-rate 80
```

Related Commands

config advanced 802.11 coverage
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
show 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

3.

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.

Examples

This 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:

```
> config advanced 802.11a coverage level global 60
```

Related Commands

config advanced 802.11 coverage
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
show 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

10.

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.

Examples

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

```
> config advanced 802.11a coverage data packet-count 100
```

Related Commands

config advanced 802.11 coverage
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
show 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

- Data packets: –80 dBm.
- Voice packets: –75 dBm.

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.

Examples

This 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:

```
> config advanced 802.11a coverage data rssi-threshold -60
```

Related Commands

config advanced 802.11 coverage
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
show advanced 802.11 coverage

config advanced 802.11 edca-parameters

To enable a specific enhanced distributed channel access (EDCA) profile on the 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}

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 when 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 when voice services other than Spectralink are deployed on your network.
optimized-video-voice	Enables EDCA voice- 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 (ACM) 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.

Command Default

wmm-default

Examples

This example shows how to enable Spectralink voice priority parameters:

```
> config advanced 802.11a edca-parameters svp-voice
```

Related Commands

show 802.11a

config advanced 802.11b edca-parameters

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.

Examples This example shows how to return all the 802.11a advanced settings to their factory defaults:

```
> 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 Descriptiono

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.

Examples

This example shows how to add a controller in the the 802.11a automatic RF group:

```
> 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 group-mode

To set the 802.11a automatic RF group selection mode on or off, use the **config advanced 802.11 group-mode** command.

config advanced 802.11{**a** | **b**} **group-mode** {**auto** | **leader** | **off** | **restart**}

Syntax Descriptiono

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
auto	Sets the 802.11a RF group selection to automatic update mode.
leader	Sets the 802.11a RF group selection to static mode, and sets this controller as the group leader.
off	Sets the 802.11a RF group selection to off.
restart	Restarts the 802.11a RF group selection.

Command Default

Auto.

Examples

This example shows how to turn the 802.11a automatic RF group selection mode on:

```
> config advanced 802.11a group-mode auto
```

This example shows how to turn the 802.11a automatic RF group selection mode off:

```
> config advanced 802.11a group-mode off
```

Related Commands

show advanced 802.11a group

config advanced 802.11 group-member

Configure Advanced 802.11 Logging Commands

Use the **config advanced 802.11 logging** commands to configure report log settings on supported 802.11 networks.

- config advanced 802.11 logging channel, page 2-403
- config advanced 802.11 logging coverage, page 2-404
- config advanced 802.11 logging foreign, page 2-405
- config advanced 802.11 logging load, page 2-406
- config advanced 802.11 logging noise, page 2-407
- config advanced 802.11 logging performance, page 2-408
- config advanced 802.11 logging txpower, page 2-409

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

Off (disabled).

Examples

This example shows how to turn the 802.11a logging channel selection mode on:

```
> 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

Off (disabled).

Examples

This example shows how to turn the 802.11a coverage profile violation logging selection mode on:

```
> 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

Off (disabled).

Examples

This example shows how to turn the 802.11a foreign interference profile violation logging selection mode on:

```
> 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

Off (disabled).

Examples

This example shows how to turn the 802.11a load profile logging mode on:

```
> config advanced 802.11a 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

Off (disabled).

Examples

This example shows how to turn the 802.11a noise profile logging mode on:

```
> 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

Off (disabled).

Examples

This example shows how to turn the 802.11a performance profile logging mode on:

```
> 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

Off (disabled).

Examples

This example shows how to turn the 802.11a transmit power change mode on:

```
> config advanced 802.11a logging txpower off
```

Related Commands

show advanced 802.11 logging

config advanced 802.11b logging power

Configure Advanced 802.11 Monitor Commands

Use the **config advanced 802.11 monitor** commands to configure monitor settings on supported 802.11 networks.

- config advanced 802.11 monitor channel-list, page 2-410
- config advanced 802.11 monitor coverage, page 2-411
- config advanced 802.11 monitor load, page 2-412
- config advanced 802.11 monitor mode, page 2-413
- config advanced 802.11 monitor ndp-type, page 2-414
- config advanced 802.11 monitor noise, page 2-415
- config advanced 802.11 monitor signal, page 2-416

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

country.

Examples

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

```
> config advanced 802.11a 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

180 seconds.

Examples

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

```
> config advanced 802.11a 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

60 seconds.

Examples

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

```
> config advanced 802.11a monitor load 60
```

Related Commands

show advanced 802.11a monitor

config advanced 802.11b monitor load

config advanced 802.11 monitor mode

To enable or disable 802.11a access point monitoring, use the **config advanced 802.11 monitor mode** command.

config advanced 802.11{**a** | **b**} **monitor mode** {**enable** | **disable**}

Syntax Description

a	Specifies the 802.11a network.
b	Specifies the 802.11b/g network.
enable	Enables the 802.11 access point monitoring.
disable	Disables the 802.11 access point monitoring.

Command Default

Enabled.

Examples

This example shows how to enable the 802.11a access point monitoring:

```
> config advanced 802.11a monitor mode enable
```

Related Commands

show advanced 802.11a monitor

config advanced 802.11b monitor mode

config advanced 802.11 monitor ndp-type

To configure 802.11 access point radio resource management neighbor discovery protocol type, use the **following** 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 neighbor discovery protocol.
transparent	Specifies the Tx RRM transparent neighbor discovery protocol.

Command Default

None.

Usage Guidelines

Before you configure the 802.11 access point RRM neighbor discovery protocol type, ensure that you have disabled the network by entering the **config 802.11 disable network** command.

Examples

This example shows how to enable the 802.11a access point RRM neighbor discovery protocol type as protected:

```
> config advanced 802.11a monitor ndp-type protected
```

Related Commands

show advanced 802.11 monitor
config advanced 802.11 monitor mode
config 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

180 seconds.

Examples

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

```
> config advanced 802.11a 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

60 seconds.

Examples

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

```
> config advanced 802.11a monitor signal 120
```

Related Commands

show advanced 802.11a monitor
config advanced 802.11b monitor signal

Configure Advanced 802.11 Profile Commands

Use the **config advanced 802.11 profile** commands to configure Cisco lightweight access point profile settings on supported 802.11 networks.

- config advanced 802.11 profile clients, page 2-418
- config advanced 802.11 profile customize, page 2-419
- config advanced 802.11 profile foreign, page 2-420
- config advanced 802.11 profile noise, page 2-421
- config advanced 802.11 profile throughput, page 2-422
- config advanced 802.11 profile utilization, page 2-423
- config advanced 802.11 receiver, page 2-424
- config advanced 802.11 tpc-version, page 2-425
- config advanced 802.11 tpcv2-intense, page 2-427
- config advanced 802.11 tpcv2-per-chan, page 2-428
- config advanced 802.11 tpcv2-thresh, page 2-429
- config advanced 802.11 txpower-update, page 2-430
- config advanced backup-controller primary, page 2-431
- config advanced backup-controller secondary, page 2-432

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

12 clients.

Examples

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

```
> config advanced 802.11a profile clients global 25

Global client count profile set.
```

This example shows how to set the AP1 clients threshold to 75 clients:

```
> config advanced 802.11a profile clients AP1 75

Global client count profile set.
```

Related Commands

show advanced 802.11a profile

config advanced 802.11b profile clients

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 network.
b	Specifies the 802.11b/g 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

Off.

Examples

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

```
> config advanced 802.11 profile customize AP1 on
```

Related Commands

show advanced 802.11 profile

config advanced 802.11b profile customize

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

10.

Examples

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

```
> config advanced 802.11a profile foreign global 50
```

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

```
> config advanced 802.11a profile foreign AP1 0
```

Related Commands

show advanced 802.11a profile

config advanced 802.11b profile foreign

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 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.
dBm	802.11a foreign noise threshold between –127 and 0 dBm.

Command Default

–70 dBm.

Examples

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

```
> config advanced 802.11 profile noise global -127
```

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

```
> config advanced 802.11 profile noise AP1 0
```

Related Commands

show advanced 802.11 profile

config advanced 802.11b profile noise

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

1,000,000 bytes per second.

Examples

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

```
> config advanced 802.11a profile throughput global 1000
```

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

```
> config advanced 802.11a profile throughput AP1 10000000
```

Related Commands

show advanced 802.11 profile

config advanced 802.11b profile data-rate

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	Specifies Cisco lightweight access point name.
percent	802.11a RF utilization threshold between 0 and 100 percent.

Command Default

80 percent.

Examples

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

```
> config advanced 802.11a profile utilization global 0
```

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

```
> config advanced 802.11a profile utilization AP1 100
```

Related Commands

show advanced 802.11a profile

config advanced 802.11b profile utilization

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
config advanced 802.11{a | b} receiver 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.
rxstartjumpThreshold	Specifies the receiver start signal.
value	Jump threshold configuration value between 0 and 127.

Command Default

None.

Examples

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

```
> config advanced802.11a receiver default
```

Related Commands

config advanced 802.11b receiver

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.

Examples

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

```
> 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.

Examples

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

```
> config advanced 802.11a tpcv1-thresh -60
```

Related Commands

config advanced 802.11 tpc-version
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.

Examples

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

```
> config advanced 802.11a tpcv2-intense 50
```

Related Commands

config advanced 802.11 tpc-version
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.

Examples

This example shows how to enable TPC version 2 on a per-channel basis for the 802.11a radio:

```
> config advanced 802.11a tpcv2-per-chan enable
```

Related Commands

config advanced 802.11 tpc-version
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.

Examples

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

```
> config advanced 802.11a tpcv2-thresh -60
```

Related Commands

config advanced 802.11 tpc-version
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.

Examples

This example shows how to initiate updates of 802.11a transmit power for an 802.11a access point:

```
> config advanced 802.11a txpower-update
```

Related Commands

config advance 802.11b txpower-update

config advanced backup-controller primary

To configure a primary backup controller for a specific controller, use the **config advanced backup-controller primary** command.

config advanced backup-controller primary *backup_controller_name backup_controller_ip_address*

Syntax Description

backup_controller_name	Name of the backup controller.
backup_controller_ip_address	IP address of the backup controller.

Command Default None.

Usage Guidelines To delete a primary backup controller entry, enter 0.0.0.0 for the controller IP address.

Examples This example shows how to configure the primary backup controller:

```
> config advanced backup-controller primary Controller_1 10.10.10.10
```

Related Commands **show advanced backup-controller**

config advanced backup-controller secondary

To configure a secondary backup controller for a specific controller, use the **config advanced backup-controller secondary** command.

config advanced backup-controller secondary *backup_controller_name backup_controller_ip_address*

Syntax Description

backup_controller_name	Name of the backup controller.
backup_controller_ip_address	IP address of the backup controller.

Command Default

None.

Usage Guidelines

To delete a secondary backup controller entry, enter 0.0.0.0 for the controller IP address.

Examples

This example shows how to configure a secondary backup controller:

```
> config advanced backup-controller secondary Controller_1 10.10.10.10
```

Related Commands

show advanced backup-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 0 excessive retries (disabled).

Usage Guidelines This command is supported only for the1000/1510 series access points.

Examples This example shows how to set the client handoff to 100 excessive retries:

```
> config advanced client-handoff 100
```

Related Commands **show advanced client-handoff**

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 this command.
disable	Disables this command.

Command Default

Disabled.

Examples

This example shows how to enable over-the-air frame padding:

```
> 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 in milliseconds*] | **disable**}

Syntax Description

enable	Enable this feature.
disable	Disables this feature.
number of associations per interval	(Optional) Number of association request per access point slot in a given interval. The valid range is 1 to 100.
interval in milliseconds	(Optional) Association request limit interval. The valid range is 100 to 10000.

Command Default

Disabled.

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.

Examples

This 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:

```
> 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 [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***]**

Syntax Description

eapol-key-timeout *timeout*	(Optional) 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*	(Optional) 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*	(Optional) 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	(Optional) 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*	(Optional) index—Specifies the key index (0 or 3) used for dynamic wired equivalent privacy (WEP).
max-login-ignore-identity-response	(Optional) Specifies that the maximum EAP identity response login count for a user is ignored. When enabled, this command limits the number of devices that can be connected to the controller with the 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	(Optional) 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.

Command Default

Default for **eapol-key-timeout**: 1 second.

Default for **eapol-key-retries**: 2 retries.

Examples

This example shows how to configure the key index used for dynamic wired equivalent privacy (WEP):

```
> config advanced eap key-index 0
```

Related Commands

show advanced eap

config advanced max-1x-session

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	Specifies the 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.

Examples This example shows how to configure the maximum number of simultaneous 802.1X sessions:

```
> config advanced max-1x-sessions 200
```

config advanced rate

To enable or disable 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.

Examples

This example shows how to enable switch control path rate limiting:

```
> 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.

Examples

This example shows how to add a new preferred call for index 2:

```
> 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 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

Enabled.

Examples

This example shows how to disable the switch port statistics collection settings:

```
> config advanced statistics disable
```

Related Commands

show advanced statistics

show stats port

show stats switch

config advanced probe filter

To enable or disable the filtering of probe requests forwarded from an access point to the controller, use the **config advanced probe filter** command.

config advanced probe filter {**enable** | **disable**}

Syntax Description

enable	Enables the filtering of probe requests.
disable	Disables the filtering of probe requests.

Command Default

None.

Examples

This example shows how to enable the filtering of probe requests forwarded from an access point to the controller:

```
> config advanced probe filter enable
```

Related Commands

config advanced probe limit
config radius acct ipsec authentication
show advanced probe
show radius acct statistics

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 *num_probes* is 2 probe requests.
The default *interval* is 500 milliseconds.

Examples

This example shows how to set the number of probes per access point per client to 5 and the probe interval to 800 milliseconds:

```
> config advanced probe limit 5 800
```

Related Commands

config advanced probe filter
config radius acct ipsec authentication
show advanced probe

Configure Advanced Timers Commands

User the **advanced timers** commands to configure advanced 802.11a settings.

config advanced timers ap-discovery-timeout

To configure the Cisco lightweight access point discovery time-out, use the **config advanced timers ap-discovery-timeout** command.

config advanced timers ap-discovery-timeout *seconds*

Syntax Description

seconds	Cisco lightweight access point discovery timeout value between 1 and 10 seconds.

Command Default

10 seconds.

Usage Guidelines

The Cisco lightweight access point discovery timeout is how often a Cisco wireless LAN controller attempts to discover unconnected Cisco lightweight access points.

Examples

This example shows how to configure an access point discovery-timeout with the timeout value of 20:

```
> config advanced timers ap-discovery-timeout 20
```

Related Commands

show advanced timers
config advanced timers ap-fast-heartbeat
config advanced timers ap-heartbeat-timeout
config advanced timers ap-primary-discovery-timeout
config advanced timers auth-timeout

config advanced timers ap-fast-heartbeat

To enable or disable 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

Disabled.

Examples

This example shows how to enable the fast heartbeat interval for access point in local mode:

```
> config advanced timers ap-fast-heartbeat local enable 5
```

This example shows how to enable the fast heartbeat interval for access point in FlexConnect mode:

```
> config advanced timers ap-fast-heartbeat flexconnect enable 8
```

This example shows how to enable the fast heartbeat interval for all access points:

```
> config advanced timers ap-fast-heartbeat all enable 6
```

This example shows how to disable the fast heartbeat interval for all access point:

```
> config advanced timers ap-fast-heartbeat all disable
```

Related Commands

show advanced timers
config advanced timers ap-discovery-timeout
config advanced timers ap-heartbeat-timeout
config advanced timers ap-primary-discovery-timeout
config advanced timers auth-timeout

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

30 seconds.

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.

Examples

This example shows how to configure an access point heartbeat timeout to 20:

```
> config advanced timers ap-heartbeat-timeout 20
```

Related Commands

show advanced timers
config advanced timers ap-discovery-timeout
config advanced timers ap-fast-heartbeat
config advanced timers ap-primary-discovery-timeout
config advanced timers auth-timeout

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

120 seconds.

Examples

This example shows how to configure the access point primary discovery request timer to 1200 seconds:

```
> config advanced timers ap-primary-discovery-timeout 1200
```

Related Commands

show advanced timers
config advanced timers ap-discovery-timeout
config advanced timers ap-fast-heartbeat
config advanced timers ap-heartbeat-timeout
config advanced timers auth-timeout

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

10 seconds.

Examples

This example shows how to configure the authentication timeout to 20 seconds:

```
> config advanced timers auth-timeout 20
```

Related Commands

show advanced timers
config advanced timers ap-fast-heartbeat
config advanced timers ap-discovery-timeout
config advanced timers ap-heartbeat-timeout
config advanced timers ap-primary-discovery-timeout

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.

Examples This example shows how to configure the EAP expiration timeout to 10 seconds:

```
> config advanced timers eap-timeout 10
```

Related Commands **show advanced timers**

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.

Examples This example shows how to configure the advanced EAP identity request delay to 8 seconds:

```
> config advanced timers eap-identity-request-delay 8
```

Related Commands
config advanced timers auth-timeout
config advanced timers rogue-ap
show advanced timers

Configure Access Point Commands

Use the **config ap** commands to configure access point settings.

config ap

To enable or disable 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.

Examples

This example shows how to disable lightweight access point AP1:

```
> config ap disable AP1
```

This 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:

```
> config ap add 12:12:12:12:12:12 2033 enable 192.12.12.1
```

Related Commands

Configure Access Point Commands
Show Access Point Commands

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

Auto.

Usage Guidelines

In previous software releases, the default value for bridge data rate was 24000 (24 Mbps). In controller software release 6.0, the default value for bridge data rate is **auto**. If you configured the default bridge data rate value (24000) in a previous controller software release, the bridge data rate is configured with the new default value (auto) when you upgrade to controller software release 6.0. However, if you configured a non default value (for example, 18000) in a previous controller 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).

Examples

This example shows how to configure the Cisco bridge backhaul Tx rate to 54000 kbps:

```
> config ap bhrate 54000 AP01
```

Related Commands

config ap

config ap autoconvert

To automatically convert all access points to a FlexConnect mode or monitor mode upon joining the controller, use the **confip ap autoconvert** command:

config ap autoconvert {**flexconnect** | **monitor** | **disable**}

Syntax Description

flexconnect	Configures all the APs automatically to FlexConnect mode.
monitor	Configures all the APs automatically to monitor mode.
disable	Disables the autoconvert option on the APs.

Command Default

None.

Usage Guidelines

When access points in local mode connect to a Cisco 7500 Series 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 Controller, the access points must be in FlexConnect mode or monitor mode.

Examples

This example shows how to automatically convert all APs to the FlexConnect mode:

```
> config ap autoconvert flexconnect
```

This example shows how to disable the autoconvert option on the APs:

```
> config ap autoconvert disable
```

Related Commands

Configure Access Point Commands
Show Access Point Commands

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

Auto.

Usage Guidelines

In previous software releases, the default value for bridge data rate was 24000 (24 Mbps). In controller software release 6.0, the default value for bridge data rate is **auto**. If you configured the default bridge data rate value (24000) in a previous controller software release, the bridge data rate is configured with the new default value (auto) when you upgrade to controller software release 6.0. However, if you configured a non default value (for example, 18000) in a previous controller 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).

Examples

This example shows how to configure the Cisco bridge backhaul Tx rate to 54000 kbps:

```
> config ap bhrate 54000 AP01
```

Related Commands

config ap

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**} *cisco_ap*

Syntax Description

set	Sets a Cisco lightweight access point's bridge group name.
groupname	Specifies the Bridge group name.
delete	Deletes a Cisco lightweight access point's bridge group name.
cisco_ap	Name of a Cisco lightweight access point.

Command Default

None.

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.

Examples

This example shows how to delete a bridge group name on Cisco access point's bridge group name AP02:

```
> 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)
```

Related Commands

config ap

config ap bridging

To enable or disable 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.

Examples

This example shows how to enable bridging on an access point:

```
> config ap bridging enable nyc04-44-1240
```

This example shows hot to disable bridging on an access point:

```
> config ap bridging disable nyc04-44-1240
```

Related Commands

config ap

config ap cdp

To enable or disable 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 name ‘all’, then the ‘all access points’ case takes precedence over the AP that is named ‘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.

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.

Examples

This example shows how to enable CDP on all access points:

```
> config ap cdp enable all
```

This example shows how to disable CDP on ap02 access point:

```
> config ap cdp disable ap02
```

This example shows how to enable CDP for Ethernet interface number 2 on all access points:

```
> config ap cdp interface ethernet 2 enable all
```

Related Commands

config cdp timer
show ap cdp

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.

Usage Guidelines

The access point must be able to reach the TFTP server.

Examples

This example shows how to configure and compress the core dump file:

```
> config ap core-dump enable 192.1.1.1 log compress AP02
```

Related Commands

config ap crash-file clear-all
config ap crash-file delete
config ap crash-file get-crash-file
config ap crash-file get-radio-core-dump
config ap port

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.

Examples

This example shows how to delete all crash files:

```
> config ap crash-file clear-all
```

Related Commands

config ap core-dump
config ap crash-file delete
config ap crash-file get-crash-file
config ap crash-file get-radio-core-dump
config ap port

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.

Examples

This example shows how to delete crash file 1:

```
> config ap crash-file delete crash-file-1
```

Related Commands

config ap core-dump
config ap crash-file clear-all
config ap crash-file get-crash-file
config ap crash-file get-radio-core-dump
config ap port

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.

Usage Guidelines Use the transfer upload datatype command to transfer the collected data to the Cisco wireless LAN controller.

Examples This example shows how to collect the latest crash data for access point AP3:

```
> config ap crash-file get-crash-file AP3
```

Related Commands

config ap core-dump
config ap crash-file clear-all
config ap crash-file delete
config ap crash-file get-radio-core-dump
config ap port

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.

Examples

This example shows how to collect the radio core dump for access point AP02 and slot 0:

```
> config ap crash-file get-radio-core-dump 0 AP02
```

Related Commands

config ap core-dump
config ap crash-file clear-all
config ap crash-file delete
config ap crash-file get-crash-file
config ap port

config ap dot1xuser

To configure the global authentication username and password for all access points currently joined to the controller as well as any access points that join the controller in the future, use the **config ap dot1xuser** command**.**

config ap dot1xuser add username *user* **password** *password* {**all** | *cisco_ap*}

Syntax Description

add username	Specifies to add a username.
user	Username.
password	Specifies to add a password.
password	Password.
cisco_ap	Specific access point.
all	Specifies all access points.

Command Default

None.

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.

Examples

This example shows how to configure the global authentication username and password for all access points:

```
> config ap dot1xuser add username cisco123 password cisco2020 all
```

Related Commands

config ap dot1xuser delete
config ap dot1xuser disable
show ap summary

config ap dot1xuser delete

To force a specific access point to use the controller's global authentication settings, use the **config ap dot1xuser delete** command.

config ap dot1xuser delete *cisco_ap*

Syntax Description

cisco_ap	Access point.

Command Default

None.

Examples

This example shows how to delete access point AP01 to use the controller's global authentication settings:

```
> config ap dot1xuser delete AP01
```

Related Commands

config ap dot1xuser
config ap dot1xuser disable
show ap summary

config ap dot1xuser disable

To disable authentication for all access points or for a specific access point, use the **config ap dot1xuser disable** command.

config ap dot1xuser disable {**all** | *cisco_ap*}

Syntax Description

disable	Disables authentication.
all	Specifies all access points.
cisco_ap	Access point.

Command Default

None.

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.

Examples

This example shows how to disable the authentication for access point cisco_ap1:

```
> config ap dot1user disable cisco_ap1
```

Related Commands

config ap dot1xuser
config ap dot1xuser delete
show ap summary

config ap ethernet

To configure the duplex and speed settings on the wireless LAN and the lightweight access points, use the **config ap ethernet** command.

config ap ethernet duplex [auto | half | full] speed [auto | 10 | 100 | 1000] {all | *cisco_ap***}**

Syntax Description

duplex	Specifies the Ethernet port duplex settings.
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

Examples

This example shows how to configure the Ethernet port duplex half settings 10 Mbps for all access points:

```
> config ap ethernet duplex half speed 10 all
```

Related Commands

config ap
show ap summary

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.

Usage Guidelines

The Cisco lightweight access point must be disabled before changing this parameter.

Examples

This example shows how to configure a descriptive name for access point AP01:

```
> config ap group-name superusers AP01
```

Related Commands

config ap group-name
config wlan apgroup
show ap summary
show ap wlan

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 access point.
ip_address	Name of the Cisco lightweight access point.
auth_port secret	Name of the port.

Command Default

None.

Examples

This example shows how to configure a primary RADIUS server for a specific access point:

```
> config ap flexconnect radius auth set primary 192.12.12.1
```

Related Commands

config ap mode flexconnect
config ap flexconnect vlan wlan
config ap flexconnect vlan
config ap flexconnect vlan native

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.

Examples

This example shows how to enable the access point's VLAN tagging for a FlexConnect access:

```
> config ap flexconnect vlan enable AP02
```

Related Commands

config ap mode flexconnect

config ap flexconnect radius auth set

config ap flexconnect vlan wlan

config ap flexconnect vlan native

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.

Examples

This example shows how to configure the FlexConnect access point:

> **config ap flexconnect vlan add 21 acl** *in_acl out_acl ap_1*

Related Commands

config ap mode flexconnect

config ap flexconnect radius auth set

config ap flexconnect vlan wlan

config ap flexconnect vlan native

config ap flexconnect vlan native

To configure a native VLAN for a FlexConnect access, 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.

Examples

This example shows how to configure a native VLAN for a FlexConnect access point mode:

```
> config ap flexconnect vlan native 6 AP02
```

Related Commands

config ap mode flexconnect

config ap flexconnect radius auth set

config ap flexconnect vlan wlan

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 *ip_address vlan-id cisco_ap*

Syntax Description

ip_address	Name of the Cisco lightweight access point.
vlan-id	VLAN identifier.
cisco_ap	Name of the Cisco lightweight access point.

Command Default

VLAN ID associated to the WLAN.

Examples

This example shows how to assign a VLAN ID to a FlexConnect access point:

```
> config ap flexconnect vlan wlan 192.12.12.1 6 AP02
```

Related Commands

config ap mode flexconnect

config ap flexconnect radius auth set

config ap flexconnect vlan

config ap flexconnect vlan native

config ap flexconnect web-policy acl

To add or delete a Web Policy ACL on a FlexConnect access point, use the **config ap flexconnect web-policy acl** command.

config ap flexconnect web-policy acl {**add** | **delete**} *acl_name cisco_ap*

Syntax Description

acl_name	Name of the Web Policy ACL on the FlexConnect access point.
cisco_ap	Name of the Cisco lightweight access point.

Examples

This example shows how to add a Web Policy ACL on a FlexConnect access point:

```
> config ap flexconnect web-policy acl add mywebpolicyacl AP02
```

Related Commands

config ap flexconnect web-auth wlan

config ap flexconnect web-auth wlan

To map a Web-Auth or a Web Passthrough ACL to a WLAN for a FlexConnect access point, use the **config ap flexconnect web-auth wlan** command.

config ap flexconnect web-auth wlan *wlan_id cisco_ap acl_name* {**enable** | **disable**}

Syntax Description

wlan_id	ID of the WLAN.
cisco_ap	Name of the Cisco lightweight access point that is in FlexConnect mode.
acl_name	Name of the Web-Auth or a Web Passthrough ACL that you want to map to the WLAN on the FlexConnect access point.
enable	Enables the mapping.
disable	Disables the mapping.

Examples

This example shows how to enable a Web-Auth or a Web Passthrough ACL (*mywebauthacl*) to a WLAN ID 1 for a FlexConnect access point AP02:

```
> config ap flexconnect web-auth wlan 1 AP02 mywebauthacl enable
```

Related Commands

config ap flexconnect web-policy acl

config ap flexconnect web-auth

To assign a VLAN ID to a FlexConnect access point, use the **config ap flexconnect vlan wlan** command.

config ap flexconnect vlan wlan *ip_address vlan-id cisco_ap*

Syntax Description

ip_address	Name of the Cisco lightweight access point.
vlan-id	VLAN identifier.
cisco_ap	Name of the Cisco lightweight access point.

Command Default

VLAN ID associated to the WLAN.

Examples

This example shows how to assign a VLAN ID to a FlexConnect access point:

```
> config ap flexconnect vlan wlan 192.12.12.1 6 AP02
```

Related Commands

config ap mode flexconnect

config ap flexconnect radius auth set

config ap flexconnect vlan

config ap flexconnect vlan native

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	Aborts the predownload image process.
primary	Predownloads an image to a Cisco access point from the controller's primary image.
backup	Predownloads an image to a Cisco access point from the controller's backup image.
cisco_ap	Name of a Cisco lightweight access point.
all	Specifies all access points to predownload an image.

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.

Examples This example shows how to predownload an image to an access point from the primary image:

```
> config ap image predownload primary all
```

Related Commands

config ap image swap

show ap image

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 name 'all', then the 'all access points' case takes precedence over the AP that is named 'all'.

Command Default

None.

Examples

This example shows how to swap an access point's primary and secondary images:

```
> config ap image swap all
```

Related Commands

config ap image predownload

show ap image

config ap led-state

To enable or disable the LED-State for an access point, use the **config ap led-state** command.

config ap led-state {enable | disable} {*cisco_ap* **| all}**

Syntax Description

enable	Enables the access point's LED state.
disable	Disables the access point's LED state.
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.

Examples

This example shows how to enable the LED state for an access point:

```
> config ap led-state enable AP02
```

Related Commands

config ap

config ap link-encryption

To enable or disable the Datagram Transport Layer Security (DTLS) data encryption for access points on the 5500 series controller, use the **config ap link-encryption** command.

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.

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

DTLS data encryption is enabled automatically for OfficeExtend access points but disabled by default for all other access points.

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.

Examples

This example shows how to enable the data encryption for an access point:

```
> config ap link-encryption enable AP02
```

Related Commands

config ap
show dtls connections

config ap link-latency

To enable or disable link latency for a specific access point or for all access points currently associated to the controller, use the **config ap link-latency** command:

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.

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 Link latency is disabled by default.

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.

Examples This example shows how to enable the link latency for all access points:

```
> config ap link-latency enable all
```

Related Commands show ap config

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.

Usage Guidelines

The Cisco lightweight access point must be disabled before changing this parameter.

Examples

This example shows how to configure the descriptive location for access point AP1:

```
> config ap location "Building 1" AP1
```

Related Commands

show ap summary

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 name ‘all’, then the ‘all access points’ case takes precedence over the AP that is named ‘all’.

Command Default None.

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.

Examples This example shows how to set the severity for filtering syslog messages to 3:

```
> config ap logging syslog level 3
```

Related Commands

config logging syslog host
config logging syslog facility
show logging

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.

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.

Examples

This example shows how to add a username, password, and secret password for AP management:

```
> config ap mgmtuser add username acd password Arc_1234 secret Mid_45 all
```

Related Commands

config ap mgmtuser delete

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.

Examples This example shows how to delete the credentials of an access point:

```
> config ap mgmtuser delete cisco_ap1
```

Related Commands **show ap summary**

config ap mode

To change a Cisco wireless LAN controller communication option for an individual Cisco lightweight access point, use the **config ap mode** command.

config ap mode {**bridge** | **flexconnect** | **local** | **reap** | **rogue** | **sniffer** | **se-connect** | **monitor** [**submode** {**none** | **wips**}]} *cisco_ap*

Syntax Description

bridge	Converts from a lightweight access point to a mesh access point (bridge mode).
flexconnect	Enables FlexConnect mode on an access point.
local	Converts from an indoor mesh access point (MAP or RAP) to a nonmesh 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 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.
cisco_ap	Name of the Cisco lightweight access point.

Command Default

Local.

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.

Examples

This example shows how to set the controller to communicate with access point AP91 in bridge mode:

```
> config ap mode bridge AP91
```

This example shows how to set the controller to communicate with access point AP01 in local mode:

```
> config ap mode local AP01
```

This example shows how to set the controller to communicate with access point AP91 in remote office (REAP) mode:

```
> config ap mode reap AP91
```

This example shows how to set the controller to communicate with access point AP91 in remote office (REAP) mode:

```
> config ap mode flexconnect AP01
```

This example shows how to set the controller to communicate with access point AP91 in a wired rogue access point detector mode:

```
> config ap mode rogue AP91
```

This example shows how to set the controller to communicate with access point AP02 in wireless sniffer mode:

```
> config ap mode sniffer AP02
```

This example shows how to set the controller to communicate with access point AP02 in wIPS submode:

```
> config ap mode monitor submode wips AP02
```

Related Commands

config 802.11 enable
config ap mode
config ap monitor-mode
show ap config
show ap monitor-mode summary
show wps wips statistics

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.

Examples

This example shows how to configure a Cisco wireless intrusion prevention system (wIPS) monitor mode on access point AP01:

```
> config ap monitor-mode wips-optimized AP01
```

Related Commands

config 802.11 enable
config ap mode
show ap config
show ap monitor-mode summary
show wps wips statistics
show wps wips summary

config ap name

To modify the name of a Cisco lightweight access point, use the **config ap name** command.

config ap name *new_name old_name*

Syntax Description

new_name	Desired Cisco lightweight access point name.
old_name	Current Cisco lightweight access point name.

Command Default

None.

Examples

This example shows how to modify the name of access point AP1 to AP2:

```
> config ap name AP1 AP2
```

Related Commands

show ap config

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.

Examples

This example shows how to configure the port for a foreign access point MAC address:

```
> config ap port 12:12:12:12:12:12 20
```

Related Commands

config ap

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 name ‘all’, then the ‘all access points’ case takes precedence over the AP that is named ‘all’.

Command Default

None.

Examples

This example shows how to enable the power injector state for all access points:

```
> config ap power injector enable all 12:12:12:12:12:12
```

Related Commands

config ap

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.

Examples

This example shows how to enable the inline power Cisco pre-standard switch state for access point AP02:

```
> config ap power pre-standard enable AP02
```

Related Commands

config ap

config ap primary-base

To set the Cisco lightweight access point primary Cisco wireless LAN 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 Cisco wireless LAN 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.

Usage Guidelines

The Cisco lightweight access point associates with this Cisco wireless LAN 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.

Examples

This example shows how to set an access point primary Wireless LAN controller:

```
> config ap primary-base SW_1 AP2
```

Related Commands

show sysinfo

config sysname

config ap secondary-base

config ap tertiary-base

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.

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.

Examples

This 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:

```
> config ap priority 3 AP02
```

Related Commands

config network ap-priority
show ap summary
show network summary

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.

Examples This example shows how to reset an access point reporting period to 120 seconds:

```
> config ap reporting-period 120
```

Related Commands

show ap config 802.11a
show ap config 802.11ab

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.

Examples This example shows how to reset an access point:

```
> config ap reset AP2
```

Related Commands **show ap config**

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.

Examples This example shows how to configure the retransmission interval for all access points globally:

```
> config ap retransmit interval 4 all
```

Related Commands **show ap config**

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 (range is 3 to 8 times).
all	All access points.
cisco_ap	Cisco lightweight access point name.

Command Default

None.

Examples

This example shows how to configure the retransmission retry count for a specific access point:

```
> config ap retransmit count 6 cisco_ap
```

Related Commands

show ap config

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.

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. Changing the AP's role will cause the AP to reboot.

Examples

This example shows how to designate mesh access point AP02 as a root access point:

```
> 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)
```

Related Commands

config ap

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.

Examples

This example shows how to configure the reset button for access point AP03:

```
> config ap rst-button enable AP03
```

Related Commands

config ap

config ap secondary-base

To set the Cisco lightweight access point secondary Cisco wireless LAN 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 Cisco wireless LAN 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.

Usage Guidelines

The Cisco lightweight access point associates with this Cisco wireless LAN 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.

Examples

This example shows how to set an access point secondary Cisco wireless controller:

```
> config ap secondary-base SW_1 AP2
```

Related Commands

show sysinfo

config sysname

config ap primary-base

config ap tertiary-base

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.

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*)

Examples

This example shows how to enable the sniffing on the 802.11a an access point primary Wireless LAN controller:

```
> config ap sniff 80211a enable 23 11.22.44.55 AP01
```

Related Commands

show ap config
config ap sniff 802.11b

config ap ssh

To enable Secure Shell (SSH) connectivity on an access point, use the **config ap ssh** command.

config ap ssh {enable | disable} *cisco_ap*

Syntax Description

enable	Enables the SSH connectivity on an access point.
disable	Disables the SSH connectivity on an access point.
cisco_ap	Cisco access point name.

Command Default

None.

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.

Examples

This example shows how to enable SSH connectivity on access point Cisco_ap2:

```
> config ap ssh enable cisco_ap2
```

Related Commands

config ap
config network ssh
show ap stats

config ap static-ip

To configure Cisco lightweight access point static IP address settings, use the **config ap static-ip** command.

config ap static-ip {**enable** *cisco_ap ip_address net_mask gateway* | **disable** *cisco_ap* | **add** {**domain** {*cisco_ap* | **all**} *domain_name*} | {**nameserver** {*cisco_ap* | **all**} *dns_ip_address*} | **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.
ip_address	Cisco lightweight access point IP address
net_mask	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	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.
dns_ip_address	DNS server IP address.
delete	Deletes a domain or DNS server.

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.

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 IP, netmask, and gateway addresses, save your configuration to reboot the access point. After the access point rejoins the controller, you can enter the domain and DNS server information.

Examples

This example shows how to configure an access point static IP address:

```
> config ap static-ip enable AP2 1.1.1.1 255.255.255.0 10.1.1.1
```

Related Commands

show sysinfo

config sysname

config ap secondary-base

config ap primary-base

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

0 (disabled).

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.

Examples

This example shows how to set the stats timer to 600 seconds for access point AP2:

```
> config ap stats-timer 600 AP2
```

Related Commands

config ap disable

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 *syslog_server_IP_address*

Syntax Description

syslog_server_IP_address	IP address of the syslog server.

Command Default

255.255.255.255.

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.

Examples

This example shows how to configure a global syslog server for all access points:

```
> config ap syslog host global 255.255.255.255
```

Related Commands

config ap syslog host specific
show ap config global
show ap config general

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 cisco_ap *syslog_server_IP_address*

Syntax Description

cisco_ap	Cisco lightweight access point.
syslog_server_IP_address	IP address of the syslog server.

Command Default

0.0.0.0.

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.

Examples

This example shows how to configure a syslog server:

```
> config ap syslog host specific 0.0.0.0
```

Related Commands

config ap syslog host global
show ap config global
show ap config general

config ap tcp-adjust-mss

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-adjust-mss** command.

config ap tcp-adjust-mss {**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, from 536 to 1363 bytes.

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.

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.

Examples

This example shows how to enable the TCP MSS on access point Cisco_ap1 with a segment size of 1200 bytes:

```
> config ap tcp-adjust-mss enable cisco_ap1 1200
```

Related Commands

show ap tcp-mss-adjust

config ap telnet

To enable Telnet connectivity on an access point, use the **config ap telnet** command.

config ap telnet {enable | disable} *cisco_ap*

Syntax Description

enable	Enables the Telnet connectivity on an access point.
disable	Disables the Telnet connectivity on an access point.
cisco_ap	Cisco access point name.

Command Default

None.

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.

Examples

This example shows how to enable Telnet connectivity on access point cisco_ap1:

```
> config ap telnet enable cisco_ap1
```

This example shows how to disable Telnet connectivity on access point cisco_ap1:

```
> config ap telnet disable cisco_ap1
```

Related Commands

config ap
config network telnet
show ap config

config ap tertiary-base

To set the Cisco lightweight access point tertiary Cisco wireless LAN 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 Cisco wireless LAN 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.

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 Cisco wireless LAN controller for all network operations and in the event of a hardware reset.

Examples

This example shows how to set the access point teritary wireless LAN controller:

```
> config ap tertiary-base SW_1 AP2
```

Related Commands

show sysinfo

config sysname

config ap secondary-base

config ap primary-base

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_address* | *image_filename* | *ap_name*}

Syntax Description

tftp_ip_address	IP address of the TFTP server.
image_filename	Filename of the access point image file on the TFTP server.
ap_name	Access point name.

Command Default

None.

Examples

This example shows how to configure the settings for downgrading access point ap1240_102301:

```
> config ap tftp-downgrade 10.0.23.8 1238.tar ap1240_102301
```

Related Commands

show running-config

show version

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.

Examples

This example shows how to assign a username and password to a specific access point:

```
config ap username jack password blue la204
```

This example shows how to assign the same username and password to a all access points:

```
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	Specifies a venue name.
venue_group	Specifies the venue group category. See Table 2-4.
venue_type	Specifies a venue type. This value depends on the venue-group specified. See Table 2-4.
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.

Command Default

None.

Examples

The command shows how to set the venue details for an access point named cisco-ap1:

> config ap venue add *test 11 34 eng cisco-ap1*

Table 2-4 Venue Group Mapping

Venue Group Name	Value	Venue Type for Group
UNSPECIFIED	0	
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
EDUCATIONAL	3	• 0—UNSPECIFIED EDUCATIONAL • 1—SCHOOL, PRIMARY • 2—SCHOOL, SECONDARY • 3—UNIVERSITY OR COLLEGE

Venue Group Name	Value	Venue Type for Group
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
UTILITY-MISC	9	0—UNSPECIFIED UTILITY AND MISCELLANEOUS

Venue Group Name	Value	Venue Type for Group
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

Related Commands

config wlan mobile-concierge dot11u

config wlan mobile-concierge hotspot2

config wlan mobile-concierge msap

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.

Examples

This example shows how to enable wireless LAN override on the AP03 802.11a radio:

```
> config ap wlan enable 802.11a AP03
```

Related Commands

show ap wlan

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	Key hash value that is equal to 20 bytes or 40 digits.

Command Default

None.

Examples

This example shows how to create an authorized access point entry with a manufacturer-installed certificate on MAC address 00:0b:85:02:0d:20:

```
> config auth-list add mic 00:0b:85:02:0d:20
```

Related Commands

config auth-list delete

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.

Examples

This example shows how to enable an access point authorization policy:

```
> config auth-list ap-policy authorize-ap enable
```

This example shows how to enable an access point with a self-signed certificate to connect:

```
> config auth-list ap-policy ssc disable
```

Related Commands

config auth-list add

config auth-list delete

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.

Examples This example shows how to delete an access point entry for MAC address 00:0b:85:02:0d:20:

```
> config auth-list delete 00:0b:85:02:0d:20
```

Related Commands

config auth-list add

config auth-list ap-policy

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 *cycle_count*

Syntax Description		
	cycle_count	Value for the cycle count between 1 to 10.

Command Default None.

Examples This example shows how to set the proble cycle count for band select to 8:

```
> 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 *cycle_threshold*

Syntax Description		
	cycle_threshold	Value for the cycle threshold between 1 and 1000 milliseconds.

Command Default None.

Examples This example shows how to set the time threshold for a new scanning cycle with threshold value of 700 milliseconds:

```
> config band-select cycle-threshold 700
```

Related Commands

config band-select cycle-threshold
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.

Examples

This example shows how to set the suppression expire to 70 seconds:

```
> config band-select expire suppression 70
```

Related Commands

config band-select cycle-threshold
config band-select cycle-count
config band-select client-rssi

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 *client_rssi*

Syntax Description		
	client_rssi	Minimum dBM of a client RSSI to respond to probe between 20 and 90.

Command Default None.

Examples This example shows how to set the RSSI threshold for band select to 70:

```
> config band-select client-rssi 70
```

Related Commands

config band-select cycle-threshold
config band-select expire
config band-select cycle-count

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

primary.

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.

Examples

This example shows how to set the primary image as active so that the LAN controller can boot off the primary, last loaded image:

```
> config boot primary
```

This example shows how to set the backup image as active so that the LAN controller can boot off the backup, earlier loaded OS image:

```
> config boot backup
```

Related Commands

show boot

config cdp timer

To configure the Cisco Discovery Protocol (CDP) maximum hold timer, use the **config cdp timer** command.

config cdp timer *seconds*

Syntax Description

seconds	Maximum hold timer value (5 to 254 seconds).

Command Default

None.

Examples

This example shows how to configure the CDP maximum hold timer to 150 seconds:

```
> config cdp timer 150
```

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.

Examples

This example shows how to generate a new web administration SSL certificate:

```
> config certificate generate webadmin

Creating a certificate may take some time. Do you wish to continue? (y/n)
```

This example shows how to configure the compatibility mode for inter-Cisco wireless LAN controller IPsec settings:

```
> 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** commands.

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.

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.

Examples

This example shows how to enable the LSC settings:

```
> config certificate lsc enable
```

This example shows how to enable the LSC settings for Certificate Authority (CA) server settings:

```
> config certificate lsc ca-server http://10.0.0.1:8080/caserver
```

This example shows how to add a CA certificate from the CA server and add it to the controller's certificate database:

```
> config certificate lsc ca-cert add
```

This example shows how to configure an LSC certificate with the keysize of 2048 bits:

```
> config certificate lsc keysize 2048
```

Related Commands

config certificate
show certificate compatibility
show certificate lsc
show certificate summary
show local-auth certificates

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.

Examples This example shows how to clear the reporting information of the client MAC address 172.19.28.40:

```
> config client ccx clear-reports 172.19.28.40
```

Related Commands

config client ccx get-profiles
config client ccx get-operating-parameters
config client ccx get-manufacturer-info
config client ccx get-client-capability
show client ccx profiles
show client ccx operating-parameters
show client ccx manufacturer-info
show client ccx client-capability
config client ccx stats-request
show client ccx stats-report

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.

Examples This example shows how to clear the test results of the client MAC address 172.19.28.40:

```
> config client ccx clear-results 172.19.28.40
```

Related Commands

config client ccx default-gw-ping
config client ccx
config client ccx dns-ping
config client ccx dns-resolve
config client ccx test-association
config client ccx test-dot1x
config client ccx test-profile
config client ccx test-abort
config client ccx send-message
show client ccx last-test-status
show client ccx last-response-status
show client ccx results
show client ccx frame-data

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.

Usage Guidelines

This test does not require the client to use the diagnostic channel.

Examples

This example shows how to send a request to the client 00:E0:77:31:A3:55 to perform the default gateway ping test:

```
> config client ccx default-gw-ping 00:E0:77:31:A3:55
```

Related Commands

config client ccx dhcp-test
config client ccx dns-ping
config client ccx dns-resolve
config client ccx test-association
config client ccx test-dot1x
config client ccx test-profile
config client ccx test-abort
config client ccx clear-results
config client ccx send-message
show client ccx last-test-status
show client ccx last-response-status
show client ccx results
show client ccx frame-data

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.

Usage Guidelines This test does not require the client to use the diagnostic channel.

Examples This example shows how to send a request to the client 00:E0:77:31:A3:55 to perform the DHCP test:

```
> config client ccx dhcp-test 00:E0:77:31:A3:55
```

Related Commands

config client ccx default-gw-ping
config client ccx dns-ping
config client ccx dns-resolve
config client ccx test-association
config client ccx test-dot1x
config client ccx test-profile
config client ccx test-abort
config client ccx clear-results
config client ccx send-message
show client ccx last-test-status
show client ccx last-response-status
show client ccx results
show client ccx frame-data

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.

Usage Guidelines

This test does not require the client to use the diagnostic channel.

Examples

This example shows how to send a request to the client 00:E0:77:31:A3:55 to perform the DNS server IP address ping test:

```
> config client ccx dns-ping 00:E0:77:31:A3:55
```

Related Commands

config client ccx default-gw-ping
config client ccx dhcp
config client ccx dns-resolve
config client ccx test-association
config client ccx test-dot1x
config client ccx test-profile
config client ccx test-abort
config client ccx clear-results
config client ccx send-message
show client ccx last-test-status
show client ccx last-response-status
show client ccx results
show client ccx frame-data

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.

Usage Guidelines

This test does not require the client to use the diagnostic channel.

Examples

This 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:

```
> config client ccx dns-resolve 00:E0:77:31:A3:55 host_name
```

Related Commands

config client ccx default-gw-ping
config client ccx dhcp
config client ccx dns-ping
config client ccx test-association
config client ccx test-dot1x
config client ccx test-profile
config client ccx test-abort
config client ccx clear-results
config client ccx send-message
show client ccx last-test-status
show client ccx last-response-status
show client ccx results
show client ccx frame-data

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.

Examples This example shows how to send a request to the client 172.19.28.40 to send its capability information:

```
> config client ccx get-client-capability 172.19.28.40
```

Related Commands

config client ccx get-profiles
config client ccx get-operating-parameters
config client ccx get-manufacturer-info
config client ccx clear-reports
show client ccx profiles
show client ccx operating-parameters
show client ccx manufacturer-info
show client ccx client-capability
config client ccx stats-request
show client ccx stats-report

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.

Examples

This example shows how to send a request to the client 172.19.28.40 to send the manufacturer's information:

```
> config client ccx get-manufacturer-info 172.19.28.40
```

Related Commands

config client ccx get-profiles
config client ccx get-operating-parameters
config client ccx get-client-capability
config client ccx clear-reports
show client ccx profiles
show client ccx operating-parameters
show client ccx manufacturer-info
show client ccx client-capability
config client ccx stats-request
show client ccx stats-report

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.

Examples This example shows how to send a request to the client 172.19.28.40 to send its current operating parameters:

```
> config client ccx get-operating-parameters 172.19.28.40
```

Related Commands

config client ccx get-profiles
config client ccx get-manufacturer-info
config client ccx get-client-capability
config client ccx clear-reports
show client ccx profiles
show client ccx operating-parameters
show client ccx manufacturer-info
show client ccx client-capability
config client ccx stats-request
show client ccx stats-report

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.

Examples This example shows how to send a request to the client 172.19.28.40 to send its profile details:

```
> config client ccx get-profiles 172.19.28.40
```

Related Commands

config client ccx get-operating-parameters
config client ccx get-manufacturer-info
config client ccx get-client-capability
config client ccx clear-reports
show client ccx profiles
show client ccx operating-parameters
show client ccx manufacturer-info
show client ccx client-capability
config client ccx stats-request
show client ccx stats-report

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 *log_type* {**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.

Examples

This example shows how to specify the request to specify the client CCS system log:

```
> 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
```

This example shows how to specify the client CCX roaming log:

```
> 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
```

This example shows how to specify the client CCX RSNA log:

```
> 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=00-0f-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
Tue Oct 05 11:05:48 2006
    RSNA Request LogID=2
```

Related Commands **show client ccx log-response**

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.

Examples This example shows how to send a message to the client MAC address 172.19.28.40 with the message user-action-required:

```
> config client ccx send-message 172.19.28.40 user-action-required
```

Related Commands

config client ccx default-gw-ping
config client ccx dhcp
config client ccx dns-ping
config client ccx dns-resolve
config client ccx test-association
config client ccx test-dot1x
config client ccx test-profile
config client ccx test-abort
config client ccx clear-results
show client ccx last-test-status
show client ccx last-response-status
show client ccx results
show client ccx frame-data

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 stats_name* {**dot11** | **security**} *client_mac_address*

Syntax Description

measurement_duration stats_name	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.

Examples

This example shows how to specify dot11 counter settings:

```
> 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
```

Related Commands

show client ccx stats-report

config client ccx test-abort

To send a request to the client to abort 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.

Usage Guidelines

Only one test can be pending at a time.

Examples

This example shows how to send a request to the client 11:11:11:11:11:11 to abort the correct test settings:

```
> config client ccx test-abort 11:11:11:11:11:11
```

Related Commands

config client ccx default-gw-ping
config client ccx dhcp
config client ccx dns-ping
config client ccx dns-resolve
config client ccx test-association
config client ccx test-dot1x
config client ccx test-profile
config client ccx clear-results
config client ccx send-message
show client ccx last-test-status
show client ccx last-response-status
show client ccx results
show client ccx frame-data

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

Examples

This 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:

```
> config client ccx test-association 00:E0:77:31:A3:55 ssid bssid 802.11a
```

Related Commands

config client ccx default-gw-ping
config client ccx dhcp
config client ccx dns-ping
config client ccx dns-resolve
config client ccx test-dot1x
config client ccx test-profile
config client ccx test-abort
config client ccx clear-results
config client ccx send-message
show client ccx last-test-status
show client ccx last-response-status
show client ccx results
show client ccx frame-data

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.

Examples

This example shows how to send a request to the client to perform the 802.11b test with the profile name profile_01:

```
> config client ccx test-dot1172.19.28.40 profile_01 bssid 802.11b
```

Related Commands

config client ccx default-gw-ping
config client ccx dhcp
config client ccx dns-ping
config client ccx dns-resolve
config client ccx test-association
config client ccx test-profile
config client ccx test-abort
config client ccx clear-results
config client ccx send-message
show client ccx last-test-status
show client ccx last-response-status
show client ccx results
show client ccx frame-data

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.

Examples

This example shows how to send a request to the client to perform the profile redirect test with the profile name profile_01:

```
> config client ccx test-profile 11:11:11:11:11:11 profile_01
```

Related Commands

config client ccx default-gw-ping
config client ccx dhcp
config client ccx dns-ping
config client ccx dns-resolve
config client ccx test-association
config client ccx test-dot1x
config client ccx test-abort
config client ccx clear-results
config client ccx send-message
show client ccx last-test-status
show client ccx last-response-status
show client ccx results
show client ccx frame-data

config client deauthenticate

To disconnect a client, use the **config client deauthenticate** command.

config client deauthenticate *MAC*

Syntax Description		
	MAC	Client MAC address.

Command Default None.

Examples This example shows how to deauthenticate a client:

```
> config client deauthenticate 11:11:11:11:11:11
```

Related Commands

show client summary
show client detail

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.

Examples

This example shows how to enable the client location calibration for the client 37:15:85:2a with a measurement interval of 45 seconds:

```
> config client location-calibration enable 37:15:86:2a:Bc:cf 45
```

Related Commands

show client location-calibration summary

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.

Examples

This example shows how to enable the controller to generate a core dump file following a crash:

```
> 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.

Usage Guidelines

The controller must be able to reach the FTP server to use this command.

Examples

This 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*:

```
> 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.

Usage Guidelines

The controller must be able to reach the FTP server to use this command.

Examples

This example shows how to specify a FTP server username of *admin* and password *adminpassword* for the core dump file upload:

```
> config coredump username admin password adminpassword
```

Related Commands

config coredump
config coredump ftp
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).

Usage Guidelines Cisco wireless LAN 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 to 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.

Examples This example shows how to configure the controller's country code to DE:

```
> config country DE
```

Related Commands **show country**

config cts sxp

To configure Cisco TrustSec SXP (CTS) connections on the controller, use the **config cts sxp** command.

config cts sxp {**enable** | **disable**}

Syntax Description

enable	Enables CTS connections on the controller.
disable	Disables CTS connections on the controller.

Command Default

None.

Examples

This example shows how to enable CTS on the controller:

```
> config cts sxp enable
```

Related Commands

config cts sxp connection
config cts sxp default password
config cts sxp retry period

config cts sxp connection

To configure a Cisco TrustSec SXP (CTS) connection on the controller, use the **config cts sxp connection** command.

config cts sxp connection {**delete** | **peer**} *ip-address*

Syntax Description

delete	Deletes the CTS connection on the controller.
peer	Configures the next hop switch with which the controller is connected.
ip-address	IPv4 address of the peer.

Command Default

None.

Usage Guidelines

Default password should be configured before adding CTS connections.

Examples

This example shows how to configure a peer for a CTS connection:

```
> config cts sxp connection peer 209.165.200.224
```

Related Commands

config cts sxp
config cts sxp default password
config cts sxp retry period

config cts sxp default password

To configure the default password for MD5 Authentication of SXP messages, 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.

Examples

This example shows how to configure the default password for MD5 Authentication of SXP messages:

```
> config cts sxp default password controller
```

Related Commands

config cts sxp
config cts sxp connection

config cts sxp retry period

To configure the SXP retry period, 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 connection should be again tried for after a failure to connect.

Command Default None

Examples This example shows how to configure the SXP retry period as 20 seconds:

```
> config cts sxp retry period 20
```

Related Commands

config cts sxp
config cts sxp connection
config cts sxp default password

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.

Examples

This example shows how to enable the external URL web-based client authorization:

```
> 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
config custom-web logout-popup
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.

Examples This example shows how to configure the complete external web authentication URL http://www.AuthorizationURL.com/ for the web-based client authorization:

```
> 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
config custom-web logout-popup
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.

Examples

This 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:

```
> 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 logout-popup

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.

Examples This example shows how to disable the custom web authentication logout popup:

```
> 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-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.

Examples This example shows how to configure the URL that is redirected to abc.com:

```
> 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

config custom-web logout-popup

show custom-web

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	Sets the web authentication type to internal.
customized	Sets the web authentication type to customized.
external	Sets the web authentication type to external.

Command Default

The default web authentication type is **internal**.

Examples

This example shows how to configure the type of the web authentication type to internal:

```
> 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

config custom-web logout-popup

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.

Examples

This example shows how to enable the web authentication logo:

```
> 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

config custom-web logout-popup

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.

Examples This example shows how to configure the message text *Thisistheplace* for webauthentication:

```
> 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.

Examples This example shows how to set the custom title text Helpdesk for web authentication:

```
> 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** command.

config database size *count*

Syntax Description		
	count	Database size value between 512 and 2040

Command Default None.

Usage Guidelines Use the **show database** command to display local database configuration.

Examples This example shows how to configure the DHCP lease for scope 003.

```
> 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* | **opt-82 remote-id** {*ap_mac* | *ap_mac***:***ssid* | *ap-ethmac*}}

Syntax Description

address-pool *scope start end*	Configures an address range to allocate. You must specify the scope name and the first and last addresses of the address range.
create-scope *name*	Creates a new DHCP scope. You must specify the scope name.
default-router *scope router_1* [*router_2*] [*router_3*]	Configures the default routers for the specified scope and specify the IP address of a router. Optionally, you can specify the IP addresses of secondary and tertiary routers.
delete-scope *scope*	Deletes the specified DHCP scope.
disable *scope*	Disables the specified DHCP scope.
dns-servers *scope dns1* [*dns2*] [*dns3*]	Configures the name servers for the given scope. You must also specify at least one name server. Optionally, you can specify secondary and tertiary name servers.
domain *scope domain*	Configures the DNS domain name. You must specify the scope and domain names.
enable *scope*	Enables the specified dhcp scope.
lease *scope lease_duration*	Configures the lease duration (in seconds) for the specified scope.
netbios-name-server *scope wins1* [*wins2*] [*wins3*]	Configures the netbios name servers. You must specify the scope name and the IP address of a name server. Optionally, you can specify the IP addresses of secondary and tertiary name servers.
network *scope network netmask*	Configures the network and netmask. You must specify the scope name, the network address, and the network mask.
opt-82 remote-id	Configures the DHCP Option 82 Remote ID Field Format.
ap_mac	MAC address of the access point to the DHCP option 82 payload.
*ap_mac***:***ssid*	MAC address and SSID of the access point to the DHCP option 82 payload.
ap-ethmac	Remote ID format as **AP Ethernet MAC Address** .

Command Default

None.

Usage Guidelines

Use the **show dhcp** command to display the internal DHCP configuration.

Examples

This example shows how to configure the DHCP lease for the scope 003:

```
> config dhcp lease 003
```

Related Commands

config dhcp proxy
config dhcp timeout
config interface dhcp
config wlan dhcp_server
debug dhcp
debug dhcp service-port
debug disable-all
show dhcp
show dhcp proxy

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

Enabled.

Usage Guidelines

Follow these guidelines when you use this command:

- 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.

Examples

This example shows how to disable the DHCP packet modification:

```
> config dhcp proxy disable
```

This example shows how to enable the DHCP BootP broadcast option:

```
> config dhcp proxy disable bootp-broadcast enable
```

Related Commands

config dhcp
config dhcp timeout
config interface dhcp
config wlan dhcp_server
config wlan passive-client
debug dhcp
debug dhcp service-port
debug disable-all
show dhcp
show dhcp proxy

config dhcp timeout

To configure a DHCP timeout, use the **config dhcp timeout** command.

config dhcp timeout *timeout-value*

Syntax Description		
	timeout-value	Timeout value in the range of 5 to 120 seconds.

Command Default None.

Examples This example shows how to set the DHCP timeout to 10 seconds:

```
> config dhcp timeout 10
```

Related Commands

config dhcp
config interface dhcp
config wlan dhcp_server
config wlan passive-client
debug dhcp
debug dhcp service-port
debug disable-all
show dhcp
show dhcp proxy

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.

Examples This example shows how to create a local exclusion list entry for the MAC address *xx:xx:xx:xx:xx:xx:*

```
> config exclusionlist add xx:xx:xx:xx:xx:xx lab
```

This example shows how to delete a local exclusion list entry for the MAC address *xx:xx:xx:xx:xx:xx:*

```
> config exclusionlist delete xx:xx:xx:xx:xx:xx lab
```

Related Commands **show exclusionlist**

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.

Examples

This example shows how to enable a wireless LAN with the LAN ID 16:

```
> 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 to specify the URL of the external server.

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.

Examples

This example shows how to enable a wireless LAN with the LAN ID 16:

```
> 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.

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.

Examples

This example shows how to disable the global web configuration for guest LAN ID 1:

```
> 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.

Examples

This example shows how to customize a web login page custompage1 for guest LAN ID 1:

```
> 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

Internal.

Examples

This example shows how to configure the guest LAN with the webauth-type as internal for guest LAN ID 1:

```
> 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 which provides a path between the wired guest client and the controller by way of 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 between 1 and 5 (inclusive).
interface_name	Interface name.

Command Default

None.

Examples

This 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:

```
> config interface 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.

Examples

This 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:

```
> 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**} *wlan_id anchor_ip*

Syntax Description

add	Adds a mobility anchor.
delete	Deletes a mobility anchor.
wlan_id	WLAN identifier.
anchor_ip	IP address of the mobility anchor.

Command Default

None.

Examples

This example shows how to delete a mobility anchor for WAN ID 4 and the anchor IP *192.168.0.14*:

```
> config guest-lan mobility anchor delete 4 192.168.0.14
```

Related Commands

config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
config wlan mobility anchor
debug mobility
show mobility anchor
show mobility statistics
show mobility summary

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.

Examples

This example shows how to enable the NAC out-of-band support for guest LAN ID 3:

```
> 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

Web authentication.

Examples

This example shows how to configure the security web authentication policy for guest LAN ID 1:

```
> config guest-lan security web-auth enable 1
```

Related Commands

config ingress-interface guest-lan

config guest-lan create

config interface guest-lan

config flexconnect acl

To apply access control lists configured on a FlexConnect access point, use the **config flexconnect acl** command.

config flexconnect acl {**apply** | **create** | **delete**} *acl_name*

Syntax Description

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.

Examples

This example shows how to apply the ACL configured on a FlexConnect access point:

```
> config flexconnect acl apply acl1
```

config flexconnect acl rule

To configure access control list (ACL) rules on a FlexConnect access point, use the **config flexconnect acl rule** command.

config flexconnect 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.
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.

Examples

This example shows how to configure an ACL to permit access:

```
> config flexconnect acl rule action lab1 4 permit
```

Related Commands

config flexconnect acl

show flexconnect acl summary

show flexconnect group detail

config flexconnect group

To add, delete, or configure a FlexConnect group, use the **config flexconnect group** command.

config flexconnect group *group_name*
{**add** | **delete** | **ap** {**add** | **delete**} *ap-mac* | **radius server** {**add** | **delete**}{ **primary** | **secondary**} *server_index*} | **radius ap** {**authority** | **disable** | **eap-fast** | **enable** | **leap** | **pac-timeout** | **server-key**| **user**}} **predownload** {**disable** | **enable** | **master** *ap_name* | **slave** {**retry-count** | **ap-name**} *cisco_ap* | **start**}

Syntax Description

group_name	Group name.
add	Adds a FlexConnect group.
delete	Deletes a FlexConnect group.
ap	Adds or deletes an access point to a FlexConnect group.
ap-mac	MAC address of the access point.
radius server	Configures a primary or secondary RADIUS server for a FlexConnect group.
primary	Designates a RADIUS server as primary server.
secondary	Designates a RADIUS server as secondary server.
server_index	RADIUS server index number.
authority	Configures the EAP-FAST authority parameters.
disable	Disables an AP based RADIUS server.
eap-fast	Enables or disables EAP-FAST authentication.
enable	Enables an AP based RADIUS server.
leap	Enables or Disables LEAP authentication.
pac-timeout	Configures the EAP-FAST PAC timeout paramters.
server-key	Configures the EAP-FAST server key parameters.
user	Manages the user list at the AP based RADIUS server.
pre-download	Configures effecient AP upgrade for the FlexConnect group.
disable	Disables effecient upgrade for a FlexConnect group.
enable	Enables effecient upgrade for a FlexConnect group.
master	Manually designates an access point in the FlexConnect group as the primary AP.
ap_name	Access point name.
slave	Manually designates an access point in the FlexConnect group as the slave AP.
retry-count	Number of times the slave access point must try the predownload from the primary.
cisco_ap	Access point name.
start	Start effecient upgrade for the FlexConnect group.

Command Default

None.

Usage Guidelines

You can add up to 100 clients.

Examples

This example shows how to add a FlexConnect group for MAC address 192.12.1.2:

```
> config flexconnect group 192.12.1.2 add
```

This example shows how to add a RADIUS server as a primary server for a FlexConnect group with the server index number 1:

```
> config flexconnect group 192.12.1.2 radius server add primary 1
```

Related Commands

config ap mode
config flexconnect join min-latency
config flexconnect office-extend
debug flexconnect group
show flexconnect group detail
show flexconnect group summary

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 VLAN for the FlexConnect group.
vlan-id	VLAN ID.
acl	Access control list.
in-aclname	In-bound ACL name.
out-aclname	Out-bound ACL name.
delete	Deletes VLAN from the FlexConnect group.

Examples

This 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:

```
> config flexconnect group myflexacl vlan add 1 acl in-acl out-acl
```

Related Commands

debug flexconnect group
show flexconnect group detail
show flexconnect group summary

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.

Examples

This example shows how to enable Web-Auth ACL webauthacl for the FlexConnect group myflexacl on WLAN ID 1:

```
> config flexconnect group myflexacl web-auth wlan 1 acl webauthacl enable
```

Related Commands

debug flexconnect group
show flexconnect group detail
show flexconnect group summary

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	Addes the Web Policy ACL.
delete	Deletes the Web Policy ACL.
acl-name	Name of the Web Policy ACL.

Examples

This example shows how to add the Web Policy ACL mywebpolicyacl to the FlexConnect group myflexacl:

```
> config flexconnect group myflexacl web-policy acl add mywebpolicyacl
```

Related Commands

debug flexconnect group
show flexconnect group detail
show flexconnect group summary

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 default value is disabled.

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 Wireless Services Module 2

Examples

This example shows how to enable the access point to choose the controller with the least latency when joining:

```
> config flexconnect join min-latency enable CISCO_AP
```

Related Commands

config ap mode
config flexconnect group
config flexconnect office-extend

config flexconnect office-extend

To configure 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.

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 {**enable** | **disable**} {*cisco_ap* | **all**} 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 {**enable** | **disable**} {*cisco_ap* | **all**} 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 {**enable** | **disable**} *cisco_ap* or config ap ssh {**enable** | **disable**} *cisco_ap* 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 {**enable** | **disable**} {*cisco_ap* | **all**} command.

Examples

This example shows how to enable the office-extend mode for the access point Cisco_ap:

```
> config flexconnect office-extend enable Cisco_ap
```

This example shows how to clear only the access point's personal SSID for the access point Cisco_ap:

```
> config flexconnect office-extend clear-personalssid-config Cisco_ap
```

Related Commands

debug flexconnect group
show flexconnect group detail
show flexconnect group summary

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 interface** 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-quotes. Valid range is 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.

Examples

This example shows how to create a new interface group with the name int-grp-10:

```
> config interface group create int-grp-10 "for wlan1"
```

config interface acl

To configure an interface's access control list, 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.

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.

Examples

This example shows how to configure an access control list with a value None:

```
> config interface acl management none
```

Related Commands

show interface

config interface address

To configure address information for an interface, use the **config interface address** command.

config interface address
{**ap-manager** *IP_address netmask gateway* |
management *IP_address netmask gateway* |
service-port *IP_address netmask* |
virtual *IP_address* |
interface-name *interface-name IP_address netmask gateway*}

Syntax Description

ap-manager	Specifies the access point manager interface.
IP_address	IP address.
netmask	Network mask.
gateway	IP address of the gateway.
management	Specifies the management interface.
service-port	Specifies the out-of-band service port interface.
virtual	Specifies the virtual gateway interface.
interface-name	Specifies the interface identified by the *interface-name* parameter.
interface-name	Interface name.

Command Default

None.

Usage Guidelines

For Cisco 5500 Series Controllers, you are not required to configure an AP-manager interface. The management interface acts like an AP-manager interface by default.

Examples

This example shows how to configure an access point manager interface with IP address 10.109.15.7, network mask 255.255.0.0, and gateway address 10.109.15.1:

```
> config interface address ap-manager 10.109.15.7 255.255.0.0 10.109.15.1
```

Related Commands

show interface

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.

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.

Examples

This example shows how to disable an access point manager myinterface:

```
> config interface ap-manager myinterface disable
```

Related Commands

show interface

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.

Examples

This example shows how to create a dynamic interface with the interface named lab2 and VLAN ID 6:

```
> config interface create lab2 6
```

Related Commands

show interface

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.

Command Default None.

Examples This example shows how to delete a dynamic interface named VLAN501:

```
> config interface delete VLAN501
```

Related Commands **show interface**

config interface dhcp

To configure DHCP options on an interface, use the **config interface dhcp** command.

config interface dhcp
{**ap-manager** [**primary** *dhcp_server* **secondary** *dhcp_server* | **option-82** [**enable** | **disable**]] | **management** [**primary** *dhcp_server* **secondary** *dhcp_server* | **option-82** [**enable** | **disable**]] | **service-port** {**enable** | **disable**} | **dynamic-interface** *name* [**primary** *dhcp_server* **secondary** *dhcp_server* | **option-82** [**enable** | **disable**]]}

Syntax Description

ap-manager	Configures the access point manager interface.
primary	(Optional) Specifies the primary DHCP server.
dhcp_server	IP address of the server.
secondary	(Optional) Specifies the secondary DHCP server.
option-82	(Optional) Configures DHCP Option 82 on the interface.
enable	(Optional) Enables the feature.
disable	(Optional) Disables the feature.
management	Configures the management interface.
service-port	Specifies the DHCP for the out-of-band service port.
dynamic-interface	Specifies the interface and the primary DHCP server. Optionally, you can also enter the address of the alternate DHCP server.
name	Specifies the interface name

Command Default

None.

Examples

This example shows how to configure ap-manager server with the primary DHCP server 10.21.15.01 and secondary DHCP server 10.21.15.25:

```
> config interface dhcp ap-manager server-1 10.21.15.01 server-2 10.21.15.25
```

This example shows how to configure DHCP option 82 on the ap-manager:

```
> config interface dhcp ap-manager option-82 enable
```

This example shows how to enable the DHCP for the out-of-band service port:

```
> config interface dhcp service-port enable
```

Related Commands

config dhcp
config dhcp proxy
config interface dhcp
config wlan dhcp_server
debug dhcp
debug dhcp service-port
debug disable-all

show dhcp
show dhcp proxy
show interface

config interface group

To configure interface groups, use the **config interface group** command.

config interface group {{**create** | **delete**} *interface_group_name description_details*} | {**description** *interface_group_name description_details*} | {**interface** {**add** | **delete**} *interface_group_name interface_name*}}

Syntax Description

create	Adds a new interface group.
delete	Deletes an interface group.
interface_group_name	Interface group name that can be up to 32 alphanumeric characters. **Note** To display details of all interface groups, use the **show interface group summary** command.
description	Adds a description to the specified interface group.
description_details	Description of the interface group to be entered. The description can be up to 32 alphanumeric characters within double-quotes, including the double-quotes.
interface	Edits the list of interfaces in an interface group.
add	Adds a new interface to an interface group.
delete	Deletes an interface from an interface group.
interface_name	Interface name that can be up to 32 alphanumeric characters. **Note** To display details of all the interfaces, use the **show interface summary** command.

Command Default

None.

Examples

This example shows how to create a new interface group and add a description to the group:

```
> config interface group create mygroup1 "My interface group"
```

This example shows how to delete an interface group:

```
> config interface group delete mygroup1"
```

This example shows how to add an interface to an interface group:

```
> config interface group interface add mygroup1 myinterface1
```

Related Commands

show interface group summary
show interface summary

config interface guest-lan

To enable or disable the guest LAN VLAN, use the **config interface guest-lan** command.

config interface guest-lan *interface_name* {**enable** | **disable**}

Syntax Description

interface_name	Interface name.
enable	Enables the guest LAN.
disable	Disables the guest LAN.

Command Default

None.

Examples

This example shows how to enable the guest LAN feature on the interface named myinterface:

```
> config interface guest-lan myinterface enable
```

Related Commands

config guest-lan create

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 1.1.1.1, to be used by Layer 3 security and mobility managers.
DNS_host	DNS hostname.

Command Default

This example shows how to configure virtual gateway interface to use the specified virtual address of the fully qualified DNS hostname DNS_Host:

```
> config interface hostname virtual DNS_Host
```

Related Commands

show interface

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.

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.

Examples

This example shows how to enable one-to-one mapping NAT on the management interface:

```
> config interface nat-address management enable
```

This example shows how to set the external NAP IP address 10.10.10.10 on the management interface:

```
> config interface nat-address management set 10.10.10.10
```

Related Commands

show interface

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*} *primary_port* [*secondary_port*]

Syntax Description

management	Specifies the management interface.
interface_name	Interface name.
primary_port	Primary physical port number.
secondary_port	(Optional) Secondary physical port number.

Command Default

None.

Usage Guidelines

You can use the **management** option for all controllers except the Cisco 5500 Series Controllers.

Examples

This example shows how to configure the LAb02 interface's primary port number to 3:

```
> config interface port lab02 3
```

Related Commands

show interface
config interface create

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.

Examples

This example shows how to configure a quarantine VLAN on the quarantine interface with the VLAN ID 10:

```
> config interface quarantine vlan quarantine 10
```

Related Commands

show interface

config interface vlan

To configure an interface's VLAN identifier, use the **config interface vlan** command.

config interface vlan {**ap-manager** | **management** | *interface-name*} *vlan*

Syntax Description

ap-manager	Configures the access point manager interface.
management	Configures the management interface.
interface_name	Interface name.
vlan	VLAN identifier.

Command Default

None.

Examples

This example shows how to configure VLAN ID 10 on the management interface:

```
> config interface vlan management 10
```

Related Commands

show interface

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.

Examples

This example shows how to enable LAG settings:

```
> 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.
```

This example shows how to disable LAG settings:

```
> 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.
```

Related Commands

show lag summary

config ldap

To configure the Lightweight Directory Access Protocol (LDAP) server settings, use the **config ldap** command.

config ldap {**add** | **delete** | **disable** | **enable** | **retransmit-timeout**} *index*

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.
index	LDAP server index. Valid values are from 1 to 17.

Command Default

None.

Examples

This example shows how to enable LDAP server index 10:

```
> 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*

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.

Command Default

None.

Examples

This example shows how to configure a LDAP server with the index10, server IP address 10.31.15.45, port number 2:

```
> config ldap add 10 10.31.15.45 2 base_name attr_name type_name
```

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** *username* **password** *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**.

Examples

This example shows how to configure the local authentication bind method that allows anonymous access to the LDAP server:

```
> config ldap simple-bind anonymous
```

Related Commands

config ldap
config ldap add
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*] **{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	Specifies the access control list.
acl	(Optional) Specifies the access control list for license requests.
max-message	Specifies the maximum message size for license requests.
size	The maximum message size for license request is from 0 to 65535.
max-session	Specifies the maximum number of sessions allowed.
sessions	The 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.

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/en/US/products/ps7138/index.html

Examples

This example shows how to authenticate the default license agent settings:

```
> config license agent default authenticate
```

This example shows how to configure the license agent with the number of maximum sessions allowed as 5:

```
> 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.

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.

Examples

This example shows how to set the license boot settings to wplus:

```
> config license boot wplus
```

Related Commands

license install
license modify priority
show license in-use

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*}

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.

Command Default

Disabled.

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.

Examples

This example shows how to enable the aggressive load-balancing settings:

```
> config load-balancing aggressive enable
```

Related Commands

show load-balancing

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 valid range is 1 to 3600.

Command Default

This command has a default of 100 seconds.

Examples

This example shows how to specify the active timeout to authenticate wireless clients using EAP to 500 seconds:

```
> 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 [add | delete] *method profile_name* **|**
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.

Examples

This example shows how to create a local EAP profile named FAST01:

```
> config local-auth eap-profile add FAST01
```

This example shows how to add the EAP-FAST method to a local EAP profile:

```
> config local-auth eap-profile method add fast FAST01
```

This example shows how to specify Cisco as the issuer of the certificates that will be sent to the client for an EAP-FAST profile:

```
> config local-auth eap-profile method fast cert-issuer cisco
```

This example shows how to specify that the incoming certificate from the client be validated against the CA certificates on the 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
show local-auth certificates
show local-auth config
show local-auth statistics
clear stats local-auth
debug aaa local-auth

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.

Examples

This example shows how to disable the controller to allows anonymous provisioning:

```
> config local-auth method fast anon-prov disable
```

This example shows how to configure the authority identifier 0125631177 of the local EAP-FAST server:

```
> config local-auth method fast authority-id 0125631177
```

This example shows how to configure the number of days to 10 for the PAC to remain viable:

```
> config local-auth method fast pac-ttl 10
```

Related Commands

config local-auth active-timeout
config local-auth eap-profile
config local-auth user-credentials
show local-auth certificates
show local-auth config
show local-auth statistics
clear stats local-auth
debug aaa local-auth

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.

Usage Guidelines

The order of the specified database parameters indicate the database search order.

Examples

This example shows how to specify the order in which the local EAP authentication database is searched:

```
> config local-auth user-credentials local lda
```

In the above example, the local database is searched first and then the LDAP database.

Related Commands

config local-auth active-timeout
config local-auth eap-profile
config local-auth method fast
show local-auth certificates
show local-auth config
show local-auth statistics
clear stats local-auth
debug aaa local-auth

config location

To configure a location-based system, use the **config location** command.

config location {**add** *location* [*description*] | **delete** *location* | **enable** | **disable** | **description** *location description* | **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

add	Adds a location element.
location	Location element name.
description	Element description. Optional with the **add** command, and required with the **description** command.
delete	Deletes a location element.
enable	Enables the access point location-based overrides.
disable	Disables the access point location-based overrides.
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. 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 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.

Examples

This example shows how to specify the **simple** algorithm for averaging RSSI and SNR values on a location-based controller:

```
> config location algorithm simple
```

Related Commands

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.

Examples

This example shows how to set the controller buffer severity level for logging messages to 4:

```
> 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.

Examples

This example shows how to set the controller console severity level for logging messages to 3:

```
> 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,

The **buffered** and **syslog** commands are disabled.

Examples

This example shows how to save the debug messages to the controller console:

```
> 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.

Examples

This example shows how to enable the controller to include information about the source file in the message logs:

```
> 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.

Examples

This example shows how to enable the controller to include the process information in the message logs:

```
> config logging procinfo enable
```

Related Commands

show logging

config logging traceinfo

To cause the controller to include traceback information in the message logs or to prevent the controller from displaying this information, use the **config logging traceinfo** command.

config logging traceinfo {enable | disable}

Syntax Description

enable	Includes traceback information in the message logs.
disable	Prevents the controller from displaying traceback information in the message logs.

Command Default

None.

Examples

This example shows how to disable the controller to include the traceback information in the message logs:

```
> config logging traceinfo disable
```

Related Commands

show logging

config logging syslog host

To configure a remote host for sending syslog messages, use the **config logging syslog host** command.

config logging syslog host {*host_IP_address*}

Syntax Description

host_IP_address	IP address for the remote host.

Command Default None.

Usage Guidelines To remove a remote host that was configured for sending syslog messages, enter the **config logging syslog host** *host_IP_address* **delete** command.

Examples This example shows how to configure a remote host 10.92.125.52 for sending the syslog messages:

```
> config logging syslog host 10.92.125.51
```

Related Commands

config logging syslog facility
config logging syslog level
show logging

config logging syslog facility

To set the facility for outgoing syslog messages to the remote host, use the **config logging syslog facility** command.

config logging syslog facility *facility_code*

Syntax Description

facility_code	Facility code. Choose one of the following: • authorization—Authorization system. Facility level—4. • auth-private—Authorization system (private). Facility level—10. • cron—Cron/at facility. Facility level—9. • daemon—System daemons. Facility level—3. • ftp—FTP daemon. Facility level—11. • kern—Kernel. Facility level—0. • local0—Local use. Facility level—16. • local1—Local use. Facility level—17. • local2—Local use. Facility level—18. • local3—Local use. Facility level—19. • local4—Local use. Facility level—20. • local5—Local use. Facility level—21. • local6—Local use. Facility level—22. • local7—Local use. Facility level—23. • lpr—Line printer system. Facility level—6. • mail—Mail system. Facility level—2. • news—USENET news. Facility level—7. • sys12—System use. Facility level—12. • sys13—System use. Facility level—13. • sys14—System use. Facility level—14. • sys15—System use. Facility level—15. • syslog—The syslog itself. Facility level—5. • user—User process. Facility level—1. • uucp—UNIX-to-UNIX copy system. Facility level—8.

Command Default

None.

Examples

This example shows how to set the facility for outgoing syslog messages to authorization:

```
> config logging syslog facility authorization
```

Related Commands

config logging syslog host
config logging syslog level
show logging

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.

Examples

This example shows how to set the severity level for syslog messages to 3:

```
> 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 session(s), 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.

Examples

This example shows how to close all active Telnet sessions:

```
> 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.

Examples This example shows how to enable LSC on mesh access point:

```
> config lsc mesh enable
```

Related Commands **show loginsession**

Configure IPv6 Commands

Use the **config ipv6** commands to configure IPv6 settings.

config ipv6 acl

To create or delete an IPv6 acl on the Cisco wireless LAN controller, use the **config ipv6 acl** command.

config ipv6 acl {**apply** *ipv6_acl_name* } | {**create** *ipv6_acl_name* }| {**delete** *ipv6_acl_name* }| {
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

apply	Apply an IPv6 ACL.
create	Create an IPv6 ACL.
delete	Delete an IPv6 ACL.
rule	Configure the IPv6 ACL.
ipv6_acl_name	IPv6 ACL name that contains up to 32 alphanumeric characters.
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	Swap's two rules' indices.

Command Default

None.

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.

Examples

This example shows how to configure an IPv6 ACL to permit access:

```
> config ipv6 acl rule action lab1 4 permit
```

Related Commands

show ipv6 acl

config ipv6 neighbor-binding

To configure the Neigbor Binding table on the Cisco wireless LAN controller, use the **config ipv6 neighbor-binding** command.

config ipv6 neigbor-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

down-lifetime	Configure the down lifetime.
down_time	Enter the down liftime in seconds. The range is from 0 to 86400. The default is 86400 seconds.
reachable-lifetime	Configure the reachable lifetime.
reachable_time	Enter the reachable liftime in seconds. The range is from 0 to 86400. The default is 300 seconds.
stale-lifetime	Configure the stale lifetime.
stale_time	Enter the stale liftime in seconds. The range is from 0 to 86400. The default is 86400 seconds.
at_least_value	Enter the Number of multicast RAs from router before throttling. The range is from 0 to 32. The default is 1.
enable	Enable IPv6 RA Throttling.
disable	Disbale IPv6 RA Throttling.
interval-option	Adjust the behavior on RA with RFC3775 interval option.
ignore	Interval option has no influence on throttling.
passthrough	All RAs with RFC3775 interval option will be forwarded (default).
throttle	All RAs with RFC3775 interval option will be throttled.
max-through	Cap 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	No upper bound at the vlan level.
throttle-period	To adjust 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

None.

Examples

This example shows how to configure the Neigbor Binding table :

```
> config ipv6 neigbor-binding ra-throttle
```

Related Commands

show ipv6 neighbor-binding

config ipv6 ns-mcast-fwd

To configure the NS multicast cachemiss forwarding, use the **config ipv6 ns-mcast-fwd** command.

config ipv6 ns-mcast-fwd {**enable** | **disable**}

Syntax Description

enable	Enables NS Multicast forwarding on CacheMiss.
disable	Disables NS Multicast forwarding on CacheMiss.

Command Default

None.

Examples

This example shows how to configure an NS Multicast Forwarding:

```
> config ipv6 ns-mcast-fwd enable
```

Related Commands

show ipv6 summary

config ipv6 ra-guard

To configure the filter for RA packets originating from client on AP, use the **config ipv6 ra-guard** command.

config ipv6 ra-guard ap { **enable** | **disable** }

Syntax Description

enable	Enables Router Advertisement Guard on AP.
disable	Disables Router Advertisement Guard on AP.

Command Default None.

Examples This example shows how to enable IPv6 RA guard:

```
> config ipv6 ra-guard enable
```

Related Commands **show ipv6 ra-guard**

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** 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.
client_MAC	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	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.
macfilter_IP	(Optional) IP address of the local MAC filter database.
delete	Deletes a MAC filter entry on the controller.

Command Default

None.

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.

Examples

This example shows how to add a MAC filer 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:

```
> 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 description*

Syntax Description

MAC	Client MAC address.
description	(Optional) Description within double quotes (up to 32 characters).

Command Default

None.

Examples

This example shows how to set the description MAC filter 01 to MAC address **11:11:11:11:11:11:**

```
> 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 interface*

Syntax Description

MAC	Client MAC address.
interface	Interface name. A value of zero is equivalent to no name.

Command Default

None.

Examples

This example shows how to create a MAC filer interface Lab01 on client **11:11:11:11:11:11**:

```
> 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	IP address for a specific MAC address in the local MAC filter database.

Command Default

None.

Examples

This example shows how to specify IP address **10.92.125.51** for a MAC **00:E0:77:31:A3:55 in the local MAC filter database:**

```
> 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.

Examples

This example shows how to have the operating system send MAC addresses to the RADIUS server in the form aa:bb:cc:dd:ee:ff:

```
> config macfilter mac-delimiter colon
```

This example shows how to have the operating system send MAC addresses to the RADIUS server in the form aa-bb-cc-dd-ee-ff:

```
> config macfilter mac-delimiter hyphen
```

This example shows how to have the operating system send MAC addresses to the RADIUS server in the form aabbccddeeff:

```
> 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.

Examples

This example shows how to configure the Cisco ACS compatibility mode to “other”:

```
> 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 wlan_id*

Syntax Description

MAC	Client MAC address.
wlan_id	Wireless LAN identifier to associate with. A value of zero is not allowed.

Command Default

None.

Examples

This example shows how to modify client wireless LAN ID 2 for a MAC filer **11:11:11:11:11:11:**

```
> config macfilter wlan-id 11:11:11:11:11:11 2
```

Related Commands

show macfilter
show wlan

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.

Examples

This example shows how to enable a remote LAN with ID 2**:**

```
> config remote-lan enable 2
```

Related Commands

show remote-lan

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.

Examples

This example shows how to enable user policy override through AAA on a remote LAN where the remote LAN ID is 2**:**

```
> config remote-lan aaa-override enable 2
```

Related Commands

show remote-lan

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.

Examples

This example shows how to specify ACL1 for a remote LAN whose ID is 2:

```
> config remote-lan acl 2 ACL1
```

Related Commands

show remote-lan

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.

Examples

This example shows how to configure a new remote LAN, MyRemoteLAN, with the LAN ID as 3:

```
> config remote-lan create 3 MyRemoteLAN
```

Related Commands

show remote-lan

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 remote-lan-id* } |
{**global** {**enable** | **disable**} *remote-lan-id* } |
{**login-page** *page-name remote-lan-id*} |
{**loginfailure-page** {*page-name* | **none**} *remote-lan-id*} |
{**logout-page** {*page-name* | **none**} *remote-lan-id*} |
{**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.
remote-lan-id	Remote LAN identifier. Valid values are between 1 and 512.
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.

Command Default

None.

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.

Examples

This example shows how to configure an external web authentication URL for a remote LAN with ID 3:

```
> config remote-lan custom-web ext-webauth-url http://www.AuthorizationURL.com/ 3
```

This example shows how to enable the global status of a remote LAN with ID 3:

```
> config remote-lan custom-web global enable 3
```

This example shows how to configure the login page for a remote LAN with ID 3:

```
> config remote-lan custom-web login-page custompage1 3
```

This example shows how to configure a web authentication type with the default login page for a remote LAN with ID 3:

```
> config remote-lan custom-web webauth-type internal 3
```

Related Commands

show remote-lan

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.

Examples This example shows how to delete a remote LAN with ID 3:

```
> config remote-lan delete 3
```

Related Commands show remote-lan

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_address	IP Address of the DHCP server.

Command Default

None.

Examples

This example shows how to configure a DHCP server for a remote LAN with ID 3:

```
> 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.

Examples

This example shows how to configure the exclusion list timeout to 20 seconds on a remote LAN with ID 3:

```
> config remote-lan exclusionlist 3 20
```

Related Commands

show remote-lan

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.

Examples

This example shows how to configure an interface myinterface for a remote LAN with ID 3:

```
> config remote-lan interface 3 myinterface
```

Related Commands

show remote-lan

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.

Examples

This example shows how to add an LDAP server with the index number 10 for a remote LAN with ID 3:

```
> config remote-lan ldap add 3 10
```

Related Commands

show remote-lan

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

Enabled.

Examples

This example shows how to disable MAC filtering on a remote LAN with ID 3:

```
> config remote-lan mac-filtering disable 3
```

Related Commands

show remote-lan

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.

Examples

This example shows how to configure 10 client connections on a remote LAN with ID 3:

```
> config remote-lan max-client-associated 3 10
```

Related Commands

show remote-lan

config remote-lan radius_server

To configure the Remote Authentication Dial In User Service (RADIUS) servers on a remote LAN, use the **config remote-lan radius_server** command.

config remote-lan radius_server
{acct {add | delete} *remote-lan-id server-index* **|** {**enable | disable**} *remote-lan-id*} **|**
{**auth {add | delete}** *remote-lan-id server-index* **|** {**enable | disable**} *remote-lan-id*} **|**
{**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.

Command Default

None.

Examples

This example shows how to enable RADIUS accounting for a remote LAN with ID 3:

```
> config remote-lan acct enable 3
```

Related Commands

show remote-lan

config remote-lan security

To configure security policy for a remote LAN, use the **config remote-lan security** command.

config remote-lan security {{web-auth {enable | disable | acl | server-precedence} *remote-lan-id* **| {web-passthrough {acl | email-input | disable | enable}** *remote-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.
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.

Examples

This example shows how to configure the security web authentication policy for remote LAN ID 1:

```
> config remote-lan security web-auth enable 1
```

Related Commands

show remote-lan

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.

Examples

This example shows how to configure the client session timeout to 6000 seconds for a remote LAN with ID 1:

```
> config remote-lan session-timeout 1 6000
```

Related Commands

show remote-lan

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.

Examples This example shows how to enable web authentication exclusion on a remote LAN with ID 1:

```
> config remote-lan webauth-exclude 1 enable
```

Related Commands show remote-lan

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

Disabled by default.

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.

Examples

This example shows how to enable monitoring for memory errors and leaks for a 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.

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.

Examples

This 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:

```
> config memory monitor leaks 12000 35000
```

Related Commands

config memory monitor errors
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.

Examples

This example shows how to set the maximum hops threshold to 8:

```
> config mesh alarm max-hop 8
```

This example shows how to set the upper SNR threshold to 25:

```
> config mesh high-snr value 25
```

Related Commands

config mesh client-access
config mesh ethernet-bridging vlan-transparent
config mesh full-sector-dfs
config mesh multicast
config mesh radius-server
config mesh security
config mesh slot-bias
show mesh ap
show mesh security-stats
show mesh stats
show mgmtuser

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.

Examples

This example shows how to enable anti-stranding on all outdoor mesh access points:

```
> config mesh astools enable
```

Related Commands

config mesh security
show mesh ap
show mesh astools stats
show mesh config
show mesh stats
show mgmtuser

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

Disabled.

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.

Examples

This example shows how to set the backhaul client access to the best-effort level:

```
> config mesh backhaul rate-adapt silver
```

Related Commands

show mesh ap
show mesh config
show mesh stats

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

Disabled.

Usage Guidelines

For 2.4 GHz, only slot 0 and 1 are valid. If slot 0 is enabled, then slot 1 is automatically be disabled. If slot 0 is disabled, then slot 1 is automatically enabled. The **config mesh backhaul slot** command is applicable only to AP1522.

Examples

This example shows how to enable slot 1 as the preferred backhaul for the root AP myrootap1:

```
> config mesh backhaul slot 1 enable myrootap1
```

Related Commands

show mesh ap
show mesh config
show mesh stats

config mesh battery-state

To configure the battery state for Cisco Aironet 1520 series mesh access points, use the **config mesh battery-state** command.

config mesh battery-state {**enable** | **disable**} {**all** | *cisco_ap*}

Syntax Description

enable	Enables the battery-state for 1520 series mesh access points.
disable	Disables the battery-state for 1520 series mesh access points.
all	Applies this command to all mesh access points.
cisco_ap	Specific mesh access point.

Command Default

Disabled.

Examples

This example shows how to set the backhaul client access to the best-effort level:

```
> config mesh battery-state enable 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 1524 serial 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

Disabled.

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, Cisco Aironet 1520 series (152x) 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 152x carries backhaul traffic over the 802.11a radio and allows client association only over the 802.11b/g radio.

Examples

This example shows how to enable client access extended to allow a wireless client association over the 802.11a radio:

```
> 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
```

This example shows how to restrict a wireless client association to the 802.11b/g radio:

```
> 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 cancelled.
```

Related Commands

show mesh ap
show mesh client-access
show mesh config
show mesh stats

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

Enabled.

Usage Guidelines

VLAN transparent is enabled as a default to ensure a smooth software upgrade from 4.1.192.xxM releases to release 5.2. Release 4.1.192.xxM does not support VLAN tagging.

Examples

This example shows how to configure Ethernet packets as untagged:

```
> config mesh ethernet-bridging vlan-transparent enable
```

This example shows how to drop tagged Ethernet packets:

```
> config mesh ethernet-bridging vlan-transparent disable
```

Related Commands

config mesh client-access
config mesh linkdata
config mesh linktest
config mesh multicast
show mesh ap
show mesh client-access
show mesh config
show mesh stats

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.

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.

Examples

This example shows to enable full-sector DFS on mesh access points:

```
> config mesh full-sector-dfs enable
```

Related Commands

config mesh alarm
config mesh battery-state
config mesh client-access
config mesh linkdata
config mesh linktest
config mesh range
show mesh ap
show mesh security-stats
show mesh stats
show mgmtuser

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 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.

Examples This example shows how to enable external MAC address filtering on access point AP001d.710d.e300:

```
> 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:

```
> 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]
```

Related Commands

config mesh alarm
config mesh client-access
config mesh ethernet-bridging vlan-transparent
config mesh linktest
config mesh radius-server
show mesh ap
show mesh client-access
show mesh config
show mesh stats

config mesh linktest

To verify client access between mesh access points, use the **config mesh linktest** command.

config mesh linktest *source_ap* {*dest_ap* | *dest_MAC*} *datarate packet_rate packet_size duration*

Syntax Description

source_ap	Source access point.
dest_ap	Destination access point.
dest_MAC	Destination 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.

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 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?
```

Examples

This 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:

```
> 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%
```

Table 2-5 lists the output flags displayed for the **config mesh linktest** command.

Table 2-5 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.

Table 2-5 Output Flags for the Config Mesh Linktest Command (continued)

Output Flag	Description
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.

Related Commands

config mesh battery-state
config mesh client-access
config mesh full-sector-dfs
config mesh linkdata
config mesh multicast
config mesh range
show mesh client-access
show mesh config
show mesh security-stats
show mesh stats

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.

Examples

This example shows how to enable LSC on mesh access points:

```
> config mesh lsc enable
```

Related Commands

config certificate lsc
show certificate lsc

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.

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.

Examples

This example shows how to multicast video across the entire mesh network and all its segments by bridging-enabled RAPs and MAPs:

```
> config mesh multicast regular
```

Related Commands

config network multicast global
config mesh battery-state
config mesh client-access
config mesh linktest
show mesh ap
show mesh config
show mesh stats

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.

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 blacklisted.
- 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.

Examples

This example shows how to configure a preferred parent with the MAC address 00:21:1b:ea:36:60 for a mesh access point myap1:

```
> config mesh parent preferred myap1 00:21:1b:ea:36:60
```

This 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**:

```
> config mesh parent preferred myap1 00:21:1b:ea:36:60 none
```

Related Commands

config network multicast global
config mesh battery-state
config mesh client-access
config mesh linktest
show mesh ap
show mesh config
show mesh stats

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

Disabled.

Usage Guidelines

4.9 GHz is a licensed frequency band restricted to public-safety personnel.

Examples

This example shows how to enable the 4.9-GHz public safety band for all mesh access points:

```
> 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
```

Related Commands

config mesh range
config mesh security
show mesh ap
show mesh config
show mesh public-safety
show mesh security-stats
show mesh stats

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 by default.

Examples

This example shows how to enable external authentication for mesh access points:

```
> config mesh radius-server eap enable
```

Related Commands

config mesh alarm
config mesh security
show mesh ap
show mesh security-stats
show mesh stats

config mesh range

To globally set the maximum range between outdoor mesh 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.

Usage Guidelines

After this command is enabled, all outdoor mesh access points reboot. This command does not affect indoor access points.

Examples

This example shows how to set the range between an outdoor mesh RAP and a MAP:

```
> 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
```

Related Commands

config mesh astools
config mesh ethernet-bridging vlan-transparent
config mesh full-sector-dfs
config mesh linkdata
config mesh linktest
show mesh ap
show mesh stats

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	Uses reliable link layer (RLL) at the second hop and beyond.
rll-retransmit	Extends the number of RLL retry attempts in an effort to improve reliability.

Command Default

None.

Usage Guidelines

Note The secondary backhaul access feature is not supported by Cisco 1520 and 1524 indoor mesh access points in the 5.2 release.

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.

Examples

This 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:

```
> config mesh secondary-backhaul enable force-same-secondary-channel
```

Related Commands

config mesh battery-state
config mesh backhaul slot
show mesh client-access
show mesh config
show mesh stats

config mesh security

To configure the security settings for mesh networks, use the **config mesh security** commands.

config mesh security {{{**rad-mac-filter** | **force-ext-auth**} {**enable** | **disable**}} | **eap** | **psk**}

Syntax Description

rad-mac-filter	Enables a RADIUS MAC address filter for the mesh security setting.
force-ext-auth	Disables forced external authentication for the mesh security setting.
enable	Enables the setting.
disable	Disables the setting.
eap	Designates the Extensible Authentication Protocol (EAP) for the mesh security setting.
psk	Designates preshared keys (PSKs) for the mesh security setting.

Command Default

EAP.

Examples

This example shows how to configure EAP as the security option for all mesh access points:

```
> config mesh security eap
```

This example shows how to configure PSK as the security option for all mesh access points:

```
> config mesh security psk
```

Related Commands

config mesh alarm
config mesh client-access
config mesh public-safety
config mesh radius-server
show mesh ap
show mesh client-access
show mesh config
show mesh security-stats
show mesh stats

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.

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.

Examples

This example shows how to disable slot bias for serial backhaul mesh APs:

```
> config mesh slot-bias disable
```

Related Commands

config mesh alarm
config mesh client-access
config mesh public-safety
config mesh radius-server
show mesh ap
show mesh client-access
show mesh config
show mesh security-stats
show mesh stats

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 Cisco wireless LAN controller, use the **config mgmtuser add** command.

config mgmtuser add *username password* {**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.
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.

Examples

This example shows how to create a management user account with read-write access:

```
> config mgmtuser add admin admin read-write "Main account"
```

Related Commands

show mgmtuser

config mgmtuser delete

To delete a management user from the Cisco wireless LAN 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 None.

Examples This example shows how to delete a management user account admin from the Cisco wireless LAN 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 Cisco wireless LAN 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

None.

Examples

This example shows how to add a description “primary-user” to the management user “admin”:

```
> config mgmtuser description admin “primary-user”
```

Related Commands

config mgmtuser add

config mgmtuser delete

config mgmtuser password

show mgmtuser

config mgmtuser password

To change 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.

Examples This example shows how to change the password of the management user “admin” with the new password 5rTfm:

```
> config mgmtuser password admin 5rTfm
```

Related Commands **show mgmtuser**

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.

Examples

This example shows how to configure the mobility intercontroller DSCP value to 40:

```
> config mobility dscp 40
```

Related Commands

config guest-lan mobility anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
config wlan mobility anchor
debug mobility

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.

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.

Examples

This example shows how to add a mobility anchor with the IP address 192.12.1.5 to a wireless LAN ID 2:

```
> config mobility group anchor add wlan 2 192.12.1.5
```

This example shows how to delete a mobility anchor with the IP address 193.13.1.15 from a wireless LAN:

```
> config mobility group anchor delete wlan 5 193.13.1.5
```

Related Commands

config guest-lan mobility anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
config wlan mobility anchor
debug mobility

show mobility anchor
show mobility statistics
show mobility summary

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.

Examples

This example shows how to configure a mobility domain name lab1:

```
> config mobility group domain lab1
```

Related Commands

config mobility group anchor
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
debug mobility
show mobility anchor
show mobility statistics
show mobility summary

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** commands.

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 valid range is 3 to 20. The default is 3.

Command Default

3.

Examples

This 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 3 counts:

```
> config mobility group keepalive count 3
```

Related Commands

config mobility group anchor
config mobility group domain
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
debug mobility
show mobility anchor
show mobility statistics
show mobility summary

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 valid range is 1 to 30 seconds. The default value is 10 seconds.

Command Default

10 seconds.

Examples

This example shows how to specify the amount of time between each ping request sent to a mobility group member to 10 seconds:

```
> config mobility group keepalive interval 10
```

Related Commands

config mobility group anchor
config mobility group domain
config mobility group keepalive count
config mobility group member
config mobility group multicast-address
config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
debug mobility
show mobility anchor
show mobility statistics
show mobility summary

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 IP_address* [*group_name*] | **delete** *MAC*}

Syntax Description

add	Adds or changes a mobility group member to the list.
MAC	Member switch MAC address.
IP_address	Member switch IP address.
group_name	(Optional) Member switch group name (if different from the default group name).
delete	(Optional) Deletes a mobility group member from the list.

Command Default

None.

Examples

This example shows how to add a mobility group member to the list:

```
> config mobility group member add 11:11:11:11:11:11 192.12.1.2
```

Related Commands

config mobility group anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group multicast-address
config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
debug mobility
show mobility anchor
show mobility statistics
show mobility summary

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.

Examples

This example shows how to configure the multicast group IP address 10.10.10.1 for a group named test:

```
> config mobility group multicast-address test 10.10.10.1
```

Related Commands

config mobility group anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
debug mobility
show mobility anchor
show mobility statistics
show mobility summary

config mobility multicast-mode

To enable or disable multicast mobility 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 multicast mode to send Mobile Announce messages to the local group.
disable	Disables the multicast mode; the controller uses unicast mode to send the Mobile Announce messages to the local group.
local_group_multicast_address	IP address for the local mobility group.

Command Default

Disabled.

Examples

This example shows how to enable the multicast mobility mode for the local mobility group IP address 157.168.20.0:

```
> config mobility multicast-mode enable 157.168.20.0
```

Related Commands

config mobility group anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility secure-mode
config mobility statistics reset
debug mobility
show mobility anchor
show mobility statistics
show mobility summary

config mobility secure-mode

To configure the secure mode for mobility messages between Cisco wireless LAN 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.

Examples

This example shows how to enable the secure mode for mobility messages:

```
> config mobility secure-mode enable
```

Related Commands

config mobility group anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility multicast-mode
config mobility statistics reset
debug mobility
show mobility anchor
show mobility statistics
show mobility summary

config mobility statistics reset

To reset the mobility statistics, use the **config mobility statistics** command.

config mobility statistics reset

Syntax Description This command has no arguments or keywords.

Command Default None.

Examples This example shows how to reset the mobility group statistics:

```
> config mobility statistics reset
```

Related Commands

config mobility group anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility multicast-mode
config mobility secure-mode
debug mobility
show mobility anchor
show mobility statistics
show mobility summary

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.

Usage Guidelines

The message log always collects and displays critical messages, regardless of the message log level setting.

Examples

This example shows how to configure the message log severity level and display critical messages:

```
> 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.

Examples This example shows how to reset the message log to collect and display critical and noncritical error messages:

```
> 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.

Examples

This example shows how to reset the message log so that it collects and display critical, noncritical, and authentication or security-related errors:

```
> 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.

Examples

This example shows how to reset the message logs so that it collects and display all messages:

```
> 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.

Examples This 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:

```
> 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** commands.

config {802.11a | 802.11b} media-stream multicast-direct {admission-besteffort {enable | disable}} | {enable | disable} | {client-maximum | radio-maximum {*value* | no-limit}}

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.
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.
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.

Command Default

None.

Usage Guidelines

Before you configure the media stream multicast-direct parameters on a 802.11 network, ensure that the network is nonoperational.

Examples

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 {802.11a | 802.11b} 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.

Examples

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-direct
show 802.11a media-stream name
show media-stream group summary
show media-stream group detail

config 802.11 multicast data-rate

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

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

Syntax Description

data-rate	Minimum multicast datarates. 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 datarate.
default	Configures all APs radio in this datarate.

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 datarate 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 datarate 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 APs already joined the controller. The APs that join the controller after the new datarate value is set will receive the new datarate value.

Examples

This example shows how to configure minimum multicast datarate settings:

```
> config 802.11a multicast data-rate 12
```

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.

Examples

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

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	Enables the session announcement message state.
disable	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	Configure the notes.
note	Session announcement notes.

Command Default

Disabled.

Usage Guidelines

Media-stream multicast-direct requires load-based Call Admission Control (CAC) to run.

Examples

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 email 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	Specifies the 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.

Usage Guidelines

Media-stream multicast-direct requires load-based Call Admission Control (CAC) to run.

Examples

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.

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.

Examples This example shows how to allow traffic for a media stream group:

```
> 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 block** command.

config media-stream block *media_stream_name*

Syntax Description		
	media_stream_name	Media-stream group name.

Command Default None.

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.

Examples This example shows how to block traffic for a media stream group:

```
> 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.

Usage Guidelines Media-stream multicast-direct requires load-based Call Admission Control (CAC) to run.

Examples This example shows how to configure the media stream named abc:

```
> 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.

Usage Guidelines

Local network usernames must be unique because they are stored in the same database.

Examples

This example shows how to add a permanent usernamed Jane to the wireless network for 1 hour:

```
> config netuser add jane able2 1 wlan_id 1 userType permanent
```

This example shows how to add a guest usernamed George to the wireless network for 1 hour:

```
> 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*

Syntax Description

username	Network username. The username can be up to 24 alphanumeric characters.

Command Default None.

Usage Guidelines Local network usernames must be unique because they are stored in the same database.

Examples This example shows how to delete an existing username named able1 from the network:

```
> config netuser delete able1

Deleted user able1
```

Related Commands **show netuser**

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.

Examples This example shows how to add a user description “HQ1 Contact” to an existing network user named able 1:

```
> config netuser description able1 “HQ1 Contact”
```

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	Enter a Wired Guest LAN Identifier to associate with the user. A zero value associates the user with any wired LAN.

Command Default None.

Examples This example shows how to configure a wired LAN ID 2 to associate with the user named aire1:

```
> config netuser guest-lan-id aire1 2
```

Related Commands

show netuser

show wlan summary

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.

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.

Examples

This example shows how to apply a QoS role to a guest user jsmith with the QoS guest role named Contractor:

```
> 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.

Usage Guidelines To delete a QoS role, use the **config netuser guest-role delete** role-name.

Examples This example shows how to create a QoS role for the guest user named guestuser1:

```
> 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.

Examples This example shows how to delete a quality of service (QoS) role for guestuser1:

```
> 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.

Examples

This example shows how to configure an average rate for the QoS guest named guestuser1:

```
> 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.

Examples

This 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:

```
> 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.

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.

Examples

This example shows how to configure the peak data rate for the QoS guest named guestuser1 with the rate for TCP traffic of 0 Kbps:

```
> 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.

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.

Examples

This 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:

```
> 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	Enter lifetime between 60 to 2592000 seconds or 0 for no limit.

Command Default

None.

Examples

This example shows how to configure a the lifetime for a Guest Network User:

```
> config netuser lifetime guest1 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 0 (unlimited)

Examples This example shows how to configure the maximum number of login sessions for a single user to 8:

```
> 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.

Examples This example shows how to change the network user password from aire1 to aire2:

```
> 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.

Examples This example shows how to configure a wireless LAN ID 2 to associate with the user named aire1:

```
> 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

Disabled.

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.

Examples

This example shows how to enable the 802.3 bridging:

```
> 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

Enabled.

Examples

This example shows how to configure an old bridge access point to associate with the switch:

```
> config network allow-old-bridge-aps enable
```

Related Commands

show network summary

config network ap-discovery

To configure the use of 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. This is the default.
disable	Enables use of both NAT IP and non NAT IP in discovery response.

Command Default

Enabled.

Usage Guidelines

- If the **config interface nat-address management** command is set, then 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, then enter the **config network ap-discovery nat-ip-only enable**, and only the management NAT address is sent.
- If the controller has both APs on the outside and the inside of its NAT gateway, then 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.

Examples

```
config network ap-discovery nat-ip-only enable
```

Related Commands

None.

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

Enabled.

Examples

This example shows how to enable the Cisco lightweight access point fallback:

```
> config network ap-fallback enable
```

Related Commands

show network summary

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

Disabled.

Examples

This example shows how to enable the lightweight access point priority reauthorization:

```
> config network ap-priority enable
```

Related Commands

config ap priority
show ap summary
show network summary

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.

Examples

This example shows how to configure AppleTalk bridging:

```
> config network apple-talk enable
```

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. The default value is 300.

Command Default

300.

Examples

This example shows how to set the ARP entry timeout value to 240 seconds:

```
> config network arptimeout 240
```

Related Commands

show network summary

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 Enabled.

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.

Examples This example shows how to configure the bridging shared secret string “shhh1”:

```
> config network bridging-shared-secret shhh2
```

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

Disabled.

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.

Examples

This example shows how to enable broadcast packet forwarding:

```
> 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.

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.

Examples

This example shows how to enable the fast SSID changing for mobile stations:

```
> 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 this command.
disable	Disables this command.

Command Default

Enabled.

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).

Examples

This example shows how to validate the source IP and MAC address within client packets:

```
> config network ip-network-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.

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.

Examples

This example shows how to enable the Cisco wireless LAN controller as a default primary:

```
> 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

Disabled.

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.

Examples

This example shows how to configure switch management from a wireless interface:

```
> 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

Disabled.

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.

Examples

This example shows how to enable the global multicast support:

```
> 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

20 seconds.

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.

Examples

This example shows how to configure the IGMP query interval at 20 seconds:

```
> 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.

Examples

This example shows how to enable internet IGMP snooping settings:

```
> 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.

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.

Examples This example shows how to configure the timeout value 50 for IGMP network settings:

```
> config network multicast igmp timeout 50
```

Related Commands
config network multicast global
config network multicast 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.

Examples

This example shows how to enable Layer 2 multicast for all interfaces:

```
> 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	Query interval to send MLD query messages.
interval-value	Query interval in seconds. The valid value is between 15 seconds to 2400 seconds.
snooping	Configures MLD snooping.
enable	Enables MLD snooping.
disable	Disables MLD snooping.
timeout	Configures MLD timeout.
timeout-value	Timeout value in seconds. The valid range is between 30 seconds to 7200 seconds.

Command Default

None.

Examples

This example shows how to set a query interval of 20 seconds for MLD query messages:

```
> 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.

Examples

This example shows how to configure the multicast mode to send a single copy of data to multiple receivers:

```
> 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.

Examples

This example shows how to configure the controller to use the unicast mode:

```
> 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

Disabled.

Examples

This example shows how to enable the Ethernet port 3 of Cisco OfficeExtend 600 Series access points to operate as a remote LAN port:

```
> config network oeap-600 dual-rlan-ports enable
```

Related Commands

show network summary

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** {**enable** | **disable**} 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

Disabled.

Examples

This example shows how to enable access to the local network for the Cisco 600 Series OfficeExtend access points:

```
> config network oeap-600 local-network enable
```

Related Commands

show network summary

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

Enabled.

Examples

This example shows how to disable the OTAP provisioning:

```
> config network otap-mode disable
```

Related Commands

show network summary

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.

Examples This example shows how to set the RF-network name to travelers:

```
> 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	Disable the secure web interface for management users.

Command Default

Enabled.

Usage Guidelines

This command allows management users to access the controller GUI using *http://ip-address*. Web mode is *not* a secure connection.

Examples

This example shows how to enable the secure web interface settings for management users:

```
> 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**} {**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.
enable	Enables the secure web interface.
disable	Disables the secure web interface.

Command Default

The default is disabled for secure web mode with increased security and **enabled** for SSL v2.

Usage Guidelines

Note The **cipher-option high** command allows users to access the controller GUI using *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.

Examples

This example shows how to enable secure web mode with increased security:

```
> config network secureweb cipher-option high enable
```

This example shows how to disable SSL v2:

```
> 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

Disabled.

Examples

This example shows how to enable the new SSH session:

```
> 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

Disabled.

Examples

This example shows how to configure the new Telnet sessions:

```
> 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. The default value is 300.

Command Default 300.

Usage Guidelines Use this command to set the idle client session duration on the Cisco wireless LAN controller. The minimum duration is 90 seconds.

Examples This example shows how to configure the idle session timeout to 1200 seconds:

```
> 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.

Examples

This example shows how to configure the controller to support bypass of captive portals:

```
> config network web-auth captive-bypass enable
```

Related Commands

show network summary

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.

Examples This example shows how to configure an additional port number 1200 to be redirected for web authentication:

```
> 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.

Examples

This example shows how to enable proxy redirect support for web authentication clients:

```
> 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.

Command Default Enabled.

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 Cisco WLC to implement the change.

Examples This example shows how to enable the secure web (https) authentication for clients:

```
> 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

Enabled.

Examples

This example shows how to disable the web interface mode:

```
> 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

Disabled.

Usage Guidelines

You must reset the system for the configuration to take effect.

Examples

This example shows how to enable proxy redirect support for web authentication clients:

```
> config network web-auth proxy-redirect enable
```

Related Commands

show network summary
show run-config

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

Enabled.

Examples

This example shows how to enable the bridge access point ZeroConfig support:

```
> config network zero-config enable
```

Related Commands

show network summary

config paging

To enable or disable scrolling of the page, use the **config paging** command.

Note Paging cannot be saved in configuration file. This is because paging configuration is enabled or disabled per tenset/console session and the sessions are dynamic and cannot be stored.

config paging {**enable** | **disable**}

Syntax Description

enable	Enables the scrolling of the page.
disable	Disables the scrolling of the page.

Command Default

Enabled.

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

Disabled.

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.

Examples

This example shows how to enable display of passwords in plain text:

```
> 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

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.

Examples

This example shows how to disable port 8:

```
> config port adminmode 8 disable
```

This example shows how to enable all ports:

```
> config port adminmode all enable
```

Related Commands

config port autoneg
config port linktrap
config port multicast appliance
config port power
show port
transfer download port

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 autonegotiation is enabled.

Examples

This example shows how to turn on physical port autonegotiation for all front-panel Ethernet ports:

```
> config port autoneg all enable
```

This example shows how to disable physical port autonegotiation for front-panel Ethernet port 19:

```
> config port autoneg 19 disable
```

Related Commands

config port adminmode
config port linktrap
config port multicast appliance
config port power
show port
transfer download port

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

Enabled.

Examples

This example shows how to disable port 8 traps:

```
> config port linktrap 8 disable
```

This example shows how to enable all port traps:

```
> config port linktrap all enable
```

Related Commands

config port adminmode
config port autoneg
config port multicast appliance
config port power
show port
transfer download port

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

Enabled.

Examples

This example shows how to enable multicast appliance service on all ports:

```
> config port multicast appliance all enable
```

This example shows how to disable multicast appliance service on port 8:

```
> config port multicast appliance 8 disable
```

Related Commands

config port adminmode
config port autoneg
config port linktrap
config port power
show port
transfer download port

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** commands.

config port power {**all** | *port*} {**enable** | **disable**}

Syntax Description

all	Configures all ports.
port	Port number.
enable	Enables the specified ports.
disable	Disable the specified ports.

Command Default

Enabled.

Examples

This example shows how to enable PoE on all ports:

```
> config port power all enable
```

This example shows how to disable PoE on port 8:

```
> config port power 8 disable
```

Related Commands

config port adminmode
config port autoneg
config port linktrap
config port multicast appliance
show port
transfer download port

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.

Usage Guidelines Because the system prompt is a user-defined variable, it is omitted from the rest of this documentation.

Examples This example shows how to change the CLI system prompt to Cisco 4400:

```
> config prompt "Cisco 4400"
```

config qos average-data-rate

To define the average data rate in Kbps for TCP traffic per user, use the **config qos average-data-rate** command.

config qos average-data-rate {**bronze** | **silver** | **gold** | **platinum**} *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.
rate	Average data rate for TCP traffic per user. A value between 0 and 60,000 Kbps (inclusive). A value of 0 imposes no bandwidth restriction on the QoS profile.

Command Default

None.

Examples

This example shows how to configure the average data rate 0 Kbps for the queue gold:

```
> config qos average-data-rate gold 0
```

Related Commands

show qos description

config qos burst-data-rate

config qos average-realtime-rate

config qos burst-realtime-rate

config qos max-rf-usage

config qos average-realtime-rate

To define the average real-time data rate in Kbps for UDP traffic per user, use the **config qos average-realtime-rate** command.

config qos average-realtime-rate {**bronze** | **silver** | **gold** | **platinum**} *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.
rate	Average real-time data rate for TCP traffic per user. A value between 0 and 60,000 Kbps (inclusive). A value of 0 imposes no bandwidth restriction on the QoS profile.

Command Default

None.

Examples

This example shows how to configure the average real-time actual rate for queue gold:

```
> config qos average-realtime-rate gold 10
```

Related Commands

show qos description

config qos average-data-rate

config qos burst-data-rate

config qos burst-realtime-rate

config qos max-rf-usage

config qos burst-data-rate

To define the peak data rate in Kbps for TCP traffic per user, use the **config qos burst-data-rate** command.

config qos burst-data-rate {**bronze** | **silver** | **gold** | **platinum**} *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.
rate	Peak data rate for TCP traffic per user. A value between 0 and 60,000 Kbps (inclusive). A value of 0 imposes no bandwidth restriction on the QoS profile.

Command Default

None.

Examples

This example shows how to configure the peak rate 30000 Kbps for the queue gold:

```
> config qos burst-data-rate gold 30000
```

Related Commands

show qos description

config qos average-data-rate

config qos average-realtime-rate

config qos burst-realtime-rate

config qos max-rf-usage

config qos burst-realtime-rate

To define the burst real-time data rate in Kbps for UDP traffic per user, use the **config qos burst-realtime-rate** command.

config qos burst-realtime-rate {**bronze** | **silver** | **gold** | **platinum**} *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.
rate	Burst real-time data rate for TCP traffic per user. A value between 0 and 60,000 Kbps (inclusive). A value of 0 imposes no bandwidth restriction on the QoS profile.

Command Default

None.

Examples

This example shows how to configure the burst real-time actual rate 2000 Kbps for the queue gold:

```
> config qos burst-realtime-rate gold 2000
```

Related Commands

show qos description

config qos average-data-rate

config qos burst-data-rate

config qos average-realtime-rate

config qos max-rf-usage

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.

Examples

This example shows how to configure the QoS profile description “description” for the queue gold:

```
> 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.

Examples

This example shows how to specify the maximum percentage of RF usage for the queue gold:

```
> 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 (0-7) 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.

Examples

This example shows how to configure the a QoS 802.1p tag for the queue gold with the dot1p tag value of 5:

```
> 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

Usage Guidelines

The maximum priority level should not be lower than the default unicast and multicast priority levels.

Examples

This 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.

```
> config qos priority gold voice video besteffort
```

Related Commands

config qos protocol-type

config qos protocol-type

To define the maximum value (0-7) 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.

Examples

This example shows how to configure the QoS protocol type silver:

```
> 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.

Examples This example shows how to configure the QoS length for the queue "gold" with the maximum queue length value as 12:

```
> 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 add, delete, or configure settings for a RADIUS accounting server for the Cisco wireless LAN controller, use the **config radius acct** command.

config radius acct {{**enable** | **disable** | **delete**} *index*} |
add *index server_ip port* {**ascii** | **hex**} *secret*}

Syntax Description

enable	Enables a RADIUS accounting server.
disable	Disables a RADIUS accounting server.
delete	Deletes a RADIUS accounting server.
index	RADIUS server index. The controller begins the search with 1.
add	Adds a RADIUS accounting server.
index_server_ip	IP address of RADIUS server.
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.

Command Default

When adding a RADIUS server, the port number defaults to **1813** and the state is **enabled**.

Examples

This 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*:

```
> config radius acct add 1 10.10.10.10 1813 ascii admin
```

Related Commands

show radius acct statistics

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.

Examples

This example shows how to configure the IPsec hmac-md5 authentication service on the RADIUS accounting server index 1:

```
> config radius acct ipsec authentication hmac-md5 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.

Examples This example shows how to disable the IPsec support for RADIUS accounting server index 1:

```
> config radius acct ipsec disable 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.

Examples This example shows how to enable the IPsec support for RADIUS accounting server index 1:

```
> config radius acct ipsec enable 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

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.

Examples

This example shows how to configure the IPsec 3DES encryption for RADIUS server index value 3:

```
> config radius acct ipsec encryption 3des 3
```

Related Commands

show radius acct statistics

show radius summary

config radius acct ipsec ike

To configure Internet Key Exchange (IKE) for the Cisco wireless LAN controller, use the **config radius acct ipsec** command.

config radius acct ipsec ike dh-group {**group-1** | **group-2** | **group-5**} | **lifetime** *seconds* | **phase1** {**aggressive** | **main**}} *index*

Syntax Description

IPsec	Configures the IPsec.
ike	Configures the IKE.
dh-group	Specifies the Dixie-Hellman 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).
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.

Examples

This example shows how to configure an IKE lifetime of 23 seconds for RADIUS server index 1:

```
> 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.

Examples

This 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:

```
> 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.

Examples

This example shows how to configure a default RADIUS accounting server for the network users with RADIUS server index1:

```
> 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.

Examples This example shows how to configure retransmission timeout value 5 seconds between the retransmission:

```
> 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 add, delete, or configure settings for a RADIUS authentication server for the Cisco wireless LAN controller, use the **config radius auth** command.

config radius auth {{**enable** | **disable** | **delete**} *index*} |
add *index server_ip port* {**ascii** | **hex**} *secret*

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.
add	Adds a RADIUS authentication server. See the "Defaults" section.
server_ip	IP address of the RADIUS server.
port	RADIUS server's UDP port number for the interface protocols.
ascii	Specifies RADIUS server's secret type: **ascii**.
hex	Specifies RADIUS server's secret type: **hex**.
secret	RADIUS server's secret.

Command Default

When adding a RADIUS server, the port number defaults to **1813** and the state is **enabled**.

Examples

This example shows how to configure a priority *1* RADIUS authentication server at *10.10.10.10* using port *1812* with a login password of *admin*:

```
> config radius auth add 1 10.10.10.10 1812 ascii admin
```

Related Commands

show radius auth statistics

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.

Examples

This example shows how to configure the IPsec hmac-md5 support for RADIUS authentication server index 1:

```
> 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.

Examples

This example shows how to enable the IPsec support for RADIUS authentication server index 1:

```
> config radius auth IPsec enable 1
```

This example shows how to disable the IPsec support for RADIUS authentication server index 1:

```
> 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** command.

config radius auth IPsec encryption {**3des** | **aes** | **des**} *index*

Syntax Description

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.

Examples

This example shows how to configure IPsec 3dec encryption RADIUS authentication server index 3:

```
> 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 {**dh-group** {**group-1** | **group-2** | **group-5**} | **lifetime** *seconds* | **phase1** {**aggressive** | **main**}} *index*

Syntax Description

dh-group	Configures the IKE Diffe-Hellman 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 2 (1024 bits).
lifetime	Configures the IKE lifetime.
seconds	Lifetime in seconds.
phase1	Configures the IKE phase1 mode.
aggressive	Enables the aggressive mode.
main	Enables the main mode.
index	RADIUS server index.

Command Default

None.

Examples

This example shows how to configure IKE lifetime of 23 seconds for RADIUS authentication server index 1:

```
> 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 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).
index	Index of the RADIUS authentication server on which to configure the AES key wrap.

Command Default

None.

Examples

This example shows how to enable the AES key wrap for a RADIUS authentication server:

```
> 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.

Examples

This example shows how to specify a delimiter hyphen to be used for a RADIUS authentication server:

```
> 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.

Examples

This example shows how to configure a RADIUS server for management users:

```
> 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 1 to 30 seconds.

Command Default

None.

Examples

This example shows how to configure a default RADIUS server retransmission timeout for management users:

```
> 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.

Examples

This example shows how to configure a default RADIUS server for network users:

```
> config radius auth network 1 enable
```

Related Commands

show radius acct statistics

config radius acct network

config radius auth retransmit-timeout

To change a default transmission timeout for a RADIUS authentication server for network users, use the **config radius auth retransmit-timeout** command.

config radius auth retransmit-timeout *index timeout*

Syntax Description

index	RADIUS server index.
timeout	Number of seconds (from 2 to 30) between retransmissions.

Command Default

None.

Examples

This example shows how to configure a retransmission timeout of 5 seconds for a RADIUS authentication server:

```
> config radius auth retransmit-timeout 5
```

Related Commands

show radius auth statistics

config radius auth rfc3576

To configure RADIUS RFC-3576 support for the authentication server for the Cisco wireless LAN 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

None.

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.

Examples

This example shows how to enable the RADIUS RFC-3576 support for a RADIUS authentication server:

```
> config radius auth rfc3576 enable 2
```

Related Commands

show radius auth statistics

show radius summary

show radius rfc3576

config radius auth server-timeout

To configure a retransmission timeout value for a RADIUS accounting server, use the **config radius auth server-timeout** command.

config radius auth server-timeout *index timeout*

Syntax Description

index	RADIUS server index.
timeout	Timeout value. The range is 2 to 30 seconds.

Command Default

The default timeout is 2 seconds.

Examples

This example shows how to configure a server timeout value of 2 seconds for RADIUS authentication server index 10:

```
> config radius auth server-timeout 2 10
```

Related Commands

show radius auth statistics

show radius summary

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.

Examples

This example shows how to configure the controller to mark a RADIUS server as down:

```
> config radius aggressive-failover disabled
```

Related Commands

show radius summary

config radius backward compatibility

To configure RADIUS backward compatibility for the Cisco wireless LAN 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.

Examples

This example shows how to enable the RADIUS backward compatibility settings:

```
> config radius backward compatibility disable
```

Related Commands

show radius summary

config radius callStationIdCase

To configure callStationIdCase information sent in RADIUS messages for the Cisco wireless LAN controller, use the **config radius callStationIdCase** command.

config radius callStationIdCase {**legacy** | **lower** | **upper**}

Syntax Description

legacy	Sends Call Station IDs for layer 2 auth to RADIUS in uppercase.
lower	Sends all Call Station IDs to RADIUS in lowercase.
upper	Sends all Call Station IDs to RADIUS in uppercase.

Command Default

Enabled.

Examples

This example shows how to send the call station ID Case (lowercase or uppercase) to use the IP address:

```
> config radius callStationIdCase lower
```

Related Commands

show radius summary

config radius callStationIdType

To configure callStationIdType information sent in RADIUS messages for the Cisco wireless LAN controller, use the **config radius callStationIdType** command.

config radius callStationIdType {ipaddr | macaddr | ap-macaddr | ap-macaddr-ssid}

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>

Command Default

The MAC address of the system.

Usage Guidelines

This command uses the selected calling station ID for communications with RADIUS servers and other applications.

Examples

This example shows how to configure the call station ID type to use the IP address:

```
> config radius callStationIdType ipAddr
```

This example shows how to configure the call station ID type to use the system's MAC address:

```
> config radius callStationIdType macAddr
```

This example shows how to configure the call station ID type to use the access point's MAC address:

```
> config radius callStationIdType ap-macAddr
```

Related Commands

show radius summary

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.

Examples

This example shows how to disable the RADIUS accounting server fallback behavior:

```
> config radius fallback-test mode off
```

This example shows how to configure the controller to revert to a preferable server from the available backup servers without using the extraneous probe messages:

```
> config radius fallback-test mode passive
```

This example shows how to configure the controller to revert to a preferable server from the available backup servers by using RADIUS probe messages:

```
> config radius fallback-test mode active
```

Related Commands

config advanced probe filter
config advanced probe limit
show advanced probe
show radius acct statistics

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.

Examples

This example shows how to enable an automatic timeout of RFID tags:

```
> 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.

Examples

This example shows how to configure RFID tag tracking settings:

```
> 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.

Examples This example shows how to configure a static RFID tag data timeout of 60 seconds.

```
> config rfid timeout 60
```

Related Commands

show rfid summary

config rfid statistics

Configure RF-Profile commands

Use the configure **rf-profile** commands to configure rf-profiles.

- config rf-profile create, page 2-825
- config rf-profile data-rates, page 2-826
- config rf-profile delete, page 2-827
- config rf-profile description, page 2-828
- config rf-profile tx-power-control-thresh-v1, page 2-829
- config rf-profile tx-power-control-thresh-v2, page 2-830
- config rf-profile tx-power-max, page 2-831
- config rf-profile tx-power-min, page 2-832

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.

Examples

This example shows how to create a new RF profile:

```
> config rf-profile create 802.11a RFtestgroup1
```

Related Commands

config rogue auto-contain level
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

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 {**disabled** | **mandatory** | **supported** } *data-rate profile-name*

Syntax Description

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

None.

Examples

This example shows how to set a data-rate to mandatory for a RF profile:

```
> config rf-profile data-rates mandatory 24 RFGroup1
```

Related Commands

config rogue auto-contain level
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

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.

Examples This example shows how to delete a RF profile:

```
> config rf-profile delete RFGroup1
```

Related Commands

config rogue auto-contain level
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

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.

Examples

This example shows how to add a description to a RF profile:

```
> config rf-profile description This is a demo desciption RFGroup1
```

Related Commands

config rogue auto-contain level
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

config rf-profile tx-power-control-thresh-v1

To configure TPCv1 to a 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.

Examples

This example shows how to configure TPCv1 on a RF profile:

```
> config rf-profile tx-power-control-thresh-v1 RFGroup1
```

Related Commands

config rogue auto-contain level
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

config rf-profile tx-power-control-thresh-v2

To configure TPCv2 to a 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.

Examples

This example shows how to configure TPCv2 on a RF profile:

```
> config rf-profile tx-power-control-thresh-v2 RFGroup1
```

Related Commands

config rogue auto-contain level
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

config rf-profile tx-power-max

To configure maximum auto-rf to a RF profile, use the **config rf-profile tx-power-max** command.

config rf-profile tx-power-max *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.

Examples

This example shows how to configure tx-power-max on a RF profile:

```
> config rf-profile tx-power-max RFGroup1
```

Related Commands

config rogue auto-contain level
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

config rf-profile tx-power-min

To configure minimum auto-rf to a RF profile, use the **config rf-profile tx-power-min** command.

config rf-profile tx-power-max *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.

Examples This example shows how to configure tx-power-min on a RF profile:

```
> config rf-profile tx-power-min RFGroup1
```

Related Commands

config rogue auto-contain level
show rogue ignore-list
show rogue rule detailed
show rogue rule summary

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*}

Syntax Description

enable	Globally enables detection and reporting of ad-hoc rogues.
disable	Globally disables detection and reporting of ad-hoc rogues.
external	Acknowledges the presence of the ad-hoc rogue.
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).

Command Default

The default for this command is **enabled** and is set to **alert**. The default for auto-containment is **disabled**.

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.

Examples

This example shows how to enable the detection and reporting of ad-hoc rogues:

```
> config rogue adhoc enable
```

This example shows how to enable alerts for all ad-hoc rogue access points:

```
> config rogue adhoc alert all
```

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.

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.

Examples

This example shows how to classify a rogue access point as friendly and can be trusted:

```
> config rogue ap classify friendly state internal 11:11:11:11:11:11
```

This example shows how to classify a rogue access point as malicious and to send an alert:

```
> config rogue ap classify malicious state alert 11:11:11:11:11:11
```

This example shows how to classify a rogue access point as unclassified and to contain it:

```
> config rogue ap classify unclassified state contain 11:11:11:11:11:11
```

Related Commands

config rogue ap friendly
config rogue ap rldp
config rogue ap ssid
config rogue ap timeout
config rogue ap valid-client

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 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.

Examples

This 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:

```
> config rogue ap friendly add 11:11:11:11:11:11
```

Related Commands

config rogue ap classify
config rogue ap rldp
config rogue ap ssid
config rogue ap timeout
config rogue ap valid-client
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 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.

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.

Examples

This example shows how to enable RLDP on all access points:

```
> config rogue ap rldp enable alarm-only
```

This example shows how to enable RLDP on monitor-mode access point ap_1:

```
> config rogue ap rldp enable alarm-only ap_1
```

This example shows how to start RLDP on the rogue access point with MAC address 123.456.789.000:

```
> config rogue ap rldp initiate 123.456.789.000
```

This example shows how to disable RLDP on all access points:

```
> config rogue ap rldp disable
```

Related Commands

config rogue ap classify
config rogue ap friendly
config rogue ap ssid
config rogue ap timeout

config rogue ap valid-client
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 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.

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.

Examples

This example shows how to automatically contain a rogue access point that is advertising your network's SSID:

```
> config rogue ap ssid auto-contain
```

Related Commands

config rogue ap classify
config rogue ap friendly
config rogue ap rldp
config rogue ap timeout
config rogue ap valid-client
config rogue rule
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 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

1200 seconds.

Examples

This example shows how to set an expiration time for entries in the rogue access point and client list to 2400 seconds:

```
> 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 ap valid-client
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 auto-containment level, use the **config rogue auto-contain level** command.

config rogue auto-contain level *level* [**monitor_ap_only**]

Syntax Description

level	Configures rogue auto-containment level in the range of 1 to 4. **Note** Up to 4 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

Level 1.

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 autocontainment 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.

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.

Examples

This example shows how to configure the auto-contain level to 3:

```
> 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.

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.

Examples

This example shows how to automatically contain a rogue access point that is associated with a valid client:

```
> config rogue ap valid-client auto-contain
```

Related Commands

config rogue ap classify
config rogue ap friendly
config rogue ap rldp
config rogue ap ssid
config rogue ap timeout
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*} *num_of_APs*

Syntax Description

aaa	Configures AAA server or local database to validate whether rogue clients are valid clients.
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.
num_of_APs	Maximum number of Cisco access points to actively contain the rogue access point (1–4).

Command Default

None.

Examples

This example shows how to enable the AAA server or local database to check MAC addresses:

```
> config rogue client aaa enable
```

This example shows how to disable the AAA server or local database from checking MAC addresses:

```
> config rogue client aaa disable
```

Related Commands

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 detection

To enable or disable rogue detection, use the **config rogue detection** command.

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.

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

Enabled.

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.

Examples

This example shows how to enable rogue detection on the access point Cisco_AP:

```
> config rogue detection enable Cisco_AP
```

Related Commands

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 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.

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.

Examples

This example shows how to configure the minimum RSSI value:

```
> config rogue detection min-rssi -80
```

Related Commands

config rogue detection
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 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	Interval at which rogue reports are sent.
transient-rogue-interval	Interval at which rogues are consistently scanned for by APs after the first time the rogues are scanned for.
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**

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.

Examples

This example shows how to configure the rogue report interval to 60 seconds:

```
> config rogue detection monitor-ap report-interval 60
```

This example shows how to configure the transient rogue interval to 300 seconds:

```
> 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** commands.

config rogue rule {**add ap priority** *priority* **classify** {**friendly** | **malicious**} *rule_name* |
classify {**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 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.
friendly	Classifies a rule as friendly.
malicious	Classifies a rule as malicious.
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 the rogue access point. The valid range is 1 to 10 (inclusive). • **duration**—Requires that the rogue access point be detected for a minimum period of time. The valid range is 0 to 3600 seconds (inclusive). • **managed-ssid**—Requires that the rogue access point's SSID be known to the controller. • **no-encryption**—Requires that the rogue access point's advertised WLAN does not have encryption enabled. • **rssi**—Requires that the rogue access point have a minimum RSSI value. The valid range is –95 to –50 dBm (inclusive). • **ssid**—Requires that the rogue access point have a specific 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

None.

Usage Guidelines

For your changes to be effective, you must enable the rule. You can configure up to 64 rules.

Examples

This example shows how to create a rule called **rule_1** with a priority of **1** and a classification as **friendly**:

```
> config rogue rule add ap priority 1 classify friendly rule_1
```

This example shows how to enable rule_1:

```
> config rogue rule enable rule_1
```

This example shows how to change the priority of the last command:

```
> config rogue rule priority 2 rule_1
```

This example shows how to change the classification of the last command:

```
> config rogue rule classify malicious rule_1
```

This example shows how to disable the last command:

```
> config rogue rule disable rule_1
```

This example shows how to delete SSID_2 from the user-configured SSID list in rule-5:

```
> config rogue rule condition ap delete ssid ssid_2 rule-5
```

Related Commands

config rogue adhoc
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
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 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.

Examples

This 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:

```
> config route add 10.1.1.0 255.255.255.0 10.1.1.1
```

Related Commands

show route summary

config route delete

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.

Examples This example shows how to delete a route from the network IP address 10.1.1.0:

```
> config route delete 10.1.1.0
```

Related Commands

show route all
config route add

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

9600.

Examples

This example shows how to configure a serial baud rate with the default connection speed of 9600:

```
> config serial baudrate 9600
```

Related Commands

config serial timeout

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).

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.

Examples This example shows how to configure the timeout of a serial port session to 10 minutes:

```
> config serial timeout 10
```

Related Commands **config serial timeout**

config service timestamps

To enable or disable timestamps in message logs, use the **config service timestamps** command.

config service timestamps {**debug** | **log**} {**datetime** | **disable**}

Syntax Description

debug	Configures timestamps in debug messages.
log	Configures timestamps in log messages.
datetime	Specifies to timestamp message logs with the standard date and time.
disable	Specifies to prevent message logs being timestamped.

Command Default

Disabled.

Examples

This example shows how to configure timestamp message logs with the standard date and time:

```
> config service timestamps log datetime
```

This example shows how to prevent message logs being timestamped:

```
> config service timestamps debug disable
```

Related Commands

show logging

config sessions maxsessions

To configure the number of Telnet CLI sessions allowed by the Cisco wireless LAN 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 5.

Usage Guidelines Up to five sessions are possible while a setting of zero prohibits any Telnet CLI sessions.

Examples This example shows how to configure the number of allowed CLI sessions to 2:

```
> config sessions maxsessions 2
```

Related Commands **show sessions**

config sessions timeout

To configure the inactivity timeout for Telnet CLI sessions, use the **config sessions timeout** command.

config sessions timeout *timeout*

Syntax Description

timeout	Timeout of Telnet session in minutes (from 0 to 160). A value of 0 indicates no timeout.

Command Default

5.

Examples

This example shows how to configure the inactivity timeout for Telnet sessions to 20 minutes:

```
> config sessions timeout 20
```

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.
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 AP.
cisco_ap	Name of the Cisco access point on which the channel is configured.

Command Default

None.

Examples

This example shows how to enable slot 3 for the access point abc:

```
> config slot 3 enable abc
```

This example shows how to configure rts for the access point abc:

```
> config slot 2 rts abc
```

Related Commands

show mesh ap

show mesh stats

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
```

Examples

This example shows how to configure read/write access mode for SNMP community:

```
> 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.

Usage Guidelines Use this command to create a new community with the default configuration.

Examples This example shows how to create a new SNMP community named test:

```
> 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.

Examples This example shows how to delete an SNMP community named test:

```
> 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 IP address of an SNMP community, use the **config snmp community ipaddr** command.

config snmp community ipaddr *ip_address ip_mask name*

Syntax Description

ip_address	SNMP community IP address.
ip_mask	SNMP community subnet mask.
name	SNMP community name.

Command Default

None.

Examples

This example shows how to configure an SNMP community with the IP address 10.10.10.10, IP mask 255.255.255.0, and SNMP community named public:

```
> config snmp community ipaddr 10.10.10.10 255.255.255.0 public
```

Related Commands

show snmp community
config snmp community mode
config snmp community accessmode
config snmp community create
config snmp community delete
config snmp community ipaddr

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.

Examples

This example shows how to enable the SNMP community named public:

```
> config snmp community mode disable public
```

Related Commands

show snmp community
config snmp community accessmode
config snmp community create
config snmp community delete
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.

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.

Examples

This example shows how to configure the SNMP engine ID with the value fffffffffff:

```
> config snmp engineID fffffffffff
```

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. The contact can be up to 31 alphanumeric characters.

Command Default None.

Examples This example shows how to set the SMNP system contact named Cisco WLAN Solution_administrator:

```
> config snmp syscontact Cisco WLAN Solution_administrator
```

Related Commands **show snmpcommunity**

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. The location can be up to 31 alphanumeric characters.

Command Default None.

Examples This example shows how to configure the SNMP system location name to Building_2a:

```
> config snmp syslocation Building_2a
```

Related Commands **show snmpcommunity**

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_address*

Syntax Description

name	SNMP community name. The name contain up to 16 characters.
ip_address	SNMP community IP address.

Command Default None.

Usage Guidelines The IP address must be valid for the command to add the new server.

Examples This example shows how to add a new SNMP trap receiver with the SNMP community named test and IP address 10.1.1.1:

```
> config snmp trapreceiver create test 10.1.1.1
```

Related Commands **show snmp trap**

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.

Examples This example shows how to delete a server named test from the SNMP trap receiver list:

```
> 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.

Usage Guidelines

This command enables or disables the Cisco wireless LAN controller from sending the traps to the selected server.

Examples

This example shows how to disable an SNMP trap receiver from sending traps to a server named server1:

```
> 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
```

Examples

This example shows how to add an SNMP username named test with read-only privileges and no encryption or authentication:

```
> 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.

Examples This example shows how to remove an SNMP user named test:

```
> 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 All versions enabled

Examples This example shows how to enable SNMP version v1:

```
> 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.

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.

Examples

This example shows how to disable STP for all Ethernet ports:

```
> config spanningtree port mode off all
```

This example shows how to turn on STP 802.1D mode for Ethernet port 24:

```
> config spanningtree port mode 802.1d 24
```

This example shows how to turn on fast STP mode for Ethernet port 2:

```
> config spanningtree port mode fast 2
```

Related Commands

show spanningtree port
config spanningtree switch mode
config spanningtree port pathcost
config spanningtree port priority

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

auto.

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.

Examples

This example shows how to have the STP algorithm automatically assign a path cost for all ports:

```
> config spanningtree port pathcost auto all
```

This example shows how to have the STP algorithm use a port cost of 200 for port 22:

```
> config spanningtree port pathcost 200 22
```

Related Commands

show spanningtree port
config spanningtree port mode
config spanningtree port priority

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 is 128.

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.

Examples

This example shows how to set Ethernet port 2 to STP priority 100:

```
> config spanningtree port priority 100 2
```

Related Commands

show spanningtree port
config spanningtree switch mode
config spanningtree port mode
config spanningtree port pathcost

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 is 32768.

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.

Examples This example shows how to configure spanning tree values on a per switch basis with the bridge priority 40230:

```
> config spanningtree switch bridgepriority 40230
```

Related Commands

show spanningtree switch
config spanningtree switch forwarddelay
config spanningtree switch hellotime
config spanningtree switch maxage
config spanningtree switch mode

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 is 15.

Usage Guidelines

The value that all bridges use for **forwarddelay** 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.

Examples

This example shows how to configure spanning tree values on a per switch basis with the bridge timeout as 20 seconds:

```
> config spanningtree switch forwarddelay 20
```

Related Commands

config spanningtree switch bridgepriority
config spanningtree switch hellotime
config spanningtree switch maxage
config spanningtree switch mode
config switchconfig flowcontrol

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 is 15.

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.

Examples

This example shows how to configure the STP hello time to 4 seconds:

```
> config spanningtree switch hellotime 4
```

Related Commands

show spanningtree switch
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 is 20.

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.

Examples

This example shows how to configure the STP bridge maximum age to 30 seconds:

```
> config spanningtree switch maxage 30
```

Related Commands

show spanningtree switch
config spanningtree switch bridgepriority
config spanningtree switch forwarddelay
config spanningtree switch hellotime
config spanningtree switch mode

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.

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.

Examples

This example shows how to support STP on all Cisco wireless LAN controller ports:

```
> config spanningtree switch mode enable
```

Related Commands

show spanningtree switch
config spanningtree switch bridgepriority
config spanningtree switch forwarddelay
config spanningtree switch hellotime
config spanningtree switch maxage
config spanningtree port mode

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

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.

Examples

This example shows how to enable the breaking into boot prompt by pressing the **Esc** key at system startup:

```
> 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 enable or disable the features that are prerequisites for the Federal Information Processing Standard (FIPS) mode, use the **config switchconfig fips-prerequisite** command.

config switchconfig fips-prerequisite {**enable** | **disable**}

Syntax Description

enable	Enables the features that are prerequisites for the FIPS mode.
disable	Disables the features that are prerequisites for the FIPS mode.

Command Default

Disabled.

Usage Guidelines

You must configure the FIPS authorization secret before you can enable or disable the FIPS prerequisite features.

Examples

This example shows how to enable the features that are prerequisites for the FIPS mode:

```
> config switchconfig fips-prerequisite enable
```

Related Commands

show switchconfig
config switchconfig boot-break
config switchconfig flowcontrol
config switchconfig mode
config switchconfig secret-obfuscation
config switchconfig strong-pwd

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 | all-checks {**enable** | **disable**}

Syntax Description

case-check	Checks at least three combinations: lower-case characters, upper-case 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.
all-checks	Checks all cases.
enable	Enables a strong password check for the AP and controller.
disable	Disables a strong password check for the AP and controller.

Command Default

Enabled.

Examples

This example shows how to enable the case check feature of the strong password check:

```
> config switchconfig strong-pwd case-check enable
```

Related Commands

show switchconfig
config switchconfig boot-break
config switchconfig flowcontrol
config switchconfig mode
config switchconfig fips-prerequisite
config switchconfig secret-obfuscation

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

Disabled.

Examples

This example shows how to enable 802.3x flow control on Cisco wireless LAN controller parameters:

```
> 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** 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

L3

Examples

This example shows how to configure LWAPP transport mode to Layer 3:

```
> 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.

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.

Examples

This example shows how to enable secret obfuscation:

```
> config switchconfig secret-obfuscation enable
```

Related Commands

show switchconfig

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 31 alphanumeric characters.

Command Default None.

Examples This example shows how to configure the system named Ent_01:

```
> config sysname Ent_01
```

Related Commands **show sysinfo**

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 {*server_index ip_address port type secret_key*} | **delete** {*server_index*} | **disable** {*server_index*} | **enable** {*server_index*} | **retransmit-timeout** {*server_index seconds*}

Syntax Description

add	Adds a new TACACS+ accounting server.
server_index	TACACS+ accounting server index (1 to 3).
ip_address	IP address for the TACACS+ accounting server.
port	Controller port used for the TACACS+ accounting server.
type	Type of secret key being used (ASCII or HEX).
secret_key	Secret key in ASCII or hexadecimal characters.
delete	Deletes a TACACS+ server.
disable	Disables a TACACS+ server.
enable	Enables a TACACS+ server.
retransmit-timeout	Changes the default retransmit timeout for the TACACS+ server.
seconds	Retransmit timeout (2 to 30 seconds).

Command Default

None.

Examples

This example shows how to add a new TACACS+ accounting server index 3 with the IP address 10.0.0.0, port number 10, and secret key 12345678 in ASCII:

```
> config tacacs acct add 1 10.0.0.0 10 ascii 12345678
```

This example shows how to change the default retransmit timeout of 30 seconds for the TACACS+ accounting server:

```
> config tacacs acct retransmit-timeout 30
```

Related Commands

show run-config

show tacacs acct statistics

show tacacs summary

config tacacs athr

To configure TACACS+ authorization server settings, use the **config tacacs athr** command.

config tacacs athr add {*server_index ip_address port type secret_key*} | **delete** {*server_index*}| **disable** {*server_index*} | **enable** {*server_index*} | **retransmit-timeout** {*server_index seconds*}

Syntax Description

add	Adds a new TACACS+ authorization server.
server_index	TACACS+ authorization server index (1 to 3).
ip_address	IP address for the TACACS+ authorization server.
port	Controller port used for the TACACS+ authorization server.
type	Type of secret key being used (ASCII or HEX).
secret_key	Secret key in ASCII or hexadecimal characters.
delete	Deletes a TACACS+ server.
disable	Disables a TACACS+ server.
enable	Enables a TACACS+ server.
retransmit-timeout	Changes the default retransmit timeout for the TACACS+ server for network users.
seconds	Retransmit timeout (2 to 30 seconds).

Command Default

None.

Examples

This example shows how to add a new TACACS+ authorization server index 3 with the IP address 10.0.0.0, port number 4, and secret key 12345678 in ASCII:

```
> config tacacs athr add 3 10.0.0.0 4 ascii 12345678
```

This example shows how to change the default retransmit timeout of 30 seconds for the TACACS+ authorization server:

```
> config tacacs athr retransmit-timeout 30
```

Related Commands

show run-config

show tacacs athr statistics

show tacacs summary

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.

Examples

This example shows how to configure a default TACACS+ authorization server timeout for management users:

```
> config tacacs athr mgmt-server-timeout 1 10
```

Related Commands

config tacacs athr

config tacacs auth

To configure TACACS+ authentication server settings, use the **config tacacs auth** command.

config tacacs auth add {*server_index ip_address port type secret_key*} | **delete** {*server_index}* | **disable** {*server_index*} | **enable** {*server_index*} | **retransmit-timeout** {*server_index seconds*}

Syntax Description

add	(Optional) Adds a new TACACS+ authentication server.
server_index	TACACS+ authentication server index (1 to 3).
ip_address	IP address for the TACACS+ authentication server.
port	Controller port used for the TACACS+ authentication server.
type	Type of secret key being used (ASCII or HEX).
secret_key	Secret key in ASCII or hexadecimal characters.
delete	(Optional) Deletes a TACACS+ server.
disable	(Optional) Disables a TACACS+ server.
enable	(Optional) Enables a TACACS+ server.
retransmit-timeout	(Optional) Changes the default retransmit timeout for the TACACS+ server for network users.
seconds	Retransmit timeout (2 to 30 seconds).

Command Default

None.

Examples

This example shows how to add a new TACACS+ authentication server index 2 with the IP address 10.0.0.3, port number 6, and secret key 12345678 in ASCII:

```
> config tacacs auth add 2 10.0.0.3 6 ascii 12345678
```

This example shows how to change the default retransmit timeout of 30 seconds for TACACS+ authentication server:

```
> config tacacs auth retransmit-timeout 30
```

Related Commands

show run-config

show tacacs auth statistics

show tacacs summary

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.

Examples

This example shows how to configure a default TACACS+ authentication server timeout for management users:

```
> config tacacs auth mgmt-server-timeout 1 10
```

Related Commands

config tacacs auth

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.

Examples This example shows how to configure the system date to 04/04/2010 and time to 15:29:00:

```
> 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** *seconds*} | {**key-auth** {**add** *key_index* **md5** {**ascii** | **hex**} *key_value* | **delete** *key_index*}} | {**server** *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 polling interval.
seconds	NTP polling interval in seconds (between 3600 and 604800).
key-auth	Configures the NTP authentication key.
add	Adds an NTP authentication key.
md5	Specifies the authentication protocol.
ascii	Specifies the ASCII key format (a maximum of 16 characters).
hex	Specifies the hexadecimal key format (a maximum of 32 digits).
delete	Deletes an authentication key.
server	Configures the NTP servers.
ip_address	NTP server's IP address. Use 0.0.0.0 to delete the entry.

Command Default

None.

Examples

This example shows how to configure the NTP polling interval to 7000 seconds:

```
> config time ntp interval 7000
```

This example shows how to enable NTP authentication where the server index is 4 and the key index is 1:

```
> config time ntp auth enable 4 1
```

This 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:

```
> config time ntp key-auth add 1 md5 hex ff
```

This 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:

```
> config time ntp key-auth add 1 md5 ascii ciscokey
```

Related Commands

show ntp-keys

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.

Examples

This example shows how to enable the daylight saving time:

```
> 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.

Examples This example shows how to set the location of the time zone in order to set the daylight saving time to location index 10 automatically:

```
> config time timezone location 10
```

Related Commands show time

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

Enabled.

Examples

This example shows how to disable the 802.11 security related traps:

```
> 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

Enabled.

Examples

This example shows how to enable the sending of AAA server-related traps:

```
> config trapflags aaa auth enable
```

Related Commands

show trapflags

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

Enabled.

Examples

This example shows how to prevent traps from sending access point-related traps:

```
> 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

Enabled.

Examples

This example shows how to prevent sending traps on invalid SNMP access:

```
> 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-disassocate** | **802.11-deauthenticate** | **802.11-authfail** | **802.11-assocfail** | **excluded**} {**enable** | **disable**}

Syntax Description

802.11-disassocate	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.
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

Disabled.

Examples

This example shows how to enable the sending of Dot11 disassociation trap to clients:

```
> 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

Enabled.

Examples

This example shows how to enable the sending of configuration-saved traps:

```
> 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

Enabled.

Examples

This example shows how to enable the sending of IPsec traps when ESP authentication failure occurs:

```
> config trapflags IPsec esp-auth enable
```

Related Commands

show trapflags

config trapflags linkmode

To enable or disable Cisco wireless LAN controller level link up/down trap flags, use the **config trapflags linkmode** command.

config trapflags linkmode {**enable** | **disable**}

Syntax Description

enable	Enables Cisco wireless LAN controller level link up/down trap flags.
disable	Disables Cisco wireless LAN controller level link up/down trap flags.

Command Default

Enabled.

Examples

This example shows how to enable the Cisco wireless LAN controller level link up/down trap:

```
> 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

Enabled.

Examples

This example shows how to disable the sending of traps when multiple logins are active:

```
> 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

Enabled

Examples

This example shows how to disable the sending of rogue access point detection traps:

```
> 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

Enabled.

Examples

This example shows how to enable the sending of RRM parameter-related traps:

```
> 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

Enabled.

Examples

This example shows how to disable the sending of RRM profile-related traps:

```
> 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

Enabled.

Examples

This example shows how to disable the sending of spanning tree traps:

```
> 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

Enabled.

Examples

This example shows how to disable the WPS traps sending:

```
> config trapflags wps disable
```

Related Commands

show trapflags

config wgb vlan

To configure 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 DMZ.
disable	Disables wired clients behind a WGB from connecting to an anchor controller in a DMZ.

Command Default None.

Examples This example shows how to enable WGB VLAN client support:

```
> config wgb vlan enable
```

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.

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.

Examples

This example shows how to enable wireless LAN identifier 16:

```
> config wlan enable 16
```

Related Commands

show ap wlan
show wlan

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.

Usage Guidelines

You cannot enable both WMM mode and client-controlled CAC mode on the same WLAN.

Examples

This example shows how to enable the phone support that requires client-controlled CAC with wireless LAN ID 8:

```
> config wlan 7920-support ap-cac-limit enable 8
```

Related Commands

show wlan

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.

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.

Examples

This example shows how to allow 802.11e on the wireless LAN with LAN ID 1:

```
> config wlan 802.11e allow 1
```

Related Commands

show trapflags

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 policy override.
disable	Disables policy override.
wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default

Disabled.

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 primarily 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 may come from a RADIUS server, for example.

Examples

This example shows how to configure user policy override via AAA on wireless LAN ID 1:

```
> config wlan aaa-override enable 1
```

Related Commands

show wlan

config wlan acl

To configure a wireless LAN access control list (ACL), use the **config wlan acl** command.

config wlan acl *wlan_id [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.

Examples

This example shows how to configure a WLAN access control list with WLAN ID 1 and ACL named office_1:

```
> config wlan acl 1 office_1
```

Related Commands

show wlan

config wlan apgroup

To manage access point group VLAN features, use the **config wlan apgroup** command.

config wlan apgroup {**add** *apgroup_name wlan_id* [*interface_name* | *interface_group_name]* |
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*
profile-mapping {**add** | **delete**} *apgroup_name*
venue {**add** | **delete**} *apgroup_name*
wlan-radio-policy *apgroup_name wlan-id* {**802.11a-only** | **802.11bg** | **802.11g-only** | **all**}}

Syntax Description

add	Creates a new access point group (AP-Group).
apgroup_name	Access point group name.
wlan_id	Wireless LAN identifier between 1 and 512.
interface_name	(Optional) Interface to which you want to map the AP-Group.
interface_group_name	(Optional) Interface group to which you want to map the AP-Group.
delete	Removes a wireless LAN from an AP-Group.
description	Describes an AP-Group.
description	Description of the AP-Group.
interface-mapping	Assigns or removes a Wireless LAN from an AP-Group.
nac-snmp	Configure NAC SNMP functionality on given AP-Group. Enables or disables Network Admission Control (NAC) out-of-band support on an access point group.
enable	Turns on NAC out-of-band support on an AP-Group.
disable	Turns off NAC out-of-band support on an AP-Group.
profile-mapping	Configure RF Profile mapping on a given AP-Group.
venue	Configure Venue info for the specified AP-Group.
wlan-radio-policy	Configures WLAN radio policy on the AP group.
802.11a-only	Configures the WLAN on 802.11a only.
802.11bg	Configures the WLAN on 802.11b/g only, 802.11b works only if 802.11g is disabled.
802.11g-only	Configures the WLAN on 802.11g only.
all	Configures the WLAN on all radio bands.

Command Default

Disabled.

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.

Examples

This example shows how to enable the NAC out-of band support on access point group 4:

```
> config wlan apgroup nac enable apgroup 4
```

Related Commands

config guest-lan nac

config wlan nac

debug group

show ap stats

show ap summary

show ap wlan

show nac statistics

show nac summary

show wlan

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

Disabled.

Examples

This example shows how to configure an SSID broadcast on wireless LAN ID 1:

```
> config wlan broadcast-ssid enable 1
```

Related Commands

show wlan

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.

Usage Guidelines

WLAN should be with Platinum QoS and it needs to be disabled while invoking this CLI

Examples

This example shows how to enable VoIP snooping for WLAN 3:

```
> config wlan call-snoop 3 enable
```

Related Commands

show wlan
show call-control ap
show call-control client
config wlan

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.

Examples

This example shows how to enable CHD for WLAN 3:

```
> config wlan chd 3 enable
```

Related Commands

show wlan
config ap wlan
config wlan

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.

Examples

This example shows how to enable Aironet information elements for a WLAN:

```
> config wlan ccx aironet-ie enable
```

Related Commands

config wlan
config wlan security ckip
show client detail

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.

Usage Guidelines

The priority value should be set to 6 on the client and on the WLAN.

Examples

This 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:

```
> config wlan channel-scan defer-priority 6 enable 30
```

Related Commands

config wlan
config wlan channel-scan defer-time
show client detail

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 (o to 60000 milliseconds).
wlan_id	Wireless LAN identifier (1 to 512).

Command Default

None.

Usage Guidelines

The time value in milliseconds should match the requirements of the equipment on your wlan.

Examples

This example shows how to assign the scan defer time to 40 milliseconds for WLAN id 50:

```
> config wlan channel-scan defer-time 40 50
```

Related Commands

config wlan
config wlan channel-scan defer-priority
show client detail

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.

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.

Examples

This example shows how to configure an IP address 10.10.2.1 of the internal DHCP server for wireless LAN ID 16:

```
> config wlan dhcp_server 16 10.10.2.1
```

Related Commands

config dhcp
config dhcp proxy
config interface dhcp
debug dhcp
debug dhcp service-port
debug disable-all
show dhcp
show dhcp proxy

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.

Examples

This example shows how to enable the wireless LAN diagnostic channel for WLAN ID 1:

```
> config wlan diag-channel enable 1
```

Related Commands

show run-config
show wlan

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.

Examples

This example shows how to configure DTIM for 802.11a radio network with DTIM value 128 and WLAN ID 1:

```
> config wlan dtim 802.11a 128 1
```

Related Commands

show wlan

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.

Usage Guidelines

This command replaces the **config wlan blacklist** command.

Examples

This example shows how to enable the exclusion list for WLAN ID 1:

```
> config wlan exclusionlist 1 enabled
```

Related Commands

show wlan
show wlan summary

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.

Usage Guidelines

Local switching must be enabled on the WLAN where you want to configure local authentication of clients associated with FlexConnect.

Examples

This example shows how to enable authentication of clients associated with FlexConnect on a specified WLAN:

```
> config wlan flexconnect ap-auth 6 enable
```

Related Commands

config wlan flexconnect local-switching
show wlan

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 IP address learning on a wireless LAN.
disable	Disables client IP 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.

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 The ability to disable IP address learning is not supported with FlexConnect *central* switching.

Examples

This example shows how to disable client IP address learning for WLAN 6:

```
> config wlan flexconnect learn-ipaddr disable 6
```

Related Commands

config wlan flexconnect local-switching
show wlan

config wlan flexconnect local-switching

To configure the WLAN for local switching, use the **config wlan flexconnect local switching** command.

config wlan flexconnect local-switching {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables local switching on a wireless LAN.
disable	Disables local switching on a wireless LAN.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

Disabled.

Usage Guidelines

When you enable the **config wlan flexconnect local-switching** command, the config wlan flexconnect learn-ipaddr command is enabled by default.

Note The ability to disable IP address learning is not supported with FlexConnect *central* switching.

Examples

This example shows how to enable WLAN 6 for local switching:

```
> config wlan flexconnect local-switching enable 6
```

Related Commands

config wlan flexconnect learn-ipaddr
config wlan flexconnect ap-auth
show wlan

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.

Examples

This example shows how to configure an interface named VLAN901:

```
> config wlan interface 16 VLAN901
```

Related Commands

show wlan

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.

Examples

This example shows how to configure an IPv6 ACL for local switching:

```
> config wlan ipv6 acl 22 acl_sample
```

Related Commands

show wlan

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.

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**

Examples

This example shows how to enable the KTS-based CAC policy for a WLAN with the ID 4:

```
> config wlan kts-cac enable 4
```

Related Commands

config wlan
config wlan qos
config wlan flexconnect local-switching
config wlan wmm
config 802.11a cac voice

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.

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.

Examples

This example shows how to add a link to a configured LDAP server with the WLAN ID 100 and server ID 4:

```
> config wlan ldap add 100 4
```

Related Commands

config ldap

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

Enabled.

Examples

This example shows how to enable band selection on a wireless LAN with WLAN ID 3:

```
> config wlan load-balance allow enable 3
```

Related Commands

config load-balancing

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 between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default

None.

Examples

This example shows how to enable the MAC filtering on WLAN ID 1:

```
> config wlan mac-filtering enable 1
```

Related Commands

show wlan

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	Specifies the maximum number of client connections to be accepted.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None.

Examples

This example shows how to specify the maximum number of client connections on WLAN ID 2:

```
> config wlan max-associated-clients 25 2
```

Related Commands

show wlan

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	Specifies the 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.

Examples

This example shows how to specify the maximum number of client connections per access point radio on WLAN ID 2:

```
> config wlan max-radio-clients 25 2
```

Related Commands

show wlan

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.

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.

Examples

This example shows how to enable the global multicast-direct media stream with WLAN ID 2:

```
> config wlan media-stream multicast-direct 2 enable
```

Related Commands

config wlan
config wlan qos
show wlan

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.

Examples

This example shows how to configure client management frame protection for WLAN ID 1:

```
> config wlan mfp client enable 1
```

Related Commands

show run-config
show wlan

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 hess_id *wlan_id*
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	
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	Enter domain index in the range 1 to 32.
domain-name	Enter 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 IP address available type information.
net-auth-type	Configures 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 indexin 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.

Examples

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 | eap-method | realm-name] *wlan_id realm-index eap-index auth-index auth-method auth-parameter*

Syntax Description

add	Adds a realm.
delete	Deletes a realm.
modify	Modifies a realm.
auth-method	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.

Examples

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 hotspot2

config wlan mobile-concierge msap

config wlan mobile-concierge dot11u

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	The WLAN identifier.
index	Specifies the index of the operator. The range is 1-32.
opreator-name	Specifies the 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.

Examples

The following command configures the wan-metrics parameters.

```
config wlan mobile-concierge hotspot2 wan-metrics add 345 1 0 3333
```

Related Commands

config wlan mobile-concierge msap

config wlan mobile-concierge dot11u

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 { disable | enable | server-id *server-id* } *wlan-id*

Syntax Description

disable	Disables MSAP on the WLAN.
enable	Enables MSAP on the WLAN.
server-id	Specifies the MSAP server-id.
server-id	Server ID to assign.
wlan-id	WLAN identifier.

Command Default

None.

Examples

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 hotspot2

config wlan mobile-concierge dot11u

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_address*

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_address	Member switch IP address for anchoring the wireless LAN.

Command Default

None.

Examples

This example shows how to configure the mobility wireless LAN anchor list with WLAN ID 4 and IP address 192.168.0.14:6:

```
> config wlan mobility anchor add 4 192.168.0.14
```

Related Commands

config guest-lan mobility anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
debug mobility
show mobility anchor
show mobility statistics
show mobility summary
config wlan mobility foreign-map

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 between 1 and 512.
foreign_mac_address	Foreign switch MAC address on WLAN.
interface_name	Interface name up to 32 alphanumeric characters.
interface_group_name	Interface group name up to 32 alphanumeric characters.

Command Default

None.

Examples

This 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:

```
> config wlan mobility foreign-map add 4 00:21:1b:ea:36:60 mygroup1
```

Related Commands

show mobility foreign-map
config mobility group member
config wlan mobility anchor
debug mobility
show mobility anchor
show mobility summary

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 wlan_id*

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

30.

Examples

This example shows how to configure radio multicast buffer settings:

```
> config wlan multicast buffer enable 45 222
```

Related Commands

config 802.11a multicast data-rate

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.

Examples

This example shows how to enable the multicast interface feature for a wireless LAN with WLAN ID 4 and interface name myinterface1:

```
> config wlan multicast interface 4 enable myinterface1
```

Related Commands

config guest-lan mobility anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
debug mobility
show mobility anchor
show mobility statistics
show mobility summary
config wlan mobility foreign-map

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 between 1 and 512.

Command Default

None.

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.

Examples

This example shows how to configure SNMP NAC support for WLAN 13:

```
> config wlan nac snmp enable 13
```

This example shows how to configure RADIUS NAC support for WLAN 34:

```
> config wlan nac radius enable 20
```

Related Commands

show nac statistics
show nac summary
config guest-lan nac
debug nac

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.

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.

Examples

This example shows how to configure the passive client on wireless LAN ID 2:

```
> config wlan passive-client enable 2
```

Related Commands

config wlan
config wlan
config network multicast global
config network multicast mode multicast
show wlan

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.

Examples

This example shows how to disable the peer-to-peer blocking for WLAN ID 1:

```
> config wlan peer-blocking disable 1
```

Related Commands

show wlan

config wlan profiling

To configure profiling of a client on a WLAN, use the **config wlan profiling** command.

config wlan profiling radius {**enable** | **disable**} *wlan_id*

Syntax Description

radius	Configures RADIUS client profiling on the WLAN.
enable	Enables profiling of a client on the WLAN.
disable	Disables profiling of a client on the WLAN.
wlan_id	WLAN identifier between 1 and 512.

Command Default

Enabled.

Usage Guidelines

Ensure that you have disabled the WLAN before configuring client profiling on the WLAN.

Examples

This example shows how to enable profiling of a client on WLAN ID 1:

```
> config wlan profiling radius enable 1
```

Related Commands

show wlan

config wlan qos

To change the quality of service 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.
foreignAp	Specifies third-party access points.
bronze	Specifies the bronze QoS policy.
silver	Specifies the silver QoS policy.
gold	Specifies the gold QoS policy.
platinum	Specifies the platinum QoS policy.

Command Default

Silver.

Examples

This example shows how to set the highest level of service on wireless LAN 1:

```
> config wlan qos 1 gold
```

Related Commands

show wlan

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** | **802.11b**g | **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.

Examples

This example shows how to configure the wireless LAN on all radio bands:

```
> config wlan radio 1 all
```

Related Commands

config 802.11a enable
config 802.11a disable
config 802.11b enable
config 802.11b disable
config 802.11b 11gSupport enable
config 802.11b 11gSupport disable
show wlan

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*}}

Syntax Description

enable	Enables RADIUS accounting for the WLAN.
disable	Disables RADIUS accounting for the WLAN.
wlan_id	Wireless LAN identifier between 1 and 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.

Command Default

None.

Examples

This example shows how to enable RADIUS accounting for the WLAN 2:

```
> config wlan radius_server acct enable 2
```

This example shows how to add a link to a configured RADIUS accounting server:

> config wlan radius_server acct add 2 5

Related Commands

config 802.11a enable
config 802.11a disable
config 802.11b enable
config 802.11b disable
config 802.11b 11gSupport enable
config 802.11b 11gSupport disable
show wlan

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 {*interval* | **enable** | **disable**} *wlan_id*

Syntax Description

interim-update	Configures the interim update of the RADIUS accounting server.
interval	Interim update interval that you specify. The valid range is 180 seconds to 3600 seconds.
enable	Enables interim update of the RADIUS accounting server for the WLAN.
disable	Disables interim update of the RADIUS accounting server for the WLAN.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

Enabled at 600 seconds.

Examples

This example shows how to specify an interim update of 200 seconds to a RADIUS accounting server of WLAN 2:

```
> config wlan radius_server acct interim-update 200 2
```

Related Commands

config 802.11a enable
config 802.11a disable
config 802.11b enable
config 802.11b disable
config 802.11b 11gSupport enable
config 802.11b 11gSupport disable
show wlan

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 between 1 and 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.

Examples

This example shows how to add a link to a configured RADIUS authentication server with WLAN ID 1 and Server ID 1:

```
> config wlan radius_server auth add 1 1
```

Related Commands

config 802.11a enable
config 802.11a disable
config 802.11b enable
config 802.11b disable
config 802.11b 11gSupport enable
config 802.11b 11gSupport disable
show wlan

config wlan radius_server acct interim-update

To configure a wireless LAN's RADIUS servers, use the **config wlan radius_server acct interim-update** command.

config wlan radius_server acct interim-update {**enable** *wlan_id* | **disable** *wlan_id*}{*interval wlan_id*}

Syntax Description

enable	Enables RADIUS authentication or accounting for this WLAN.
wlan_id	Wireless LAN identifier between 1 and 512.
disable	Disables RADIUS authentication or accounting for this WLAN.
interval	Accounting interim interval between 180 to 3600 seconds.

Command Default

None.

Usage Guidelines

This command helps to set some time as a default if the timeout interval is not specified.

Examples

This example shows how to force the 10 minutes as the default, if timeout interval is not specified:

```
> config wlan radius_server acct interim-update 600 1
```

Related Commands

config 802.11a enable
config 802.11a disable
config 802.11b enable
config 802.11b disable
config 802.11b 11gSupport enable
config 802.11b 11gSupport disable
show wlan

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 {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables RADIUS dynamic interface for this WLAN.
disable	Disables RADIUS dynamic interface for this WLAN.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None.

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.

Examples

This example shows how to enable RADIUS dynamic interface for a WLAN with an ID 1:

```
> config wlan radius_server overwrite-interface enable 1
```

Related Commands

config 802.11a enable
config 802.11a disable
config 802.11b enable
config 802.11b disable
config 802.11b 11gSupport enable
config 802.11b 11gSupport disable
show wlan

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

Disabled.

Examples

This example shows how to enable a roamed voice client's reanchor policy where WLAN ID is 1:

```
> config wlan roamed-voice-client re-anchor enable 1
```

Related Commands

show wlan

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

Disabled.

Examples

This example shows how to enable a client disassociation on a SIP CAC failure where the WLAN ID is 1:

```
> config wlan sip-cac disassoc-client enable 1
```

Related Commands

show wlan
config wlan sip-cac send-486busy

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

Enabled.

Examples

This example shows how to enable sending a SIP 486 busy message upon a SIP CAC failure where the WLAN ID is 1:

```
> config wlan sip-cac send-busy486 enable 1
```

Related Commands

show wlan
config wlan sip-cac disassoc-client

config wlan static-ip tunneling

To configure static IP client tunneling support on a WLAN, use the **config wlan static-ip tunneling** command.

config wlan static-ip tunneling {enable | disable} *wlan-id*

Syntax Description

tunneling	Configures static IP client tunneling support on a WLAN.
enable	Enables static IP client tunneling support on a WLAN.
disable	Disables static IP client tunneling support on a WLAN.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None.

Examples

This example shows how to enable static IP client tunneling support for WLAN ID 3:

```
> config wlan static-ip tunneling enable enable 34
```

Related Commands

config wlan

show wlan

Configure Wireless LAN Security Commands

Use the **config wlan security** commands to configure wireless LAN security settings.

config wlan security 802.1X

To change the state of 802.1X security on the wireless LAN Cisco radios, use the **config wlan security 802.1X** command.

config wlan security 802.1X {**enable** {*wlan_id* | **foreignAp**} | **disable** {*wlan_id* | **foreignAp**} | **encryption** {*wlan_id* | **foreignAp**} {**0** | **40** | **104**}}

Syntax Description

enable	Enables the 802.1X settings.
wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.
disable	Disables the 802.1X settings.
0	Specifies a WEP key size of 0 (no encryption) bits. The default value is 104. **Note** All keys within a wireless LAN must be the same size.
40	Specifies a WEP key size of 40 bits. The default value is 104. **Note** All keys within a wireless LAN must be the same size.
104	Specifies a WEP key size of 104 bits. The default value is 104. **Note** All keys within a wireless LAN must be the same size.

Command Default

None.

Usage Guidelines

To change the encryption level of 802.1X security on the wireless LAN Cisco radios, use the following key sizes:

- 0—no 802.1X encryption.
- 40—40/64-bit encryption.
- 104—104/128-bit encryption. (This is the default encryption setting.)

Examples

This example shows how to configure 802.1X security on WLAN ID 16:

```
> config wlan security 802.1X enable 16
```

Related Commands

show wlan

config wlan security ckip

To configure Cisco Key Integrity Protocol (CKIP) security options for the wireless LAN, use the **config wlan security ckip** command.

config wlan security ckip {**enable** | **disable**} *wlan_id*
[**akm psk set-key** {**hex** | **ascii**}{**40** | **104**} **key** *key_index wlan_id* |
mmh-mic {**enable** | **disable**} *wlan_id* |
kp {**enable** | **disable**} *wlan_id*]

Syntax Description

enable	Enables CKIP security.
disable	Disables CKIP security.
wlan_id	WLAN to which you apply the command.
akm psk set-key	(Optional) Configures encryption key management for the CKIP wireless LAN.
hex	Specifies a hexadecimal encryption key.
ascii	Specifies an ASCII encryption key.
40	Sets the static encryption key length to 40 bits for the CKIP WLAN. 40-bit keys must contain 5 ASCII text characters or 10 hexadecimal characters.
104	Sets the static encryption key length to 104 bits for the CKIP WLAN. 104-bit keys must contain 13 ASCII text characters or 26 hexadecimal characters.
key	Specifies the CKIP WLAN key settings.
key_index	Configured PSK key index.
mmh-mic	(Optional) Configures multi-modular hash message integrity check (MMH MIC) validation for the CKIP wireless LAN.
kp	(Optional) Configures key-permutation for the CKIP wireless LAN.

Command Default

None.

Examples

This example shows how to configure a CKIP WLAN encryption key of 104 bits (26 hexadecimal characters) for PSK key index 2 on WLAN 03:

```
> config wlan security ckip akm psk set-key hex 104 key 2 03
```

Related Commands

config wlan ccx aironet-ie
show wlan

config wlan security cond-web-redir

To enable or disable conditional web redirect, use the **config wlan security cond-web-redir** command.

config wlan security cond-web-redir {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables conditional web redirect.
disable	Disables conditional web redirect.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None.

Examples

This example shows how to enable the conditional web direct on WLAN ID 2:

```
> config wlan security cond-web-redir enable 2
```

Related Commands

show wlan

config wlan security eap-passthru

To configure the 802.1X frames pass through on to the external authenticator, use the **config wlan security eap-passthru** command.

config wlan security eap-passthru {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables 802.1X frames pass through to external authenticator.
disable	Disables 802.1X frames pass through to external authenticator.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None.

Examples

This example shows how to enable the 802.1X frames pass through to external authenticator on WLAN ID 2:

```
> config wlan security eap-passthru enable 2
```

Related Commands

show wlan

config wlan security ft

To configure 802.11r fast transition parameters, use the **config wlan security ft** command.

config wlan security ft {**enable** | **disable** | {**reassociation-timeout** *timeout-in-seconds*}} *wlan_id*

Syntax Description

enable	Enables 802.11r fast transition roaming support.
disable	Disables 802.11r fast transition roaming support.
reassociation-timeout	Configures reassociation deadline interval.
timeout-in-seconds	Reassociation timeout value in seconds. The valid range is 1 to 100 seconds.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None.

Usage Guidelines

Ensure that you have disabled the WLAN before you proceed.

Examples

This example shows how to enable 802.11r fast transition roaming support on WLAN ID 2:

```
> config wlan security ft enable 2
```

This example shows how to set the reassociation timeout value of 20 seconds for 802.11r fast transition roaming support on WLAN ID 2:

```
> config wlan security ft reassociation-timeout 20 2
```

Related Commands

show wlan

config wlan security ft over-the-ds

To configure 802.11r fast transition parameters over a distributed system, use the **config wlan security ft over-the-ds** command.

config wlan security ft over-the-ds {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables 802.11r fast transition roaming support over a distributed system.
disable	Disables 802.11r fast transition roaming support over a distributed system.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

Enabled.

Usage Guidelines

- Ensure that you have disabled the WLAN before you proceed.
- Ensure that 802.11r fast transition is enabled on the WLAN.

Examples

This example shows how to enable 802.11r fast transition roaming support over a distributed system on WLAN ID 2:

```
> config wlan security ft over-the-ds enable 2
```

Related Commands

show wlan

config wlan security IPsec disable

To disable IPsec security, use the **config wlan security IPsec disable** command.

config wlan security IPsec disable {*wlan_id* | **foreignAp**}

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default

None.

Examples

This example shows how to disable the IPsec for WLAN ID 16:

```
> config wlan security IPsec disable 16
```

Related Commands

show wlan

config wlan security IPsec enable

To enable IPsec security, use the **config wlan security IPsec enable** command.

config wlan security IPsec enable {*wlan_id* | **foreignAp**}

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default

None.

Examples

This example shows how to enable the IPsec for WLAN ID 16:

```
> config wlan security IPsec enable 16
```

Related Commands

show wlan

config wlan security IPsec authentication

To modify the IPsec security authentication protocol used on the wireless LAN, use the **config wlan security IPsec authentication** command.

config wlan security IPsec authentication {**hmac-md5** | **hmac-sha-1**} {*wlan_id* | **foreignAp**}

Syntax Description

hmac-md5	Specifies the IPsec HMAC-MD5 authentication protocol.
hmac-sha-1	Specifies the IPsec HMAC-SHA-1 authentication protocol.
wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default

None.

Examples

This example shows how to configure the IPsec HMAC-SHA-1 security authentication parameter for WLAN ID 1:

```
> config wlan security IPsec authentication hmac-sha-1 1
```

Related Commands

show wlan

config wlan security IPsec encryption

To modify the IPsec security encryption protocol used on the wireless LAN, use the **config wlan security IPsec encryption** command.

config wlan security IPsec encryption {**3des** | **aes** | **des**} {*wlan_id* | **foreignAp**}

Syntax Description

3des	Enables IPsec 3DES encryption.
aes	Enables IPsec AES 128-bit encryption.
des	Enables IPsec DES encryption.
wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default

None.

Examples

This example shows how to configure the IPsec aes encryption:

```
> config wlan security IPsec encryption aes 1
```

Related Commands

show wlan

config wlan security IPsec config

To configure the propriety Internet Key Exchange (IKE) CFG-Mode parameters used on the wireless LAN, use the **config wlan security IPsec config** command.

config wlan security IPsec config qotd *ip_address* {*wlan_id* | **foreignAp**}

Syntax Description

qotd	Configures the quote-of-the day server IP for cfg-mode.
ip_address	Quote-of-the-day server IP for cfg-mode.
wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default

None.

Usage Guidelines

IKE is used as a method of distributing the session keys (encryption and authentication), as well as providing a way for the VPN endpoints to agree on how the data should be protected. IKE keeps track of connections by assigning a bundle of Security Associations (SAs), to each connection.

Examples

This example shows how to configure the quote-of-the-day server IP 44.55.66.77 for cfg-mode for WLAN 1:

```
> config wlan security IPsec config qotd 44.55.66.77 1
```

Related Commands

show wlan

config wlan security IPsec ike authentication

To modify the IPsec Internet Key Exchange (IKE) authentication protocol used on the wireless LAN, use the **config wlan security IPsec ike authentication** command.

config wlan security IPsec ike authentication {**certificates** {*wlan_id* | **foreignAp**} | **pre-share-key** {*wlan_id* | **foreignAp**} *key* | **xauth-psk** {*wlan_id* | **foreignAp**} *key*}

Syntax Description

certificates	Enables the IKE certificate mode.
wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.
pre-share-key	Enables the IKE Xauth with preshared keys.
xauth-psk	Enables the IKE preshared key.
key	Key required for preshare and xauth-psk.

Command Default

None.

Examples

This example shows how to configure the IKE certification mode:

```
> config wlan security IPsec ike authentication certificates 16
```

Related Commands

show wlan

config wlan security IPsec ike dh-group

To modify the IPsec Internet Key Exchange (IKE) Diffie Hellman group used on the wireless LAN, use the **config wlan security IPsec ike dh-group** command.

config wlan security IPsec ike dh-group {*wlan_id* | **foreignAp**} {**group-1** | **group-2** | **group-5**}

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.
group-1	Specifies DH group 1 (768 bits).
group-2	Specifies DH group 2 (1024 bits).
group-5	Specifies DH group 5 (1536 bits).

Command Default

None.

Examples

This example shows how to configure the Diffe Hellman group parameter for group-1:

```
> config wlan security IPsec ike dh-group 1 group-1
```

Related Commands

show wlan

config wlan security IPsec ike lifetime

To modify the IPsec Internet Key Exchange (IKE) lifetime used on the wireless LAN, use the **config wlan security IPsec ike lifetime** command.

config wlan security IPsec ike lifetime {*wlan_id* | **foreignAp**} *seconds*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.
seconds	IKE lifetime in seconds, between 1800 and 345600.

Command Default

None.

Examples

This example shows how to configure the IPsec IKE lifetime use on the wireless LAN:

```
> config wlan security IPsec ike lifetime 1 1900
```

Related Commands

show wlan

config wlan security IPsec ike phase1

To modify IPsec Internet Key Exchange (IKE) Phase 1 used on the wireless LAN, use the **config wlan security IPsec ike phase1** command.

config wlan security IPsec ike phase1 {**aggressive** | **main**} {*wlan_id* | **foreignAp**}

Syntax Description

aggressive	Enables the IKE aggressive mode.
main	Enables the IKE main mode.
wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default

None.

Examples

This example shows how to modify IPsec IKE Phase 1:

```
> config wlan security IPsec ike phase1 aggressive 16
```

Related Commands

show wlan

config wlan security IPsec ike contivity

To modify Nortel's Contivity VPN client support on the wireless LAN, use the **config wlan security IPsec ike contivity** command.

config wlan security IPsec ike contivity {**enable** | **disable**} {*wlan_id* | **foreignAp**}

Syntax Description

enable	Enables contivity support for this WLAN.
disable	Disables contivity support for this WLAN.
wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default

None.

Examples

This example shows how to modify Contivity VPN client support:

```
> config wlan security IPsec ike contivity enable 14
```

Related Commands

show wlan

config wlan security passthru

To modify the IPsec pass-through used on the wireless LAN, use the **config wlan security passthru** command.

config wlan security passthru {**enable** | **disable**} {*wlan_id* | **foreignAp**} [*ip_address*]

Syntax Description

enable	Enables IPsec pass-through.
disable	Disables IPsec pass-through.
wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.
ip_address	(Optional) IP address of the IPsec gateway (router) that is terminating the VPN tunnel.

Command Default

None.

Examples

This example shows how to modify IPsec pass-through used on the wireless LAN:

```
> config wlan security passthru enable 3 192.12.1.1
```

Related Commands

show wlan

config wlan security splash-page-web-redir

To enable or disable splash page web redirect, use the **config wlan security splash-page-web-redir** command.

config wlan security splash-page-web-redir {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables splash page web redirect.
disable	Disables splash page web redirect.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

Disabled.

Examples

This example shows how to enable spash page web redirect:

```
> config wlan security splash-page-web-redir enable 2
```

Related Commands

show wlan

config wlan security static-wep-key authentication

To configure static Wired Equivalent Privacy (WEP) key 802.11 authentication on a wireless LAN, use the **config wlan security static-wep-key authentication** command.

config wlan security static-wep-key authentication {**shared-key** | **open**} *wlan_id*

Syntax Description

shared-key	Enables shared key authentication.
open	Enables open system authentication.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None.

Examples

This example shows how to enable the static WEP shared key authentication for WLAN ID 1:

```
> config wlan security static-wep-key authentication shared-key 1
```

Related Commands

show wlan

config wlan security static-wep-key disable

To disable the use of static Wired Equivalent Privacy (WEP) keys, use the **config wlan security static-wep-key disable** command.

config wlan security static-wep-key disable *wlan_id*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.

Command Default None.

Examples This example shows how to disable the static WEP keys for WLAN ID 1:

```
> config wlan security static-wep-key disable 1
```

Related Commands **config wlan security wpa encryption**

config wlan security static-wep-key enable

To enable the use of static Wired Equivalent Privacy (WEP) keys, use the **config wlan security static-wep-key enable** command.

config wlan security static-wep-key enable *wlan_id*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.

Command Default None.

Examples This example shows how to enable the use of static WEK keys for WLAN ID 1:

```
> config wlan security static-wep-key enable 1
```

Related Commands **config wlan security wpa encryption**

config wlan security static-wep-key encryption

To configure the static Wired Equivalent Privacy (WEP) keys and indexes, use the **config wlan security static-wep-key encryption** command.

config wlan security static-wep-key encryption *wlan_id* {**40** | **104**} {**hex** | **ascii**} *key key-index*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
40	Specifies the encryption level: 40.
104	Specifies the encryption level: 104.
hex	Specifies to use hexadecimal characters to enter key.
ascii	Specifies whether to use ASCII characters to enter key.
key	WEP key in ASCII.
key-index	Key index (1 to 4).

Command Default

None.

Usage Guidelines

One unique WEP key index can be applied to each wireless LAN. Because there are only four WEP key indexes, only four wireless LANs can be configured for static WEP Layer 2 encryption.

Make sure to disable 802.1X before using this command.

Examples

This example shows how to configure the static WEP keys for WLAN ID 1 that uses hexadecimal character 0201702001 and key index 2:

```
> config wlan security static-wep-key encryption 1 40 hex 0201702001 2
```

Related Commands

show wlan

config wlan security web-auth

To change the status of web authentication used on wireless LAN, use the **config wlan security web-auth** command.

config wlan security web-auth {{**acl** | **enable** | **disable**} {*wlan_id* | **foreignAp**} [*ipv4_acl_name* | **none**]} | {**on-macfilter-failure** *wlan_id*} | {**server-precedence** *wlan_id* [**local** | **ldap** | **radius**]} | {**flexacl** *wlan_id* [*ipv4_acl_name* | **none**]} | {**ipv6 acl** *wlan_id* [*ipv6_acl_name* | **none**]}

Syntax Description

acl	Configures the access control list.
enable	Enables web authentication.
disable	Disables web authentication.
wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.
ipv4_acl_name	IPv4 ACL name (up to 32 alphanumeric characters).
none	Specifies **no ACL name**.
on-macfilter-failure	Enables web authentication on MAC filter failure.
server-precendence	Configures the authentication server precedence order for Web-Auth users.
local	Specifies the server type.
ldap	Specifies the server type.
radius	Specifies the server type.
flexacl	Configures FlexConnect ACL.
ipv6	Configures IPv6 releated parameters.
ipv6_acl_name	IPv4 ACL name (up to 32 alphanumeric characters).

Command Default

None.

Examples

This example shows how to configure the security policy for WLAN ID 1 and an acl named ACL03:

```
> config wlan security web-auth acl 1 ACL03
```

Related Commands

show wlan

config wlan security web-passthrough acl

To add an access control list (ACL) to the wireless LAN definition, use the **config wlan security web-passthrough acl** command.

config wlan security web-passthrough acl {*wlan_id* | **foreignAp**} {*acl_name* | **none**}

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.
acl_name	ACL name (up to 32 alphanumeric characters).
none	Specifies that there is no ACL.

Command Default

None.

Examples

This example shows how to add an ACL to the wireless LAN definition:

```
> config wlan security web-passthrough acl 1 ACL03
```

Related Commands

show wlan

config wlan security web-passthrough disable

To disable a web captive portal with no authentication required on a wireless LAN, use the **config wlan security web-passthrough disable** command.

config wlan security web-passthrough disable {*wlan_id* | **foreignAp**}

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default None.

Examples This example shows how to disable a web captive portal with no authentication required on wireless LAN ID 1:

```
> config wlan security web-passthrough disable 1
```

Related Commands **show wlan**

config wlan security web-passthrough email-input

To configure a web captive portal using an e-mail address, use the **config wlan security web-passthrough email-input** command.

config wlan security web-passthrough email-input {**enable** | **disable**} {*wlan_id* | **foreignAp**}

Syntax Description

email-input	Configures a web captive portal using an e-mail address.
enable	Enables a web captive portal using an e-mail address.
disable	Disables a web captive portal using an e-mail address.
wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default

None.

Examples

This example shows how to configure a web captive portal using an e-mail address:

```
> config wlan security web-passthrough email-input enable 1
```

Related Commands

show wlan

config wlan security web-passthrough enable

To enable a web captive portal with no authentication required on the wireless LAN, use the **config wlan security web-passthrough enable** command.

config wlan security web-passthrough enable {*wlan_id* | **foreignAp**}

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.
foreignAp	Specifies third-party access points.

Command Default

None.

Examples

This example shows how to enable a web captive portal with no authentication required on wireless LAN ID 1:

```
> config wlan security web-passthrough enable 1
```

Related Commands

show wlan

config wlan security wpa akm 802.1x

To configure authentication key-management using 802.1X, use the **config wlan security wpa akm 802.1x** command.

config wlan security wpa akm 802.1x {**enable** | **disable**} *wlan_id*

Syntax Description

enable	Enables the 802.1X support
disable	Disables the 802.1X support
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None.

Examples

This example shows how to configure authentication using 802.1X :

```
> config wlan security wpa akm 802.1x enable 1
```

Related Commands

show wlan

config wlan security wpa akm cckm

To configure authentication key-management using Cisco Centralized Key Management (CCKM), use the **config wlan security wpa akm cckm** command.

config wlan security wpa akm cckm {**enable** *wlan_id* | **disable** *wlan_id* | *timestamp-tolerance* }

Syntax Description

enable	Enables CCKM support.
disable	Disables CCKM support.
wlan_id	Wireless LAN identifier between 1 and 512.
timestamp-tolerance	CCKM IE time-stamp tolerance. The range is between 1000 to 5000 milliseconds; the default is 1000 milliseconds.

Command Default

None.

Examples

This example shows how to configure authentication key-management using CCKM :

```
> config wlan security wpa akm cckm 1500
```

Related Commands

show wlan

config wlan security wpa akm ft

To configure authentication key-management using 802.11r fast transition 802.1X, use the **config wlan security wpa akm ft** command.

config wlan security wpa akm ft [**over-the-air** | **over-the-ds** | **psk**] [**reassociation-timeout** *seconds*] {**enable** | **disable**} *wlan_id*

Syntax Description

over-the-air	Configures 802.11r fast transition roaming over-the-air support.
over-the-ds	Configures 802.11r fast transition roaming DS support.
psk	Configures 802.11r fast transition PSK support.
reassociation-timeout	Configures reassoication deadline interval. The valid range is between 1 to 100 seconds. The default value is 20 seconds.
seconds	Reassociation deadline interval in seconds.
enable	Enables 802.11r fast transition 802.1X support.
disable	Disables 802.11r fast transition 802.1X support.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

Disabled.

Examples

This example shows how to configure authentication key-management using 802.11r fast transition:

```
> config wlan security wpa akm ft reassociation-timeout 25 1
```

Related Commands

show wlan

config wlan security wpa psk

To configure the Wi-Fi protected access (WPA) preshared key mode, use the **config wlan security wpa akm psk** command.

config wlan security wpa akm psk {**enable** | **disable** | **set-key** *key-format key*} *wlan_id*

Syntax Description

enable	Enables WPA-PSK.
disable	Disables WPA-PSK.
set-key	Configures a pre shared key.
key-format	Specifies key format. Either ASCII or hexadecimal.
key	WPA preshared key.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None.

Examples

This example shows how to configure the WPA preshared key mode:

```
> config wlan security wpa akm psk disable 1
```

Related Commands

show wlan

config wlan security wpa disable

To disable WPA1, use the **config wlan security wpa disable** command.

config wlan security wpa disable *wlan_id*

Syntax Description		
	wlan_id	Wireless LAN identifier between 1 and 512.

Command Default None.

Examples This example shows how to disable WPA:

```
> config wlan security wpa disable 1
```

Related Commands **show wlan**

config wlan security wpa enable

To enable WPA1, use the **config wlan security wpa enable** command.

config wlan security wpa enable *wlan_id*

Syntax Description		
	wlan_id	Wireless LAN identifier between 1 and 512.

Command Default None.

Examples This example shows how to configure the WPA on WLAN ID 1:

```
> config wlan security wpa enable 1
```

Related Commands **show wlan**

config wlan security wpa ciphers

To configure the Wi-Fi protected authentication (WPA1) or Wi-Fi protected authentication (WPA2), use the **config wlan security wpa ciphers** command.

config wlan security wpa {**wpa1** | **wpa2**} **ciphers** {**aes** | **tkip**} {**enable** | **disable**} *wlan_id*

Syntax Description

wpa1	Configures WPA1 support.
wpa2	Configures WPA2 support.
ciphers	Configurse WPA ciphers.
aes	Configures AES encryption support.
tkip	Configures TKIP encryption support.
enable	Enables WPA AES/TKIP mode.
disable	Disables WPA AES/TKIP mode.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None.

Usage Guidelines

If you are not specifying the WPA versions, it implies the following:

- If the cipher enabled is AES, you are configuring WPA2/AES.
- If the ciphers enabled is AES+TKIP, you are configuring WPA/TKIP, WPA2/AES,or WPA/TKIP.
- If the cipher enabled is TKIP, you are configuring WPA/TKIP or WPA2/TKIP.

Examples

This example shows how to encrypt the WPA:

```
> config wlan security wpa wpa1 ciphers aes enable 1
```

Related Commands

show wlan

config wlan security wpa wpa1 disable

To disable WPA1, use the **config wlan security wpa wpa1 disable** command.

config wlan security wpa wpa1 disable *wlan_id*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.

Command Default None.

Examples This example shows how to disable WPA1:

```
> config wlan security wpa wpa1 disable 1
```

Related Commands **show wlan**

config wlan security wpa wpa1 enable

To enable WPA1, use the **config wlan security wpa wpa1 enable** command.

config wlan security wpa wpa1 enable *wlan_id*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.

Command Default None.

Examples This example shows how to enable WPA1:

```
> config wlan security wpa wpa1 enable 1
```

Related Commands **show wlan**

config wlan security wpa wpa2 disable

To disable WPA2, use the **config wlan security wpa wpa2 disable** command.

config wlan security wpa wpa2 disable *wlan_id*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.

Command Default None.

Examples This example shows how to disable WPA2:

```
> config wlan security wpa wpa2 disable 1
```

Related Commands **show wlan**

config wlan security wpa wpa2 enable

To enable WPA2, use the **config wlan security wpa wpa2 enable** command.

config wlan security wpa wpa2 enable *wlan_id*

Syntax Description

wlan_id	Wireless LAN identifier between 1 and 512.

Command Default None.

Examples This example shows how to enable WPA2:

```
> config wlan security wpa wpa2 enable 1
```

Related Commands **show wlan**

config wlan security wpa wpa2 cache

To configure caching methods on a WLAN, use the **config wlan security wpa wpa2 cache** command.

config wlan security wpa wpa2 cache sticky {enable | disable*} wlan_id*

Syntax Description

sticky	Configures Sticky Key Caching (SKC) roaming support on the WLAN.
enable	Enables SKC roaming support on the WLAN.
disable	Disables SKC roaming support on the WLAN.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

None.

Usage Guidelines

Beginning in Release 7.2 and later releases, the controller supports Sticky PMKID Caching (SKC). In SKC (Sticky Key caching) also known as PKC (Pro Active Key caching), the client stores each Pairwise Master Key (PMK) ID (PMKID) against a Pairwise Master Key Security Association (PMKSA). When a client finds an AP for which it has the PMKSA, it sends the PMKID in the association request to the AP. If the PMKSA is alive in the AP, the AP provides support for fast roaming. In SKC, full authentication is done on each new AP to which the client associates and the client must keep the PMKSA associated with all APs.

- You cannot use SKC for large scale deployments as the controller supports SKC only up to eight APs.
- SKC does not work across controllers in a mobility group.
- SKC works only on WPA2-enabled WLANs.
- SKC works only on local mode APs.

Examples

This example shows how to enable SKC roaming support on a WLAN:

```
> config wlan security wpa wpa2 cache sticky enable 1
```

Related Commands

config wlan security wpa wpa2 enable

config wlan security wpa wpa2 disable

config wlan security wpa wpa2 ciphers

show wlan

config wlan security wpa wpa2 ciphers

To configure WPA2 ciphers and to enable or disable Advanced Encryption Standard (AES) or Temporal Key Integrity Protocol (TKIP) data encryption for WPA2, use the **config wlan security wpa wpa2 ciphers** command.

config wlan security wpa wpa2 ciphers {aes | tkip} {enable | disable} *wlan_id*

Syntax Description

aes	Configures AES data encryption for WPA2.
tkip	Configures TKIP data encryption for WPA2.
enable	Enables AES or TKIP data encryption for WPA2.
disable	Disables AES or TKIP data encryption for WPA2.
wlan_id	Wireless LAN identifier between 1 and 512.

Command Default

AES.

Examples

This example shows how to enable AES data encryption for WPA2:

```
> config wlan security wpa wpa2 ciphers aes enable 1
```

Related Commands

config wlan security wpa wpa2 enable

config wlan security wpa wpa2 disable

config wlan security wpa wpa2 cache

config wlan security wpa akm

config wlan security wpa akm psk set-key

config wlan session-timeout

To change the timeout of wireless LAN clients, use the **config wlan session-timeout** command.

config wlan 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.

Command Default

None.

Examples

This example shows how to configure the client timeout to 6000 seconds for WLAN ID 1:

```
> config wlan session-timeout 1 6000
```

Related Commands

show wlan

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.

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.

Examples

This example shows how to enable the web authentication exclusion for WLAN ID 5:

```
> config wlan webauth-exclude 5 enable
```

Related Commands

config dhcp
show run-config
show wlan

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.

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.

Examples

The following example shows you how to configure wireless LAN ID 1 to allow WMM.

```
> config wlan wmm allow 1
```

The following exmaple shows you how to configure wireless LAN ID 1 to specify that clients use WMM.

```
> config wlan wmm require 1
```

Related Commands

show run-config
show wlan

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.

Examples

This example shows how to configure WMM-enabled clients with the threshold value 25:

```
> 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**}

Syntax Description

enable	Enables the auto-immune feature.
disable	Disables the auto-immune feature.

Command Default

Disabled.

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.

Examples

This example shows how to configure the auto-immune mode:

```
> config wps auto-immune enable
```

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** *index* **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

Examples

This 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:

```
> 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 | 802.1x-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.

Examples

This example shows how to disable clients on the 802.11 association attempt after five consecutive failures:

```
> config wps client-exclusion 802.11-assoc disable
```

Related Commands

show wps summary

config wps mfp

To configure Management Frame Protection (MFP), use the **config wps mfp** command.

config wps mfp infrastructure {enable | disable}

Syntax Description

infrastructure	Configures the MFP infrastructure.
enable	Enables the MFP feature.
disable	Disables the MFP feature.

Command Default

None.

Examples

This example shows how to enable the infrastructure MFP:

```
> 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.

Examples

This example shows how to configure the controller to synchronize with other controllers for the shun list:

```
> 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.

Usage Guidelines

If IDS signature processing is disabled, all signatures are disabled, regardless of the state configured for individual signatures.

Examples

This example shows how to enable IDS signature processing, which enables the processing of all IDS signatures:

```
> config wps signature enable
```

This example shows how to disable a standard individual IDS signature:

```
> 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.

Usage Guidelines

If IDS signature processing is disabled, all signatures are disabled, regardless of the state configured for individual signatures.

Examples

This 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:

```
> config wps signature frequency 4 1800
```

Related Commands

config wps signature
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 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.

Usage Guidelines

If IDS signature processing is disabled, all signatures are disabled, regardless of the state configured for individual signatures.

Examples

This example shows how to set the number of seconds to elapse before reaching the signature frequency threshold to 200 for signature ID 1:

```
> config wps signature interval 1 200
```

Related Commands

config wps signature
config wps signature frequency
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.

Usage Guidelines

If IDS signature processing is disabled, all signatures are disabled, regardless of the state configured for individual signatures.

Examples

This 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:

```
> config wps signature mac-frequency 3 50
```

Related Commands

config wps signature
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 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.

Usage Guidelines

If IDS signature processing is disabled, all signatures are disabled, regardless of the state configured for individual signatures.

Examples

This 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:

```
> 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.

Usage Guidelines

If IDS signature processing is disabled, all signatures are disabled, regardless of the state configured for individual signatures.

Examples

This example shows how to reset the IDS signature 1 to default values:

```
> 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

Capwap Access Point Commands

Use the **capwap ap** commands to configure capwap access point settings.

capwap ap controller ip address

To configure the controller IP address into the capwap access point from the access point's console port, use the **capwap ap controller ip address** command.

capwap ap controller ip address *ip_address*

Syntax Description

ip_address	IP address of the controller.

Command Default

None.

Usage Guidelines

This command must be entered from an access point's console port.

Note The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases.

Examples

This example shows how to configure the controller IP address 10.23.90.81 into the capwap access point:

```
> capwap ap controller ip address 10.23.90.81
```

Related Commands

capwap ap dot1x
capwap ap hostname
capwap ap ip address
capwap ap ip default-gateway
capwap ap log-server
capwap ap primary-base
capwap ap primed-timer
capwap ap secondary-base
capwap ap tertiary-base

capwap ap dot1x

To configure the dot1x username and password into the capwap access point from the access point's console port, use the **capwap ap dot1x** command.

capwap ap dot1x username *user_name* **password** *password*

Syntax Description

user_name	Dot1x username.
password	Dot1x password.

Command Default

None.

Usage Guidelines

This command must be entered from an access point's console port.

Note The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases.

Examples

This example shows how to configure the dot1x username ABC and password pass01:

```
> capwap ap dot1x username ABC password pass01
```

Related Commands

capwap ap controller ip address
capwap ap hostname
capwap ap ip address
capwap ap ip default-gateway
capwap ap log-server
capwap ap primary-base
capwap ap primed-timer
capwap ap secondary-base
capwap ap tertiary-base

capwap ap hostname

To configure the access point host name from the access point's console port, use the **capwap ap hostname** command.

capwap ap hostname *host_name*

Syntax Description

host_name	Hostname of the access point.

Command Default

None.

Usage Guidelines

This command must be entered from an access point's console port.

Note The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases. This command is available only for Lightweight AP IOS Software recovery image (rcvk9w8) without private-config. You can remove the private-config by using the **clear capwap private-config** command.

Examples

This example shows how to configure the hostname WLC into the capwap access point:

```
> capwap ap hostname WLC
```

Related Commands

capwap ap controller ip address
capwap ap dot1x
capwap ap ip address
capwap ap ip default-gateway
capwap ap log-server
capwap ap primary-base
capwap ap primed-timer
capwap ap secondary-base
capwap ap tertiary-base

capwap ap ip address

To configure the IP address into the capwap access point from the access point's console port, use the **capwap ap ip address** command.

capwap ap ip address *ip_address*

Syntax Description

ip_address	IP address.

Command Default

None.

Usage Guidelines

This command must be entered from an access point's console port.

Note The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases.

Examples

This example shows how to configure the IP address 10.0.0.0.1 into capwap access point:

```
> capwap ap ip address 10.0.0.1
```

Related Commands

capwap ap controller ip address
capwap ap dot1x
capwap ap hostname
capwap ap ip default-gateway
capwap ap log-server
capwap ap primary-base
capwap ap primed-timer
capwap ap secondary-base
capwap ap tertiary-base

capwap ap ip default-gateway

To configure the default gateway from the access point's console port, use the **capwap ap ip default-gateway** command.

capwap ap ip default-gateway *default_gateway*

Syntax Description

default_gateway	Default gateway address of the capwap access point.

Command Default

None.

Usage Guidelines

This command must be entered from an access point's console port.

Note The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases.

Examples

This example shows how to configure the capwap access point with the default gateway address 10.0.0.1:

```
> capwap ap ip default-gateway 10.0.0.1
```

Related Commands

capwap ap controller ip address
capwap ap dot1x
capwap ap hostname
capwap ap ip address
capwap ap log-server
capwap ap primary-base
capwap ap primed-timer
capwap ap secondary-base
capwap ap tertiary-base

capwap ap log-server

To configure the system log server to log all the capwap errors, use the **capwap ap log-server** command.

capwap ap log-server *ip_address*

Syntax Description

ip_address	IP address of the syslog server.

Command Default

None.

Usage Guidelines

This command must be entered from an access point's console port.

Note The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases.

Examples

This example shows how to configure the syslog server with the IP address 10.0.0.1:

```
> capwap ap log-server 10.0.0.1
```

Related Commands

capwap ap controller ip address
capwap ap dot1x
capwap ap hostname
capwap ap ip address
capwap ap ip default-gateway
capwap ap primary-base
capwap ap primed-timer
capwap ap secondary-base
capwap ap tertiary-base

capwap ap primary-base

To configure the primary controller name and IP address into the capwap access point from the access point's console port, use the **capwap ap primary-base** command.

capwap ap primary-base *controller_name controller_ip_address*

Syntax Description

controller_name	Name of the primary controller.
controller_ip_address	IP address of the primary controller.

Command Default

None.

Usage Guidelines

This command must be entered from an access point's console port.

Note The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases.

Examples

This example shows how to configure the primary controller name WLC1 and primary controller IP address 10.92.109.1 into the capwap access point:

```
> capwap ap primary-base WLC1 10.92.109.1
```

Related Commands

capwap ap controller ip address
capwap ap dot1x
capwap ap hostname
capwap ap ip address
capwap ap ip default-gateway
capwap ap log-server
capwap ap primed-timer
capwap ap secondary-base
capwap ap tertiary-base

capwap ap primed-timer

To configure the primed timer into the capwap access point, use the **capwap ap primed-timer** command.

capwap ap primed-timer {**enable** | **disable**}

Syntax Description

enable	Enables the primed timer settings
disable	Disables the primed timer settings.

Command Default

None.

Usage Guidelines

This command must be entered from an access point's console port.

Note The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases.

Examples

This example shows how to enable the primed-timer settings:

```
> capwap ap primed-timer enable
```

Related Commands

capwap ap controller ip address
capwap ap dot1x
capwap ap hostname
capwap ap ip address
capwap ap ip default-gateway
capwap ap log-server
capwap ap primary-base
capwap ap secondary-base
capwap ap tertiary-base

capwap ap secondary-base

To configure the secondary controller name and IP address into the capwap access point from the access point's console port, use the **capwap ap secondary-base** command.

capwap ap secondary-base *controller_name controller_ip_address*

Syntax Description

controller_name	Name of the secondary controller.
controller_ip_address	IP address of the secondary controller.

Command Default

None.

Usage Guidelines

This command must be entered from an access point's console port.

Note The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases.

Examples

This example shows how to configure the secondary controller name WLC2 and secondary controller IP address 10.92.108.2 into the capwap access point:

```
> capwap ap secondary-base WLC2 10.92.108.2
```

Related Commands

capwap ap controller ip address
capwap ap dot1x
capwap ap hostname
capwap ap ip address
capwap ap ip default-gateway
capwap ap log-server
capwap ap primary-base
capwap ap primed-timer
capwap ap tertiary-base

capwap ap tertiary-base

To configure the tertiary controller name and IP address into the capwap access point from the access point's console port, use the **capwap ap tertiary-base** command.

capwap ap tertiary-base *controller_name controller_ip_address*

Syntax Description

controller_name	Name of the tertiary controller.
controller_ip_address	IP address of the tertiary controller.

Command Default

None.

Usage Guidelines

This command must be entered from an access point's console port.

Note The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases.

Examples

This example shows how to configure the tertiary controller name WLC3 and secondary controller IP address 10.80.72.2 into the capwap access point:

```
> capwap ap tertiary-base WLC3 10.80.72.2
```

Related Commands

capwap ap controller ip address
capwap ap dot1x
capwap ap hostname
capwap ap ip address
capwap ap ip default-gateway
capwap ap log-server
capwap ap primary-base
capwap ap primed-timer
capwap ap secondary-base

lwapp ap controller ip address

To configure the controller IP address into the FlexConnect access point from the access point's console port, use the **lwapp ap controller ip address** command.

lwapp ap controller ip address *ip_address*

Syntax Description

ip_address	IP address of the controller.

Command Default None.

Usage Guidelines This command must be entered from an access point's console port.

Prior to changing the FlexConnect configuration on an access point using the access point's console port, the access point must be in standalone mode (not connected to a controller) and you must remove the current LWAPP private configuration by using the **clear lwapp private-config** command.

Note The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases.

Examples This example shows how to configure the controller IP address 10.92.109.1 into the FlexConnect access point:

```
> lwapp ap controller ip address 10.92.109.1
```

Related Commands clear lwapp private-config

debug lwapp console cli

Saving Configurations

Use the **save config** command before you log out of the command line interface to save all previous configuration changes.

save config

To save Cisco wireless LAN controller configurations, use the **save config** command.

save config

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to save the Cisco wireless LAN controller settings:

```
> save config

Are you sure you want to save? (y/n) y

Configuration Saved!
```

Related Commands

show sysinfo

test pmk-cache delete

To delete an entry in the Pairwise Master Key (PMK) cache from all Cisco wireless LAN controllers in the mobility group, use the **test pmk-cache delete** command.

test pmk-cache delete {**all** | *mac_address*}

Syntax Description

all	Deletes all Cisco wireless LAN controllers.
mac_address	MAC address of the Cisco wireless LAN controller to delete.

Command Default None.

Examples This example shows how to delete all entries in the PMK cache:

```
> test pmk-cache delete all
```

Related Commands **show pmk-cache**

Clearing Configurations, Logfiles, and Other Actions

Use the **clear** command to clear existing configurations, log files, and other functions.

clear acl counters

To clear the current counters for an access control list (ACL), use the **clear acl counters** command.

clear acl counters *acl_name*

Syntax Description		
	acl_name	ACL name.

Command Default None.

Usage Guidelines

Note ACL counters are available only on the following controllers: Cisco 4400 Series Controller, Cisco WiSM, and Catalyst 3750G Integrated Wireless LAN Controller Switch.

Examples This example shows how to clear the current counters for acl1:

```
> clear acl counters acl1
```

Related Commands

config acl counter
show acl

clear ap-config

To clear (reset to the default values) the configuration settings of a lightweight access point, use the **clear ap-config** command.

clear ap-config *ap_name*

Syntax Description

ap_name	Access point name.

Command Default

None.

Usage Guidelines

Entering this command does not clear the static IP address of the access point.

Examples

This example shows how to clear the access point's configuration settings for the access point named ap1240_322115:

```
> clear ap-config ap1240_322115

Clear ap-config will clear ap config and reboot the AP. Are you sure you want continue? (y/n)
```

Related Commands

show ap config

clear ap-eventlog

To delete the existing event log and create an empty event log file for a specific access point or for all access points joined to the controller, use the **clear ap-eventlog** command.

clear ap-eventlog {specific *ap_name* **| all}**

Syntax Description

specific	Specifies a specific access point log file.
ap_name	Name of the access point for which the event log file will be emptied.
all	Deletes the event log for all access points joined to the controller.

Command Default

None.

Examples

This example shows how to delete the event log for all access points:

```
> clear ap-eventlog all

This will clear event log contents for all APs. Do you want continue? (y/n) :y

Any AP event log contents have been successfully cleared.
```

Related Commands

show ap eventlog

clear ap join stats

To clear the join statistics for all access points or for a specific access point, use the **clear ap join stats** command.

clear ap join stats {**all** | *ap_mac*}

Syntax Description

all	Specifies all access points.
ap_mac	Access point MAC address.

Command Default None.

Examples This example shows how to clear the join statistics of all the access points:

```
> clear ap join stats all
```

Related Commands **show ap config**

clear arp

To clear the Address Resolution Protocol (ARP) table, use the **clear arp** command.

clear arp

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to cleat the ARP table:

```
> clear arp

Are you sure you want to clear the ARP cache? (y/n)
```

Related Commands

clear transfer
clear download filename
clear download mode
clear download path
clear download serverip
clear download start
clear upload datatype
clear upload filename
clear upload mode
clear upload path
clear upload serverip
clear upload start

clear client tsm

To clear the traffic stream metrics (TSM) statistics for a particular access point or all the access points to which this client is associated, use the **clear client tsm** command.

clear client tsm {**802.11a** | **802.11b**} *client_mac* {*ap_mac* | **all**}

Syntax Description

802.11a	Specifies the 802.11a network.
802.11b	Specifies the 802.11b network.
client_mac	MAC address of the client.
ap_mac	MAC address of a Cisco lightweight access point.
all	Specifies all access points.

Command Default

None.

Examples

This example shows how to clear the TSM for the MAC address 00:40:96:a8:f7:98:

```
> clear client tsm 802.11a 00:40:96:a8:f7:98 all
```

Related Commands

clear upload start

clear config

To reset configuration data to factory defaults, use the **clear config** command.

clear config

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to reset the configuration data to factory defaults:

```
> clear config

Are you sure you want to clear the configuration? (y/n)
n
Configuration not cleared!
```

Related Commands

clear transfer
clear download filename
clear download mode
clear download path
clear download serverip
clear download start
clear upload datatype
clear upload filename
clear upload mode
clear upload path
clear upload serverip
clear upload start

clear ext-webauth-url

To clear the external web authentication URL, use the **clear ext-webauth-url** command.

clear ext-webauth-url

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to clear the external web authentication URL:

```
> clear ext-webauth-url

URL cleared.
```

Related Commands

clear transfer
clear download datatype
clear download filename
clear download mode
clear download path
clear download serverip
clear download start
clear upload filename
clear upload mode
clear upload path
clear upload serverip
clear upload start

clear license agent

To clear the license agent's counter or session statistics, use the **clear license agent** command.

clear license agent {**counters** | **sessions**}

Syntax Description

counters	Clears the counter statistics.
sessions	Clears the session statistics.

Command Default

None.

Examples

This example shows how to clear the license agent's counter settings:

```
> clear license agent counters
```

Related Commands

config license agent
show license agent
license install

clear location rfid

To clear a specific radio frequency identification (RFID) tag or all of the RFID tags in the entire database, use the **clear location rfid** command.

clear location rfid {*mac_address* | **all**}

Syntax Description

mac_address	MAC address of a specific RFID tag.
all	Specifies all of the RFID tags in the database.

Command Default

None.

Examples

This example shows how to clear all of the RFID tags in the database:

```
> clear location rfid all
```

Related Commands

clear location statistics rfid
config location
show location
show location statistics rfid

clear location statistics rfid

To clear radio frequency identification (RFID) statistics, use the **clear location statistics rfid** command.

clear location statistics rfid

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to clear RFID statistics:

```
> clear location statistics rfid
```

Related Commands

clear location statistics rfid
config location
show location

clear locp statistics

To clear the Location Protocol (LOCP) statistics, use the **clear locp statistics** command.

clear locp statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to clear the statistics related to LOCP:

```
> clear locp statistics
```

Related Commands

clear nmsp statistics
show nmsp statistics
show nmsp status

clear login-banner

To remove the login banner file from the controller, use the **clear login-banner** command.

clear login-banner

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to clear the login banner file:

```
> clear login-banner
```

Related Commands

transfer download datatype

clear lwapp private-config

To clear (reset to default values) an access point's current Lightweight Access Point Protocol (LWAPP) private configuration, which contains static IP addressing and controller IP address configurations, use the **clear lwapp private-config** command.

clear lwapp private-config

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Usage Guidelines

This command is executed from the access point console port.

Prior to changing the FlexConnect configuration on an access point using the access point's console port, the access point must be in standalone mode (not connected to a controller) and you must remove the current LWAPP private configuration by using the **clear lwapp private-config** command.

Note The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases.

Examples

This example shows how to clear an access point's current LWAPP private configuration:

```
AP# clear lwapp private-config
removing the reap config file flash:/lwapp_reap.cfg
```

Related Commands

debug capwap
debug capwap reap
debug lwapp console cli

clear nmsp statistics

To clear the Network Mobility Services Protocol (NMSP) statistics, use the **clear nmsp statistics** command.

clear nmsp statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to delete the NMSP statistics log file:

```
> clear nmsp statistics
```

Related Commands

clear locp statistics
show nmsp status

clear radius acct statistics

To clear the RADIUS accounting statistics on the controller, use the **clear radius acc statistics** command.

clear radius acct statistics [*index* | **all**]

Syntax Description

index	(Optional) Index of the RADIUS accounting server.
all	(Optional) Specifies all RADIUS accounting servers.

Command Default None.

Examples This example shows how to clear the RADIUS accounting statistics:

```
> clear radius acct statistics
```

Related Commands **show radius acct statistics**

clear tacacs auth statistics

To clear the RADIUS authentication server statistics in the controller, use the **clear tacacs auth statistics** command.

clear radius tacacs auth statistics [*index* | **all**]

Syntax Description

index	(Optional) Index of the RADIUS authentication server.
all	(Optional) Specifies all RADIUS authentication servers.

Command Default None.

Examples This example shows how to clear the RADIUS authentication server statistics:

```
> clear tacacs auth statistics
```

Related Commands

show tacacs auth statistics

show tacacs summary

config tacacs auth

clear redirect-url

To clear the custom web authentication redirect URL on the Cisco wireless LAN controller, use the **clear redirect-url** command.

clear redirect-url

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to clear the custom web authentication redirect URL:

```
> clear redirect-url

URL cleared.
```

Related Commands

clear transfer
clear download datatype
clear download filename
clear download mode
clear download path
clear download start
clear upload datatype
clear upload filename
clear upload mode
clear upload path
clear upload serverip
clear upload start

clear stats ap wlan

To clear the WLAN statistics, use the **clear stats ap wlan** command.

clear stats ap wlan *cisco_ap*

Syntax Description

cisco_ap	Selected configuration elements.

Command Default

None.

Examples

This example shows how to clear the WLAN configuration elements of the access point cisco_ap:

```
> clear stats ap wlan cisco-ap

WLAN statistics cleared.
```

Related Commands

show ap stats
show ap wlan

clear stats local-auth

To clear the local Extensible Authentication Protocol (EAP) statistics, use the **clear stats local-auth** command.

clear stats local-auth

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to clear the local EAP statistics:

```
> clear stats local-auth

Local EAP Authentication Stats Cleared.
```

Related Commands

config local-auth active-timeout
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

clear stats mobility

To clear mobility manager statistics, use the **clear stats mobility** command.

clear stats mobility

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to cleat mobility manager statistics:

```
> clear stats mobility

Mobility stats cleared.
```

Related Commands

clear transfer
clear download datatype
clear download filename
clear download mode
clear download serverip
clear download start
clear upload datatype
clear upload filename
clear upload mode
clear upload path
clear upload serverip
clear upload start
clear stats port

clear stats port

To clear statistics counters for a specific port, use the **clear stats port** command.

clear stats port *port*

Syntax Description		
	port	Physical interface port number.

Command Default None.

Examples This example shows how to clear the statistics counters for port 9:

```
> clear stats port 9
```

Related Commands

clear transfer
clear download datatype
clear download filename
clear download mode
clear download serverip
clear download start
clear upload datatype
clear upload filename
clear upload mode
clear upload path
clear upload serverip
clear upload start

clear stats radius

To clear the statistics for one or more RADIUS servers, use the **clear stats radius** command.

clear stats radius {**auth** | **acct**} {*index* | **all**}

Syntax Description

auth	Clears statistics regarding authentication.
acct	Clears statistics regarding accounting.
index	Index number of the RADIUS server to be cleared.
all	Clears statistics for all RADIUS servers.

Command Default

None.

Examples

This example shows how to clear the statistics for all RADIUS authentication servers:

```
> clear stats radius auth all
```

Related Commands

clear transfer
clear download datatype
clear download filename
clear download mode
clear download serverip
clear download start
clear upload datatype
clear upload filename
clear upload mode
clear upload path
clear upload serverip
clear upload start

clear stats switch

To clear all switch statistics counters on a Cisco wireless LAN controller, use the **clear stats switch** command.

clear stats switch

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to clear all switch statistics counters:

```
> clear stats switch
```

Related Commands

clear transfer
clear download datatype
clear download filename
clear download mode
clear download path
clear download start
clear upload datatype
clear upload filename
clear upload mode
clear upload path
clear upload serverip
clear upload start

clear stats tacacs

To clear the TACACS+ server statistics on the controller, use the **clear stats tacacs** command.

clear stats tacacs [**auth | athr | acct**] [*index* | **all**]

Syntax Description

auth	(Optional) Clears the TACACS+ authentication server statistics.
athr	(Optional) Clears the TACACS+ authorization server statistics.
acct	(Optional) Clears the TACACS+ accounting server statistics.
index	Index of the TACACS+ server.
all	(Optional) Specifies all TACACS+ servers.

Command Default

None.

Examples

This example shows how to clear the TACACS+ accounting server statistics for index 1:

```
> clear stats tacacs acct 1
```

Related Commands

show tacacs summary

clear transfer

To clear the transfer information, use the **clear transfer** command.

clear transfer

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to clear the transfer information:

```
> clear transfer

Are you sure you want to clear the transfer information? (y/n) y

Transfer Information Cleared.
```

Related Commands

transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload pac
transfer upload password
transfer upload path
transfer upload port
transfer upload serverip
transfer upload start
transfer upload username

clear traplog

To clear the trap log, use the **clear traplog** command.

clear traplog

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to clear the trap log:

```
> clear traplog

Are you sure you want to clear the trap log? (y/n) y

Trap Log Cleared.
```

Related Commands

clear transfer
clear download datatype
clear download filename
clear download mode
clear download path
clear download serverip
clear download start
clear upload filename
clear upload mode
clear upload path
clear upload serverip
clear upload start

clear webimage

To clear the custom web authentication image, use the **clear webimage** command.

clear webimage

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to clear the custom web authentication image:

```
> clear webimage
```

Related Commands

clear transfer
clear download datatype
clear download filename
clear download mode
clear download path
clear download serverip
clear download start
clear upload filename
clear upload mode
clear upload path
clear upload serverip
clear upload start

clear webmessage

To clear the custom web authentication message, use the **clear webmessage** command.

clear webmessage

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to clear the custom web authentication message:

```
> clear webmessage

Message cleared.
```

Related Commands

clear transfer
clear download datatype
clear download filename
clear download mode
clear download path
clear download serverip
clear download start
clear upload filename
clear upload mode
clear upload path
clear upload serverip
clear upload start

clear webtitle

To clear the custom web authentication title, use the **clear webtitle** command.

clear webtitle

Syntax Description This command has no arguments or keywords.

Command Default None.

Examples This example shows how to clear the custom web authentication title:

```
> clear webtitle

Title cleared.
```

Related Commands
clear transfer
clear download datatype
clear download filename
clear download mode
clear download path
clear download serverip
clear download start
clear upload filename
clear upload mode
clear upload path
clear upload serverip
clear upload start

Resetting the System Reboot Time

Use the **reset** command to schedule a reboot of the controller and access points.

reset system at

To reset the system at a specified time, use the **reset system at** command.

reset system at *YYYY-MM-DD HH*: *MM*: *SS* image {no-swap | swap} reset-aps [save-config]

Syntax Description

YYYY-MM-DD	Date.
HH: MM: SS	Time in 24-hour format.
image	Configures the image to be rebooted.
swap	Changes the active boot image.
no-swap	Boots from the active image.
reset-aps	Resets all access points during the system reset.
save-config	(Optional) Saves the configuration before the system reset.

Command Default

None.

Examples

This example shows how to reset the system at 2010-03-29 and 12:01:01 time:

```
> reset system at 2010-03-29 12:01:01 image swap reset-aps save-config
```

Related Commands

reset system notify-time

reset system in

reset system in

To specify the amount of time delay before the devices reboot, use the **reset system in** command.

reset system in *HH*: *MM*: *SS* image {swap | no-swap} reset-aps save-config

Syntax Description

HH :MM :SS	Delay in duration.
image	Configures the image to be rebooted.
swap	Changes the active boot image
no-swap	Boots from the active image.
reset-aps	Resets all access points during the system reset.
save-config	Saves the configuration before the system reset.

Command Default

None.

Examples

This example shows how to reset the system after a delay of 00:01:01:

```
> reset system in 00:01:01 image swap reset-aps save-config
```

Related Commands

reset system notify-time

reset system at

reset system cancel

To cancel a scheduled reset, use the **reset system cancel** command.

reset system cancel

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to cancel a scheduled reset:

```
> reset system cancel
```

Related Commands

reset system at

reset system in

reset system notify-time

reset system notify-time

To configure the trap generation prior to scheduled resets, use the **reset system notify-time** command.

reset system notify-time *minutes*

Syntax Description		
	minutes	Number of minutes before each scheduled reset at which to generate a trap.

Command Default The default is 10 minutes.

Examples This example shows how to configure the trap generation to 10 minutes before the scheduled resets:

```
> reset system notify-time 55
```

Related Commands **reset system in**

reset system at

Uploading and Downloading Files and Configurations

Use the **transfer** command to transfer files to or from the Cisco wireless LAN controller.

transfer download certpasswor

To set the password for the .PEM file so that the operating system can decrypt the web administration SSL key and certificate, use the **transfer download certpassword** command.

transfer download certpassword *private_key_password*

Syntax Description

private_key_password	Certificate's private key password.

Command Default None.

Examples This example shows how to transfer a file to the switch with the certificate's private key password certpassword:

```
> transfer download certpassword

Clearing password
```

Related Commands

clear transfer
transfer download filename
transfer download mode
transfer download path
transfer download serverip
transfer download start
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload path
transfer upload serverip
transfer upload start

transfer download datatype

To set the download file type, use the **transfer download datatype** command.

transfer download datatype {config | code | image | signature | webadmincert | webauthbundle | eapdevcert | eapcacert}

Syntax Description

config	Downloads the configuration file.
code	Downloads an executable image to the system.
image	Downloads a web page login to the system.
signature	Downloads a signature file to the system.
webadmincert	Downloads a certificate for web administration to the system.
webauthbundle	Downloads a custom webauth bundle to the system.
eapdevcert	Downloads an EAP dev certificate to the system.
eapcacert	Downloads an EAP ca certificate to the system.

Command Default

None.

Examples

This example shows how to download an executable image to the system:

```
> transfer download datatype code
```

Related Commands

clear transfer
transfer download certpassword
transfer download filename
transfer download mode
transfer download path
transfer download serverip
transfer download start
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload path
transfer upload serverip
transfer upload start

transfer download filename

To download a specific file, use the **transfer download filename** command.

transfer download filename *filename*

Syntax Description		
	filename	Filename that contains up to 512 alphanumeric characters.

Command Default None.

Examples This example shows how to transfer a file named build603:

```
> transfer download filename build603
```

Related Commands

clear transfer
transfer download certpassword
transfer download mode
transfer download path
transfer download serverip
transfer download start
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload path
transfer upload serverip
transfer upload start

transfer download mode

To set the transfer mode, use the **transfer download mode** command.

transfer download mode {ftp | tftp}

Syntax Description

ftp	Sets the transfer mode to FTP.
tftp	Sets the transfer mode to TFTP.

Command Default

None.

Examples

This example shows how to transfer a file using the TFTP mode:

```
> transfer download mode tftp
```

Related Commands

clear transfer
transfer download certpassword
transfer download filename
transfer download path
transfer download serverip
transfer download start
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload path
transfer upload serverip
transfer upload start

transfer download password

To set the password for an FTP transfer, use the **transfer download password** command.

transfer download password *password*

Syntax Description		
	password	Password.

Command Default None.

Examples This example shows how to set the password for FTP transfer to pass01:

```
> transfer download password pass01
```

Related Commands

transfer download mode
transfer download port
transfer download username

transfer download path

To set a specific FTP or TFTP path, use the **transfer download path** command.

transfer download path *path*

Syntax Description

path	Directory path.	
	Note	Pathnames on a TFTP or FTP server are relative to the server's default or root directory. For example, in the case of the Solarwinds TFTP server, the path is "/".

Command Default None.

Examples This example shows how to transfer a file to the path c:\install\version2:

```
> transfer download path c:\install\version2
```

Related Commands

clear transfer
transfer download certpassword
transfer download filename
transfer download mode
transfer download serverip
transfer download start
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload path
transfer upload serverip
transfer upload start

transfer download port

To specify the FTP port, use the **transfer download port** command.

transfer download port *port*

Syntax Description		
	port	FTP port.

Command Default The default FTP *port* is **21**.

Examples This example shows how to specify FTP port number 23:

```
> transfer download port 23
```

Related Commands

transfer download mode
transfer download password
transfer download username

transfer download serverip

To configure the IP address of the TFTP server from which to download information, use the **transfer download serverip** command.

transfer download serverip *TFTP_server ip_address*

Syntax Description

TFTP_server	TFTP IP address.
ip_address	Server IP address.

Command Default None.

Examples This example shows how to configure the IP address of the TFTP server with the IP address 175.34.56.78:

```
> transfer download serverip 175.34.56.78
```

Related Commands

clear transfer
transfer download certpassword
transfer download filename
transfer download mode
transfer download path
transfer download start
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload path
transfer upload serverip
transfer upload start

transfer download start

To initiate a download, use the **transfer download start** command.

transfer download start

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to initiate a download:

```
> transfer download start

Mode..................................... TFTP
Data Type................................ Site Cert
TFTP Server IP........................... 172.16.16.78
TFTP Path................................ directory path
TFTP Filename............................ webadmincert_name

This may take some time.
Are you sure you want to start? (y/n) Y
TFTP Webadmin cert transfer starting.
Certificate installed.
Please restart the switch (reset system) to use the new certificate.
```

Related Commands

clear transfer
transfer download certpassword
transfer download filename
transfer download mode
transfer download path
transfer download serverip
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload path
transfer upload serverip
transfer upload start

transfer download tftpPktTimeout

To specify the TFTP packet timeout, use the **transfer download tftpPktTimeout** command.

transfer download tftpPktTimeout *timeout*

Syntax Description		
	timeout	Timeout in seconds between 1 and 254.

Command Default None.

Examples This example shows how to transfer a file with the TFTP packet timeout of 55 seconds:

```
> transfer download tftpPktTimeout 55
```

Related Commands

clear transfer
transfer download certpassword
transfer download filename
transfer download mode
transfer download path
transfer download serverip
transfer download start
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload path
transfer upload serverip
transfer upload start

transfer download tftpMaxRetries

To specify the number of allowed TFTP packet retries, use the **transfer download tftpMaxRetries** command.

transfer download tftpMaxRetries *retries*

Syntax Description

retries	Number of allowed TFTP packet retries between 1 and 254 seconds.

Command Default

None.

Examples

This example shows how to set the number of allowed TFTP packet retries to 55:

```
> transfer download tftpMaxRetries 55
```

Related Commands

clear transfer
transfer download certpassword
transfer download filename
transfer download mode
transfer download path
transfer download serverip
transfer download start
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload path
transfer upload serverip
transfer upload start

transfer download username

To specify the FTP username, use the **transfer download username** command.

transfer download username *username*

Syntax Description		
	username	Username.

Command Default None.

Examples This example shows how to set the FTP username to ftp_username:

```
> transfer download username ftp_username
```

Related Commands

transfer download mode
transfer download password
transfer download port

transfer encrypt

To configure encryption for configuration file transfers, use the **transfer encrypt** command.

transfer encrypt {**enable** | **disable** | **set-key** *key*}

Syntax Description

enable	Enables the encryption settings.
disable	Disables the encryption settings.
set-key	Specifies the encryption key for configuration file transfers.
key	Encryption key for config file transfers.

Command Default

None.

Examples

This example shows how to enable the encryption settings:

```
> transfer encrypt enable
```

Related Commands

clear transfer
transfer download datatype
transfer download filename
transfer download mode
transfer download path
transfer download serverip
transfer upload datatype
transfer download filename
transfer download mode
transfer download path
transfer download serverip
transfer download start

transfer upload datatype

To set the controller to upload specified log and crash files, use the **transfer upload datatype** command.

transfer upload datatype {**config** | **coredump** | **crashfile** | **errorlog** | **invalid-config** | **pac** | **packet-capture** | **panic-crash-file** | **radio-core-dump** | **signature** | **systemtrace** | **traplog** | **watchdog-crash-file**}

Syntax Description

config	Uploads the system configuration file.
coredump	Uploads the core-dump file.
crashfile	Uploads the system crash file.
errorlog	Uploads the system error log file.
invalid-config	Uploads the system invalid-config file.
pac	Uploads a Protected Access Credential (PAC).
packet-capture	Uploads a packet capture file.
panic-crash-file	Uploads the kernel panic information file.
radio-core-dump	Uploads the system error log.
signature	Uploads the system signature file.
systemtrace	Uploads the system trace file.
traplog	Uploads the system trap log.
watchdog-crash-file	Uploads a console dump file resulting from a software-watchdog-initiated controller reboot following a crash.

Command Default

None.

Examples

This example shows how to upload the system error log file:

```
> transfer upload datatype errorlog
```

Related Commands

clear transfer
transfer upload filename
transfer upload mode
transfer upload pac
transfer upload password
transfer upload path
transfer upload port
transfer upload serverip
transfer upload start
transfer upload username

transfer upload filename

To upload a specific file, use the **transfer upload filename** command.

transfer upload filename *filename*

Syntax Description		
	filename	Filename that contains up to 16 alphanumeric characters.

Command Default None.

Examples This example shows how to upload a file build603:

```
> transfer upload filename build603
```

Related Commands

clear transfer
transfer upload datatype
transfer upload mode
transfer upload pac
transfer upload password
transfer upload path
transfer upload port
transfer upload serverip
transfer upload start
transfer upload username

transfer upload mode

To configure the transfer mode, use the **transfer upload mode** command.

transfer upload mode {**ftp** | **tftp**}

Syntax Description

ftp	Sets the transfer mode to FTP.
tftp	Sets the transfer mode to TFTP.

Command Default

None.

Examples

This example shows how to set the transfer mode to TFTP:

```
> transfer upload mode tftp
```

Related Commands

clear transfer
transfer upload datatype
transfer upload filename
transfer upload pac
transfer upload password
transfer upload path
transfer upload port
transfer upload serverip
transfer upload start
transfer upload username

transfer upload pac

To load a Protected Access Credential (PAC) to support the local authentication feature and allow a client to import the PAC, use the **transfer upload pac** command.

transfer upload pac *username validity password*

Syntax Description

username	User identity of the PAC.
validity	Validity period (days) of the PAC.
password	Password to protect the PAC.

Command Default

None.

Usage Guidelines

The client upload process uses a TFTP or FTP server.

Examples

This example shows how to upload a PAC with the username user1, validity period 53, and password pass01:

```
> transfer upload pac user1 53 pass01
```

Related Commands

clear transfer
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload password
transfer upload path
transfer upload port
transfer upload serverip
transfer upload start
transfer upload username

transfer upload password

To configure the password for FTP transfer, use the **transfer upload password** command.

transfer upload password *password*

Syntax Description		
	password	Password needed to access the FTP server.

Command Default None.

Examples This example shows how to configure the password for the FTP transfer to pass01:

```
> transfer upload password pass01
```

Related Commands

clear transfer
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload pac
transfer upload path
transfer upload port
transfer upload serverip
transfer upload start
transfer upload username

transfer upload path

To set a specific upload path, use the **transfer upload path** command.

transfer upload path *path*

Syntax Description		
	path	Server path to file.

Command Default None.

Examples This example shows how to set the upload path to c:\install\version2:

```
> transfer upload path c:\install\version2
```

Related Commands

clear transfer
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload pac
transfer upload password
transfer upload port
transfer upload serverip
transfer upload start
transfer upload username

transfer upload port

To specify the FTP port, use the **transfer upload port** command.

transfer upload port *port*

Syntax Description		
	port	Port number.

Command Default The default FTP port is **21**.

Examples This example shows how to specify FTP port 23:

```
> transfer upload port 23
```

Related Commands

clear transfer
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload pac
transfer upload password
transfer upload path
transfer upload serverip
transfer upload start
transfer upload username

transfer upload serverip

To configure the IP address of the TFTP server to upload files to, use the **transfer upload serverip** command.

transfer upload serverip *ip_address*

Syntax Description

ip_address	Server IP address.

Command Default

None.

Examples

This example shows how to set the IP address of the TFTP server to 175.31.56.78:

```
> transfer upload serverip 175.34.56.78
```

Related Commands

clear transfer
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload pac
transfer upload password
transfer upload path
transfer upload port
transfer upload start
transfer upload username

transfer upload start

To initiate an upload, use the **transfer upload start** command.

transfer upload start

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to initiate an upload of a file:

```
> transfer upload start

Mode..................................... TFTP
TFTP Server IP........................... 172.16.16.78
TFTP Path................................ c:\find\off/
TFTP Filename............................ wps_2_0_75_0.aes
Data Type................................ Code

Are you sure you want to start? (y/n) n

Transfer Cancelled
```

Related Commands

clear transfer
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload pac
transfer upload password
transfer upload path
transfer upload port
transfer upload serverip
transfer upload username

transfer upload username

To specify the FTP username, use the **transfer upload username** command.

transfer download username *username*

Syntax Description		
	username	Username required to access the FTP server. The username can contain up to 31 characters.

Command Default None.

Examples This example shows how to set the FTP username to ftp_username:

```
> transfer upload username ftp_username
```

Related Commands

clear transfer
transfer upload datatype
transfer upload filename
transfer upload mode
transfer upload pac
transfer upload password
transfer upload path
transfer upload port
transfer upload serverip
transfer upload start

Installing and Modifying Licenses

Use the **license** commands to install, remove, modify, or rehost licenses.

Note The **license** commands are available only on the Cisco 5500 Series Controller.

Note For detailed information on installing and rehosting licenses on the Cisco 5500 Series Controller, see the "Installing and Configuring Licenses" section in Chapter 4 of the *Cisco Wireless LAN Controller Configuration Guide*.

license clear

To remove a license from the Cisco 5500 Series Controller, use the **license clear** command.

license clear *license_name*

Syntax Description		
	license_name	Name of the license.

Command Default None.

Usage Guidelines You can delete an expired evaluation license or any unused license. You cannot delete unexpired evaluation licenses, the permanent base image license, or licenses that are in use by the controller.

Examples This example shows how to remove the license settings of the license named wplus-ap-count:

```
> license clear wplus-ap-count
```

Related Commands

license comment
license install
license revoke
license save
show license all

license comment

To add comments to a license or delete comments from a license on the Cisco 5500 Series Controller, use the **license comment** command.

license comment {**add** | **delete**} *license_name comment_string*

Syntax Description

add	Adds a comment.
delete	Deletes a comment.
license_name	Name of the license.
comment_string	License comment.

Command Default

None.

Examples

This example shows how to add a comment “wplus ap count license” to the license name wplus-ap-count:

```
> license comment add wplus-ap-count Comment for wplus ap count license
```

Related Commands

license clear
license install
license revoke
license save
show license all

license install

To install a license on the Cisco 5500 Series Controller, use the **license install** command.

license install *url*

Syntax Description		
	url	URL of the TFTP server (**tftp://***server_ip/path/filename*).

Command Default None.

Usage Guidelines

We recommend that the access point count be the same for the base-ap-count and wplus-ap-count licenses installed on your controller. If your controller has a base-ap-count license of 100 and you install a wplus-ap-count license of 12, the controller supports up to 100 access points when the base license is in use but only a maximum of 12 access points when the wplus license is in use.

You cannot install a wplus license that has an access point count greater than the controller's base license. For example, you cannot apply a wplus-ap-count 100 license to a controller with an existing base-ap-count 12 license. If you attempt to register for such a license, an error message appears indicating that the license registration has failed. Before upgrading to a wplus-ap-count 100 license, you would first have to upgrade the controller to a base-ap-count 100 or 250 license.

Examples

This example shows how to install a license on the controller from the URL tftp://10.10.10.10/path/license.lic:

```
> license install tftp://10.10.10.10/path/license.lic
```

Related Commands

license clear
license modify priority
license revoke
license save
show license all

license modify priority

To raise or lower the priority of the base-ap-count or wplus-ap-count evaluation license on a Cisco 5500 Series Controller, use the **license modify priority** command.

license modify priority *license_name* {**high** | **low**}

Syntax Description

license_name	Ap-count evaluation license.
high	Modifies the priority of an ap-count evaluation license.
low	Modifies the priority of an ap-count evaluation license.

Command Default

None.

Usage Guidelines

If you are considering upgrading to a license with a higher access point count, you can try an evaluation license before upgrading to a permanent version of the license. For example, if you are using a permanent license with a 50 access point count and want to try an evaluation license with a 100 access point count, you can try out the evaluation license for 60 days.

AP-count evaluation licenses are set to low priority by default so that the controller uses the ap-count permanent license. If you want to try an evaluation license with an increased access point count, you must change its priority to high. If you no longer want to have this higher capacity, you can lower the priority of the ap-count evaluation license, which forces the controller to use the permanent license.

Note You can set the priority only for ap-count evaluation licenses. AP-count permanent licenses always have a medium priority, which cannot be configured.

Note If the ap-count evaluation license is a wplus license and the ap-count permanent license is a base license, you must also change the feature set to wplus.

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.

Examples

This example shows how to set the priority of the wplus-ap-count to high:

```
> license modify priority wplus-ap-count high
```

Related Commands

- license clear
- license install
- license revoke
- license save
- show license all

license revoke

To rehost a license on a Cisco 5500 Series Controller, use the **license revoke** command.

license revoke {*permission_ticket_url* | **rehost** *rehost_ticket_url*}

Syntax Description

permission_ticket_url	URL of the TFTP server (**tftp://***server_ip/path/filename*) where you saved the permission ticket.
rehost	Specifies the rehost license settings.
rehost_ticket_url	URL of the TFTP server (**tftp://***server_ip/path/filename*) where you saved the rehost ticket.

Command Default

None.

Usage Guidelines

Before you revoke a license, save the device credentials by using the **license save credential** *url* command.

You can rehost all permanent licenses except the permanent base image license. Evaluation licenses and the permanent base image license cannot be rehosted.

In order to rehost a license, you must generate credential information from the controller and use it to obtain a permission ticket to revoke the license from the Cisco licensing site (https://tools.cisco.com/SWIFT/Licensing/PrivateRegistrationServlet). Next, you must obtain a rehost ticket and use it to obtain a license installation file for the controller on which you want to install the license.

For detailed information on rehosting licenses, see the "Installing and Configuring Licenses" section in Chapter 4 of the *Cisco Wireless LAN Controller Configuration Guide*.

Examples

This example shows how to revoke the license settings from the saved permission ticket URL tftp://10.10.10.10/path/permit_ticket.lic:

```
> license revoke tftp://10.10.10.10/path/permit_ticket.lic
```

This example shows how to revoke the license settings from the saved rehost ticket URL tftp://10.10.10.10/path/rehost_ticket.lic:

```
> license revoke rehost tftp://10.10.10.10/path/rehost_ticket.lic
```

Related Commands

license clear
license install
license modify priority
license save
show license all

license save

To save a backup copy of all installed licenses or license credentials on the Cisco 5500 Series Controller, use the **license save** command.

license save credential *url*

Syntax Description

credential	Saves device credential information to a file.
url	URL of the TFTP server (**tftp://***server_ip/path/filename*).

Command Default None.

Usage Guidelines Save the device credentials before you revoke the license by using the **license revoke** command.

Examples This example shows how to save a backup copy of all installed licenses or license credentials on tftp://10.10.10.10/path/cred.lic:

```
> license save credential tftp://10.10.10.10/path/cred.lic
```

Related Commands

license clear
license install
license modify priority
license revoke
show license all

Troubleshooting Commands

Use the **debug** commands to manage system debugging.

Caution Debug commands are reserved for use only under direction of Cisco personnel. Do not use these commands without direction from Cisco-certified staff.

Note Enabling all **debug** commands on a system with many clients authenticating may result in some debugs being lost.

debug aaa

To configure AAA debug options, use the **debug aaa** command.

debug aaa {[**all** | **detail** | **events** | **packet** | **ldap** | **local-auth** | **tacacs**] [**enable** | **disable**]}

Syntax Description

all	(Optional) Specifies debugging of all AAA messages.
detail	(Optional) Specifies debugging of AAA errors.
events	(Optional) Specifies debugging of AAA events.
packet	(Optional) Specifies debugging of AAA packets.
ldap	(Optional) Specifies debugging of the AAA Lightweight Directory Access Protocol (LDAP) events.
local-auth	(Optional) Specifies debugging of the AAA local Extensible Authentication Protocol (EAP) events.
tacacs	(Optional) Specifies debugging of the AAA TACACS+ events.
enable	(Optional) Starts the debugging feature.
disable	(Optional) Stops the debugging feature.

Command Default

None.

Examples

This example shows how to enable the debugging of AAA LDAP events:

```
> debug aaa ldap enable
```

Related Commands

debug aaa local-auth eap

show running-config

debug aaa local-auth

To debug AAA local authentication on the controller, use the **debug aaa local-auth** command.

debug aaa local-auth {**db** | **shim** | **eap** {**framework** | **method**} {**all** | **errors** | **events** | **packets** | **sm**}} {**enable** | **disable**}

Syntax Description

db	Configures debugging of the AAA local authentication back-end messages and events.
shim	Configures debugging of the AAA local authentication shim layer events.
eap	Configures debugging of the AAA local Extensible Authentication Protocol (EAP) authentication.
framework	Configures debugging of the local EAP framework.
method	Configures debugging of local EAP methods.
all	Specifies debugging of local EAP messages.
errors	Specifies debugging of local EAP errors.
events	Specifies debugging of local EAP events.
packets	Specifies debugging of local EAP packets.
sm	Specifies debugging of the local EAP state machine.
enable	Starts the debugging feature.
disable	Stops the debugging feature.

Command Default

None.

Examples

This example shows how to enable the debugging of the AAA local EAP authentication:

```
> debug aaa local-auth eap method all enable
```

Related Commands

clear stats local-auth
config local-auth active-timeout
config local-auth eap-profile
config local-auth method fast
config local-auth user-credentials
show local-auth certificates
show local-auth config
show local-auth statistics

debug airewave-director

To configure the Airewave Director software debug options, use the **debug airwave-director** command.

debug airewave-director {**all** | **channel** | **detail** | **error** | **group** | **manager** | **message** | **packet** | **power** | **profile** | **radar** | **rf-change**} {**enable** | **disable**}

Syntax Description

all	Configures debugging of all Airewave Director logs.
channel	Configures debugging of the Airewave Director channel assignment protocol.
detail	Configures debugging of the Airewave Director detail logs.
error	Configures debugging of the Airewave Director error logs.
group	Configures debugging of the Airewave Director grouping protocol.
manager	Configures debugging of the Airewave Director manager.
message	Configures debugging of the Airewave Director messages.
packet	Configures debugging of the Airewave Director packets.
power	Configures debugging of the Airewave Director power assignment protocol and coverage hole detection.
profile	Configures debugging of the Airewave Director profile events.
radar	Configures debugging of the Airewave Director radar detection/avoidance protocol.
rf-change	Configures debugging of the Airewave Director rf changes.
enable	Enables the Airewave Director debug setting.
disable	Disables the Airewave Director debug setting.

Command Default

None.

Examples

This example shows how to enable the debugging of Airewave Director profile events:

```
> debug airewave-director profile enable
```

Related Commands

show sysinfo

debug disable-all

debug ap

To enable or disable remote debugging of Cisco lightweight access points or to remotely execute a command on a lightweight access point, use the **debug ap** command.

debug ap {**enable** | **disable** | **command** *cmd*} *cisco_ap*

Syntax Description

enable	Enables debugging on a lightweight access point. **Note** The debugging information is displayed only to the controller console and does not send output to a controller Telnet/SSH CLI session.
disable	Disables debugging on a lightweight access point. **Note** The debugging information is displayed only to the controller console and does not send output to a controller Telnet/SSH CLI session.
command	Specifies that a CLI command is to be executed on the access point.
cmd	Command to be executed. **Note** The command to be executed must be enclosed in double quotes, such as **debug ap command "led flash 30" AP03**. **Note** The output of the command displays only to the controller console and does not send output to a controller Telnet/SSH CLI session.
cisco_ap	Name of a Cisco lightweight access point.

Command Default

Disabled.

Examples

This example shows how to enable remote debugging on access point AP01:

```
> debug ap enable AP01
```

This example shows how to execute the **config ap location** command on access point AP02:

```
> debug ap command "config ap location "Building 1" AP02"
```

This example shows how to execute the flash LED command on access point AP03:

```
> debug ap command "led flash 30" AP03
```

Related Commands

show sysinfo

config sysname

debug ap enable

To enable or disable remote debugging of Cisco lightweight access points or to remotely execute a command on a lightweight access point, use the **debug ap enable** command.

debug ap {**enable** | **disable** | **command** *cmd*} *cisco_ap*

Syntax Description

enable	Enables remote debugging. **Note** The debugging information is displayed only to the controller console and does not send output to a controller Telnet/SSH CLI session.
disable	Disables remote debugging.
command	Specifies that a CLI command is to be executed on the access point.
cmd	Command to be executed. **Note** The command to be executed must be enclosed in double quotes, such as **debug ap command "led flash 30" AP03**. **Note** The output of the command displays only to the controller console and does not send output to a controller Telnet/SSH CLI session.
cisco_ap	Cisco lightweight access point name.

Command Default

None.

Examples

This example shows how to enable remote debugging on access point AP01:

```
> debug ap enable AP01
```

This example shows how to disable remote debugging on access point AP02:

```
> debug ap disable AP02
```

This example shows how to execute the flash LED command on access point AP03:

```
> debug ap command "led flash 30" AP03
```

Related Commands

show sysinfo

config sysname

debug ap show stats

To troubleshoot video messages and statistics of Cisco lightweight access points, use the **debug ap show stats** command.

debug ap show stats {**802.11a** | **802.11b**} *cisco_ap* {**tx-queue** | **packet** | **load** | **multicast** | **client** {*client_MAC* | **video** | **all**} | **video metrics**}

Syntax Description

802.11a	Specifies the 802.11a network.
802.11b	Specifies the 802.11b/g network.
cisco_ap	Cisco lightweight access point name.
tx-queue	Displays the transmit queue traffic statistics of the AP.
packet	Displays the packet statistics of the AP.
load	Displays the QBSS and other statistics of the AP.
multicast	Displays the multicast supported rate statistics of the AP.
client	Displays the specified client metric statistics.
client_MAC	MAC address of the client.
video	Displays video statistics of all clients on the AP.
all	Displays statistics of all clients on the AP.
video metrics	Displays the video metric statistics.

Command Default

None.

Examples

This example shows how to troubleshoot the access point AP01's transmit queue traffic on an 802.11a network:

```
> debug ap show stats 802.11a AP01 tx-queue
```

This example shows how to troubleshoot the access point AP02's multicast supported rates on an 802.11b/g network:

```
> debug ap show stats 802.11b AP02 multicast
```

This example shows how to troubleshoot the metrics of a client identified by its MAC address, associated with the access point AP01 on an 802.11a network:

```
> debug ap show stats 802.11a AP01 client 00:40:96:a8:f7:98
```

This example shows how to troubleshoot the metrics of all clients associated with the access point AP01 on an 802.11a network:

```
> debug ap show stats 802.11a AP01 client all
```

Related Commands

debug ap show stats video

debug ap show stats video

To troubleshoot video messages and statistics of Cisco lightweight access points, use the **debug ap show stats video** command.

debug ap show stats video *cisco_ap* {**multicast mgid** *mgid_value* | **admission** | **bandwidth**}

Syntax Description

cisco_ap	Cisco lightweight access point name.
multicast mgid	Dispalys multicast database related information for the specified MGID of an access point.
mgid_value	Layer 2 MGID database number between 1 to 4095.
admission	Displays the video admission control.
bandwidth	Displays the video bandwidth.

Command Default

None.

Examples

This example shows how to troubleshoot the access point AP01's multicast group that is identified by the group's Layer 2 MGID database number:

```
> debug ap show stats video AP01 multicast mgid 50
```

This example shows how to troubleshoot the access point AP01's video bandwidth:

```
> debug ap show stats video AP01 bandwidth
```

Related Commands

debug ap show stats

debug arp

To configure Address Resolution Protocol (ARP) debug options, use the **debug arp** command.

debug arp {**all** | **detail** | **events** | **message**} {**enable** | **disable**}

Syntax Description

all	Configures debugging of all ARP logs.
detail	Configures debugging of ARP detail messages.
error	Configures debugging of ARP errors.
message	Configures debugging of ARP messages.
enable	Enables ARP debugging.
disable	Disables ARP debugging.

Command Default

None.

Examples

This example shows how to enable ARP debug settings:

```
> debug arp error enable
```

This example shows how to disable ARP debug settings:

```
> debig arp error disable
```

Related Commands

show sysinfo
debug disable-all

debug bcast

To configure debugging of broadcast options, use the **debug bcast** command.

debug bcast {**all** | **error** | **message** | **igmp** | **detail**} {**enable** | **disable**}

Syntax Description

all	Configures debugging of all broadcast logs.
error	Configures debugging of broadcast errors.
message	Configures debugging of broadcast messages.
igmp	Configures debugging of broadcast IGMP messages.
detail	Configures debugging of broadcast detailed messages.
enable	Enables the broadcast debugging.
disable	Disables the broadcast debugging.

Command Default

None.

Examples

This example shows how to enable broadcast debug settings:

```
> debug bcast message enable
```

This example shows how to disable broadcast debug settings:

```
> debug bcast message disable
```

Related Commands

show sysinfo
debug disable-all

debug cac

To configure Call Admission Control (CAC) debug options, use the **debug cac** command.

debug cac {**all** | **event** | **kts** | **packet**}{**enable** | **disable**}

Syntax Description

all	Configures debugging options for all CAC messages.
event	Configures debugging options for CAC events.
packet	Configures debugging options for selected CAC packets.
kts	Configures debugging options for KTS-based CAC messages.
enable	Enables the debugging.
disable	Disables the debugging.

Command Default

Disabled.

Examples

This example shows how to enable debug CAC settings:

```
> debug cac event enable
> debug cac packet enable
```

Related Commands

config 802.11 cac video acm
config 802.11 {**enable** | **disable**} **network**
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 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 stream-size
config 802.11 cac voice tspec-inactivity-timeout

debug call-control

To debug the SIP call control settings, use the **debug call-control** command.

debug call-control {**all** | **event**}{**enable** | **disable**}

Syntax Description

all	Configures debugging options for all SIP call control messages.
event	Configures debugging options for SIP call control events.
enable	Enables the SIP call control debugging settings.
disable	Disables the SIP call control debugging settings.

Command Default

Disabled.

Examples

This example shows how to enable debugging of all SIP call control messages:

```
> debug call-control all enable
```

debug capwap

To obtain troubleshooting information about Control and Provisioning of Wireless Access Points (CAPWAP) settings, use the **debug capwap** command.

debug capwap {**detail** | **dtls-keepalive** | **errors** | **events** | **hexdump** | **info** | **packet** | **payload**} {**enable** | **disable**}

Syntax Description

detail	Configures debugging for CAPWAP detail settings.
dtls-keepalive	Configures debugging for CAPWAP DTLS data keepalive packets settings.
errors	Configures debugging for CAPWAP error settings.
events	Configures debugging for CAPWAP events settings.
hexdump	Configures debugging for CAPWAP hexadecimal dump settings.
info	Configures debugging for CAPWAP info settings.
packet	Configures debugging for CAPWAP packet settings.
payload	Configures debugging for CAPWAP payload settings.
enable	Enables debugging of the CAPWAP command.
disable	Disables debugging of the CAPWAP command.

Command Default

None.

Examples

This example shows how to enable debug CAPWAP detail settings:

```
> debug capwap detail enable
```

Related Commands

clear lwapp private-config
debug disable-all

debug capwap reap

To obtain troubleshooting information about Control and Provisioning of Wireless Access Points (CAPWAP) settings on a FlexConnect access point, use the **debug capwap reap** command.

debug capwap reap [**mgmt** | **load**]

Syntax Description

mgmt	(Optional) Configures debugging for client authentication and association messages.
load	(Optional) Configures debugging for payload activities, which is useful when the FlexConnect access point boots up in standalone mode.

Command Default

None.

Examples

This example shows how to debug FlexConnect client authentication and association messages:

```
> debug capwap reap mgmt
```

Related Commands

clear lwapp private-config
debug disable-all

debug client

To debug if the passive client is associated correctly with the access point and if the passive client has moved into the DHCP required state at the controller, use the **debug client** command.

debug client *mac_address*

Syntax Description		
	mac_address	MAC address of the client.

Command Default None.

Examples This example shows how to debug a passive client with mac address 00:0d:28:f4:c0:45:

```
> debug client 00:0d:28:f4:c0:45
```

Related Commands debug disable-all

debug crypto

To configure hardware cryptographic debug options, use the **debug crypto** command.

debug crypto {**all** | **sessions** | **trace** | **warning**} {**enable** | **disable**}

Syntax Description

all	Configures debugging of all hardware crypto messages.
sessions	Configures debugging of hardware crypto sessions.
trace	Configures debugging of hardware crypto sessions.
warning	Configures debugging of hardware crypto sessions.
enable	Enables the hardware cryptographic debugging.
disable	Disables the hardware cryptographic debugging setting.

Command Default

None.

Examples

This example shows how to enable the debugging of hardware crypto sessions:

```
> debug crypto sessions enable
```

Related Commands

show sysinfo

debug disable-all

debug dhcp

To configure DHCP debug options, use the **debug dhcp** command.

debug dhcp {**message** | **packet**} {**enable** | **disable**}

Syntax Description

message	Configures debugging of DHCP error messages.
packet	Configures debugging of DHCP packets.
enable	Enables the DHCP debugging.
disable	Disables the DHCP debugging.

Command Default

None.

Examples

This example shows how to enable DHCP debug settings:

```
> debug dhcp message enable
```

Related Commands

config dhcp
config dhcp proxy
config interface dhcp
config wlan dhcp_server
debug dhcp service-port
debug disable-all
show dhcp
show dhcp proxy

debug dhcp service-port

To enable or disable debugging of Dynamic Host Configuration Protocol (DHCP) packets on the service port, use the **debug dhcp service-port** command.

debug dhcp service-port {**enable** | **disable**}

Syntax Description

enable	Enables the debugging of DHCP packets on the service port.
disable	Disables the debugging of DHCP packets on the service port.

Command Default

None.

Examples

This example shows how to enable debugging of DHCP packets on a service port:

```
> debug dhcp service-port enable
```

Related Commands

config dhcp
config dhcp proxy
config interface dhcp
config wlan dhcp_server
debug dhcp
debug disable-all
show dhcp
show dhcp proxy

debug disable-all

To disable all debug messages, use the **debug disable-all** command.

debug disable-all

Syntax Description

This command has no arguments or keywords.

Command Default

Disabled.

Examples

This example shows how to disable all debug messages:

```
> debug disable-all
```

debug dot11

To configure dot11 events debug options, use the **debug dot11** command.

debug dot11 {**all** | **load-balancing** | **management** | **mobile** | **nmsp** | **probe** | **rldp** | **rogue** | **state**} {**enable** | **disable**}

Syntax Description

all	Configures debugging of all 802.11 messages.
load-balancing	Configures debugging of 802.11 load balancing events.
management	Configures debugging of 802.11 MAC management messages.
mobile	Configures debugging of 802.11 mobile events.
nmsp	Configures debugging of the 802.11 NMSP interface events.
rldp	Configures debugging of 802.11 Rogue Location Discovery.
rogue	Configures debugging of 802.11 rogue events.
state	Configures debugging of 802.11 mobile state transitions.
enable	Enables dot11 debugging.
disable	Disables dot11 debugging.

Command Default

None.

Examples

This example shows how to enable dot11 debug settings:

```
> debug dot11 state enable
> debug dot11 mobile enable
```

Related Commands

debug disable-all
debug dot11 mgmt interface
debug dot11 mgmt msg
debug dot11 mgmt ssid
debug dot11 mgmt state-machine
debug dot11 mgmt station

debug dot11 mgmt interface

To debug 802.11 management interface events, use the **debug dot11 mgmt interface** command.

debug dot11 mgmt interface

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to debug dot11 management interface events:

```
> debug dot11 mgmt interface
```

Related Commands

debug disable-all
debug dot11
debug dot11 mgmt msg
debug dot11 mgmt ssid
debug dot11 mgmt state-machine
debug dot11 mgmt station

debug dot11 mgmt msg

To debug 802.11 management messages, use the **debug dot11 mgmt msg** command.

debug dot11 mgmt msg

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to debug dot11 management messages:

```
> debug dot11 mgmt msg
```

Related Commands

debug disable-all
debug dot11
debug dot11 mgmt interface
debug dot11 mgmt ssid
debug dot11 mgmt state-machine
debug dot11 mgmt station

debug dot11 mgmt ssid

To debug 802.11 Service Set Identifier (SSID) management events, use the **debug dot11 mgmt ssid** command.

debug dot11 mgmt ssid

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to debug dot11 SSID management events:

```
> debug dot11 mgmt ssid
```

Related Commands

debug disable-all
debug dot11
debug dot11 mgmt interface
debug dot11 mgmt msg
debug dot11 mgmt state-machine
debug dot11 mgmt station

debug dot11 mgmt state-machine

To debug the 802.11 state machine, use the **debug dot11 mgmt state-machine** command.

debug dot11 mgmt state-machine

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to debug dot11 state machine settings:

```
> debug dot11 mgmt state-machine
```

Related Commands

debug disable-all
debug dot11
debug dot11 mgmt interface
debug dot11 mgmt msg
debug dot11 mgmt ssid
debug dot11 mgmt station

debug dot11 mgmt station

To debug client events, use the **debug dot11 mgmt station** command.

debug dot11 mgmt station

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Examples

This example shows how to debug management station settings:

```
> debug dot11 mgmt station
```

Related Commands

debug disable-all
debug dot11
debug dot11 mgmt interface
debug dot11 mgmt msg
debug dot11 mgmt ssid
debug dot11 mgmt state-machine

debug dot1x

To configure dot1x debug options, use the **debug dot1x** command.

debug dot1x {**aaa** | **all** | **events** | **packet** | **states**} {**enable** | **disable**}

Syntax Description

aaa	Configures debugging of 802.1X AAA interactions.
all	Configures debugging of all 802.1X messages.
events	Configures debugging of 802.1X events.
packet	Configures debugging of 802.1X mobile state transitions.
states	Configures debugging of 802.1X mobile state transitions.
enable	Enables dot1x debugging.
disable	Disables dot1x debugging.

Command Default

None.

Examples

This example shows how to enable debugging of dot1x mobile state transitions:

```
> debug dot1x states enable
```

This example shows how to disable debugging of all dot1x interactions:

```
> debug dot1x all disable
```

Related Commands

debug disable-all
debug dot11
debug dot11 mgmt interface
debug dot11 mgmt msg
debug dot11 mgmt ssid
debug dot11 mgmt state-machine
debug dot11 mgmt station

debug ft events

To configure debugging of fast transition events, use the **debug ft events** command.

debug ft events {**enable** | **disable**}

Syntax Description		
	enable	Enables debugging of fast transition events.
	disable	Disables debugging of fast transition events.

Command Default None.

Examples This example shows how to enable debugging of fast transition events:

```
> debug ft events enable
```

Related Commands

config wlan security ft
config wlan security ft over-the-ds

debug ft keys

To configure debugging of 802.11r key generation, use the **debug ft keys** command.

debug ft keys {**enable** | **disable**}

Syntax Description

enable	Enables 802.11r key generation.
disable	Disables 802.11r key generation.

Command Default

None.

Examples

This example shows how to enable debugging of 802.11r key generation:

```
> debug ft keys enable
```

Related Commands

config wlan security ft
config wlan security ft over-the-ds

debug group

To enable or disable debugging of access point groups, use the **debug group** command.

debug group {**enable** | **disable**}

Syntax Description

enable	Enables access point group debugging.
disable	Disables access point group debugging.

Command Default

None.

Examples

This example shows how to enable debugging of access point groups:

```
> debug group enable
```

Related Commands

config guest-lan nac
config wlan apgroup
config wlan nac

debug flexconnect aaa

To enable or disable debugging of FlexConnect backup RADIUS server events or errors, use the **debug flexconnect aaa** command.

debug flexconnect aaa {**event** | **error**} {**enable** | **disable**}

Syntax Description

event	Configures debugging for FlexConnect RADIUS server events.
error	Configures debugging for FlexConnect RADIUS server errors.
enable	Enables debugging of FlexConnect RADIUS server settings.
disable	Disables debugging of FlexConnect RADIUS server settings.

Command Default

None.

Examples

This example shows how to enable debugging of FlexConnect RADIUS server events:

```
> debug flexconnect aaa event enable
```

Related Commands

debug disable-all
debug flexconnect cckm
debug flexconnect group
config flexconnect group
show flexconnect group detail
show flexconnect group summary
show radius summary

debug flexconnect acl

To enable or disable debugging of FlexConnect access control lists (ACLs), use the **debug flexconnect acl** command.

debug flexconnect acl {**enable** | **disable**}

Syntax Description

enable	Enables debugging of FlexConnect ACLs.
disable	Disables debugging of FlexConnect ACLs.

Command Default

None.

Examples

This example shows how to enable debugging of FlexConnect ACLs:

```
> debug flexconnect acl enable
```

Related Commands

debug disable-all
debug flexconnect cckm
debug flexconnect group
config flexconnect group
show flexconnect group detail
show flexconnect group summary
show radius summary

debug flexconnect cckm

To enable or disable debugging of FlexConnect Cisco Centralized Key Management (CCKM) fast roaming, use the **debug flexconnect cckm** command.

debug flexconnect cckm {**enable** | **disable**}

Syntax Description

enable	Enables debugging of FlexConnect CCKM fast roaming settings.
disable	Disables debugging of FlexConnect CCKM fast roaming settings.

Command Default

None.

Examples

This example shows how to enable debugging of FlexConnect CCKM fast roaming events:

```
> debug flexconnect cckm event enable
```

Related Commands

debug disable-all
debug flexconnect aaa
debug flexconnect group
config flexconnect group
show flexconnect group detail
show flexconnect group summary
show radius summary

debug flexconnect group

To enable or disable debugging of FlexConnect access point groups, use the **debug flexconnect group** command.

debug flexconnect group {**enable** | **disable**}

Syntax Description

enable	Enables debugging of FlexConnect access point groups.
disable	Disables debugging of FlexConnect access point groups.

Command Default

None.

Examples

This example shows how to enable debugging of FlexConnect access point groups:

```
> debug flexconnect group enable
```

Related Commands

debug disable-all
debug flexconnect aaa
debug flexconnect cckm
config flexconnect group
show flexconnect group detail
show flexconnect group summary

debug l2age

To configure debugging of Layer 2 age timeout messages, use the **debug l2age** command.

debug l2age {**enable** | **disable**}

Syntax Description

enable	Enables Layer2 age debug settings.
disable	Disables Layer2 age debug settings.

Command Default

None.

Examples

This example shows how to enable Layer2 age debug settings:

```
> debug l2age enable
```

Related Commands

debug disable-all

debug lwapp console cli

To begin debugging the access point console CLI, use the **debug lwapp console cli** command from the access point console port.

debug lwapp console cli

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Usage Guidelines

This access point CLI command must be entered from the access point console port.

Examples

This example shows how to begin debugging the access point console:

```
AP# debug lwapp console cli
LWAPP console CLI allow/disallow debugging is on
```

Related Commands

debug disable-all
debug ap
clear lwapp private-config

debug mac

To configure MAC address debugging, use the **debug mac** command.

debug mac {**disable** | **addr** *MAC*}

Syntax Description

disable	Disables MAC debugging.
addr	Configures MAC address debugging.
MAC	MAC address.

Command Default

None.

Examples

This example shows how to configure MAC address debugging settings:

```
> debug mac addr 00.0c.41.07.33.a6
```

Related Commands

debug disable-all

debug media-stream

To enable or disable media stream debugging, use the **debug media-stream** command.

debug media-stream {**admission** | **config** | **errors** | **event** | **history** | **rrc**} {**enable** | **disable**}

Syntax Description

admission	Configures debugging of the media stream admission.
config	Configures debugging of the media stream configuration.
errors	Configures debugging of the media stream errors.
event	Configures debugging of the media stream events.
history	Configures debugging of the media stream history.
rrc	Configures debugging of the media stream radio resource management.
enable	Enables debugging of the media stream.
disable	Disables debugging of the media stream.

Command Default

None.

Examples

This example shows how to enable debugging of the media stream history:

```
> debug media-stream history enable
```

Related Commands

config media-stream multicast direct
show media-stream group summary

debug memory

To enable or disable debugging of errors or events during controller memory allocation, use the **debug memory** command

debug memory {**errors** | **events**} {**enable** | **disable**}

Syntax Description

errors	Troubleshoots memory leak errors.
events	Troubleshoots memory leak events.
enable	Enables debugging of memory leak events.
disable	Disables debugging of memory leak events.

Command Default

Disabled.

Examples

This example shows how to enable debugging of memory leak events:

```
> debug memory events enable
```

Related Commands

config memory monitor errors
config memory monitor leaks
show memory monitor

debug mesh security

To begin debugging mesh security problems, use the **debug mesh security** command.

debug mesh security {**all** | **events** | **errors**}{**enable** | **disable**}

Syntax Description

all	Debugs all mesh security messages.
events	Debugs mesh security event messages.
errors	Debugs mesh security error messages.
enable	Enables debugging of mesh security error messages.
disable	Disables debugging of mesh security error messages.

Command Default

None.

Examples

This example shows how to enable debugging of mesh security error messages:

```
> debug mesh security errors enable
```

Related Commands

config mesh security
show mesh security-stats

debug mobility

To debug wireless mobility issues, use the **debug mobility** command.

debug mobility {{**directory** | **handoff** | **multicast**} {**enable** | **disable**} |
keep-alive {**enable** | **disable**} *IP_address*

Syntax Description

directory	Starts debugging of wireless mobility error messages.
handoff	Starts debugging of wireless mobility packets.
multicast	Starts debugging of multicast mobility packets.
enable	Enables debugging of the wireless mobility feature.
disable	Disables debugging of the wireless mobility feature.
keep-alive	Starts debugging of wireless mobility keepalive messages.
IP_address	IP address of the wireless mobility client.

Command Default

None.

Examples

This example shows how to enable debugging of wireless mobility packets:

```
> debug mobility handoff enable
```

Related Commands

config guest-lan mobility anchor
config mobility group domain
config mobility group keepalive count
config mobility group keepalive interval
config mobility group member
config mobility group multicast-address
config mobility multicast-mode
config mobility secure-mode
config mobility statistics reset
config wlan mobility anchor
show mobility anchor
show mobility statistics
show mobility summary

debug nac

To configure debugging of Network Access Control (NAC), use the **debug nac** command.

debug nac {**events** | **packet**} {**enable** | **disable**}

Syntax Description

events	Configures debugging of NAC events.
packet	Configures debugging of NAC packets.
enable	Enables NAC debugging.
disable	Disables NAC debugging.

Command Default

None.

Examples

This example shows how to enable NAC debug settings:

```
> debug nac events enable
```

Related Commands

show nac statistics
show nac summary
config guest-lan nac
config wlan nac

debug nmsp

To configure debugging of the Network Mobility Services Protocol (NMSP), use the **debug nmsp** command.

debug nmsp {**all** | **connection** | **detail** | **error** | **event** | **message** | **packet**}

Syntax Description

all	Configures debugging for all NMSP messages.
connection	Configures debugging for NMSP connection events.
detail	Configures debugging for NMSP events in detail.
error	Configures debugging for NMSP error messages.
event	Configures debugging for NMSP events.
message	Configures debugging for NMSP transmit and receive messages.
packet	Configures debugging for NMSP packet events.

Command Default

None.

Examples

This example shows how to configure debugging of NMSP connection events:

```
> debug nmsp connection
```

Related Commands

clear nmsp statistics
debug disable-all

debug ntp

To configure debugging of the Network Time Protocol (NTP), use the **debug ntp** command.

debug ntp {**detail** | **low** | **packet**} {**enable** | **disable**}

Syntax Description

detail	Configures debugging of detailed NTP messages.
low	Configures debugging of NTP messages.
packet	Configures debugging of NTP packets.
enable	Enables NTP debugging.
disable	Disables NTP debugging.

Command Default

None.

Examples

This example shows how to enable NTP debug settings:

```
> debug ntp packet enable
```

Related Commands

debug disable-all

debug packet logging

To configure logging of packets sent to the controller CPU, use the **debug packet logging** command.

debug packet logging {**acl** | **disable** | **enable** {**rx** | **tx** | **all**} *packet_count display_size* | **format** {**hex2pcap** | **text2pcap**}}

debug packet logging acl {**clear-all** | **driver** {*rule_index action npu_encap port*} | **eoip-eth** {*rule_index action dst src type vlan*}| **eoip-ip** {*rule_index action src dst proto src_port dst_port*} | **eth** {*rule_index action dst src type vlan*} | **ip** {*rule_index action src dst proto src_port dst_port*}| **lwapp-dot11** {*rule_index action dst src bssid type*}| **lwapp-ip** {*rule_index action src dst proto src_port dst_port*}}

Syntax Description

acl	Filters the displayed packets according to a rule.
disable	Disables logging of the packets.
enable	Enables logging of the packets.
rx	Displays all received packets.
tx	Displays all transmitted packets.
all	Displays both transmitted and received packets.
packet_count	Maximum number of packets to log. The range is from 1 to 65535 packets, and the default value is 25 packets.
display_size	Number of bytes to display when printing a packet. By default, the entire packet is displayed.
format	Configures the format of the debug output.
hex2pcap	Configures output format to be compatible with hex2pcap format. Standard format used by IOS supports the use of hex2pcap and can be decoded using an HTML front end.
text2pcap	Configures output format to be compatible with text2pcap. In this format the sequence of packets can be decoded from the same console log file.
clear-all	Clears all existing rules for the packets.
driver	Filters the packets based on an incoming port or an NPU encapsulation type.
rule_index	Index for the rule that is a value between 1 and 6 (inclusive).
action	Action for the rule that can be permit, deny, or disable.
npu_encap	NPU encapsulation type that determines how the packets are filtered. The possible values include dhcp, dot11-mgmt, dot11-probe, dot1x, eoip-ping, iapp, ip, lwapp, multicast, orphan-from-sta, orphan-to-sta, rbcp, wired-guest, or any.
port	Physical port for packet transmission or reception.
eoip-eth	Filters packets based on the Ethernet II header in the EoIP payload.
dst	Destination MAC address.
src	Source MAC address.
type	Two-byte type code such as 0x800 for IP, 0x806 for ARP. You can also enter a few common string values such as “ip” (for 0x800) or “arp” (for 0x806).
vlan	Two-byte VLAN identifier.
eoip-ip	Filters packets based on the IP header in the EoIP payload.

proto	Protocol that can be ip, icmp, igmp, ggp, ipencap, st, tcp, egp, pup, udp, hmp, xns-idp, rdp, iso-tp4, xtp, ddp, idpr-cmtp, rspf, vmtp, ospf, ipip, and encap.
src_port	UDP/TCP two-byte source port like telnet, 23 or any. The controller supports the following strings: tcpmux, echo, discard, systat, daytime, netstat, qotd, msp, chargen, ftp-data, ftp, fsp, ssh, telnet, smtp, time, rlp, nameserver, whois, re-mail-ck, domain, mtp, bootps, bootpc, tftp, gopher, rje, finger, www, link, kerberos, supdup, hostnames, iso-tsap, csnet-ns, 3com-tsmux, rtelnet, pop-2, pop-3, sunrpc, auth, sftp, uucp-path, nntp, ntp, netbios-ns, netbios-dgm, netbios-ssn, imap2, snmp, snmp-trap, cmip-man, cmip-agent, xdmcp, nextstep, bgp, prospero, irc, smux, at-rtmp, at-nbp, at-echo, at-zis, qmtp, z3950, ipx, imap3, ulistserv, https, snpp, saft, npmp-local, npmp-gui, and hmmp-ind.
dst_port	UDP/TCP two-byte destination port like telnet, 23 or any. The controller supports the same strings as those for the src_port.
eth	Filters packets based on values in the Ethernet II header.
ip	Filters packets based on values in the IP header.
lwapp-dot11	Filters packets based on the 802.11 header in the LWAPP payload.
bssid	Basic Service Set Identifier of the VLAN.
lwapp-ip	Filters packets based on the IP header in the LWAPP payload.

Defaults

None.

Examples

This example shows how to enable logging of the packets:

```
> debug packet logging enable
```

Related Commands

show debug packet

debug pem

To configure the access policy manager debug options, use the **debug pem** command.

debug pem {**events** | **state**} {**enable** | **disable**}

Syntax Description

events	Configures debugging of the policy manager events.
state	Configures debugging of the policy manager state machine.
enable	Enables access policy manager debugging.
disable	Disables access policy manager debugging.

Command Default

None.

Examples

This example shows how to enable access policy manager debug settings:

```
> debug pem state enable
```

Related Commands

debug disable-all

debug pm

To configure debugging of the security policy manager module, use the **debug pm** command.

debug pm {**all disable** | {**config** | **hwcrypto** | **ikemsg** | **init** | **list** | **message** | **pki** | **rng** | **rules** | **sa-export** | **sa-import** | **ssh-l2tp** | **ssh-appgw** | **ssh-engine** | **ssh-int** | **ssh-pmgr** | **ssh-ppp** | **ssh-tcp**} {**enable** | **disable**}}

Syntax Description

all disable	Disables all debugging in the policy manager module.
config	Configures debugging of the policy manager configuration.
hwcrypto	Configures debugging of hardware offload events.
ikemsg	Configures debugging of Internet Key Exchange (IKE) messages.
init	Configures debugging of policy manager initialization events.
list	Configures debugging of policy manager list mgmt.
message	Configures debugging of policy manager message queue events.
pki	Configures debugging of Public Key Infrastructure (PKI) related events.
rng	Configures debugging of random number generation.
rules	Configures debugging of Layer 3 policy events.
sa-export	Configures debugging of SA export (mobility).
sa-import	Configures debugging of SA import (mobility).
ssh-l2tp	Configures debugging of policy manager l2TP handling.
ssh-appgw	Configures debugging of application gateways.
ssh-engine	Configures debugging of the policy manager engine.
ssh-int	Configures debugging of the policy manager intercepter.
ssh-pmgr	Configures debugging of the policy manager.
ssh-ppp	Configures debugging of policy manager PPP handling.
ssh-tcp	Configures debugging of policy manager TCP handling.
enable	Enables the debugging.
disable	Disables the debugging.

Command Default

None.

Examples

This example shows how to configure debugging of PKI-related events:

```
> debug pm pki enable
```

Related Commands

debug disable-all

debug poe

To configure debugging of Power over Ethernet (PoE) debug options, use the **debug poe** command.

debug poe {**detail** | **error** | **message**} {**enable** | **disable**}

Syntax Description

detail	Configures debugging of PoE detail logs.
error	Configures debugging of PoE error logs.
message	Configures debugging of PoE messages.
enable	Enables the PoE debugging.
disable	Disables the PoE debugging.

Command Default

None.

Examples

This example shows how to enable PoE debug settings:

```
> debug poe message enable
```

Related Commands

debug disable-all

debug rbcp

To configure Router Blade Control (RBCP) debug options, use the **debug rbcp** command.

debug rbcp {**all** | **detail** | **errors** | **packet**} {**enable** | **disable**}

Syntax Description

all	Configures debugging of RBCP.
detail	Configures debugging of RBCP detail.
errors	Configures debugging of RBCP errors.
packet	Configures debugging of RBCP packet trace.
enable	Enables RBCP debugging.
disable	Disables RBCP debugging.

Command Default

None.

Examples

This example shows how to enable RBCP debug settings:

```
> debug rbcp packet enable
```

Related Commands

debug disable-all

debug rfid

To configure radio-frequency identification (RFID) debug options, use the **debug rfid** command.

debug rfid {**all** | **detail** | **errors** | **nmsp** | **receive**} {**enable** | **disable**}

Syntax Description

all	Configures debugging of all RFID.
detail	Configures debugging of RFID detail.
errors	Configures debugging of RFID error messages.
nmsp	Configures debugging of RFID Network Mobility Services Protocol (NMSP) messages.
receive	Configures debugging of incoming RFID tag messages.
enable	Enables RFID debugging.
disable	Disables RFID debugging.

Command Default

None.

Examples

This example shows how to enable debugging of RFID error messages:

```
> debug rfid errors enable
```

Related Commands

debug disable-all

debug service ap-monitor

To debug the access point monitor service, use the **debug service ap-monitor** command.

debug service ap-monitor {**all** | **error** | **event** | **nmsp** | **packet**} {**enable** | **disable**}

Syntax Description

all	Configures debugging of all access point status messages.
error	Configures debugging of access point monitor error events.
event	Configures debugging of access point monitor events.
nmsp	Configures debugging of access point monitor Network Mobility Services Protocol (NMSP) events.
packet	Configures debugging of access point monitor packets.
enable	Enables debugging for access point monitor service.
disable	Disables debugging for access point monitor service.

Command Default

None.

Examples

This example shows how to debug access point monitor NMSP events:

```
> debug service ap-monitor events
```

Related Commands

debug disable-all
show nmsp status

debug snmp

To configure SNMP debug options, use the **debug snmp** command.

debug snmp {**agent** | **all** | **mib** | **trap**} {**enable** | **disable**}

Syntax Description

agent	Configures debugging of the SNMP agent.
all	Configures debugging of all SNMP messages.
mib	Configures debugging of the SNMP MIB.
trap	Configures debugging of SNMP traps.
enable	Enables SNMP debugging.
disable	Disables SNMP debugging.

Command Default

None.

Examples

This example shows how to enable SNMP debug settings:

```
> debug snmp trap enable
```

Related Commands

debug disable-all

debug transfer

To configure transfer debug options, use the **debug transfer** command.

debug transfer {**all** | **tftp** | **trace**} {**enable** | **disable**}

Syntax Description

all	Configures debugging of all transfer messages.
tftp	Configures debugging of TFTP transfers.
trace	Configures debugging of transfer/upgrade.
enable	Enables transfer debugging.
disable	Disables transfer debugging.

Command Default

None.

Examples

This example shows how to enable transfer/upgrade settings:

```
> debug transfer trace enable
```

Related Commands

debug disable-all

debug voice-diag

To trace call or packet flow, use the **debug voice-diag** command.

debug voice-diag {**enable** *client_mac1* [*client_mac2*] [**verbose**] | **disable**}

Syntax Description

enable	Enables voice diagnostics for voice client(s) involved in a call.
client_mac1	MAC address of a voice client.
client_mac2	(Optional) MAC address of an additional voice client. **Note** Voice diagnostics can be enabled or disabled for a maximum of two voice clients at a time.
verbose	(Optional) Enables debug information to be displayed on the console. **Note** When voice diagnostics is enabled from the WCS, the verbose option is not available.
disable	Disables voice diagnostics for voice client(s) involved in a call.

Command Default

None.

Usage Guidelines

Follow these guidelines when you use the **debug voice-diag** command:

- When the command is entered, the validity of the client(s) is not checked.
- A few output messages of the command are sent to the WCS.
- The command expires automatically after 60 minutes.
- The command provides the details of the call flow between a pair of client MACs involved in an active call.

Note Voice diagnostics can be enabled for a maximum of two voice clients at a time.

Examples

This example shows how to enable transfer/upgrade settings:

```
> debug voice-diag enable 00:1a:a1:92:b9:5c 00:1a:a1:92:b5:9c verbose
```

Related Commands

show client calls
show client voice-diag

debug web-auth

To configure debugs for web authenticated clients, use the **debug web-auth** command.

debug web-auth {**redirect** {**enable mac** *mac_address* | **disable**} | **webportal-server** {**enable** | **disable**}}

Syntax Description

redirect	Configures debug of web authenticated and redirected clients.
enable	Enables debug of web authenticated clients.
mac	Configures the MAC address of the web authenticated client.
mac_address	Configures the MAC address of the web authenticated client.
disable	Disables debug of web authentication of clients.
webportal-server	Configures debug of portal authentication of clients.

Command Default None.

Examples This example shows how to enable debugging of a web authenticated and redirected client:

```
> debug web-auth redirect enable mac xx:xx:xx:xx:xx:xx
```

Related Commands None.

debug wcp

To configure WLAN Control Protocol (WCP) debug options, use the **debug wcp** command.

debug wcp {**events** | **packet**} {**enable** | **disable**}

Syntax Description

events	Configures debugging of WCP events.
packet	Configures debugging of WCP packets.
enable	Enables WCP debugging settings.
disable	Disables WCP debugging settings.

Command Default None.

Examples This example shows how to enable WCP debug settings:

```
> debug wcp packet enable
```

Related Commands debug disable-all

debug wps sig

To troubleshoot Wireless Provisioning Service (WPS) signature settings, use the **debug wps sig** command.

debug wps sig {**enable** | **disable**}

Syntax Description

enable	Enables debugging for WPS settings.
disable	Disables debugging for WPS settings.

Command Default

None.

Examples

This example shows how to enable WPS signature settings:

```
> debug wps sig enable
```

Related Commands

debug disable-all
debug wps mfp

debug wps mfp

To debug WPS Management Frame Protection (MFP) settings, use the **debug wps mfp** command.

debug wps mfp {**client** | **capwap** | **detail** | **report** | **mm**}{**enable** | **disable**}

Syntax Description

client	Configures debugging for client MFP messages.
capwap	Configures debugging for MFP messages between the controller and access points.
detail	Configures detailed debugging for MFP messages.
report	Configures debugging for MFP reporting.
mm	Configures debugging for MFP mobility (inter-controller) messages.
enable	Enables debugging for WPS MFP settings.
disable	Disables debugging for WPS MFP settings.

Command Default

None.

Examples

This example shows how to enable debugging of WPS MFP settings:

```
> debug wps mfp detail enable
```

Related Commands

debug disable-all
debug wps sig

eping

To test the mobility Ethernet over IP (EoIP) data packet communication between two controllers, use the **eping** command.

eping *mobility_peer_IP_address*

Syntax Description

mobility_peer_IP_address	IP address of a controller that belongs to a mobility group.

Command Default None.

Usage Guidelines This command tests the mobility data traffic over the management interface.

Note This ping test is not Internet Control Message Protocol (ICMP) based. The term "ping" is used to indicate an echo request and an echo reply message.

Examples This example shows how to test EoIP data packets and to set the IP address of a controller that belongs to a mobility group to 172.12.35.31:

```
> eping 172.12.35.31
```

Related Commands

mping

config logging buffered debugging

show logging

debug mobility handoff enable

mping

To test mobility UDP control packet communication between two controllers, use the **mping** command.

mping *mobility_peer_IP_address*

Syntax Description

mobility_peer_IP_address	IP address of a controller that belongs to a mobility group.

Command Default None.

Usage Guidelines This test runs over mobility UDP port 16666. It tests whether the mobility control packet can be reached over the management interface.

Note This ping test is not Internet Control Message Protocol (ICMP) based. The term "ping" is used to indicate an echo request and an echo reply message.

Examples This example shows how to test mobility UDP control packet communications and to set the IP address of a controller that belongs to a mobility group to 172.12.35.31:

```
> mping 172.12.35.31
```

Related Commands

eping
config logging buffered debugging
show logging
debug mobility handoff enable

Integrated Management Module Commands in Cisco Flex 7500 Series Controllers

Use the **imm** commands to manage the Integrated Management Module (IMM) in the Cisco Flex 7500 Series Controllers.

imm address

To configure the static IP address of the IMM, use the **imm address** command.

imm address *ip-addr netmask gateway*

Syntax Description

ip-addr	IP address of the IMM
netmask	Netmask of the IMM
gateway	Gateway of the IMM

Command Default

None.

Examples

This example shows how to set the static IP address of an IMM:

```
> imm address 209.165.200.225 255.255.255.224 10.1.1.1
```

Related Commands

imm dhcp
imm mode
imm restart
imm summary
imm username

imm dhcp

To configure DHCP for the IMM, use the **imm dhcp** command.

imm dhcp {**enable** | **disable** | **fallback**}

Syntax Description

enable	Enables DHCP for the IMM
disable	Disables DHCP for the IMM
fallback	Enables DHCP for the IMM, but if it fails, then uses static IP of the IMM

Command Default

Enabled.

Examples

This example shows how to enable DHCP for the IMM:

```
> imm dhcp enable
```

Related Commands

imm address
imm mode
imm restart
imm summary
imm username

imm mode

To configure the IMM mode, use the **imm mode** command.

imm mode {**shared** | **dedicated**}

Syntax Description

shared	Sets IMM in shared mode
dedicated	Sets IMM in dedicated mode

Command Default

Dedicated.

Examples

This example shows how to set the IMM in shared mode:

```
> imm mode shared
```

Related Commands

imm address
imm dhcp
imm restart
imm summary
imm username

imm restart

To restart the IMM, use the **imm restart** command.

imm restart

Syntax Description		
	restart	Saves your settings and restarts the IMM

Command Default None.

Related Commands
imm address
imm dhcp
imm mode
imm summary
imm username

imm summary

To view the IMM parameters, use the **imm summary** command.

imm summary

Syntax Description

summary	Lists the IMM parameters

Command Default

None.

Examples

This example shows a typical summary of the IMM:

```
> imm mode shared
User ID.....................................username1
Mode.......................................... Shared
DHCP.......................................... Enabled
IP Address.................................... 209.165.200.225
Subnet Mask................................... 255.255.255.224
Gateway....................................... 10.1.1.1
```

Related Commands

imm address
imm dhcp
imm mode
imm restart
imm username

imm username

To configure the logon credentials for a user of the IMM, use the **imm username** command.

imm username *username password*

Syntax Description		
	username	Username for the user
	password	Password for the user

Examples

This example shows how to set the logon credentials for a user of the IMM:

```
> imm username username1 password1
```

Related Commands

imm address
imm dhcp
imm mode
imm restart
imm summary