



## **Cisco Wireless LAN Controller Command Reference**

Software Release 7.2  
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## Preface

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This preface describes the audience, organization, and conventions of the *Cisco Wireless LAN Controller Command Reference, Release 7.2*. It also provides information on how to obtain other documentation. This chapter includes the following sections:

- [Audience, page vii](#)
- [Organization, page viii](#)
- [Organization, page viii](#)
- [Conventions, page viii](#)
- [Related Documentation, page ix](#)
- [Obtaining Documentation and Submitting a Service Request, page ix](#)

## Audience

This publication is for experienced network administrators who configure and maintain Cisco wireless LAN controllers and Cisco lightweight access points.

## Purpose

This guide describes the tasks and commands available to configure and maintain Cisco wireless LAN controllers.



### Note

---

This version of the *Cisco Wireless LAN Controller Command Reference* pertains specifically to controller software release 7.2.

---

# Organization

This guide is organized into these chapters:

| Chapter Title                                                 | Description                                                                          |
|---------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <a href="#">Chapter 1, “Using the Command-Line Interface”</a> | Describes how to use the command-line interface (CLI) on the controller.             |
| <a href="#">Chapter 2, “CLI Commands”</a>                     | Provides detailed information about the CLI commands for the controller 7.2 release. |

# Conventions

This document uses the following conventions:

| Convention         | Indication                                                                                                                  |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>bold font</b>   | Commands and keywords and user-entered text appear in <b>bold font</b> .                                                    |
| <i>italic font</i> | Document titles, new or emphasized terms, and arguments for which you supply values are in <i>italic font</i> .             |
| [ ]                | Elements in square brackets are optional.                                                                                   |
| { x   y   z }      | Required alternative keywords are grouped in braces and separated by vertical bars.                                         |
| [ x   y   z ]      | Optional alternative keywords are grouped in brackets and separated by vertical bars.                                       |
| string             | A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks. |
| courier font       | Terminal sessions and information the system displays appear in courier font.                                               |
| < >                | Nonprinting characters such as passwords are in angle brackets.                                                             |
| [ ]                | Default responses to system prompts are in square brackets.                                                                 |
| !, #               | An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.                   |



## Note

Means *reader take note*.



## Tip

Means *the following information will help you solve a problem*.



## Caution

Means *reader be careful*. In this situation, you might perform an action that could result in equipment damage or loss of data.



**Timesaver**

Means *the described action saves time*. You can save time by performing the action described in the paragraph.

## Related Documentation

These documents provide complete information about the Cisco Unified Wireless Network solution:

- Cisco 5500 Series Wireless Controller Installation Guide
- Cisco Wireless LAN Controller Command Reference
- Cisco Wireless Control System Configuration Guide
- Release Notes for Cisco Wireless LAN Controllers and Lightweight Access Points, Release 7.2.100.0
- Quick Start Guide: Cisco Wireless Control System
- Quick start guide and hardware installation guide for your specific lightweight access point

Click this link to browse to user documentation for the Cisco Unified Wireless Network solution:

<http://www.cisco.com/cisco/web/psa/default.html?mode=prod>

## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as an RSS feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service. Cisco currently supports RSS Version 2.0.





# CHAPTER 1

## Using the Command-Line Interface

The command-line interface (CLI) is a line-oriented user interface that provides commands for configuring, managing, and monitoring the Cisco Wireless LAN Controller. This chapter contains the following topics:

- [CLI Command Keyboard Shortcuts, page 1](#)
- [Using the Interactive Help Feature, page 2](#)

## CLI Command Keyboard Shortcuts

[Table 1-1](#) lists CLI keyboard shortcuts to help you enter and edit command lines on the controller.

**Table 1-1** *CLI Command Keyboard Shortcuts*

| Action                                  | Description                                                                                                                          | Keyboard Shortcut            |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Change                                  | The word at the cursor to lowercase.                                                                                                 | Esc l                        |
|                                         | The word at the cursor to uppercase.                                                                                                 | Esc u                        |
| Delete                                  | A character to the left of the cursor.                                                                                               | Ctrl-h, Delete, or Backspace |
|                                         | All characters from the cursor to the beginning of the line.                                                                         | Ctrl-u                       |
|                                         | All characters from the cursor to the end of the line.                                                                               | Ctrl-k                       |
|                                         | All characters from the cursor to the end of the word.                                                                               | Esc d                        |
| Display MORE output                     | The word to the left of the cursor.                                                                                                  | Ctrl-w or Esc Backspace      |
|                                         | Exit from MORE output.                                                                                                               | q, Q, or Ctrl-C              |
|                                         | Next additional screen. The default is one screen. To display more than one screen, enter a number before pressing the Spacebar key. | Spacebar                     |
|                                         | Next line. The default is one line. To display more than one line, enter the number before pressing the Enter key.                   | Enter                        |
| Enter an Enter or Return key character. |                                                                                                                                      | Ctrl-m                       |

**Table 1-1** CLI Command Keyboard Shortcuts

| Action                                                                          | Description                                                                    | Keyboard Shortcut     |
|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------|
| Expand the command or abbreviation.                                             |                                                                                | Ctrl-t or Tab         |
| Move the cursor                                                                 | One character to the left (back).                                              | Ctrl-b or Left Arrow  |
|                                                                                 | One character to the right (forward).                                          | Ctrl-f or Right Arrow |
|                                                                                 | One word to the left (back), to the beginning of the current or previous word. | Esc b                 |
|                                                                                 | One word to the right (forward), to the end of the current or next word.       | Esc f                 |
|                                                                                 | To the beginning of the line.                                                  | Ctrl-a                |
|                                                                                 | To the end of the line.                                                        | Ctrl-e                |
| Redraw the screen at the prompt.                                                |                                                                                | Ctrl-l or Ctrl-r      |
| Return to the EXEC mode from any configuration mode                             |                                                                                | Ctrl-z                |
| Return to the previous mode or exit from the CLI from Exec mode.                |                                                                                | exit command          |
| Transpose a character at the cursor with a character to the left of the cursor. |                                                                                | Ctrl-t                |

## Using the Interactive Help Feature

The question mark (?) character allows you to get the following type of help about the command at the command line. [Table 1-2](#) lists the interactive help feature list.

**Table 1-2** Interactive Help Feature List

| Command                 | Purpose                                                               |
|-------------------------|-----------------------------------------------------------------------|
| help                    | Provides a brief description of the Help feature in any command mode. |
| ? at the command prompt | Lists all commands available for a particular command mode.           |
| partial command?        | Provides a list of commands that begin with the character string.     |
| partial command<Tab>    | Completes a partial command name.                                     |
| command ?               | Lists the keywords, arguments, or both associated with a command.     |
| command keyword ?       | Lists the arguments that are associated with the keyword.             |

## Using the Help Command

To look up keyboard commands, use the **help** command at the root level.

```
help
```

**Usage Guidelines**

Help may be requested at any point in a command by entering a question mark '?'. If nothing matches, the help list will be empty and you must back up until entering a '?' shows the available options. Two types of help are available

1. Full help is available when you are ready to enter a command argument (for example **show ?**) and describes each possible argument.
2. Partial help is provided when an abbreviated argument is entered and you want to know what arguments match the input (for example **show pr?**).

**Examples**

```
> help
HELP:
Special keys:
  DEL, BS... delete previous character
  Ctrl-A .... go to beginning of line
  Ctrl-E .... go to end of line
  Ctrl-F .... go forward one character
  Ctrl-B .... go backward one character
  Ctrl-D .... delete current character
  Ctrl-U, X. delete to beginning of line
  Ctrl-K .... delete to end of line
  Ctrl-W .... delete previous word
  Ctrl-T .... transpose previous character
  Ctrl-P .... go to previous line in history buffer
  Ctrl-N .... go to next line in history buffer
  Ctrl-Z .... return to root command prompt
  Tab, <SPACE> command-line completion
  Exit .... go to next lower command prompt
  ? .... list choices
```

## Using the ? command

To display all of the commands in your current level of the command tree, or to display more information about a particular command, use the ? command.

**command name ?**

**Usage Guidelines**

When you enter a command information request, put a space between the **command name** and ?.

**Examples**

This command shows you all the commands and levels available from the root level.

```
> ?

clear          Clear selected configuration elements.
config         Configure switch options and settings.
debug          Manages system debug options.
help           Help
linktest       Perform a link test to a specified MAC address.
logout         Exit this session. Any unsaved changes are lost.
ping           Send ICMP echo packets to a specified IP address.
reset          Reset options.
save           Save switch configurations.
show           Display switch options and settings.
transfer       Transfer a file to or from the switch.
```

## Using the partial? command

To provide a list of commands that begin with the character string, use the **partial command ?**.

**partial command?**

---

### Usage Guidelines

There should be no space between the command and the question mark.

---

### Examples

This example shows how to provide a command that begin with the character string “ad”:

```
> controller> config>ad?
```

The command that matches with the string “ad” is as follows:

```
advanced
```

## Using the partial command<tab>

To completes a partial command name, use the **partial command<tab>** command.

**partial command<tab>**

---

### Usage Guidelines

There should be no space between the command and <tab>.

---

### Examples

This example shows how to complete a partial command name that begin with the character string “ad”:

```
> Controller>config>cert<tab> certificate
```

## Using the command ?

To list the keywords, arguments, or both associated with the command, use the **command ?**.

**command ?**

---

### Usage Guidelines

There should be space between the command and the question mark.

---

### Examples

This example shows how to list the arguments and keyword for the command **acl**:

```
> Controller >config acl ?
```

Information similar to the following appears:

```
apply          Applies the ACL to the data path.
```

|         |                                   |
|---------|-----------------------------------|
| counter | Start/Stop the ACL Counters.      |
| create  | Create a new ACL.                 |
| delete  | Delete an ACL.                    |
| rule    | Configure rules in the ACL.       |
| cpu     | Configure the CPU Acl Information |

## command keyword ?

To list the arguments that are associated with the keyword, use the **command keyword ?**  
command keyword ?

### Usage Guidelines

There should be space between the keyword and the question mark.

### Examples

This example shows how to display the arguments associated with the keyword cpu:

```
> controller>config acl cpu ?
```

Information similar to the following appears:

|        |                              |
|--------|------------------------------|
| none   | None - Disable the CPU ACL   |
| <name> | <name> - Name of the CPU ACL |







# CHAPTER 2

## 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, page 2-2](#)
- [Configuring Controller Settings, page 2-312](#)
- [Saving Configurations, page 2-1080](#)
- [Clearing Configurations, Logfiles, and Other Actions, page 2-1082](#)
- [Uploading and Downloading Files and Configurations, page 2-1118](#)
- [Installing and Modifying Licenses, page 2-1142](#)
- [Troubleshooting Commands, page 2-1150](#)
- [Integrated Management Module Commands in Cisco Flex 7500 Series Controllers, page 2-1205](#)

# Show Commands for Viewing the Configuration

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

- [Show 802.11 Commands, page 2-3](#)
- [Show ACL Commands, page 2-16](#)
- [Show Advanced 802.11 Commands, page 2-21](#)
- [Show Access Point Commands, page 2-42](#)
- [Show Client Commands, page 2-89](#)
- [Show IPv6 Commands, page 2-184](#)
- [Show Media-Stream Commands, page 2-190](#)
- [Show Mesh Commands, page 2-194](#)
- [Show Mobility Commands, page 2-214](#)
- [Show RADIUS Commands, page 2-239](#)
- [Show Radio Frequency ID Commands, page 2-244](#)
- [Show RF-Profile Commands, page 2-250](#)
- [Show Rogue Commands, page 2-253](#)
- [Show TACACS Commands, page 2-286](#)
- [Show WPS Commands, page 2-300](#)

## 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

|          |                                  |
|----------|----------------------------------|
| <b>a</b> | Specifies the 802.11a network.   |
| <b>b</b> | Specifies the 802.11b/g network. |
| <b>h</b> | 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

|               |                                              |
|---------------|----------------------------------------------|
| <b>a</b>      | Specifies the 802.11a network.               |
| <b>b</b>      | Specifies the 802.11b/g network.             |
| <b>config</b> | 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

|                |                                                                  |
|----------------|------------------------------------------------------------------|
| <b>a</b>       | Specifies the 802.11a network.                                   |
| <b>b</b>       | Specifies the 802.11b/g network.                                 |
| <b>summary</b> | 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

|              |                                                                 |
|--------------|-----------------------------------------------------------------|
| <b>a</b>     | Specifies the 802.11a network.                                  |
| <b>b</b>     | Specifies the 802.11b/g network.                                |
| <b>worst</b> | 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

|                 |                                  |
|-----------------|----------------------------------|
| <b>a</b>        | Specifies the 802.11a network.   |
| <b>b</b>        | Specifies the 802.11b/g network. |
| <i>cisco_ap</i> | Specified access point name.     |

### Command Default

None.

### Examples

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

```
> show 802.11a cleanair device ap AP_3500
```

DC = Duty Cycle (%)

ISI = Interference Severity Index (1-Low Interference, 100-High Interference)

RSSI = Received Signal Strength Index (dBm)

DevID = Device ID

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

### Related Commands

[config 802.11 cleanair alarm](#)

[config 802.11 cleanair device](#)

[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 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a</b>           | Specifies the 802.11a network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>b</b>           | Specifies the 802.11b/g network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <i>device_type</i> | Interferer device type for a specified radio band. The device type is one of the following: <ul style="list-style-type: none"> <li>tdd-tx—Tdd-transmitter device information.</li> <li>jammer—Jammer device information.</li> <li>cont-tx—Continuous-transmitter devices information.</li> <li>dect-like—Dect-like phone devices information.</li> <li>video—Video devices information.</li> <li>802.11-inv—WiFi inverted devices information.</li> <li>802.11-nonstd—Nonstandard WiFi devices information.</li> <li>superag—Superag devices information.</li> <li>canopy—Canopy devices information.</li> <li>wimax-mobile—WiMax mobile devices information.</li> <li>wimax-fixed—WiMax fixed devices information.</li> </ul> |

**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

|                 |                                  |
|-----------------|----------------------------------|
| <b>a</b>        | Specifies the 802.11a network.   |
| <b>b</b>        | Specifies the 802.11b/g network. |
| <i>cisco_ap</i> | 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 | <b>a</b>        | Specifies the 802.11a network.                        |
|                    | <b>b</b>        | Specifies the 802.11b/g network.                      |
|                    | <b>extended</b> | 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 SFP -80; CCA threshold -90;
```

```
AP0022.9090.b618 00:24:97:88:99:60
```

```
beacon period 300, range 60; multicast buffer 45, rate 200;  
RX SFP -80; CCA threshold -77
```

```
AP0022.9090.bb3e 00:24:97:88:c5:d0
```

```
beacon period 300, range 0; multicast buffer 0, rate 0;  
RX SFP -80; CCA threshold -0
```

```
ironRap.ddbf 00:17:df:36:dd:b0
```

```
beacon period 300, range 0; multicast buffer 0, rate 0;  
RX SFP -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

|                    |                                                  |
|--------------------|--------------------------------------------------|
| <b>a</b>           | Specifies the 802.11a network.                   |
| <b>b</b>           | Specifies the 802.11b/g network.                 |
| <b>rf-param</b>    | Specifies the Layer 2 frequency parameters.      |
| <b>statistics</b>  | Specifies the Layer 2 client roaming statistics. |
| <i>mac_address</i> | 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

|                          |                                  |
|--------------------------|----------------------------------|
| <b>a</b>                 | Specifies the 802.11a network.   |
| <b>b</b>                 | Specifies the 802.11b/g network. |
| <i>media-stream_name</i> | 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                         |
|-------------------------|-------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config aaa auth</a><br><a href="#">config aaa auth mgmt</a> |
|-------------------------|-------------------------------------------------------------------------|

# 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

|                 |                                                              |
|-----------------|--------------------------------------------------------------|
| <b>summary</b>  | Displays a summary of all ACLs configured on the controller. |
| <b>detailed</b> | Displays detailed information about a specific ACL.          |
| <i>acl_name</i> | 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

|          |                                  |
|----------|----------------------------------|
| <b>a</b> | Specifies the 802.11a network.   |
| <b>b</b> | Specifies the 802.11b/g network. |

## Command Default

None.

## Examples

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

```
> show advanced 802.11a channel
```

```
Automatic Channel Assignment
Channel Assignment Mode..... AUTO
Channel Update Interval..... 600 seconds [startup]
Anchor time (Hour of the day)..... 0
Channel Update Contribution..... SNI.
Channel Assignment Leader..... 00:1a:6d:dd:1e:40
Last Run..... 129 seconds ago

DCA Sensitivity Level: ..... STARTUP (5 dB)
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

|          |                                  |
|----------|----------------------------------|
| <b>a</b> | Specifies the 802.11a network.   |
| <b>b</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

|          |                                  |
|----------|----------------------------------|
| <b>a</b> | Specifies the 802.11a network.   |
| <b>b</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

|          |                                  |
|----------|----------------------------------|
| <b>a</b> | Specifies the 802.11a network.   |
| <b>b</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

|          |                                  |
|----------|----------------------------------|
| <b>a</b> | Specifies the 802.11a network.   |
| <b>b</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

|                 |                                                    |
|-----------------|----------------------------------------------------|
| <b>a</b>        | Specifies the 802.11a network.                     |
| <b>b</b>        | Specifies the 802.11b/g network.                   |
| <b>global</b>   | Specifies all Cisco lightweight access points.     |
| <i>cisco_ap</i> | 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**

|                           |          |                                  |
|---------------------------|----------|----------------------------------|
| <b>Syntax Description</b> | <b>a</b> | Specifies the 802.11a network.   |
|                           | <b>b</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..... Disabled
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

|          |                                  |
|----------|----------------------------------|
| <b>a</b> | Specifies the 802.11a network.   |
| <b>b</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

|          |                                  |
|----------|----------------------------------|
| <b>a</b> | Specifies the 802.11a network.   |
| <b>b</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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to display the client auto handoff mode after excessive retries: |
|-----------------|-----------------------------------------------------------------------------------------|

> **show advanced client-handoff**

Client auto handoff after retries..... 130

|                         |                                                                                                |
|-------------------------|------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config advanced client-handoff</a><br><a href="#">show advanced 802.11 summary</a> |
|-------------------------|------------------------------------------------------------------------------------------------|

# 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                         |
|-----------------|-------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to view the state of over-the-air frame padding: |
|-----------------|-------------------------------------------------------------------------|

> **show advanced dot11-padding**

dot11-padding..... Disabled

---

|                         |                                                                                                                                                                                                                                                                                                           |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config advanced dot11-padding</a><br><a href="#">debug dot11</a><br><a href="#">debug dot11 mgmt interface</a><br><a href="#">debug dot11 mgmt msg</a><br><a href="#">debug dot11 mgmt ssid</a><br><a href="#">debug dot11 mgmt state-machine</a><br><a href="#">debug dot11 mgmt station</a> |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# show advanced eap

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

## show advanced eap

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                     |
|-----------------|-----------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                                                                                                |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config advanced eap</a><br><a href="#">config advanced timers eap-identity-request-delay</a><br><a href="#">config advanced timers eap-timeout</a> |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                 |
|-----------------|---------------------------------------------------------------------------------|
| <b>Examples</b> | 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

---

|                         |                                          |
|-------------------------|------------------------------------------|
| <b>Related Commands</b> | <a href="#">show advanced statistics</a> |
|-------------------------|------------------------------------------|

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                               |
|-----------------|-------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config advanced probe filter</a><br><a href="#">config advanced probe limit</a> |
|-------------------------|---------------------------------------------------------------------------------------------|

# show advanced rate

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

**show advanced rate**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                               |
|-----------------|-------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to display the switch control path rate limiting mode: |
|-----------------|-------------------------------------------------------------------------------|

> **show advanced rate**

Control Path Rate Limiting..... Disabled

---

|                         |                                                                             |
|-------------------------|-----------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config advanced rate</a><br><a href="#">config advanced eap</a> |
|-------------------------|-----------------------------------------------------------------------------|

# 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                       |
|-----------------|-----------------------------------------------------------------------|
| <b>Examples</b> | 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                                                                           |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to display switch port statistics mode:</p> <pre>&gt; show advanced statistics</pre> <p>Switch port statistics..... Enabled</p> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|

---

|                         |                                            |
|-------------------------|--------------------------------------------|
| <b>Related Commands</b> | <a href="#">config advanced statistics</a> |
|-------------------------|--------------------------------------------|



# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |                                                   |
|------------------------|---------------------------------------------------|
| <b>Command Default</b> | The defaults are shown in the “Examples” section. |
|------------------------|---------------------------------------------------|

|                 |                                                              |
|-----------------|--------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config advanced timers ap-discovery-timeout</a><br><a href="#">config advanced timers ap-fast-heartbeat</a><br><a href="#">config advanced timers ap-heartbeat-timeout</a><br><a href="#">config advanced timers ap-primary-discovery-timeout</a><br><a href="#">config advanced timers auth-timeout</a><br><a href="#">config advanced timers eap-identity-request-delay</a><br><a href="#">config advanced timers eap-timeout</a> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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***

|                           |                 |                                      |
|---------------------------|-----------------|--------------------------------------|
| <b>Syntax Description</b> | <b>a</b>        | Specifies the 802.11a network.       |
|                           | <b>b</b>        | Specifies the 802.11b/g network.     |
|                           | <i>cisco_ap</i> | Cisco lightweight access point name. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | 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

|                |                                                                           |
|----------------|---------------------------------------------------------------------------|
| <i>ap_name</i> | Specified access point name.                                              |
| <i>status</i>  | 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

|                  |                                                                    |
|------------------|--------------------------------------------------------------------|
| <b>all</b>       | Displays the CDP status on all access points.                      |
| <b>ap-name</b>   | Displays the CDP status for a specified access point.              |
| <b>neighbors</b> | Displays neighbors using CDP.                                      |
| <b>detail</b>    | Displays details about a specific access point neighbor using CDP. |
| <i>cisco_ap</i>  | 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

|                |                                |
|----------------|--------------------------------|
| <i>ap_name</i> | 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**

|                           |                 |                                             |
|---------------------------|-----------------|---------------------------------------------|
| <b>Syntax Description</b> | <b>802.11a</b>  | Specifies the 802.11a or 802.11b/g network. |
|                           | <b>802.11b</b>  | Specifies the 802.11b/g network.            |
|                           | <b>summary</b>  | Displays radio summary of all APs           |
|                           | <b>cisco_ap</b> | 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

## ■ show ap config

```

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

```

## ■ show ap config

```

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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | The command has no arguments and keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to display global syslog server settings:</p> <pre>&gt; show ap config global</pre> <p>AP global system logging host..... 255.255.255.255</p> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                        |
|-------------------------|------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><a href="#">config ap</a></p> <p><a href="#">show ap config</a></p> |
|-------------------------|------------------------------------------------------------------------|

# 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**

|                 |                                      |
|-----------------|--------------------------------------|
| <i>cisco_ap</i> | 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                |
|-----------------|----------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to display the crash file generated by the access point:<br>> <b>show ap crash-file</b> |
|-----------------|----------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                  |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config ap crash-file clear-all</a><br><a href="#">config ap crash-file delete</a><br><a href="#">config ap crash-file get-crash-file</a><br><a href="#">config ap crash-file get-radio-core-dump</a> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                 |                                                |
|-----------------|------------------------------------------------|
| <b>all</b>      | Specifies all Cisco lightweight access points. |
| <i>cisco_ap</i> | 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<br>AP Name | Data<br>Round Trip | Max Data<br>Round Trip | Last<br>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**

|                |                                           |
|----------------|-------------------------------------------|
| <i>ap_name</i> | 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

|                 |                                       |
|-----------------|---------------------------------------|
| <i>cisco_ap</i> | Name of the lightweight access point. |
| <b>all</b>      | 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*

|                           |                                                                        |
|---------------------------|------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>ap_name</i> Specifies the inventory for the specified access point. |
|---------------------------|------------------------------------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | 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*

|                           |               |                                                                                     |
|---------------------------|---------------|-------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>ap_mac</i> | Access point Ethernet MAC address or the MAC address of the 802.11 radio interface. |
|---------------------------|---------------|-------------------------------------------------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to display join information for a specific access point trying to join the controller:</p> <pre>&gt; 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</pre> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**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 | <i>ap_mac</i> | 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 <a href="#">show interface</a> command on the access point. |
|------------------|--------------------------------------------------------------------------------------------------------------------------------|
|------------------|--------------------------------------------------------------------------------------------------------------------------------|

| Examples | <p>This example shows how to display specific join information for an access point:</p> <pre>&gt; show ap join stats summary 00:0b:85:02:0d:20</pre> <pre>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</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Related Commands | <a href="#">show ap join stats detailed</a><br><a href="#">show ap join stats summary all</a> |
|------------------|-----------------------------------------------------------------------------------------------|
|------------------|-----------------------------------------------------------------------------------------------|



# 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 aspecific access point, use the **show ap led-state** command.

**show ap led-state {all | *cisco\_ap*}**

## Syntax Description

|                 |                                                          |
|-----------------|----------------------------------------------------------|
| <i>all</i>      | Shows the LED state for all access points.               |
| <i>cisco_ap</i> | 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**

| AP Name | Encryption State | Dnstream Count | Upstream Count | Last 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

|                 |                                         |
|-----------------|-----------------------------------------|
| <b>all</b>      | Specifies all access points.            |
| <i>cisco_ap</i> | 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**}]

|                           |                   |                                                     |
|---------------------------|-------------------|-----------------------------------------------------|
| <b>Syntax Description</b> | <b>802.11a</b>    | Specifies the 802.11a network                       |
|                           | <b>802.11b</b>    | Specifies the 802.11b/g network.                    |
|                           | <b>wlan</b>       | Specifies WLAN statistics.                          |
|                           | <i>cisco_ap</i>   | Specifies the name of the lightweight access point. |
|                           | <b>tsm</b>        | Specifies the traffic stream metrics.               |
|                           | <i>client_mac</i> | MAC address of the client.                          |
|                           | <b>all</b>        | 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 insufficient 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 | <i>cisco_ap</i> (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           | <p>This example shows how to display a summary of all connected access points:</p> <pre>&gt; 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</pre> <table><tr><th>AP Name</th><th>Slots</th><th>AP Model</th><th>Ethernet MAC</th><th>Location</th><th>Port</th><th>Country</th><th>Priority</th></tr><tr><td>wolverine</td><td>2</td><td>AIR-LAP1252AG-A-K9</td><td>00:1b:d5:13:39:74</td><td>Reception</td><td>1</td><td>US</td><td>3</td></tr><tr><td>ap:1120</td><td>1</td><td>AIR-LAP1121G-A-K9</td><td>00:1b:d5:a9:ad:08</td><td>Hall 235</td><td>1</td><td>US</td><td>1</td></tr></table> |                    |                   |           |      |         |          |  | 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 |
| 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   | <a href="#">config ap</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                   |           |      |         |          |  |         |       |          |              |          |      |         |          |           |   |                    |                   |           |   |    |   |         |   |                   |                   |          |   |    |   |



# 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

|                 |                                          |
|-----------------|------------------------------------------|
| <i>cisco_ap</i> | Specified lightweight access point name. |
| <b>all</b>      | 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

|                |                                  |
|----------------|----------------------------------|
| <b>802.11a</b> | Specifies the 802.11a network.   |
| <b>802.11b</b> | Specifies the 802.11b/g network. |
| <i>ap_name</i> | 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                 |
|-----------------|-----------------------------------------------------------------|
| <b>Examples</b> | 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   |

---

|                         |                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">clear arp</a><br><a href="#">debug arp</a><br><a href="#">show route kernel</a> |
|-------------------------|---------------------------------------------------------------------------------------------|

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                        |
|-----------------|------------------------------------------------------------------------|
| <b>Examples</b> | 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       |          |

|                         |                                                                                                                                                                                                                         |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">clear tacacs auth statistics</a><br><a href="#">clear stats local-auth</a><br><a href="#">config auth-list add</a><br><a href="#">config auth-list ap-policy</a><br><a href="#">config auth-list delete</a> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                |                                  |
|----------------|----------------------------------|
| <b>summary</b> | Summary of Voice CAC details.    |
| <b>stats</b>   | Voice CAC Statistics             |
| <b>802.11a</b> | Specifies the 802.11a network.   |
| <b>802.11b</b> | Specifies the 802.11b/g network. |
| <i>ap_name</i> | 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

|                 |                                                  |
|-----------------|--------------------------------------------------|
| <b>802.11a</b>  | Specifies the 802.11a network                    |
| <b>802.11b</b>  | Specifies the 802.11b/g network.                 |
| <i>cisco_ap</i> | Cisco access point name.                         |
| <b>metrics</b>  | Specifies the call metrics information.          |
| <b>traps</b>    | 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                                                                                                                                                                                           |
|------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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

|                           |                                         |
|---------------------------|-----------------------------------------|
| <b>callInfo</b>           | Specifies the call-control information. |
| <i>client_MAC_address</i> | 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                         |
|-----------------|-------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to display the status of the compatibility mode: |
|-----------------|-------------------------------------------------------------------------|

```
> show certificate compatibility
```

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

|                         |                                                                                                                                                                                                                  |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config certificate</a><br><a href="#">config certificate lsc</a><br><a href="#">show certificate lsc</a><br><a href="#">show certificate summary</a><br><a href="#">show local-auth certificates</a> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                     |                                                                              |
|---------------------|------------------------------------------------------------------------------|
| <b>summary</b>      | Displays a summary of LSC certificate settings and certificates.             |
| <b>ap-provision</b> | 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                 |
|-----------------|-----------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                                                                                                                                                        |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config certificate</a><br><a href="#">config certificate lsc</a><br><a href="#">show certificate compatibility</a><br><a href="#">show certificate lsc</a><br><a href="#">show local-auth certificates</a> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                 |                                      |
|-----------------|--------------------------------------|
| <b>802.11a</b>  | Specifies the 802.11a network.       |
| <b>802.11b</b>  | Specifies the 802.11b/g network.     |
| <i>cisco_ap</i> | 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 | 802.11b/g | all }**

## Syntax Description

|                  |                                                   |
|------------------|---------------------------------------------------|
| <b>active</b>    | Displays active calls.                            |
| <b>rejected</b>  | Displays rejected calls.                          |
| <b>802.11a</b>   | Specifies the 802.11a network.                    |
| <b>802.11b/g</b> | Specifies the 802.11b/g network.                  |
| <b>all</b>       | 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<br>Duration (sec) | AP Name         | Radio Type |
|----------------------|----------|------------------------------|-----------------|------------|
| 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*

|                           |                                                      |
|---------------------------|------------------------------------------------------|
| <b>Syntax Description</b> | <i>client_mac_address</i> MAC address of the client. |
|---------------------------|------------------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                         |                                                                                                           |
|-------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Usage Guidelines</b> | This command displays the client's available capabilities, not the current settings for the capabilities. |
|-------------------------|-----------------------------------------------------------------------------------------------------------|

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to display the client's capability:</p> <pre>&gt; show client ccx client-capability 00:40:96:a8:f7:98</pre> <pre>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)</pre> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config client ccx get-client-capability</a><br><a href="#">config client ccx get-operating-parameters</a><br><a href="#">config client ccx get-profiles</a><br><a href="#">config client ccx stats-request</a><br><a href="#">show client ccx operating-parameters</a><br><a href="#">show client ccx profiles</a><br><a href="#">show client ccx stats-report</a> |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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*

|                           |                           |                                                          |
|---------------------------|---------------------------|----------------------------------------------------------|
| <b>Syntax Description</b> | <b>roam</b>               | (Optional) Displays the CCX client roaming log response. |
|                           | <b>rsna</b>               | (Optional) Displays the CCX client RSNA log response.    |
|                           | <b>syslog</b>             | (Optional) Displays the CCX client system log response.  |
|                           | <i>client_mac_address</i> | 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, MaxRssi:-30
Rx Sensitivity ..... Rate:2.0 Mbps, MinRssi:-95, MaxRssi:-30
Radio Type ..... HRDSSS(802.11b)
Rx Sensitivity ..... Rate:5.5 Mbps, MinRssi:-95, MaxRssi:-30
Rx Sensitivity ..... Rate:11.0 Mbps, MinRssi:-95, MaxRssi:-30
Radio Type ..... ERP(802.11g)
Rx Sensitivity ..... Rate:6.0 Mbps, MinRssi:-95, MaxRssi:-30
Rx Sensitivity ..... Rate:9.0 Mbps, MinRssi:-95, MaxRssi:-30
Rx Sensitivity ..... Rate:12.0 Mbps, MinRssi:-95, MaxRssi:-30
Rx Sensitivity ..... Rate:18.0 Mbps, MinRssi:-95, MaxRssi:-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 profiles

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

**show client ccx profiles** *client\_mac\_address*

|                           |                                                      |
|---------------------------|------------------------------------------------------|
| <b>Syntax Description</b> | <i>client_mac_address</i> MAC address of the client. |
|---------------------------|------------------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                        |
|-----------------|--------------------------------------------------------|
| <b>Examples</b> | 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 |                   |                                                              |
|--------------------|-------------------|--------------------------------------------------------------|
|                    | <i>client_MAC</i> | Client MAC address.                                          |
|                    | <b>status</b>     | Displays the client CCX radio management status information. |
|                    | <b>report</b>     | Displays the client CCX radio management report.             |
|                    | <b>chan-load</b>  | Displays radio management channel load reports.              |
|                    | <b>noise-hist</b> | Displays radio management noise histogram reports.           |
|                    | <b>beacon</b>     | Displays radio management beacon load reports.               |
|                    | <b>frame</b>      | Displays radio management frame reports.                     |
|                    | <b>pathloss</b>   | 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*

|                           |                                               |
|---------------------------|-----------------------------------------------|
| <b>Syntax Description</b> | <i>client_mac_address</i> Client MAC address. |
|---------------------------|-----------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | 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
```

|                         |                                                                                                                                                |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config client ccx default-gw-ping</a><br><a href="#">config client ccx dhcp-test</a><br><a href="#">config client ccx dns-ping</a> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                    |                     |
|--------------------|---------------------|
| <i>mac_address</i> | 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

Policy Manager State.....POSTURE_REQD
Policy Manager Rule Created.....Yes
Client MAC Address..... 00:16:36:40:ac:58
Client Username..... N/A
Client State..... Associated
Client NAC OOB State..... QUARANTINE
Guest LAN Id..... 1
IP Address..... Unknown
Session Timeout..... 0
QoS Level..... Platinum
802.1P Priority Tag..... disabled
KTS CAC Capability..... Yes
WMM Support..... Enabled
Power Save..... ON
Diff Serv Code Point (DSCP)..... disabled
Mobility State..... Local
Internal Mobility State..... apfMsMmInitial
Security Policy Completed..... No
Policy Manager State..... WEBAUTH_REQD
Policy Manager Rule Created..... Yes
NPU Fast Fast Notified..... Yes
Last Policy Manager State..... WEBAUTH_REQD
Client Entry Create Time..... 460 seconds
Interface..... wired-guest
FlexConnect Authentication..... Local
FlexConnect Data Switching..... Local
VLAN..... 236
Quarantine VLAN..... 0
Client Statistics:
  Number of Bytes Received..... 66806
  Number of Bytes Sent..... 1598
  Number of Packets Received..... 2241
  Number of Packets Sent..... 19
  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..... 0
Number of RTS Retries..... 0
Number of Duplicate Received Packets..... 3
Number of Decrypt Failed Packets..... 0
Number of Mic Failed Packets..... 0
Number of Mic Missing Packets..... 0
Number of RA Packets Dropped..... 6
Number of Policy Errors..... 0
Radio Signal Strength Indicator..... -50 dBm
Signal to Noise Ratio..... 43 dB
```

**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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                          |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to display the number of probing clients:<br>> <b>show client probing</b><br><br>Number of Probing Clients..... 0 |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">show client summary</a><br><a href="#">show client summary guest-lan</a> |
|-------------------------|--------------------------------------------------------------------------------------|

# 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**

---

|                    |                     |
|--------------------|---------------------|
| <i>mac_address</i> | 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 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 | <b>802.11a</b>    | Specifies the 802.11a network.                                                |
|                    | <b>802.11b</b>    | Specifies the 802.11 b/g network.                                             |
|                    | <i>client_mac</i> | MAC address of the client.                                                    |
|                    | <i>ap_mac</i>     | MAC address of the tsm access point.                                          |
|                    | <b>all</b>        | 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

|                 |                    |
|-----------------|--------------------|
| <i>username</i> | 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 | <b>quos-map</b>     | 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.                                                |
|                    | <b>roam-history</b> | 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. |
|                    | <b>rssi</b>         | Display the client's RSSI values in the last 5 seconds when voice diagnostics is enabled.                                                                                                                      |
|                    | <b>status</b>       | Displays status of voice diagnostics for clients.                                                                                                                                                              |
|                    | <b>tspec</b>        | Displays TSPEC for voice diagnostic clients.                                                                                                                                                                   |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                                            |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to display the status of voice diagnostics for clients:</p> <pre>&gt; show client voice-diag status</pre> <p>Voice Diagnostics Status: FALSE</p> |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                           |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">show client ap</a><br/><a href="#">show client detail</a><br/><a href="#">show client summary</a><br/><a href="#">debug voice-diag</a></p> |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|

# show country

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

**show country**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                       |
|-----------------|---------------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

---

|                         |                                                                                                                   |
|-------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config country</a><br><a href="#">show country channels</a><br><a href="#">show country supported</a> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------|



# 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

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                          |
|-----------------|----------------------------------------------------------|
| <b>Examples</b> | 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..... *****
```

---

|                         |                                                                                                                    |
|-------------------------|--------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config coredump</a><br><a href="#">config coredump ftp</a><br><a href="#">config coredump username</a> |
|-------------------------|--------------------------------------------------------------------------------------------------------------------|



# show cpu

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

## show cpu

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                     |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to display the current CPU usage information:</p> <pre>&gt; show cpu</pre> <p>Current CPU load: 2.50%</p> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                  |
|-----------------|----------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                      |
|-------------------------|--------------------------------------|
| <b>Related Commands</b> | <a href="#">config database size</a> |
|-------------------------|--------------------------------------|

# show debug

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

## show debug

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                                                                                                                                 |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to display if debugging is enabled:</p> <pre>&gt; show debug</pre> <p>MAC debugging..... disabled</p> <p>Debug Flags Enabled:<br/>  arp error enabled.<br/>  bcast error enabled.</p> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

---

|                         |                           |
|-------------------------|---------------------------|
| <b>Related Commands</b> | <a href="#">debug mac</a> |
|-------------------------|---------------------------|

# 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

|                |                                                                 |
|----------------|-----------------------------------------------------------------|
| <b>leases</b>  | Displays allocated DHCP leases.                                 |
| <b>summary</b> | Displays DHCP summary information.                              |
| <i>scope</i>   | 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                    |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to display the status of dhcp proxy information:</p> <pre>&gt; show dhcp proxy</pre> <p>DHCP Proxy Behavior: enabled</p> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <ul style="list-style-type: none"><li><a href="#">config dhcp</a></li><li><a href="#">config dhcp proxy</a></li><li><a href="#">config interface dhcp</a></li><li><a href="#">config wlan dhcp_server</a></li><li><a href="#">debug dhcp</a></li><li><a href="#">debug dhcp service-port</a></li><li><a href="#">debug disable-all</a></li><li><a href="#">show dhcp</a></li></ul> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# show dhcp timeout

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

**show dhcp timeout**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                           |
|-----------------|-----------------------------------------------------------|
| <b>Examples</b> | This example shows how to display the DHCP timeout value: |
|-----------------|-----------------------------------------------------------|

> **show dhcp timeout**

DHCP Timeout (seconds)..... 10

---

|                         |                                                                                                                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config dhcp</a><br><a href="#">config dhcp timeout</a><br><a href="#">config interface dhcp</a><br><a href="#">config wlan dhcp_server</a><br><a href="#">debug dhcp</a><br><a href="#">debug dhcp service-port</a><br><a href="#">debug disable-all</a><br><a href="#">show dhcp</a> |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



# show eventlog

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

## show eventlog

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                          |
|-----------------|----------------------------------------------------------|
| <b>Examples</b> | This example shows how to display the event log entries: |
|-----------------|----------------------------------------------------------|

> **show eventlog**

|        | File     | Line | TaskID   | Code     | Time |   |   |    |
|--------|----------|------|----------|----------|------|---|---|----|
|        |          |      |          |          | 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

---

|                 |                                  |
|-----------------|----------------------------------|
| <i>acl-name</i> | 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| <b>Examples</b> | This example shows how to display the flexconnect acl summary: |
|-----------------|----------------------------------------------------------------|

```
> show flexconnect acl summary
ACL Name                               Status
-----
acl1                                   Modified
acl10                                  Modified
acl100                                 Modified
acl101                                 Modified
acl102                                 Modified
acl103                                 Modified
acl104                                 Modified
acl105                                 Modified
acl106                                 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 | <i>guest_lan_id</i> | ID of selected wired guest LAN. |
|--------------------|---------------------|---------------------------------|
|--------------------|---------------------|---------------------------------|

| Command Default | None. |
|-----------------|-------|
|-----------------|-------|

| Usage Guidelines | To display all wired guest LANs configured on the controller, use the <b>show guest-lan summary</b> 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 | <a href="#">config guest-lan</a><br><a href="#">config guest-lan custom-web ext-webauth-url</a><br><a href="#">config guest-lan custom-web global disable</a><br><a href="#">config guest-lan custom-web login_page</a><br><a href="#">config guest-lan nac</a><br><a href="#">config guest-lan security</a> |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                   |                                      |
|-------------------|--------------------------------------|
| <i>group_name</i> | 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                           |
|-----------------|---------------------------------------------------------------------------|
| <b>Examples</b> | 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     |

|                         |                                                                                           |
|-------------------------|-------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config flexconnect group</a><br><a href="#">show flexconnect group detail</a> |
|-------------------------|-------------------------------------------------------------------------------------------|

# 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

|                |                                                         |
|----------------|---------------------------------------------------------|
| <b>summary</b> | Displays a list of all OfficeExtend access points.      |
| <b>latency</b> | 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 | <b>brief</b>             | Displays a brief summary of all active IKE SAs.    |
|                    | <b>detailed</b>          | Displays a detailed summary of all active IKE SAs. |
|                    | <i>IP_or_MAC_address</i> | 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

|                       |                                             |
|-----------------------|---------------------------------------------|
| <b>summary</b>        | Displays a summary of the local interfaces. |
| <b>detailed</b>       | Displays detailed interface information.    |
| <i>interface_name</i> | 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*}

|                           |                             |                                                   |
|---------------------------|-----------------------------|---------------------------------------------------|
| <b>Syntax Description</b> | <b>summary</b>              | Displays a summary of the local interface groups. |
|                           | <b>detailed</b>             | Displays detailed interface group information.    |
|                           | <i>interface_group_name</i> | 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                         |                                                                                                                                                                                               |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Usage Guidelines</b> | 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. |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                 |                                                                           |
|-----------------|---------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                   |
|-------------------------|-----------------------------------|
| <b>Related Commands</b> | <a href="#">show ap inventory</a> |
|-------------------------|-----------------------------------|

# 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*

|                           |                          |                                                  |
|---------------------------|--------------------------|--------------------------------------------------|
| <b>Syntax Description</b> | <b>brief</b>             | Displays a brief summary of active IPsec SAs.    |
|                           | <b>detailed</b>          | Displays a detailed summary of active IPsec SAs. |
|                           | <i>IP_or_MAC_address</i> | 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 | <i>dest_MAC</i>   | MAC address to determine output port for non-IP packets.            |
|                    | <i>source_MAC</i> | (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 | <a href="#">config lag</a> |
|------------------|----------------------------|

# 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*]

|                           |                                                                                                                                                                                                                                                                                                      |                                                                    |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>dest_IP</i>                                                                                                                                                                                                                                                                                       | IP address to determine the output port for IP packets.            |
|                           | <i>source_IP</i>                                                                                                                                                                                                                                                                                     | (Optional) IP address to determine the output port for IP packets. |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                |                                                                    |
| <b>Usage Guidelines</b>   | 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. |                                                                    |
| <b>Examples</b>           | <p>This example shows how to display the physical port used for a specific IP address:</p> <pre>&gt; show lag ip-port-hash 192.168.102.138</pre> <p>Destination IP 192.168.102.138 currently maps to port 1</p>                                                                                      |                                                                    |
| <b>Related Commands</b>   | <a href="#">config lag</a>                                                                                                                                                                                                                                                                           |                                                                    |



# show lag summary

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

**show lag summary**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to display the current status of the LAG configuration:</p> <pre>&gt; show lag summary</pre> <p>LAG Enabled</p> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                            |
|-------------------------|----------------------------|
| <b>Related Commands</b> | <a href="#">config lag</a> |
|-------------------------|----------------------------|

# 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

|                 |                                             |
|-----------------|---------------------------------------------|
| <b>counters</b> | Displays license agent counter information. |
| <b>sessions</b> | 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*

|                           |                                                 |
|---------------------------|-------------------------------------------------|
| <b>Syntax Description</b> | <i>license-name</i> Name of a specific license. |
|---------------------------|-------------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to display the license details:</p> <pre>&gt; 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</pre> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                                  |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">license install</a><br><a href="#">license modify priority</a><br><a href="#">show license agent</a><br><a href="#">show license all</a><br><a href="#">show license feature</a><br><a href="#">show license image-level</a><br><a href="#">show license summary</a> |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                           |
|-----------------|---------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                                                                                                                                                                                                               |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">license install</a><br><a href="#">license modify priority</a><br><a href="#">show license all</a><br><a href="#">show license detail</a><br><a href="#">show license expiring</a><br><a href="#">show license in-use</a><br><a href="#">show license summary</a> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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
m63lR5l8JM3DPkr402DI43iLlKn7jomo3RFl1LjMRqLkKHiLJ2t0yuftQsSq2bCA06
nR3wIb38xKi3t$<WLC>AQEBIQAB//++mCzRUb0hw28vz0czAY0iAm7ocDLUMB9ER0
+BD3w2PhNEYwsBN/T3xXBqJqfC+oKRqwInXo3s+nsLU7r0td0xoIxYZAo3LYmUJ+M
FzsqLhKoJvLpYEvQ8H21MNUjVbhoN0gyIwsyiJaM8AQIkVBQFzhr10GYoLVzdzfJf
EPQIx6tZ++/Vtc/q3SF/5Ko8XCy=</WLC>
Comment:
Hash: i0GjuLLXgLhcTB113ohIzxVioHA=
. . .
```

### 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                     |
|-----------------|---------------------------------------------------------------------|
| <b>Examples</b> | 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.

---

|                         |                                                                                                                                                                                                                                                                                                                       |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">license install</a><br><a href="#">license modify priority</a><br><a href="#">show license all</a><br><a href="#">show license detail</a><br><a href="#">show license expiring</a><br><a href="#">show license feature</a><br><a href="#">show license in-use</a><br><a href="#">show license summary</a> |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                        |
|-----------------|------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">license install</a><br><a href="#">license modify priority</a><br><a href="#">show license all</a><br><a href="#">show license detail</a><br><a href="#">show license evaluation</a><br><a href="#">show license expiring</a><br><a href="#">show license feature</a><br><a href="#">show license image-level</a><br><a href="#">show license in-use</a><br><a href="#">show license summary</a> |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                           |
|-----------------|-----------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">license install</a><br><a href="#">license modify priority</a><br><a href="#">show license all</a><br><a href="#">show license detail</a><br><a href="#">show license evaluation</a><br><a href="#">show license expiring</a><br><a href="#">show license feature</a><br><a href="#">show license image-level</a><br><a href="#">show license permanent</a><br><a href="#">show license summary</a> |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| <b>Examples</b> | 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 |

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">license install</a><br><a href="#">license modify priority</a><br><a href="#">show license all</a><br><a href="#">show license detail</a><br><a href="#">show license evaluation</a><br><a href="#">show license expiring</a><br><a href="#">show license feature</a><br><a href="#">show license image-level</a><br><a href="#">show license permanent</a><br><a href="#">show license summary</a> |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# show load-balancing

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

## show load-balancing

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                              |
|-----------------|--------------------------------------------------------------|
| <b>Examples</b> | 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
```

---

|                         |                                       |
|-------------------------|---------------------------------------|
| <b>Related Commands</b> | <a href="#">config load-balancing</a> |
|-------------------------|---------------------------------------|

# show local-auth certificates

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

**show local-auth certificates**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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

**show local-auth certificates**

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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                       |
|-----------------|---------------------------------------------------------------------------------------|
| <b>Examples</b> | 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 ..... 7b7fffffff000000000000000000000000  
 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

**■ show local-auth config****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 | <b>detail</b>      | (Optional) Displays detailed location information. |
|--------------------|--------------------|----------------------------------------------------|
|                    | <i>mac_address</i> | MAC address of a client.                           |
|                    | <b>summary</b>     | (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 | <a href="#">clear location rfid</a>            |
|------------------|------------------------------------------------|
|                  | <a href="#">clear location statistics rfid</a> |
|                  | <a href="#">config location</a>                |
|                  | <a href="#">show location statistics rfid</a>  |

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                    |
|-----------------|------------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

**show logging**

```
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 login session

To display the existing sessions, use the **show login session** command.

**show login session**

---

**Syntax Description** This command has no arguments or keywords.

---

**Command Default** None.

---

**Examples** This example shows how to display the current session details:

> **show login session**

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

---

**Related Commands** [config login session close](#)

# show macfilter

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

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

|                           |                          |                                               |
|---------------------------|--------------------------|-----------------------------------------------|
| <b>Syntax Description</b> | <b>summary</b>           | Displays a summary of all MAC filter entries. |
|                           | <b>detail</b> <i>MAC</i> | 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-compatible](#)
- [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]**

|                           |                                                                                                                                                                                                        |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>detail</b> (Optional) Displays details of any memory leaks or corruption.                                                                                                                           |
| <b>Command Default</b>    | None.                                                                                                                                                                                                  |
| <b>Usage Guidelines</b>   | Be careful when changing the defaults for the <b>config memory monitor</b> 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
...
```

**show memory monitor****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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                          |
|-----------------|--------------------------------------------------------------------------|
| <b>Examples</b> | 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.
```

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">reset system at</a><br><a href="#">reset system in</a><br><a href="#">reset system cancel</a><br><a href="#">reset system notify-time</a> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                      |                                        |
|----------------------|----------------------------------------|
| <b>summary</b>       | Displays a summary of all remote LANs. |
| <i>remote-lan-id</i> | 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**

|                           |                 |                                                                  |
|---------------------------|-----------------|------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>acl_name</i> | IPv6 ACL name. The name can be up to 32 alphanumeric characters. |
|                           | <b>detailed</b> | Displays detailed information about a specific ACL.              |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | 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
```

|                         |                                 |
|-------------------------|---------------------------------|
| <b>Related Commands</b> | <a href="#">config ipv6 acl</a> |
|-------------------------|---------------------------------|

# show ipv6 neighbor-binding

To display the IPv6 Neighbor 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    |  |                                                 |
|-----------------------|--|-------------------------------------------------|
| <b>capture-policy</b> |  | Display IPv6 next-hop message capture policies. |
| <b>counters</b>       |  | Display IPv6 next-hop counters.                 |
| <b>detailed</b>       |  | Display the IPv6 Neighbor Binding Table.        |
| <b>features</b>       |  | Display IPv6 next-hop registered features.      |
| <b>policies</b>       |  | Display IPv6 next-hop policies.                 |
| <b>ra-throttle</b>    |  | Display RA Throttle Information.                |
| <b>statistics</b>     |  | Display RA Throttle statistics.                 |
| <i>vlan_id</i>        |  | VLAN identifier.                                |
| <b>routers</b>        |  | Display RA Throttle Routers.                    |
| <b>summary</b>        |  | Display the IPv6 Neighbor Binding Table.        |

**Command Default** None.

**Examples** This example shows how to display the IPv6 Neighbor Binding data summary:

```
> show ipv6 neighbor-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 Neighbor 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

```

| age | state                            | Time left | IPv6 address | MAC Address       | Port | VLAN | Type     | prlvl |
|-----|----------------------------------|-----------|--------------|-------------------|------|------|----------|-------|
| 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

|                |                                      |
|----------------|--------------------------------------|
| <b>ap</b>      | Displays Cisco access point details. |
| <b>wlc</b>     | Displays Cisco controller details.   |
| <b>summary</b> | 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | The command has no arguments and keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                    |
|-----------------|--------------------------------------------------------------------|
| <b>Examples</b> | 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 Multicast CacheMiss Forwarding..... Disabled
```

|                         |                               |
|-------------------------|-------------------------------|
| <b>Related Commands</b> | <a href="#">show ipv6 acl</a> |
|-------------------------|-------------------------------|

## 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**

|                           |                          |                                                                          |
|---------------------------|--------------------------|--------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>media-stream_name</i> | Name of the media-stream client of which the details is to be displayed. |
|                           | <b>summary</b>           | 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*

|                           |                          |                                 |
|---------------------------|--------------------------|---------------------------------|
| <b>Syntax Description</b> | <i>media-stream_name</i> | Name of the media-stream group. |
|---------------------------|--------------------------|---------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                             |
|-----------------|-----------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                 |
|-------------------------|-------------------------------------------------|
| <b>Related Commands</b> | <a href="#">show media-stream group summary</a> |
|-------------------------|-------------------------------------------------|



# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                        |
|-----------------|------------------------------------------------------------------------|
| <b>Examples</b> | 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 |

|                         |                                    |
|-------------------------|------------------------------------|
| <b>Related Commands</b> | <a href="#">Show Mesh Commands</a> |
|-------------------------|------------------------------------|

## 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       sbbox
SB_MAP1 AIR-LAP1522AG-A-K9 00:1d:71:0e:85:00 00:1d:71:0e:85:00 1       sbbox
SB_MAP2 AIR-LAP1522AG-A-K9 00:1b:d4:a7:8b:00 00:1b:d4:a7:8b:00 2       sbbox
SB_MAP3 AIR-LAP1522AG-A-K9 00:1d:71:0d:ee:00 00:1d:71:0d:ee:00 3       sbbox

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
-----

```

 show mesh ap

---

**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*]

|                           |                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>cisco_ap</i> (Optional) Antistranding feature statistics for a designated mesh access point.                                                                                                                                                                                                                                                                           |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Examples</b>           | <p>This example shows how to display anti-stranding statistics on all outdoor mesh access points:</p> <pre>&gt; show mesh astools stats</pre> <p>Total No of Aps stranded : 0</p> <p>This example shows how to display anti-stranding statistics for access point <i>sb_map1</i>:</p> <pre>&gt; show mesh astools stats sb_map1</pre> <p>Total No of Aps stranded : 0</p> |
| <b>Related Commands</b>   | <a href="#">config mesh astools</a><br><a href="#">show mesh config</a><br><a href="#">show mesh stats</a>                                                                                                                                                                                                                                                                |

# show mesh backhaul

To check the current backhaul, use the **show mesh backhaul** command.

**show mesh backhaul** *cisco\_ap*

|                           |                 |                           |
|---------------------------|-----------------|---------------------------|
| <b>Syntax Description</b> | <i>cisco_ap</i> | Name of the access point. |
|---------------------------|-----------------|---------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                         |
|-----------------|---------------------------------------------------------|
| <b>Examples</b> | 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.....External_ANTENNA
External Antenna Gain (in .5 dBm units).....0
```

|                         |                                                                                                                  |
|-------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config mesh battery-state</a><br><a href="#">show mesh config</a><br><a href="#">show mesh stats</a> |
|-------------------------|------------------------------------------------------------------------------------------------------------------|

# 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

|                 |                                                                                               |
|-----------------|-----------------------------------------------------------------------------------------------|
| <b>summary</b>  | Displays the total number of voice calls and voice bandwidth used for each mesh access point. |
| <b>bwused</b>   | Displays the bandwidth for a selected access point in a tree topology.                        |
| <b>voice</b>    | Displays the mesh topology and the voice bandwidth used or available.                         |
| <b>video</b>    | Displays the mesh topology and the video bandwidth used or available.                         |
| <b>access</b>   | Displays access voice calls in progress in a tree topology.                                   |
| <b>callpath</b> | Displays the call bandwidth distributed across the mesh tree.                                 |
| <b>rejected</b> | Displays voice calls rejected for insufficient bandwidth in a tree topology.                  |
| <i>cisco_ap</i> | 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                           |
|-------------------------|-------------------------------------------|
| <b>Related Commands</b> | <a href="#">config mesh client-access</a> |
|-------------------------|-------------------------------------------|

# 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

|                 |                                                                              |
|-----------------|------------------------------------------------------------------------------|
| <b>summary</b>  | Displays global environment summary information.                             |
| <i>cisco_ap</i> | 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

|                 |                                                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>detail</b>   | Displays the channel and signal-to-noise ratio (SNR) details between the designated mesh access point and its neighbor. |
| <b>summary</b>  | Displays the mesh neighbors for a designated mesh access point.                                                         |
| <i>cisco_ap</i> | Cisco lightweight access point name.                                                                                    |
| <b>all</b>      | 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: <ul style="list-style-type: none"> <li>• UPDATED—Recently updated neighbor.</li> <li>• NEIGH—One of the top neighbors.</li> <li>• EXCLUDED—Neighbor is currently excluded.</li> <li>• WASEXCLUDED—Neighbor was recently removed from the exclusion list.</li> <li>• PERMSNR—Permanent SNR neighbor.</li> <li>• CHILD—A child neighbor.</li> <li>• PARENT—A parent neighbor.</li> <li>• NEEDUPDATE—Not a current neighbor and needs an update.</li> <li>• BEACON—Heard a beacon from this neighbor.</li> <li>• ETHER—Ethernet neighbor.</li> </ul> |
| 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

|                 |                                               |
|-----------------|-----------------------------------------------|
| <i>summary</i>  | Displays the packet error rate stats summary. |
| <i>cisco_ap</i> | Name of mesh access point.                    |
| <b>all</b>      | 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

|                 |                                                                  |
|-----------------|------------------------------------------------------------------|
| <i>cisco_ap</i> | Name of access point for which you want packet queue statistics. |
| <b>all</b>      | 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                            |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to view 4.8-GHz public safety settings:</p> <pre>&gt; show mesh public-safety</pre> <p>Global Public Safety status: disabled</p> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><a href="#">config 802.11-a</a><br/><a href="#">config 802.11-a antenna extAntGain</a><br/><a href="#">config 802.11-a channel ap</a><br/><a href="#">config 802.11-a txpower ap</a><br/><a href="#">config mesh public-safety</a><br/><a href="#">config mesh security</a><br/><a href="#">show mesh ap</a><br/><a href="#">show mesh security-stats</a><br/><a href="#">show mesh stats</a></p> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                 |                                                                  |
|-----------------|------------------------------------------------------------------|
| <i>cisco_ap</i> | Name of access point for which you want packet error statistics. |
| <b>all</b>      | 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

|                 |                                      |
|-----------------|--------------------------------------|
| <i>cisco_ap</i> | 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                               |
|-----------------|---------------------------------------------------------------|
| <b>Examples</b> | This example shows how to display a list of management users: |
|-----------------|---------------------------------------------------------------|

> **show mgmtuser**

| User Name | Permissions | Description | Password Strength |
|-----------|-------------|-------------|-------------------|
| -----     | -----       | -----       | -----             |
| admin     | read-write  |             | Weak              |

|                         |                                                                                                                                                                          |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config mgmtuser add</a><br><a href="#">config mgmtuser delete</a><br><a href="#">config mgmtuser description</a><br><a href="#">config mgmtuser password</a> |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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*]

|                           |                     |                                                           |
|---------------------------|---------------------|-----------------------------------------------------------|
| <b>Syntax Description</b> | <b>wlan</b>         | (Optional) Displays wireless LAN mobility group settings. |
|                           | <i>wlan_id</i>      | Wireless LAN identifier between 1 and 512 (inclusive).    |
|                           | <b>guest-lan</b>    | (Optional) Displays guest LAN mobility group settings.    |
|                           | <i>guest_lan_id</i> | 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 | <b>wlan</b>    | Displays the mobility WLAN foreign-map list. |
|                    | <i>wlan_id</i> | 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 | <a href="#">config wlan mobility foreign-map</a><br><a href="#">config mobility group member</a><br><a href="#">config wlan mobility anchor</a><br><a href="#">debug mobility</a><br><a href="#">show mobility anchor</a><br><a href="#">show mobility summary</a> |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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 than 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, gw 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                             |
|-----------------|---------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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 |

|                         |                                                                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">show nac statistics</a><br><a href="#">config guest-lan nac</a><br><a href="#">config wlan nac</a><br><a href="#">debug nac</a> |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| <b>detail</b>      | Displays detailed information about the specified network user. |
| <i>user_name</i>   | Network user.                                                   |
| <b>guest_roles</b> | Displays configured roles for guest users.                      |
| <b>summary</b>     | 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                          |
|-----------------|--------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                                                                                                                                                                                                                                    |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config netuser add</a><br><a href="#">config netuser delete</a><br><a href="#">config netuser description</a><br><a href="#">config netuser guest-role apply</a><br><a href="#">config netuser wlan-id</a><br><a href="#">show netuser guest-roles</a><br><a href="#">show netuser</a> |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# show network

To display the current status of 802.3 bridging for all WLANs, use the **show network** command.

## **show network**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                 |
|-----------------|---------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to display the network details:<br>> <b>show network</b> |
|-----------------|---------------------------------------------------------------------------------|

---

|                         |                                                                                                                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">Configure Network Commands</a><br><a href="#">show network summary</a><br><a href="#">show network multicast mgid detail</a><br><a href="#">show network multicast mgid summary</a> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                   |                              |
|-------------------|------------------------------|
| <i>mgid_value</i> | 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 nmosp statistics

To display Network Mobility Services Protocol (NMSP) counters, use the **show nmosp statistics** command.

**show nmosp statistics {summary | connection all}**

## Syntax Description

|                       |                                            |
|-----------------------|--------------------------------------------|
| <b>summary</b>        | Displays common NMSP counters.             |
| <b>connection all</b> | Displays all connection-specific counters. |

## Command Default

None.

## Examples

This example shows how to display a summary of common NMSP counters:

```
> show nmosp 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 nmosp statistics connection all
```

```
NMSP Connection Counters
Connection 1 :
Connection status: UP
Freed Connection: 0
Nmosp 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 nmosp status

To display the status of active Network Mobility Services Protocol (NMSP) connections, use the **show nmosp status** command.

**show nmosp 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 nmosp status**

| LocServer      | IP    | TxEchoResp | RxEchoReq | TxData | RxData |
|----------------|-------|------------|-----------|--------|--------|
| 171.71.132.158 | 21642 | 21642      | 51278     | 21253  |        |

---

**Related Commands**

- [clear locp statistics](#)
- [clear nmosp statistics](#)
- [show nmosp 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

|                |                                                                                      |
|----------------|--------------------------------------------------------------------------------------|
| <b>summary</b> | Displays all of the NMSP services to which the controller is subscribed.             |
| <b>detail</b>  | Displays details for all of the NMSP services to which the controller is subscribed. |
| <i>ip_addr</i> | 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 loop 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

|            |                                                          |
|------------|----------------------------------------------------------|
| <b>all</b> | Displays information about all entries in the PMK cache. |
| <b>MAC</b> | 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

| Station | Entry<br>Lifetime | VLAN Override | IP Override |
|---------|-------------------|---------------|-------------|
| -----   | -----             | -----         | -----       |

## Related Commands

[config 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

|                |                                      |
|----------------|--------------------------------------|
| <b>port</b>    | Information on the individual ports. |
| <b>summary</b> | Displays all ports.                  |

## Command Default

None.

## Examples

This example shows how to display information about an individual wireless LAN controller port:

> **show port 1**

| Pr | Type   | STP<br>Stat | Admin<br>Mode | Physical<br>Mode | Physical<br>Status | Link<br>Status | Link<br>Trap | Mcast<br>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**

| Pr | Type   | STP<br>Stat | Admin<br>Mode | Physical<br>Mode | Physical<br>Status | Link<br>Status | Link<br>Trap | Mcast<br>Appliance | POE | SFPTType   |
|----|--------|-------------|---------------|------------------|--------------------|----------------|--------------|--------------------|-----|------------|
| 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}**

|                           |               |                                                                                                         |
|---------------------------|---------------|---------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>cpu</b>    | Displays how various system tasks are using the CPU at that moment.                                     |
|                           | <b>memory</b> | 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

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| <b>bronze</b>   | Displays QoS information for the bronze profile of the WLAN.   |
| <b>gold</b>     | Displays QoS information for the gold profile of the WLAN.     |
| <b>platinum</b> | Displays QoS information for the platinum profile of the WLAN. |
| <b>silver</b>   | 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**

|                           |                                           |
|---------------------------|-------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keyword. |
|---------------------------|-------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                            |
|-----------------|----------------------------------------------------------------------------|
| <b>Examples</b> | 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
  Unknown type Msgs..... 0
  Other Drops..... 0
```

|                         |                                                                                                                                                                          |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config radius auth</a><br><a href="#">config radius auth management</a><br><a href="#">config radius auth network</a><br><a href="#">show radius summary</a> |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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
```

```
-----  
RFID Mac      VENDOR      Heard      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 | <i>mac_address</i> | 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                              |
|-----------------|--------------------------------------------------------------|
| <b>Examples</b> | 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>      |

|                         |                                                                                                                                                                                                                                                      |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config rogue adhoc</a><br><a href="#">config rogue rule</a><br><a href="#">show rogue adhoc summary</a><br><a href="#">show rogue ignore-list</a><br><a href="#">show rogue rule detailed</a><br><a href="#">show rogue rule summary</a> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|            |                           |
|------------|---------------------------|
| <i>MAC</i> | 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

|                       |                                 |
|-----------------------|---------------------------------|
| <i>ap_mac_address</i> | 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 | <i>ap_mac_address</i> | 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 | <a href="#">config rogue ap classify</a><br><a href="#">config rogue ap friendly</a><br><a href="#">config rogue ap rldp</a><br><a href="#">config rogue ap ssid</a><br><a href="#">config rogue ap timeout</a><br><a href="#">config rogue ap valid-client</a><br><a href="#">config rogue rule</a><br><a href="#">show rogue ap clients</a><br><a href="#">show rogue ap summary</a><br><a href="#">show rogue ap friendly summary</a><br><a href="#">show rogue ap malicious summary</a><br><a href="#">show rogue ap unclassified summary</a> |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                  |
|-----------------|----------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config rogue ap classify</a><br><a href="#">config rogue ap friendly</a><br><a href="#">config rogue ap rldp</a><br><a href="#">config rogue ap ssid</a><br><a href="#">config rogue ap timeout</a><br><a href="#">config rogue ap valid-client</a><br><a href="#">config rogue rule</a><br><a href="#">config trapflags rogueap</a><br><a href="#">show rogue ap clients</a><br><a href="#">show rogue ap detailed</a><br><a href="#">show rogue ap summary</a><br><a href="#">show rogue ap malicious summary</a><br><a href="#">show rogue ap unclassified summary</a> |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                             |
|-----------------|-----------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to display information about rogue auto-containment: |
|-----------------|-----------------------------------------------------------------------------|

> **show rogue auto-contain**

```
Containment Level..... 3
monitor_ap_only..... false
```

---

|                         |                                                                                       |
|-------------------------|---------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config rogue adhoc</a><br><a href="#">config rogue auto-contain level</a> |
|-------------------------|---------------------------------------------------------------------------------------|

# 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**

|            |                           |
|------------|---------------------------|
| <i>MAC</i> | 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                        |
|-----------------|--------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config rogue adhoc</a><br><a href="#">config rogue ap classify</a><br><a href="#">config rogue ap friendly</a><br><a href="#">config rogue ap rldp</a><br><a href="#">config rogue ap ssid</a><br><a href="#">config rogue ap timeout</a><br><a href="#">config rogue ap valid-client</a><br><a href="#">config rogue client</a><br><a href="#">config rogue rule</a><br><a href="#">config trapflags rogueap</a><br><a href="#">show rogue ap clients</a><br><a href="#">show rogue ap detailed</a><br><a href="#">show rogue ap summary</a><br><a href="#">show rogue ap friendly summary</a><br><a href="#">show rogue ap malicious summary</a><br><a href="#">show rogue ap unclassified summary</a><br><a href="#">show rogue client detailed</a><br><a href="#">show rogue client summary</a><br><a href="#">show rogue ignore-list</a><br><a href="#">show rogue rule detailed</a><br><a href="#">show rogue rule summary</a> |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                  |                  |
|------------------|------------------|
| <i>rule_name</i> | 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                   |
|-----------------|-------------------------------------------------------------------|
| <b>Examples</b> | 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

|                 |                                                                           |
|-----------------|---------------------------------------------------------------------------|
| <b>no-ap</b>    | (Optional) Excludes access point configuration settings.                  |
| <b>commands</b> | (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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |                        |
|------------------------|------------------------|
| <b>Command Default</b> | 9600, 8, off, 1, none. |
|------------------------|------------------------|

|                 |                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                 |
|-------------------------|---------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config serial baudrate</a><br><a href="#">config serial timeout</a> |
|-------------------------|---------------------------------------------------------------------------------|

# 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

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |                        |
|------------------------|------------------------|
| <b>Command Default</b> | 5 minutes, 5 sessions. |
|------------------------|------------------------|

---

|                 |                                                                          |
|-----------------|--------------------------------------------------------------------------|
| <b>Examples</b> | 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.

---

|                         |                                                                                        |
|-------------------------|----------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config sessions maxsessions</a><br><a href="#">config sessions timeout</a> |
|-------------------------|----------------------------------------------------------------------------------------|



# 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... ffffffff

---

**Related Commands** [config snmp engineID](#)

# show snmptrap

To display Cisco wireless LAN controller Simple Network Management Protocol (SNMP) trapreceivers and their status, use the **show snmptrap** command.

## show snmptrap

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                         |
|-----------------|-------------------------------------------------------------------------|
| <b>Examples</b> | 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 |

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config snmp trapreceiver create</a><br><a href="#">config snmp trapreceiver delete</a><br><a href="#">config snmp trapreceiver delete</a> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |         |
|------------------------|---------|
| <b>Command Default</b> | Enable. |
|------------------------|---------|

|                 |                                                                                                        |
|-----------------|--------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to display the SNMP v1/v2/v3 status:</p> <p>&gt; <b>show snmpversion</b></p> |
|-----------------|--------------------------------------------------------------------------------------------------------|

```
SNMP v1  Mode..... Disable
SNMP v2c Mode..... Enable
SNMP v3  Mode..... Enable
```

|                         |                                     |
|-------------------------|-------------------------------------|
| <b>Related Commands</b> | <a href="#">config snmp version</a> |
|-------------------------|-------------------------------------|

# 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

|             |                                                                                                                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>port</i> | Physical port number:                                                                                                                                                                                                                              |
|             | <ul style="list-style-type: none"> <li>• 1 through 4 on Cisco 2100 Series Wireless LAN Controller.</li> <li>• 1 or 2 on Cisco 4402 Series Wireless LAN Controller.</li> <li>• 1 through 4 on Cisco 4404 Series Wireless LAN Controller.</li> </ul> |

## 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                         |                                                                  |
|-------------------------|------------------------------------------------------------------|
| <b>Usage Guidelines</b> | Some WLAN controllers do not support the spanning tree function. |
|-------------------------|------------------------------------------------------------------|

|                 |                                                                               |
|-----------------|-------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                                                                                                                                                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config spanningtree switch bridgepriority</a><br><a href="#">config spanningtree switch forwarddelay</a><br><a href="#">config spanningtree switch hellotime</a><br><a href="#">config spanningtree switch maxage</a><br><a href="#">config spanningtree switch mode</a> |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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 | <b>detailed</b> | Displays detailed port statistics.                                                                                                                                                                                                                                                                                                      |
|--------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | <b>summary</b>  | Displays port summary statistics.                                                                                                                                                                                                                                                                                                       |
|                    | <i>port</i>     | Physical port number: <ul style="list-style-type: none"> <li>• 1 through 4 on Cisco 2100 Series Wireless LAN Controllers.</li> <li>• 1 or 2 on Cisco 4402 Series Wireless LAN Controllers.</li> <li>• 1 through 4 on Cisco 4404 Series Wireless LAN Controllers.</li> <li>• 1 on Cisco WLCM Series Wireless LAN Controllers.</li> </ul> |

**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          Upstream Threshold  :0
CFI Discards           :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

|                 |                                      |
|-----------------|--------------------------------------|
| <b>detailed</b> | Displays detailed switch statistics. |
| <b>summary</b>  | 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.

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                              |
|-----------------|--------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                                                                                                                                                                                                                    |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config tacacs acct</a><br><a href="#">config tacacs acct</a><br><a href="#">config tacacs athr</a><br><a href="#">config tacacs auth</a><br><a href="#">show tacacs summary</a><br><a href="#">show tacacs summary</a> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                            |
|-----------------|----------------------------------------------------------------------------|
| <b>Examples</b> | 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

```

|                         |                                                                                                                                                                                                                                    |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config tacacs acct</a><br><a href="#">config tacacs acct</a><br><a href="#">config tacacs athr</a><br><a href="#">config tacacs auth</a><br><a href="#">show tacacs summary</a><br><a href="#">show tacacs summary</a> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| <b>Examples</b> | 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 Radio 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 Radio 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 Radio 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 Radio 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**}

|                           |                  |                                                                             |
|---------------------------|------------------|-----------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>apgroups</b>  | (Optional) Displays access point group information.                         |
|                           | <b>summary</b>   | (Optional) Displays a summary of all wireless LANs.                         |
|                           | <i>wlan_id</i>   | Wireless LAN identifier from 1 to 512.                                      |
|                           | <b>foreignAp</b> | (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
  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 aggrgroups
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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                           |
|-----------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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>
```

|                         |                                              |
|-------------------------|----------------------------------------------|
| <b>Related Commands</b> | <a href="#">config wps ap-authentication</a> |
|-------------------------|----------------------------------------------|

# 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

|                |                                                |
|----------------|------------------------------------------------|
| <b>summary</b> | Displays a summary of sensor settings.         |
| <b>detail</b>  | Displays all settings for the selected sensor. |
| <i>index</i>   | 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
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}**

|                           |                   |                                            |
|---------------------------|-------------------|--------------------------------------------|
| <b>Syntax Description</b> | <b>summary</b>    | Displays the MFP configuration and status. |
|                           | <b>statistics</b> | 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 ID | WLAN Name                       | WLAN Status | Infra. Protection | Client Protection     |
|---------|---------------------------------|-------------|-------------------|-----------------------|
| 1       | homeap<br>(WPA2 not configured) | Disabled    | *Enabled          | Optional but inactive |
| 2       | 7921<br>(WPA2 not configured)   | Enabled     | *Enabled          | Optional but inactive |
| 3       | open1<br>(WPA2 not configured)  | Enabled     | *Enabled          | Optional but inactive |
| 4       | 7920<br>(WPA2 not configured)   | Enabled     | *Enabled          | Optional but inactive |

| AP Name     | Infra. Validation | Radio    | Operational State | --Infra. Capability--<br>Protection | Validation   |
|-------------|-------------------|----------|-------------------|-------------------------------------|--------------|
| AP1252AG-EW | *Enabled          | b/g<br>a | Down<br>Down      | Full<br>Full                        | Full<br>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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                   |
|-----------------|---------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to display the IDS system sensor shun list:<br>> <b>show wps shun-list</b> |
|-----------------|---------------------------------------------------------------------------------------------------|

---

|                         |                                              |
|-------------------------|----------------------------------------------|
| <b>Related Commands</b> | <a href="#">config wps shun-list re-sync</a> |
|-------------------------|----------------------------------------------|



# show wps signature detail

To display installed signatures, use the **show wps signature detail** command.

**show wps signature detail** *sig-id*

|                           |                                                       |
|---------------------------|-------------------------------------------------------|
| <b>Syntax Description</b> | <i>sig-id</i> Signature ID of an installed signature. |
|---------------------------|-------------------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | 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
```

|                         |                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config wps signature</a><br><a href="#">config wps signature frequency</a><br><a href="#">config wps signature interval</a><br><a href="#">config wps signature mac-frequency</a><br><a href="#">config wps signature quiet-time</a><br><a href="#">config wps signature reset</a><br><a href="#">show wps signature summary</a><br><a href="#">show wps summary</a> |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                     |                                                                        |
|---------------------|------------------------------------------------------------------------|
| <b>summary</b>      | Displays all tracking signature summary information.                   |
| <b>standard</b>     | Displays Standard Intrusion Detection System (IDS) signature settings. |
| <b>custom</b>       | Displays custom IDS signature settings.                                |
| <i>precedenceID</i> | Signature precedence identification value.                             |
| <b>detailed</b>     | 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                        |
|-----------------|------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to display a summary of the wIPS configuration: |
|-----------------|------------------------------------------------------------------------|

> **show wps wips summary**

```
Policy Name..... Default
Policy Version..... 3
```

|                         |                                                                                                                                                                                                                                                |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config 802.11 enable</a><br><a href="#">config ap mode</a><br><a href="#">config ap monitor-mode</a><br><a href="#">show ap config</a><br><a href="#">show ap monitor-mode summary</a><br><a href="#">show wps wips statistics</a> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# Configuring Controller Settings

Use the **config** commands to configure Cisco wireless LAN (WLAN) controller options and settings.

- [Configure 802.11 Network Commands, page 2-313](#)
- [Configure 802.11 Antenna Commands, page 2-336](#)
- [Configure 802.11 CleanAir Commands, page 2-344](#)
- [Configure 802.11 CAC Commands, page 2-349](#)
- [Config ACL Commands, page 2-392](#)
- [Configure Advanced 802.11 Commands, page 2-400](#)
- [Configure Advanced 802.11 Coverage Commands, page 2-418](#)
- [Configure Access Point Commands, page 2-480](#)
- [Configure Band-Select Commands, page 2-549](#)
- [Configure Client Commands, page 2-559](#)
- [Configure Guest-LAN Commands, page 2-604](#)
- [Configure Interface Group Commands, page 2-622](#)
- [Configure IPv6 Commands, page 2-665](#)
- [Configure Macfilter Commands, page 2-671](#)
- [Configure Memory Monitor Commands, page 2-696](#)
- [Configure Mesh Commands, page 2-699](#)
- [Configure Management-User Commands, page 2-724](#)
- [Configure Mobility Commands, page 2-729](#)
- [Configure Message Log Level Commands, page 2-741](#)
- [Configure Media-Stream Commands, page 2-747](#)
- [Configure Net User Commands, page 2-758](#)
- [Configure Network Commands, page 2-774](#)
- [Configure Port Commands, page 2-813](#)
- [Configure RADIUS Account Commands, page 2-831](#)
- [Configure RADIUS Authentication Server Commands, page 2-841](#)
- [Configure Rogue Commands, page 2-872](#)
- [Configure SNMP Commands, page 2-898](#)
- [Configure Spanning Tree Protocol Commands, page 2-913](#)
- [Configure TACACS Commands, page 2-929](#)
- [Configure Trap Flag Commands, page 2-941](#)
- [Configure Wireless LAN Commands, page 2-957](#)
- [Configure Wireless LAN Security Commands, page 2-1016](#)
- [Configure WPS Commands, page 2-1055](#)



## 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, page 2-314](#)
- [Configure 802.11b Commands, page 2-319](#)
- [Configure 802.11h Commands, page 2-322](#)
- [Configure 802.11 11n Support Commands, page 2-326](#)

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

|                 |           |
|-----------------|-----------|
| Command Default | Disabled. |
|-----------------|-----------|

|          |                                                                                                                                                        |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable the 4.9-GHz public safety channel on <i>ap_24</i> access point:</p> <pre>&gt; config 802.11-a49 enable ap_24</pre> |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                                     |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">config 802.11-a antenna extAntGain</a><br/><a href="#">config 802.11-a channel ap</a><br/><a href="#">config 802.11-a txpower ap</a><br/><a href="#">show mesh public-safety</a></p> |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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 | <b>802.11-a49</b> | Specifies the 4.9-GHz public safety channel.           |
|                    | <b>802.11-a58</b> | Specifies the 5.8-GHz public safety channel.           |
|                    | <i>ant_gain</i>   | Value in .5-dBi units (for instance, 2.5 dBi = 5).     |
|                    | <i>cisco_ap</i>   | Name of the access point to which the command applies. |
|                    | <b>global</b>     | Specifies the antenna gain value to all channels.      |
|                    | <i>channel_no</i> | 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 | <b>802.11-a49</b> | Specifies the 4.9-GHz public safety channel.                                                                                                                  |
|                    | <b>802.11-a58</b> | Specifies the 5.8-GHz public safety channel.                                                                                                                  |
|                    | <i>cisco_ap</i>   | Name of the access point to which the command applies.                                                                                                        |
|                    | <b>global</b>     | Enables the Dynamic Channel Assignment (DCA) on all 4.9-GHz and 5.8-GHz subband radios.                                                                       |
|                    | <i>channel_no</i> | 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:<br>> <b>config 802.11-a49 channel ap</b> |
|----------|------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                   |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <a href="#">config 802.11-a</a><br><a href="#">config 802.11-a antenna extAntGain</a><br><a href="#">config 802.11-a channel ap</a><br><a href="#">config 802.11-a txpower ap</a> |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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}
```

|                           |                    |                                                                                                        |
|---------------------------|--------------------|--------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>802.11-a49</b>  | Specifies the 4.9-GHz public safety channel.                                                           |
|                           | <b>802.11-a58</b>  | Specifies the 5.8-GHz public safety channel.                                                           |
|                           | <b>txpower</b>     | Configures transmission power properties.                                                              |
|                           | <b>ap</b>          | Configures access point channel settings.                                                              |
|                           | <i>cisco_ap</i>    | Name of the access point to which the command applies.                                                 |
|                           | <b>global</b>      | Applies the transmission power value to all channels.                                                  |
|                           | <i>power_level</i> | 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

|                |                               |
|----------------|-------------------------------|
| <b>enable</b>  | Enables the 802.11g network.  |
| <b>disable</b> | 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

|              |                                       |
|--------------|---------------------------------------|
| <b>long</b>  | Specifies the long 802.11b preamble.  |
| <b>short</b> | 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**}

|                           |                |                                                   |
|---------------------------|----------------|---------------------------------------------------|
| <b>Syntax Description</b> | <b>enable</b>  | Enables the 802.11h channel switch announcement.  |
|                           | <i>mode</i>    | 802.11h channel switch announcement mode.         |
|                           | <i>value</i>   | 802.11h channel announcement value.               |
|                           | <b>disable</b> | Disables the 802.11h channel switch announcement. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to disable the 802.11h switch announcement:<br>> <b>config 802.11h channelswitch disable</b> |
|-----------------|---------------------------------------------------------------------------------------------------------------------|

|                         |                     |
|-------------------------|---------------------|
| <b>Related Commands</b> | <b>show 802.11h</b> |
|-------------------------|---------------------|

## config 802.11h powerconstraint

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

**config 802.11h powerconstraint** *value*

|                           |                                                                                                                     |
|---------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>value</i> 802.11h power constraint value.                                                                        |
| <b>Command Default</b>    | None.                                                                                                               |
| <b>Examples</b>           | This example shows how to configure the 802.11h power constraint to 5:<br>> <b>config 802.11h powerconstraint 5</b> |
| <b>Related Commands</b>   | <b>show 802.11h</b>                                                                                                 |

# 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**

|                 |                                      |
|-----------------|--------------------------------------|
| <i>cisco_ap</i> | 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}**

|                           |                |                                           |
|---------------------------|----------------|-------------------------------------------|
| <b>Syntax Description</b> | <b>a</b>       | Specifies the 802.11a network settings.   |
|                           | <b>b</b>       | Specifies the 802.11b/g network settings. |
|                           | <b>enable</b>  | Enables the 802.11n support.              |
|                           | <b>disable</b> | 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

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

|                      |                                                                                               |
|----------------------|-----------------------------------------------------------------------------------------------|
| <b>enable</b>        | Enables the 802.11n-5 GHz A-MPDU transmit aggregation scheduler.                              |
| <b>disable</b>       | Disables the 802.11n-5 GHz A-MPDU transmit aggregation scheduler.                             |
| <b>timeout rt</b>    | Configures the A-MPDU transmit aggregation scheduler realtime traffic timeout.                |
| <i>timeout-value</i> | 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 |  |                                    |
|--------------------|--|------------------------------------|
| <b>a</b>           |  | Specifies the 802.11a network.     |
| <b>b</b>           |  | Specifies the 802.11b/g network.   |
| <b>tx</b>          |  | Enables the antenna to transmit.   |
| <b>rx</b>          |  | Enables the antenna to receive.    |
| <i>cisco_ap</i>    |  | Access point.                      |
| <b>A</b>           |  | Specifies the right antenna port.  |
| <b>B</b>           |  | Specifies the left antenna port.   |
| <b>C</b>           |  | Specifies the center antenna port. |
| <b>enable</b>      |  | Enables the configuration.         |
| <b>disable</b>     |  | Disables the configuration.        |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure access point AP1 to use the antenna tx to transmit:</p> <pre>&gt; config 802.11a 11nsupport antenna tx AP1 C enable</pre> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <pre>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</pre> |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## config 802.11 11n support guard-interval

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

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

### Syntax Description

|             |                                                  |
|-------------|--------------------------------------------------|
| <b>any</b>  | Enables either a short or a long guard interval. |
| <b>long</b> | Enables only a long guard interval.              |

### Command Default

None.

### Examples

This example shows how to configure a long guard interval:

```
> config 802.11a 11n support guard-interval long
```

### Related Commands

```
config 802.11 11n support 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

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a</b>          | Specifies the 802.11a network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>b</b>          | Specifies the 802.11b/g network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>11nsupport</b> | Specifies support for 802.11n devices.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>mcs tx</b>     | Specifies the modulation and coding scheme data rates as follows: <ul style="list-style-type: none"> <li>• 0 (7 Mbps)</li> <li>• 1 (14 Mbps)</li> <li>• 2 (21 Mbps)</li> <li>• 3 (29 Mbps)</li> <li>• 4 (43 Mbps)</li> <li>• 5 (58 Mbps)</li> <li>• 6 (65 Mbps)</li> <li>• 7 (72 Mbps)</li> <li>• 8 (14 Mbps)</li> <li>• 9 (29 Mbps)</li> <li>• 10 (43 Mbps)</li> <li>• 11 (58 Mbps)</li> <li>• 12 (87 Mbps)</li> <li>• 13 (116 Mbps)</li> <li>• 14 (130 Mbps)</li> <li>• 15 (144 Mbps)</li> </ul> |
| <b>enable</b>     | Enables this configuration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>disable</b>    | 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

|                |                                       |
|----------------|---------------------------------------|
| <b>enable</b>  | Enables RIFS for the 802.11 network.  |
| <b>disable</b> | 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

|                 |                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a</b>        | Specifies the 802.11a network.                                                                                                            |
| <b>b</b>        | Specifies the 802.11b/g network.                                                                                                          |
| <b>enable</b>   | Enables the diversity.                                                                                                                    |
| <b>sideA</b>    | Specifies the diversity between the internal antennas and an external antenna connected to the Cisco lightweight access point left port.  |
| <b>sideB</b>    | Specifies the diversity between the internal antennas and an external antenna connected to the Cisco lightweight access point right port. |
| <i>cisco_ap</i> | 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

|                     |                                                           |
|---------------------|-----------------------------------------------------------|
| <b>a</b>            | Specifies the 802.11a network.                            |
| <b>b</b>            | Specifies the 802.11b/g network.                          |
| <i>antenna_gain</i> | Antenna gain in 0.5 dBm units (for example, 2.5 dBm = 5). |
| <i>cisco_ap</i>     | 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 | <b>a</b>        | Specifies the 802.11a network.                     |
|                    | <b>b</b>        | Specifies the 802.11b/g network.                   |
|                    | <b>omni</b>     | Specifies to use both internal antennas.           |
|                    | <b>sectorA</b>  | Specifies to use only the side A internal antenna. |
|                    | <b>sectorB</b>  | Specifies to use only the side B internal antenna. |
|                    | <i>cisco_ap</i> | 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 | <a href="#">config 802.11 disable</a><br><a href="#">config 802.11 enable</a><br><a href="#">config 802.11 antenna diversity</a><br><a href="#">config 802.11 antenna extAntGain</a><br><a href="#">config 802.11 antenna selection</a><br><a href="#">Show 802.11 Commands</a> |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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 | <b>a</b>        | Specifies the 802.11a network.       |
|                    | <b>b</b>        | Specifies the 802.11b/g network.     |
|                    | <b>internal</b> | Specifies the internal antenna.      |
|                    | <b>external</b> | Specifies the external antenna.      |
|                    | <i>cisco_ap</i> | 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**

|                   |                                                                  |
|-------------------|------------------------------------------------------------------|
| <b>a</b>          | Specifies the 802.11a network.                                   |
| <b>b</b>          | Specifies the 802.11b/g network.                                 |
| <i>time_units</i> | 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

|                          |                                          |
|--------------------------|------------------------------------------|
| <b>a</b>                 | Specifies the 802.11a network.           |
| <b>b</b>                 | Specifies the 802.11b/g network.         |
| <b>global</b>            | Specifies all lightweight access points. |
| <b>ap</b> <i>ap_name</i> | Specifies the Cisco access point name.   |
| <b>enable</b>            | Enables beamforming.                     |
| <b>disable</b>           | 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}**

|                 |                                                        |
|-----------------|--------------------------------------------------------|
| <b>enable</b>   | Enables the CleanAir settings.                         |
| <b>disable</b>  | Disables the CleanAir settings.                        |
| <i>network</i>  | 5-GHz Cisco APs.                                       |
| <i>cisco_ap</i> | Name of the access point to which the command applies. |

### Command Default

Disabled.

### Examples

This example shows how to enable the CleanAir settings on access point ap\_24:

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

### Related Commands

**config 802.11 cleanair device**

## config 802.11 cleanair device

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

**config 802.11a cleanair device** {enable | disable} *device\_type*

| Syntax Description |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>enable</b>      | Enables the CleanAir reporting for the interference device type.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>disable</b>     | Disables the CleanAir reporting for the interference device type.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>reporting</b>   | Configures CleanAir interference device reporting.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>device_type</i> | Interference device type. The device type are as follows: <ul style="list-style-type: none"> <li>• 802.11-nonstd—Devices using nonstandard WiFi channels.</li> <li>• 802.11-inv—Devices using spectrally inverted WiFi signals.</li> <li>• superag—802.11 SuperAG devices.</li> <li>• all —All interference device types.</li> <li>• cont-tx—Continuous Transmitter.</li> <li>• dect-like—Digital Enhanced Cordless Communication (DECT) like phone.</li> <li>• tdd-tx—TDD Transmitter.</li> <li>• jammer—Jammer.</li> <li>• canopy—Canopy devices.</li> <li>• video—Video cameras.</li> <li>• wimax-mobile—WiMax Mobile.</li> <li>• wimax-fixed—WiMax Fixed.</li> </ul> |

|                        |           |
|------------------------|-----------|
| <b>Command Default</b> | 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
```

|                         |                        |
|-------------------------|------------------------|
| <b>Related Commands</b> | 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

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>air-quality</b>  | Configures the 5-GHz air quality alarm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>disable</b>      | Disables the 5-GHz air quality alarm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>enable</b>       | Enables the 5-GHz air quality alarm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>threshold</b>    | Configure the 5-GHz air quality alarm threshold.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>threshold</i>    | Air quality alarm threshold (1 is bad air quality, and 100 is good air quality).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>device</b>       | Configures the 5-GHz cleanair interference devices alarm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>all</b>          | Configures all the device types at once.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>unclassified</b> | Configures the 5 GHz air quality alarm on exceeding unclassified category severity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>reporting</b>    | Configures the 5-GHz CleanAir interference devices alarm reporting.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>device_type</i>  | Device types. The device types are as follows: <ul style="list-style-type: none"> <li>802.11-nonstd—Devices using nonstandard Wi-Fi channels.</li> <li>802.11-inv—Devices using spectrally inverted Wi-Fi signals.</li> <li>superag—802.11 SuperAG devices.</li> <li>all —All interference device types.</li> <li>cont-tx—Continuous Transmitter.</li> <li>dect-like—Digital Enhanced Cordless Communication (DECT) like phone.</li> <li>tdd-tx—TDD Transmitter.</li> <li>jammer—Jammer.</li> <li>canopy—Canopy devices.</li> <li>video—Video cameras.</li> <li>wimax-mobile—WiMax Mobile.</li> <li>wimax-fixed—WiMax Fixed.</li> </ul> |

### 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

|                |                                  |
|----------------|----------------------------------|
| <b>a</b>       | Specifies the 802.11a network.   |
| <b>b</b>       | Specifies the 802.11b/g network. |
| <b>enable</b>  | Enables video CAC settings.      |
| <b>disable</b> | 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

|                  |                                           |
|------------------|-------------------------------------------|
| <b>a</b>         | Specifies the 802.11a network.            |
| <b>b</b>         | Specifies the 802.11b/g network.          |
| <i>bandwidth</i> | 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
```

■ `config 802.11 cac video max-bandwidth`

---

**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

|                  |                                           |
|------------------|-------------------------------------------|
| <b>a</b>         | Specifies the 802.11a network.            |
| <b>b</b>         | Specifies the 802.11b/g network.          |
| <i>bandwidth</i> | 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
```

■ `config 802.11 cac video roam-bandwidth`

---

**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

|               |                                                  |
|---------------|--------------------------------------------------|
| <b>a</b>      | Specifies the 802.11a network.                   |
| <b>ab</b>     | Specifies the 802.11b/g network.                 |
| <b>enable</b> | Processes the TSPEC inactivity timeout messages. |
| <b>ignore</b> | 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

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

|                  |                                           |
|------------------|-------------------------------------------|
| <b>a</b>         | Specifies the 802.11a network.            |
| <b>b</b>         | Specifies the 802.11b/g network.          |
| <i>bandwidth</i> | 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 cac voice max-bandwidth

```
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

|                  |                                           |
|------------------|-------------------------------------------|
| <b>a</b>         | Specifies the 802.11a network.            |
| <b>b</b>         | Specifies the 802.11b/g network.          |
| <i>bandwidth</i> | 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
```

■ `config 802.11 cac voice roam-bandwidth`

---

**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

|               |                                                  |
|---------------|--------------------------------------------------|
| <b>a</b>      | Specifies the 802.11a network.                   |
| <b>b</b>      | Specifies the 802.11b/g network.                 |
| <b>enable</b> | Processes the TSPEC inactivity timeout messages. |
| <b>ignore</b> | 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

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

|               |                                          |
|---------------|------------------------------------------|
| <b>a</b>      | Specifies the 802.11a network.           |
| <b>b</b>      | Specifies the 802.11b/g network.         |
| <i>number</i> | 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

|                        |                                                                                          |
|------------------------|------------------------------------------------------------------------------------------|
| <b>a</b>               | Specifies the 802.11a network.                                                           |
| <b>b</b>               | Specifies the 802.11b/g network.                                                         |
| <i>bw_kbps</i>         | Bandwidth in kbps.                                                                       |
| <b>sample-interval</b> | Specifies the packetization interval for SIP codec.                                      |
| <i>number_msecs</i>    | 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

|                        |                                                                                        |
|------------------------|----------------------------------------------------------------------------------------|
| <b>a</b>               | Specifies the 802.11a network.                                                         |
| <b>b</b>               | Specifies the 802.11b/g network.                                                       |
| <b>g711</b>            | Specifies CAC parameters for the SIP G711 codec.                                       |
| <b>g729</b>            | Specifies CAC parameters for the SIP G729 codec.                                       |
| <b>sample-interval</b> | Specifies the packetization interval for SIP codec.                                    |
| <i>number_msecs</i>    | Packetization interval in msec. 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 g711 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

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

|                |                                                                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a</b>       | Specifies the 802.11a network.                                                                                                                   |
| <b>b</b>       | Specifies the 802.11b/g network.                                                                                                                 |
| <b>auto</b>    | (Optional) Specifies that the channel is automatically set by Radio Resource Management (RRM) for the 802.11a radio.                             |
| <b>once</b>    | (Optional) Specifies that the channel is automatically set once by RRM.                                                                          |
| <b>off</b>     | (Optional) Specifies that the automatic channel selection by RRM is disabled.                                                                    |
| <i>ap_name</i> | Access point name.                                                                                                                               |
| <b>global</b>  | Specifies the 802.11a operating channel that is automatically set by RRM and overrides the existing configuration setting.                       |
| <i>channel</i> | 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 codesetting 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 | <b>a</b>          | Specifies the 802.11a network.                  |
|                    | <b>b</b>          | Specifies the 802.11b/g network.                |
|                    | <i>cisco_ap</i>   | Name of the Cisco access point.                 |
|                    | <b>global</b>     | Enables auto-RF on the designated access point. |
|                    | <i>channel_no</i> | Default channel from 1 to 26, inclusive.        |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                    |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable auto-RF for access point AP01 on an 802.11b network:</p> <pre>&gt; config 802.11b channel ap ap01 global</pre> |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                        |
|------------------|----------------------------------------------------------------------------------------|
| Related Commands | <p><b>show 802.11a</b><br/><b>config 802.11b channel</b><br/><b>config country</b></p> |
|------------------|----------------------------------------------------------------------------------------|

## 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

|                 |                                                                                                                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a</b>        | Specifies the 802.11a network.                                                                                                                                                                                        |
| <b>b</b>        | Specifies the 802.11b/g network.                                                                                                                                                                                      |
| <i>cisco_ap</i> | Access point.                                                                                                                                                                                                         |
| <b>20</b>       | Allows the radio to communicate using only 20-MHz channels.<br><br>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. |
| <b>40</b>       | 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

|                 |                                                       |
|-----------------|-------------------------------------------------------|
| <b>a</b>        | Specifies the 802.11a network.                        |
| <b>b</b>        | Specifies the 802.11b/g network.                      |
| <b>network</b>  | Disables transmission for the entire 802.11a network. |
| <i>cisco_ap</i> | 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

|                |                                        |
|----------------|----------------------------------------|
| <b>a</b>       | Specifies the 802.11a network.         |
| <b>b</b>       | Specifies the 802.11b/g network.       |
| <b>enable</b>  | Enables the support for this command.  |
| <b>disable</b> | 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

|                 |                                                       |
|-----------------|-------------------------------------------------------|
| <b>a</b>        | Specifies the 802.11a network.                        |
| <b>b</b>        | Specifies the 802.11b/g network.                      |
| <b>network</b>  | Disables transmission for the entire 802.11a network. |
| <i>cisco_ap</i> | 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

|                |                                                   |
|----------------|---------------------------------------------------|
| <b>a</b>       | Specifies the 802.11a network.                    |
| <b>b</b>       | Specifies the 802.11b/g network.                  |
| <b>enable</b>  | Enables the expedited bandwidth request feature.  |
| <b>disable</b> | 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

|                  |                                                |
|------------------|------------------------------------------------|
| <b>a</b>         | Specifies the 802.11a network.                 |
| <b>b</b>         | Specifies the 802.11b/g network.               |
| <i>threshold</i> | 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

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a</b>           | Specifies the 802.11a network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>b</b>           | Specifies the 802.11b/g network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>default</b>     | Restores Layer 2 client roaming RF parameters to default values.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>custom</b>      | Configures custom Layer 2 client roaming RF parameters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <i>min_rssi</i>    | 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.                                                                                                                          |
| <i>roam_hyst</i>   | 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.                                                                                                                                                                                                                           |
| <i>scan_thresh</i> | 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. |
| <i>trans_time</i>  | 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.                                                                                                                                                                                                                                                                                            |
|                    | <b>Note</b> For high-speed client roaming applications in outdoor mesh environments, we recommend that you set the transition time to 1 second.                                                                                                                                                                                                                                                                                                                                                                                                                                    |

### Command Default

|                    |       |
|--------------------|-------|
| <i>min_rssi</i>    | $-85$ |
| <i>roam_hyst</i>   | 2     |
| <i>scan_thresh</i> | $-72$ |
| <i>trans_time</i>  | 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 |  |                                                                                                    |
|--------------------|--|----------------------------------------------------------------------------------------------------|
| <b>a</b>           |  | Specifies the 802.11a network.                                                                     |
| <b>b</b>           |  | Specifies the 802.11b/g network.                                                                   |
| <i>max-clients</i> |  | 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:<br>> config 802.11b max-clients 22 |  |

| Related Commands                              |  |
|-----------------------------------------------|--|
| show ap config 802.11a<br>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

|                  |                                                                                          |
|------------------|------------------------------------------------------------------------------------------|
| <b>a</b>         | Specifies the 802.11a network.                                                           |
| <b>b</b>         | Specifies the 802.11b/g network.                                                         |
| <b>disabled</b>  | Disables a specific data rate.                                                           |
| <b>mandatory</b> | Specifies that a client supports the data rate in order to use the network.              |
| <b>supported</b> | Specifies to allow any associated client that supports the data rate to use the network. |
| <i>rate</i>      | 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

|                |                                  |
|----------------|----------------------------------|
| <b>a</b>       | Specifies the 802.11a network.   |
| <b>b</b>       | Specifies the 802.11b/g network. |
| <b>enable</b>  | Enables the video TSM settings.  |
| <b>disable</b> | 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

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

|                        |                                                                                                                                                                                                                                                                          |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>mgmt</b>            | 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.                                     |
| <i>aaa_server_type</i> | (Optional) AAA authentication server type ( <b>local</b> , <b>radius</b> , or <b>tacacs</b> ). The <b>local</b> setting specifies the local database, the <b>radius</b> setting specifies the RADIUS server, and the <b>tacacs</b> 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]**

|                           |               |                                                                       |
|---------------------------|---------------|-----------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>radius</b> | (Optional) Configures the order of authentication for RADIUS servers. |
|                           | <b>tacacs</b> | (Optional) Configures the order of authentication for TACACS servers. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                        |
|-----------------|----------------------------------------------------------------------------------------|
| <b>Examples</b> | 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**

|                         |                            |
|-------------------------|----------------------------|
| <b>Related Commands</b> | <b>show aaa auth order</b> |
|-------------------------|----------------------------|

## 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*

|                           |                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>rule_name</i> ACL name that contains up to 32 alphanumeric characters.                                                                                                                                                                                                                                                                          |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                              |
| <b>Usage Guidelines</b>   | 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. |
| <b>Examples</b>           | This example shows how to apply an ACL to the data path:<br><br>> <b>config acl apply acl01</b>                                                                                                                                                                                                                                                    |
| <b>Related Commands</b>   | <b>show acl</b>                                                                                                                                                                                                                                                                                                                                    |

# 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**

|              |                                           |
|--------------|-------------------------------------------|
| <b>start</b> | Enables ACL counters on your controller.  |
| <b>stop</b>  | 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*

|                           |                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>rule_name</i> ACL name that contains up to 32 alphanumeric characters.                                                                                                                                                                                                                                                                          |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                              |
| <b>Usage Guidelines</b>   | 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. |
| <b>Examples</b>           | This example shows how to create a new ACL:<br><br>> <b>config acl create acl01</b>                                                                                                                                                                                                                                                                |
| <b>Related Commands</b>   | <b>show acl</b>                                                                                                                                                                                                                                                                                                                                    |

# 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

|                  |                                                      |
|------------------|------------------------------------------------------|
| <i>rule_name</i> | Specifies the ACL name                               |
| <b>wired</b>     | Specifies an ACL on wired traffic.                   |
| <b>wireless</b>  | Specifies an ACL on wireless traffic                 |
| <b>both</b>      | 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 acl101 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*

|                           |                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>rule_name</i> ACL name that contains up to 32 alphanumeric characters.                                                                                                                                                                                                                                                                          |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                              |
| <b>Usage Guidelines</b>   | 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. |
| <b>Examples</b>           | This example shows how to delete an ACL named acl101 on the CPU:<br><br>> <b>config acl delete acl01</b>                                                                                                                                                                                                                                           |
| <b>Related Commands</b>   | <a href="#">show acl</a>                                                                                                                                                                                                                                                                                                                           |

# 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

|                            |                                                          |
|----------------------------|----------------------------------------------------------|
| <b>action</b>              | Configures whether to permit or deny access.             |
| <i>rule_name</i>           | ACL name that contains up to 32 alphanumeric characters. |
| <i>rule_index</i>          | Rule index between 1 and 32.                             |
| <b>permit</b>              | Permits the rule action.                                 |
| <b>deny</b>                | Denies the rule action.                                  |
| <b>add</b>                 | Adds a new rule.                                         |
| <b>change</b>              | Changes a rule's index.                                  |
| <b>index</b>               | Specifies a rule index.                                  |
| <b>delete</b>              | Deletes a rule.                                          |
| <b>destination address</b> | Configures a rule's destination IP address and netmask.  |
| <i>ip_address</i>          | IP address of the rule.                                  |
| <i>netmask</i>             | Netmask of the rule.                                     |
| <i>start_port</i>          | Start port number (between 0 and 65535).                 |
| <i>end_port</i>            | End port number (between 0 and 65535).                   |
| <b>direction</b>           | Configures a rule's direction to in, out, or any.        |
| <b>in</b>                  | Configures a rule's direction to in.                     |
| <b>out</b>                 | Configures a rule's direction to out.                    |
| <b>any</b>                 | Configures a rule's direction to any.                    |
| <b>dscp</b>                | Configures a rule's DSCP.                                |
| <i>dscp</i>                | Number between 0 and 63, or <b>any</b> .                 |
| <b>protocol</b>            | Configures a rule's DSCP.                                |
| <i>protocol</i>            | Number between 0 and 255, or <b>any</b> .                |
| <b>source address</b>      | Configures a rule's source IP address and netmask.       |
| <b>source port range</b>   | Configures a rule's source port range.                   |
| <b>swap</b>                | 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          |  |                                                                                                                                                                |
|-----------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a</b>                    |  | Specifies the 802.11a network.                                                                                                                                 |
| <b>b</b>                    |  | Specifies the 802.11b/g network.                                                                                                                               |
| <b>call-admission-limit</b> |  | Configures the call admission limit for the 7920s.                                                                                                             |
| <b>G711-CU-Quantum</b>      |  | 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. |
| <i>limit</i>                |  | Call admission limit (from 0 to 255). The default value is 105.                                                                                                |
| <i>quantum</i>              |  | G711 quantum value. The default value is 15.                                                                                                                   |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                             |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure the call admission limit for 7920 VISE parameters:</p> <pre>&gt; config advanced 802.11b 7920VSIEConfig call-admission-limit 4</pre> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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**

|                |                                       |
|----------------|---------------------------------------|
| <b>enable</b>  | Enables the fastpath packet capture.  |
| <b>disable</b> | 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}**

|                           |                |                                           |
|---------------------------|----------------|-------------------------------------------|
| <b>Syntax Description</b> | <b>enable</b>  | Enables the fastpath fast cache control.  |
|                           | <b>disable</b> | Disables the fastpath fast cache control. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                       |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to enable the fastpath fast cache control:</p> <p>&gt; <b>config advanced fastpath fastcache enable</b></p> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------|

## 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

|                       |                                                                   |
|-----------------------|-------------------------------------------------------------------|
| <b>a</b>              | Specifies the 802.11a network.                                    |
| <b>b</b>              | Specifies the 802.11b/g network.                                  |
| <b>add</b>            | Adds a channel to the 802.11 network auto RF channel list.        |
| <b>delete</b>         | Deletes a channel from the 802.11 network auto RF channel list.   |
| <i>channel_number</i> | 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 |  |                                                     |
|--------------------|--|-----------------------------------------------------|
| <b>a</b>           |  | Specifies the 802.11a network.                      |
| <b>b</b>           |  | Specifies the 802.11b/g network.                    |
| <b>enable</b>      |  | Enables the cleanair event-driven RRM parameters.   |
| <b>disable</b>     |  | Disables the cleanair event-driven RRM parameters.  |
| <b>sensitivity</b> |  | Sets the sensitivity for cleanair event-driven RRM. |
| <b>low</b>         |  | (Optional) Specifies low sensitivity.               |
| <b>medium</b>      |  | (Optional) Specifies medium sensitivity             |
| <b>high</b>        |  | (Optional) Specifies high sensitivity               |
| <b>custom</b>      |  | (Optional) Specifies custom sensitivity.            |
| <b>threshold</b>   |  | Specifies the EDRRM AQ threshold value.             |
| <b>1-99</b>        |  | (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

|                    |                                                     |
|--------------------|-----------------------------------------------------|
| <b>a</b>           | Specifies the 802.11a network.                      |
| <b>b</b>           | Specifies the 802.11b/g network.                    |
| <b>enable</b>      | Enables the cleanair event-driven RRM parameters.   |
| <b>disable</b>     | Disables the cleanair event-driven RRM parameters.  |
| <b>sensitivity</b> | Sets the sensitivity for cleanair event-driven RRM. |
| <b>low</b>         | (Optional) Specifies low sensitivity.               |
| <b>medium</b>      | (Optional) Specifies medium sensitivity             |
| <b>high</b>        | (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

|              |                                                                                                  |
|--------------|--------------------------------------------------------------------------------------------------|
| <b>a</b>     | Specifies the 802.11a network.                                                                   |
| <b>b</b>     | Specifies the 802.11b/g network.                                                                 |
| <i>value</i> | 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 configure the Dynamic Channel Assignment (DCA) channel width for all 802.11n radios in the 5-GHz band, use the **config advanced 802.11 channel dca chan-width-11n** command:

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

## Syntax Description

|           |                                                      |
|-----------|------------------------------------------------------|
| <b>a</b>  | Specifies the 802.11a network.                       |
| <b>b</b>  | Specifies the 802.11b/g network.                     |
| <b>20</b> | Sets the channel width for 802.11n radios to 20 MHz. |
| <b>40</b> | 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

|              |                                                                                       |
|--------------|---------------------------------------------------------------------------------------|
| <b>a</b>     | Specifies the 802.11a network.                                                        |
| <b>b</b>     | Specifies the 802.11b/g network.                                                      |
| <i>value</i> | 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 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 |                                                                                                                                              |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a</b>           | Specifies the 802.11a network.                                                                                                               |
| <b>b</b>           | Specifies the 802.11b/g network.                                                                                                             |
| <b>low</b>         | Specifies the DCA algorithm is not particularly sensitive to environmental changes. See the “Usage Guidelines” section for more information. |
| <b>medium</b>      | Specifies the DCA algorithm is moderately sensitive to environmental changes. See the “Usage Guidelines” section for more information.       |
| <b>high</b>        | 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}**

|                           |                |                                                                                             |
|---------------------------|----------------|---------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>a</b>       | Specifies the 802.11a network.                                                              |
|                           | <b>b</b>       | Specifies the 802.11b/g network.                                                            |
|                           | <b>enable</b>  | Enables the foreign access point 802.11a interference avoidance in the channel assignment.  |
|                           | <b>disable</b> | Disables the foreign access point 802.11a interference avoidance in the channel assignment. |

|                        |          |
|------------------------|----------|
| <b>Command Default</b> | Enabled. |
|------------------------|----------|

|                 |                                                                                                                                                                                                                                       |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>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:</p> <pre>&gt; config advanced 802.11a channel foreign enable</pre> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                     |
|-------------------------|-------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p>show advanced 802.11a channel</p> <p>config advanced 802.11b channel foreign</p> |
|-------------------------|-------------------------------------------------------------------------------------|

## 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}**

|                           |                                                                                                                                                                                                                 |                                                                                               |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>a</b>                                                                                                                                                                                                        | Specifies the 802.11a network.                                                                |
|                           | <b>b</b>                                                                                                                                                                                                        | Specifies the 802.11b/g network.                                                              |
|                           | <b>enable</b>                                                                                                                                                                                                   | Enables the Cisco lightweight access point 802.11a load avoidance in the channel assignment.  |
|                           | <b>disable</b>                                                                                                                                                                                                  | Disables the Cisco lightweight access point 802.11a load avoidance in the channel assignment. |
| <b>Command Default</b>    | Disabled.                                                                                                                                                                                                       |                                                                                               |
| <b>Examples</b>           | This example shows how to have RRM consider the traffic load when making channel selection updates for all 802.11a Cisco lightweight access points:<br><br>> <b>config advanced 802.11a channel load enable</b> |                                                                                               |
| <b>Related Commands</b>   | <b>show advanced 802.11a channel</b><br><br><b>config advanced 802.11b channel load</b>                                                                                                                         |                                                                                               |

## 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}**

|                           |                |                                                                           |
|---------------------------|----------------|---------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>a</b>       | Specifies the 802.11a network.                                            |
|                           | <b>b</b>       | Specifies the 802.11b/g network.                                          |
|                           | <b>enable</b>  | Enables non-802.11a noise avoidance in the channel assignment, or ignore. |
|                           | <b>disable</b> | 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

|                |                                                                   |
|----------------|-------------------------------------------------------------------|
| <b>a</b>       | Specifies the 802.11a network.                                    |
| <b>b</b>       | Specifies the 802.11b/g network.                                  |
| <b>enable</b>  | Enables 802.11 network dca list option for outdoor access point.  |
| <b>disable</b> | 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 propagation of persistent devices, use the **config advanced 802.11 channel pda-prop** command.

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

|                           |                |                                                                           |
|---------------------------|----------------|---------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>a</b>       | Specifies the 802.11a network.                                            |
|                           | <b>b</b>       | Specifies the 802.11b/g network.                                          |
|                           | <b>enable</b>  | Enables the 802.11 network DCA list option for the outdoor access point.  |
|                           | <b>disable</b> | Disables the 802.11 network DCA list option for the outdoor access point. |

|                        |           |
|------------------------|-----------|
| <b>Command Default</b> | Disabled. |
|------------------------|-----------|

|                 |                                                                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to enable or disable propagation of persistent devices:</p> <pre>config advanced 802.11a channel pda-prop enable</pre> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|



# 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

|          |                                  |
|----------|----------------------------------|
| <b>a</b> | Specifies the 802.11a network.   |
| <b>b</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}**

|                           |                |                                       |
|---------------------------|----------------|---------------------------------------|
| <b>Syntax Description</b> | <b>a</b>       | Specifies the 802.11a network.        |
|                           | <b>b</b>       | Specifies the 802.11b/g network.      |
|                           | <b>enable</b>  | Enables the coverage hole detection.  |
|                           | <b>disable</b> | 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

|                |                                                         |
|----------------|---------------------------------------------------------|
| <b>a</b>       | Specifies the 802.11a network.                          |
| <b>b</b>       | Specifies the 802.11b/g network.                        |
| <i>percent</i> | 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

|                |                                                                       |
|----------------|-----------------------------------------------------------------------|
| <b>a</b>       | Specifies the 802.11a network.                                        |
| <b>b</b>       | Specifies the 802.11b/g network.                                      |
| <b>data</b>    | Specifies the threshold for data packets.                             |
| <b>voice</b>   | Specifies the threshold for voice packets.                            |
| <i>percent</i> | 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 | <b>a</b>       | Specifies the 802.11a network.                            |
|--------------------|----------------|-----------------------------------------------------------|
|                    | <b>b</b>       | Specifies the 802.11b/g network.                          |
|                    | <i>clients</i> | 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

|                |                                                                    |
|----------------|--------------------------------------------------------------------|
| <b>a</b>       | Specifies the 802.11a network.                                     |
| <b>b</b>       | Specifies the 802.11b/g network.                                   |
| <b>data</b>    | Specifies the threshold for data packets.                          |
| <b>voice</b>   | Specifies the threshold for voice packets.                         |
| <i>packets</i> | 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

|              |                                            |
|--------------|--------------------------------------------|
| <b>a</b>     | Specifies the 802.11a network.             |
| <b>b</b>     | Specifies the 802.11b/g network.           |
| <b>data</b>  | Specifies the threshold for data packets.  |
| <b>voice</b> | Specifies the threshold for voice packets. |
| <i>rssi</i>  | 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 | <b>a</b>                     | Specifies the 802.11a network.                                                                                                                                                                                                             |
|--------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | <b>b</b>                     | Specifies the 802.11b/g network.                                                                                                                                                                                                           |
|                    | <b>wmm-default</b>           | Enables the Wi-Fi Multimedia (WMM) default parameters. Choose this option when voice or video services are not deployed on your network.                                                                                                   |
|                    | <b>svp-voice</b>             | Enables Spectralink voice priority parameters. Choose this option if Spectralink phones are deployed on your network to improve the quality of calls.                                                                                      |
|                    | <b>optimized-voice</b>       | Enables EDCA voice-optimized profile parameters. Choose this option when voice services other than Spectralink are deployed on your network.                                                                                               |
|                    | <b>optimized-video-voice</b> | Enables EDCA voice- and video-optimized profile parameters. Choose this option when both voice and video services are deployed on your network.<br><br><b>Note</b> If you deploy video services, admission control (ACM) must be disabled. |
|                    | <b>custom-voice</b>          | 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:<br>> <b>config advanced 802.11a edca-parameters svp-voice</b> |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|
|----------|---------------------------------------------------------------------------------------------------------------------------------------|

| Related Commands | <b>show 802.11a</b><br><b>config advanced 802.11b edca-parameters</b> |
|------------------|-----------------------------------------------------------------------|
|------------------|-----------------------------------------------------------------------|

## 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**

|          |                                  |
|----------|----------------------------------|
| <b>a</b> | Specifies the 802.11a network.   |
| <b>b</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 Description

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

|                |                                                                                                   |
|----------------|---------------------------------------------------------------------------------------------------|
| <b>a</b>       | Specifies the 802.11a network.                                                                    |
| <b>b</b>       | Specifies the 802.11b/g network.                                                                  |
| <b>auto</b>    | Sets the 802.11a RF group selection to automatic update mode.                                     |
| <b>leader</b>  | Sets the 802.11a RF group selection to static mode, and sets this controller as the group leader. |
| <b>off</b>     | Sets the 802.11a RF group selection to off.                                                       |
| <b>restart</b> | 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 2-430](#)
- [config advanced 802.11 logging coverage, page 2-431](#)
- [config advanced 802.11 logging foreign, page 2-432](#)
- [config advanced 802.11 logging load, page 2-433](#)
- [config advanced 802.11 logging noise, page 2-434](#)
- [config advanced 802.11 logging performance, page 2-435](#)
- [config advanced 802.11 logging txpower, page 2-436](#)

## 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**

|                        |                                     |
|------------------------|-------------------------------------|
| <b>a</b>               | Specifies the 802.11a network.      |
| <b>b</b>               | Specifies the 802.11b/g network.    |
| <b>logging channel</b> | Logs channel changes.               |
| <b>on</b>              | Enables the 802.11 channel logging. |
| <b>off</b>             | 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}**

|                           |            |                                                         |
|---------------------------|------------|---------------------------------------------------------|
| <b>Syntax Description</b> | <b>a</b>   | Specifies the 802.11a network.                          |
|                           | <b>b</b>   | Specifies the 802.11b/g network.                        |
|                           | <b>on</b>  | Enables the 802.11 coverage profile violation logging.  |
|                           | <b>off</b> | Disables the 802.11 coverage profile violation logging. |

|                        |                 |
|------------------------|-----------------|
| <b>Command Default</b> | Off (disabled). |
|------------------------|-----------------|

|                 |                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to turn the 802.11a coverage profile violation logging selection mode on:<br>> <b>config advanced 802.11a logging coverage on</b> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>show advanced 802.11a logging</b><br><b>config advanced 802.11b logging coverage</b> |
|-------------------------|-----------------------------------------------------------------------------------------|

## 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

|            |                                                                     |
|------------|---------------------------------------------------------------------|
| <b>a</b>   | Specifies the 802.11a network.                                      |
| <b>b</b>   | Specifies the 802.11b/g network.                                    |
| <b>on</b>  | Enables the 802.11 foreign interference profile violation logging.  |
| <b>off</b> | 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}**

|                           |            |                                                     |
|---------------------------|------------|-----------------------------------------------------|
| <b>Syntax Description</b> | <b>a</b>   | Specifies the 802.11a network.                      |
|                           | <b>b</b>   | Specifies the 802.11b/g network.                    |
|                           | <b>on</b>  | Enables the 802.11 load profile violation logging.  |
|                           | <b>off</b> | Disables the 802.11 load profile violation logging. |

|                        |                 |
|------------------------|-----------------|
| <b>Command Default</b> | Off (disabled). |
|------------------------|-----------------|

|                 |                                                                                                                              |
|-----------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to turn the 802.11a load profile logging mode on:<br>> <b>config advanced 802.11a logging load on</b> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                     |
|-------------------------|-------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>show advanced 802.11a logging</b><br><b>config advanced 802.11b logging load</b> |
|-------------------------|-------------------------------------------------------------------------------------|

## 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

|            |                                                      |
|------------|------------------------------------------------------|
| <b>a</b>   | Specifies the 802.11a network.                       |
| <b>b</b>   | Specifies the 802.11b/g network.                     |
| <b>on</b>  | Enables the 802.11 noise profile violation logging.  |
| <b>off</b> | 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}**

|                           |            |                                                            |
|---------------------------|------------|------------------------------------------------------------|
| <b>Syntax Description</b> | <b>a</b>   | Specifies the 802.11a network.                             |
|                           | <b>b</b>   | Specifies the 802.11b/g network.                           |
|                           | <b>on</b>  | Enables the 802.11 performance profile violation logging.  |
|                           | <b>off</b> | Disables the 802.11 performance profile violation logging. |

|                        |                 |
|------------------------|-----------------|
| <b>Command Default</b> | Off (disabled). |
|------------------------|-----------------|

|                 |                                                                                                                                            |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to turn the 802.11a performance profile logging mode on:<br>> <b>config advanced 802.11a logging performance on</b> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>show advanced 802.11a logging</b><br><b>config advanced 802.11b logging performance</b> |
|-------------------------|--------------------------------------------------------------------------------------------|

## 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

|            |                                                    |
|------------|----------------------------------------------------|
| <b>a</b>   | Specifies the 802.11a network.                     |
| <b>b</b>   | Specifies the 802.11b/g network.                   |
| <b>on</b>  | Enables the 802.11 transmit power change logging.  |
| <b>off</b> | 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 2-438](#)
- [config advanced 802.11 monitor coverage, page 2-439](#)
- [config advanced 802.11 monitor load, page 2-440](#)
- [config advanced 802.11 monitor mode, page 2-441](#)
- [config advanced 802.11 monitor ndp-type, page 2-442](#)
- [config advanced 802.11 monitor noise, page 2-443](#)
- [config advanced 802.11 monitor signal, page 2-444](#)

## 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

|                |                                                                 |
|----------------|-----------------------------------------------------------------|
| <b>a</b>       | Specifies the 802.11a network.                                  |
| <b>b</b>       | Specifies the 802.11b/g network.                                |
| <b>all</b>     | Monitors all channels.                                          |
| <b>country</b> | Monitors the channels used in the configured country code.      |
| <b>dca</b>     | 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*

|                           |                |                                                            |
|---------------------------|----------------|------------------------------------------------------------|
| <b>Syntax Description</b> | <b>a</b>       | Specifies the 802.11a network.                             |
|                           | <b>b</b>       | Specifies the 802.11b/g network.                           |
|                           | <i>seconds</i> | Coverage measurement interval between 60 and 3600 seconds. |

|                        |              |
|------------------------|--------------|
| <b>Command Default</b> | 180 seconds. |
|------------------------|--------------|

|                 |                                                                                                                                                   |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to set the coverage measurement interval to 60 seconds:</p> <pre>&gt; config advanced 802.11a monitor coverage 60</pre> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                    |
|-------------------------|----------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><b>show advanced 802.11a monitor</b></p> <p><b>config advanced 802.11b monitor coverage</b></p> |
|-------------------------|----------------------------------------------------------------------------------------------------|

## 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

|                |                                                        |
|----------------|--------------------------------------------------------|
| <b>a</b>       | Specifies the 802.11a network.                         |
| <b>b</b>       | Specifies the 802.11b/g network.                       |
| <i>seconds</i> | 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}**

|                           |                |                                              |
|---------------------------|----------------|----------------------------------------------|
| <b>Syntax Description</b> | <b>a</b>       | Specifies the 802.11a network.               |
|                           | <b>b</b>       | Specifies the 802.11b/g network.             |
|                           | <b>enable</b>  | Enables the 802.11 access point monitoring.  |
|                           | <b>disable</b> | Disables the 802.11 access point monitoring. |

|                        |          |
|------------------------|----------|
| <b>Command Default</b> | Enabled. |
|------------------------|----------|

|                 |                                                                                                                               |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to enable the 802.11a access point monitoring:<br>> <b>config advanced 802.11a monitor mode enable</b> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                     |
|-------------------------|-------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>show advanced 802.11a monitor</b><br><b>config advanced 802.11b monitor mode</b> |
|-------------------------|-------------------------------------------------------------------------------------|

# 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

|                    |                                                               |
|--------------------|---------------------------------------------------------------|
| <b>a</b>           | Specifies the 802.11a network.                                |
| <b>b</b>           | Specifies the 802.11b/g network.                              |
| <b>protected</b>   | Specifies the Tx RRM protected neighbor discovery protocol.   |
| <b>transparent</b> | 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*

|                           |                |                                                         |
|---------------------------|----------------|---------------------------------------------------------|
| <b>Syntax Description</b> | <b>a</b>       | Specifies the 802.11a network.                          |
|                           | <b>b</b>       | Specifies the 802.11b/g network.                        |
|                           | <i>seconds</i> | Noise measurement interval between 60 and 3600 seconds. |

|                        |              |
|------------------------|--------------|
| <b>Command Default</b> | 180 seconds. |
|------------------------|--------------|

|                 |                                                                                                                                    |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to set the noise measurement interval to 120 seconds:<br>> <b>config advanced 802.11a monitor noise 120</b> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>show advanced 802.11a monitor</b><br><b>config advanced 802.11b monitor noise</b> |
|-------------------------|--------------------------------------------------------------------------------------|

## 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

|                |                                                          |
|----------------|----------------------------------------------------------|
| <b>a</b>       | Specifies the 802.11a network.                           |
| <b>b</b>       | Specifies the 802.11b/g network.                         |
| <i>seconds</i> | 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 2-446](#)
- [config advanced 802.11 profile customize, page 2-447](#)
- [config advanced 802.11 profile foreign, page 2-448](#)
- [config advanced 802.11 profile noise, page 2-449](#)
- [config advanced 802.11 profile throughput, page 2-450](#)
- [config advanced 802.11 profile utilization, page 2-451](#)
- [config advanced 802.11 receiver, page 2-452](#)
- [config advanced 802.11 tpc-version, page 2-453](#)
- [config advanced 802.11 tpcv2-intense, page 2-455](#)
- [config advanced 802.11 tpcv2-per-chan, page 2-456](#)
- [config advanced 802.11 tpcv2-thresh, page 2-457](#)
- [config advanced 802.11 txpower-update, page 2-458](#)
- [config advanced backup-controller primary, page 2-459](#)
- [config advanced backup-controller secondary, page 2-460](#)
- [config advanced client-handoff, page 2-461](#)
- [config advanced dot11-padding, page 2-462](#)
- [config advanced assoc-limit, page 2-463](#)
- [config advanced eap, page 2-464](#)
- [config advanced max-1x-session, page 2-466](#)
- [config advanced rate, page 2-467](#)
- [config advanced sip-preferred-call-no, page 2-468](#)
- [config advanced statistics, page 2-469](#)
- [config advanced probe filter, page 2-470](#)
- [config advanced probe limit, page 2-471](#)
- [config advanced timers ap-discovery-timeout, page 2-473](#)
- [config advanced timers ap-fast-heartbeat, page 2-474](#)
- [config advanced timers ap-heartbeat-timeout, page 2-475](#)
- [config advanced timers ap-primary-discovery-timeout, page 2-476](#)
- [config advanced timers auth-timeout, page 2-477](#)
- [config advanced timers eap-timeout, page 2-478](#)
- [config advanced timers eap-identity-request-delay, page 2-479](#)

## 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

|                 |                                                                                   |
|-----------------|-----------------------------------------------------------------------------------|
| <b>a</b>        | Specifies the 802.11a network.                                                    |
| <b>b</b>        | Specifies the 802.11b/g network.                                                  |
| <b>global</b>   | Configures all 802.11a Cisco lightweight access points.                           |
| <i>cisco_ap</i> | Cisco lightweight access point name.                                              |
| <i>clients</i>  | 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

|                 |                                                                                   |
|-----------------|-----------------------------------------------------------------------------------|
| <b>a</b>        | Specifies the 802.11a network.                                                    |
| <b>b</b>        | Specifies the 802.11b/g network.                                                  |
| <i>cisco_ap</i> | Cisco lightweight access point.                                                   |
| <b>on</b>       | Customizes performance profiles for this Cisco lightweight access point.          |
| <b>off</b>      | 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

|                 |                                                                           |
|-----------------|---------------------------------------------------------------------------|
| <b>a</b>        | Specifies the 802.11a network.                                            |
| <b>b</b>        | Specifies the 802.11b/g network.                                          |
| <b>global</b>   | Configures all 802.11a Cisco lightweight access points.                   |
| <i>cisco_ap</i> | Cisco lightweight access point name.                                      |
| <i>percent</i>  | 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

|                 |                                                                          |
|-----------------|--------------------------------------------------------------------------|
| <b>a</b>        | Specifies the 802.11a network.                                           |
| <b>b</b>        | Specifies the 802.11b/g network.                                         |
| <b>global</b>   | Configures all 802.11a Cisco lightweight access point specific profiles. |
| <i>cisco_ap</i> | Cisco lightweight access point name.                                     |
| <i>dBm</i>      | 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

|                 |                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------|
| <b>a</b>        | Specifies the 802.11a network.                                                                          |
| <b>b</b>        | Specifies the 802.11b/g network.                                                                        |
| <b>global</b>   | Configures all 802.11a Cisco lightweight access point specific profiles.                                |
| <i>cisco_ap</i> | Cisco lightweight access point name.                                                                    |
| <i>value</i>    | 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 | <b>a</b>        | Specifies the 802.11a network.                                       |
|                    | <b>b</b>        | Specifies the 802.11b/g network.                                     |
|                    | <b>global</b>   | Configures a global Cisco lightweight access point specific profile. |
|                    | <i>cisco_ap</i> | Specifies Cisco lightweight access point name.                       |
|                    | <i>percent</i>  | 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 | <b>show advanced 802.11a profile</b><br><b>config advanced 802.11b profile utilization</b> |
|------------------|--------------------------------------------------------------------------------------------|

## 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
```

|                           |                             |                                                        |
|---------------------------|-----------------------------|--------------------------------------------------------|
| <b>Syntax Description</b> | <b>a</b>                    | Specifies the 802.11a network.                         |
|                           | <b>b</b>                    | Specifies the 802.11b/g network.                       |
|                           | <b>receiver</b>             | Specifies the receiver configuration.                  |
|                           | <b>default</b>              | Specifies the default advanced receiver configuration. |
|                           | <b>rxstartjumpThreshold</b> | Specifies the receiver start signal.                   |
|                           | <i>value</i>                | 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. |

|                        |                                           |
|------------------------|-------------------------------------------|
| <b>Command Default</b> | The default TPC version for a radio is 1. |
|------------------------|-------------------------------------------|

|                 |                                                                                                                                   |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure the TPC version as 1 for the 802.11a radio:<br>> <b>config advanced 802.11a tpc-version 1</b> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                     |
|-------------------------|-----------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config advanced 802.11 tpcv1-thresh</a> |
|-------------------------|-----------------------------------------------------|

## 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

|                  |                                             |
|------------------|---------------------------------------------|
| <b>a</b>         | Specifies the 802.11a network.              |
| <b>b</b>         | Specifies the 802.11b/g/n network.          |
| <i>threshold</i> | 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

|                  |                                                 |
|------------------|-------------------------------------------------|
| <b>a</b>         | Specifies the 802.11a network.                  |
| <b>b</b>         | Specifies the 802.11b/g/n network.              |
| <i>intensity</i> | 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

|                |                                                                     |
|----------------|---------------------------------------------------------------------|
| <b>enable</b>  | Enables the configuration of TPC version 2 on a per-channel basis.  |
| <b>disable</b> | 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

|                  |                                             |
|------------------|---------------------------------------------|
| <b>a</b>         | Specifies the 802.11a network.              |
| <b>b</b>         | Specifies the 802.11b/g network.            |
| <i>threshold</i> | 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**

|          |                                  |
|----------|----------------------------------|
| <b>a</b> | Specifies the 802.11a network.   |
| <b>b</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
```

|                           |                                                                                                                                                   |                                      |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| <b>Syntax Description</b> | <i>backup_controller_name</i>                                                                                                                     | Name of the backup controller.       |
|                           | <i>backup_controller_ip_address</i>                                                                                                               | IP address of the backup controller. |
| <b>Command Default</b>    | None.                                                                                                                                             |                                      |
| <b>Usage Guidelines</b>   | To delete a primary backup controller entry, enter 0.0.0.0 for the controller IP address.                                                         |                                      |
| <b>Examples</b>           | This example shows how to configure the primary backup controller:<br>> <b>config advanced backup-controller primary Controller_1 10.10.10.10</b> |                                      |
| <b>Related Commands</b>   | <b>show advanced backup-controller</b>                                                                                                            |                                      |

# 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
```

|                                     |                                                                                                                                                                                                              |                               |                                |                                     |                                      |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------------|-------------------------------------|--------------------------------------|
| <b>Syntax Description</b>           | <table> <tr> <td><i>backup_controller_name</i></td><td>Name of the backup controller.</td></tr> <tr> <td><i>backup_controller_ip_address</i></td><td>IP address of the backup controller.</td></tr> </table> | <i>backup_controller_name</i> | Name of the backup controller. | <i>backup_controller_ip_address</i> | IP address of the backup controller. |
| <i>backup_controller_name</i>       | Name of the backup controller.                                                                                                                                                                               |                               |                                |                                     |                                      |
| <i>backup_controller_ip_address</i> | IP address of the backup controller.                                                                                                                                                                         |                               |                                |                                     |                                      |
| <b>Command Default</b>              | None.                                                                                                                                                                                                        |                               |                                |                                     |                                      |
| <b>Usage Guidelines</b>             | To delete a secondary backup controller entry, enter 0.0.0.0 for the controller IP address.                                                                                                                  |                               |                                |                                     |                                      |
| <b>Examples</b>                     | <p>This example shows how to configure a secondary backup controller:</p> <pre>&gt; <b>config advanced backup-controller secondary Controller_1 10.10.10.10</b></pre>                                        |                               |                                |                                     |                                      |
| <b>Related Commands</b>             | <b>show advanced backup-controller</b>                                                                                                                                                                       |                               |                                |                                     |                                      |

# 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*

|                           |                                                                                                                           |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>num_of_retries</i> Number of excessive retries before client handoff (from 0 to 255).                                  |
| <b>Command Default</b>    | 0 excessive retries (disabled).                                                                                           |
| <b>Usage Guidelines</b>   | This command is supported only for the 1000/1510 series access points.                                                    |
| <b>Examples</b>           | This example shows how to set the client handoff to 100 excessive retries:<br>> <b>config advanced client-handoff 100</b> |
| <b>Related Commands</b>   | <b>show advanced client-handoff</b>                                                                                       |

# 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

|                |                        |
|----------------|------------------------|
| <b>enable</b>  | Enables this command.  |
| <b>disable</b> | 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 | <b>enable</b>                              | Enable this feature.                                                                                             |
|                    | <b>disable</b>                             | Disables this feature.                                                                                           |
|                    | <i>number of associations per interval</i> | (Optional) Number of association request per access point slot in a given interval. The valid range is 1 to 100. |
|                    | <i>interval in milliseconds</i>            | (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 <b>config advanced assoc-limit</b> command to limit association requests from access points. |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|          |                                                                                                                                                                                                                                             |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>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:</p> <pre>&gt; config advanced assoc-limit enable 20 250</pre> |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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                             |  |                                                                                                                                                                                                                        |
|------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>eapol-key-timeout</b><br><i>timeout</i>     |  | (Optional) Specifies the amount of time (1 to 5 seconds) in which the controller attempts to send an EAP key over the LAN to wireless clients using local EAP.                                                         |
| <b>eapol-key-retries</b><br><i>retries</i>     |  | (Optional) Specifies the maximum number of times (0 to 4 retries) that the controller attempts to send an EAP key over the LAN to wireless clients using local EAP.                                                    |
| <b>identity-request-timeout</b> <i>timeout</i> |  | (Optional) Specifies the amount of time (1 to 120 seconds) in which the controller attempts to send an EAP identity request to wireless clients using local EAP.                                                       |
| <b>identity-request-retries</b>                |  | (Optional) Specifies the maximum number of times (1 to 20 retries) that the controller attempts to retransmit the EAP identity request to wireless clients using local EAP.                                            |
| <b>key-index</b> <i>index</i>                  |  | (Optional) index—Specifies the key index (0 or 3) used for dynamic wired equivalent privacy (WEP).                                                                                                                     |
| <b>max-login-ignore-identity-response</b>      |  | (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. |
| <b>enable</b>                                  |  | Ignores the same username reaching the maximum EAP identity response.                                                                                                                                                  |
| <b>disable</b>                                 |  | Checks the same username reaching the maximum EAP identity response.                                                                                                                                                   |
| <b>request-timeout</b>                         |  | (Optional) Specifies the amount of time (1 to 120 seconds) in which the controller attempts to send an EAP request to wireless clients using local EAP.                                                                |
| <b>request-retries</b>                         |  | (Optional) Specifies the maximum number of times (1 to 120 retries) that the controller attempts to retransmit the EAP request to wireless clients using local EAP.                                                    |

## 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]**

|                           |                |                                                         |
|---------------------------|----------------|---------------------------------------------------------|
| <b>Syntax Description</b> | <b>enable</b>  | Enables the switch control path rate limiting feature.  |
|                           | <b>disable</b> | Disables the switch control path rate limiting feature. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                           |
|-----------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to enable switch control path rate limiting:</p> <p>&gt; <b>config advanced rate enable</b></p> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------|

# 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

|                    |                                                             |
|--------------------|-------------------------------------------------------------|
| <i>call_index</i>  | Call index with valid values between 1 and 6.               |
| <i>call_number</i> | Preferred call number that can contain up to 27 characters. |
| <b>none</b>        | 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 | <b>enable</b>  | Enables the switch port statistics collection.  |
|--------------------|----------------|-------------------------------------------------|
|                    | <b>disable</b> | Disables the switch port statistics collection. |

|                        |          |
|------------------------|----------|
| <b>Command Default</b> | Enabled. |
|------------------------|----------|

|                 |                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to disable the switch port statistics collection settings:<br>> <b>config advanced statistics disable</b> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                       |
|-------------------------|---------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>show advanced statistics</b><br><b>show stats port</b><br><b>show stats switch</b> |
|-------------------------|---------------------------------------------------------------------------------------|

# 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

|                |                                           |
|----------------|-------------------------------------------|
| <b>enable</b>  | Enables the filtering of probe requests.  |
| <b>disable</b> | 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 probe requests 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

|                   |                                                                                                                             |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <i>num_probes</i> | Number of probe requests (from 1 to 100) forwarded to the controller per client per access point radio in a given interval. |
| <i>interval</i>   | 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*

|                           |                                                                                                                                                                                                                                                                                               |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>seconds</i> Cisco lightweight access point discovery timeout value between 1 and 10 seconds.                                                                                                                                                                                               |
| <b>Command Default</b>    | 10 seconds.                                                                                                                                                                                                                                                                                   |
| <b>Usage Guidelines</b>   | The Cisco lightweight access point discovery timeout is how often a Cisco wireless LAN controller attempts to discover unconnected Cisco lightweight access points.                                                                                                                           |
| <b>Examples</b>           | This example shows how to configure an access point discovery-timeout with the timeout value of 20:<br>> <b>config advanced timers ap-discovery-timeout 20</b>                                                                                                                                |
| <b>Related Commands</b>   | <a href="#">show advanced timers</a><br><a href="#">config advanced timers ap-fast-heartbeat</a><br><a href="#">config advanced timers ap-heartbeat-timeout</a><br><a href="#">config advanced timers ap-primary-discovery-timeout</a><br><a href="#">config advanced timers auth-timeout</a> |

# 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 |  |                                                                                                                                           |
|--------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>local</b>       |  | Configures the fast heartbeat interval for access points in local mode only.                                                              |
| <b>flexconnect</b> |  | Configures the fast heartbeat interval for access points in FlexConnect mode only.                                                        |
| <b>all</b>         |  | Configures the fast heartbeat interval for all access points.                                                                             |
| <b>enable</b>      |  | Enables the fast heartbeat interval.                                                                                                      |
| <b>disable</b>     |  | Disables the fast heartbeat interval.                                                                                                     |
| <i>interval</i>    |  | 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*

|                           |                                                                                                                                                                                                                                                                                                                      |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>seconds</i> Cisco lightweight access point heartbeat timeout value between 1 and 30 seconds.                                                                                                                                                                                                                      |
| <b>Command Default</b>    | 30 seconds.                                                                                                                                                                                                                                                                                                          |
| <b>Usage Guidelines</b>   | <p>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.</p> <p>This <i>seconds</i> value should be at least three times larger than the fast heartbeat timer.</p>                    |
| <b>Examples</b>           | <p>This example shows how to configure an access point heartbeat timeout to 20:</p> <pre>&gt; config advanced timers ap-heartbeat-timeout 20</pre>                                                                                                                                                                   |
| <b>Related Commands</b>   | <p><a href="#">show advanced timers</a></p> <p><a href="#">config advanced timers ap-discovery-timeout</a></p> <p><a href="#">config advanced timers ap-fast-heartbeat</a></p> <p><a href="#">config advanced timers ap-primary-discovery-timeout</a></p> <p><a href="#">config advanced timers auth-timeout</a></p> |

# 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*

|                           |                                                                                                                                                                                                                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>interval</i> Access point primary discovery request timer between 30 and 3600 seconds.                                                                                                                                                                                             |
| <b>Command Default</b>    | 120 seconds.                                                                                                                                                                                                                                                                          |
| <b>Examples</b>           | <p>This example shows how to configure the access point primary discovery request timer to 1200seconds:</p> <pre>&gt; config advanced timers ap-primary-discovery-timeout 1200</pre>                                                                                                  |
| <b>Related Commands</b>   | <a href="#">show advanced timers</a><br><a href="#">config advanced timers ap-discovery-timeout</a><br><a href="#">config advanced timers ap-fast-heartbeat</a><br><a href="#">config advanced timers ap-heartbeat-timeout</a><br><a href="#">config advanced timers auth-timeout</a> |

# config advanced timers auth-timeout

To configure the authentication timeout, use the **config advanced timers auth-timeout** command.

**config advanced timers auth-timeout** *seconds*

|                           |                                                                                                                                                                                                                                                                                                                  |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>seconds</i> Authentication response timeout value in seconds between 10 and 600.                                                                                                                                                                                                                              |
| <b>Command Default</b>    | 10 seconds.                                                                                                                                                                                                                                                                                                      |
| <b>Examples</b>           | <p>This example shows how to configure the authentication timeout to 20 seconds:</p> <pre>&gt; config advanced timers auth-timeout 20</pre>                                                                                                                                                                      |
| <b>Related Commands</b>   | <p><a href="#">show advanced timers</a><br/><a href="#">config advanced timers ap-fast-heartbeat</a><br/><a href="#">config advanced timers ap-discovery-timeout</a><br/><a href="#">config advanced timers ap-heartbeat-timeout</a><br/><a href="#">config advanced timers ap-primary-discovery-timeout</a></p> |

## 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*

|                           |                                                                                                                                 |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>seconds</i> EAP timeout value in seconds between 8 and 120.                                                                  |
| <b>Command Default</b>    | None.                                                                                                                           |
| <b>Examples</b>           | This example shows how to configure the EAP expiration timeout to 10 seconds:<br>> <b>config advanced timers eap-timeout 10</b> |
| <b>Related Commands</b>   | <b>show advanced timers</b>                                                                                                     |

# 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*

|                           |                                                                                                                                                           |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>seconds</i> Advanced EAP identity request delay in number of seconds between 0 and 10.                                                                 |
| <b>Command Default</b>    | None.                                                                                                                                                     |
| <b>Examples</b>           | This example shows how to configure the advanced EAP identity request delay to 8 seconds:<br>> <b>config advanced timers eap-identity-request-delay 8</b> |
| <b>Related Commands</b>   | <b>config advanced timers auth-timeout</b><br><b>config advanced timers rogue-ap</b><br><b>show advanced timers</b>                                       |

## 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

|                   |                                                                    |
|-------------------|--------------------------------------------------------------------|
| <b>enable</b>     | Enables the Cisco lightweight access point.                        |
| <b>disable</b>    | Disables the Cisco lightweight access point.                       |
| <i>cisco_ap</i>   | Name of the Cisco lightweight access point.                        |
| <b>add</b>        | Adds foreign access points.                                        |
| <b>delete</b>     | Deletes foreign access points.                                     |
| <i>MAC</i>        | MAC address of a foreign access point.                             |
| <i>port</i>       | Port number through which the foreign access point can be reached. |
| <i>IP_address</i> | 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

|                 |                                                                                                                 |
|-----------------|-----------------------------------------------------------------------------------------------------------------|
| <i>rate</i>     | Cisco bridge backhaul Tx rate in kbps. The valid values are 6000, 12000, 18000, 24000, 36000, 48000, and 54000. |
| <b>auto</b>     | Configures the auto data rate.                                                                                  |
| <i>cisco_ap</i> | 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 **config ap autoconvert** command:

**config ap autoconvert { flexconnect | monitor | disable }**

## Syntax Description

|                    |                                                           |
|--------------------|-----------------------------------------------------------|
| <b>flexconnect</b> | Configures all the APs automatically to FlexConnect mode. |
| <b>monitor</b>     | Configures all the APs automatically to monitor mode.     |
| <b>disable</b>     | 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

|                 |                                                                                                                 |
|-----------------|-----------------------------------------------------------------------------------------------------------------|
| <i>rate</i>     | Cisco bridge backhaul Tx rate in kbps. The valid values are 6000, 12000, 18000, 24000, 36000, 48000, and 54000. |
| <b>auto</b>     | Configures the auto data rate.                                                                                  |
| <i>cisco_ap</i> | 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 | <b>set</b>       | Sets a Cisco lightweight access point's bridge group name.    |
|                    | <i>groupname</i> | Specifies the Bridge group name.                              |
|                    | <b>delete</b>    | Deletes a Cisco lightweight access point's bridge group name. |
|                    | <i>cisco_ap</i>  | 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

|                 |                                                                                |
|-----------------|--------------------------------------------------------------------------------|
| <b>enable</b>   | Enables the Ethernet-to-Ethernet bridging on a Cisco lightweight access point. |
| <b>disable</b>  | Disables Ethernet-to-Ethernet bridging.                                        |
| <i>cisco_ap</i> | 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 how 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

|                         |                                            |
|-------------------------|--------------------------------------------|
| <b>enable</b>           | Enables CDP on an access point.            |
| <b>disable</b>          | Disables CDP on an access point.           |
| <b>interface</b>        | Configures CDP in a specific interface.    |
| <b>ethernet</b>         | Configures CDP for an ethernet interface.  |
| <i>interface_number</i> | Ethernet interface number between 0 and 3. |
| <b>slot</b>             | Configures CDP for a radio interface.      |
| <i>slot_id</i>          | Slot number between 0 and 3.               |
| <i>cisco_ap</i>         | Name of a Cisco lightweight access point.  |
| <b>all</b>              | 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 **re-enable** 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

|                              |                                                                                |
|------------------------------|--------------------------------------------------------------------------------|
| <b>enable</b>                | Enables the Cisco lightweight access point's memory core dump setting.         |
| <b>disable</b>               | Disables the Cisco lightweight access point's memory core dump setting.        |
| <i>tftp_server_ipaddress</i> | IP address of the TFTP server to which the access point sends core dump files. |
| <i>filename</i>              | Name that the access point uses to label the core file.                        |
| <b>compress</b>              | Compresses the core dump file.                                                 |
| <b>uncompress</b>            | Uncompresses the core dump file.                                               |
| <i>cisco_ap</i>              | Name of a Cisco lightweight access point.                                      |
| <b>all</b>                   | 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                   |
|-----------------|---------------------------------------------------|
| <b>Examples</b> | This example shows how to delete all crash files: |
|-----------------|---------------------------------------------------|

```
> config ap crash-file clear-all
```

---

|                         |                                                                                                                                                                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config ap core-dump</a><br><a href="#">config ap crash-file delete</a><br><a href="#">config ap crash-file get-crash-file</a><br><a href="#">config ap crash-file get-radio-core-dump</a><br><a href="#">config ap port</a> |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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*

|                           |                                                                                                                                                                                                                                            |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>filename</i> Name of the file to delete.                                                                                                                                                                                                |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                      |
| <b>Examples</b>           | This example shows how to delete crash file 1:<br>> <b>config ap crash-file delete crash-file-1</b>                                                                                                                                        |
| <b>Related Commands</b>   | <a href="#">config ap core-dump</a><br><a href="#">config ap crash-file clear-all</a><br><a href="#">config ap crash-file get-crash-file</a><br><a href="#">config ap crash-file get-radio-core-dump</a><br><a href="#">config ap port</a> |

# 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**

|                 |                                             |
|-----------------|---------------------------------------------|
| <i>cisco_ap</i> | 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 | <i>slot_id</i>  | Slot ID (either 0 or 1).                  |
|                    | <i>cisco_ap</i> | Name of a Cisco lightweight access point. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                                |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to collect the radio core dump for access point AP02 and slot 0:</p> <pre>&gt; config ap crash-file get-radio-core-dump 0 AP02</pre> |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                                                                          |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">config ap core-dump</a><br/><a href="#">config ap crash-file clear-all</a><br/><a href="#">config ap crash-file delete</a><br/><a href="#">config ap crash-file get-crash-file</a><br/><a href="#">config ap port</a></p> |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                     |                              |
|---------------------|------------------------------|
| <b>add username</b> | Specifies to add a username. |
| <i>user</i>         | Username.                    |
| <b>password</b>     | Specifies to add a password. |
| <i>password</i>     | Password.                    |
| <i>cisco_ap</i>     | Specific access point.       |
| <b>all</b>          | 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**

|                 |               |
|-----------------|---------------|
| <i>cisco_ap</i> | 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

|                 |                              |
|-----------------|------------------------------|
| <b>disable</b>  | Disables authentication.     |
| <b>all</b>      | Specifies all access points. |
| <i>cisco_ap</i> | 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 dot1xuser 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 |  |                                                                      |
|--------------------|--|----------------------------------------------------------------------|
| <b>duplex</b>      |  | Specifies the Ethernet port duplex settings.                         |
| <b>auto</b>        |  | (Optional) Specifies the Ethernet port duplex auto settings.         |
| <b>half</b>        |  | (Optional) Specifies the Ethernet port duplex half settings.         |
| <b>full</b>        |  | (Optional) Specifies the Ethernet port duplex full settings.         |
| <b>speed</b>       |  | Specifies the Ethernet port speed settings.                          |
| <b>auto</b>        |  | (Optional) Specifies the Ethernet port speed to auto.                |
| <b>10</b>          |  | (Optional) Specifies the Ethernet port speed to 10 Mbps.             |
| <b>100</b>         |  | (Optional) Specifies the Ethernet port speed to 100 Mbps.            |
| <b>1000</b>        |  | (Optional) Specifies the Ethernet port speed to 1000 Mbps.           |
| <b>all</b>         |  | Specifies the Ethernet port setting for all connected access points. |
| <i>cisco_ap</i>    |  | Cisco access point.                                                  |

|                        |      |
|------------------------|------|
| <b>Command Default</b> | None |
|------------------------|------|

|                 |                                                                                                           |
|-----------------|-----------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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**

|                         |                                                              |
|-------------------------|--------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config ap</a><br><a href="#">show ap summary</a> |
|-------------------------|--------------------------------------------------------------|

# config ap group-name

To specify a descriptive group name for a Gsco lightweight access point, use the **config ap group-name** command.

**config ap group-name** *groupname* *cisco\_ap*

## Syntax Description

|                  |                                              |
|------------------|----------------------------------------------|
| <i>groupname</i> | Descriptive name for the access point group. |
| <i>cisco_ap</i>  | 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*

|                           |                         |                                                                                |
|---------------------------|-------------------------|--------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>primary</b>          | Specifies the primary RADIUS server for a specific FlexConnect access point.   |
|                           | <b>secondary</b>        | Specifies the secondary RADIUS server for a specific FlexConnect access point. |
|                           | <i>ip_address</i>       | Name of the Cisco lightweight access point.                                    |
|                           | <i>auth_port secret</i> | Name of the port.                                                              |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                           |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure a primary RADIUS server for a specific access point:</p> <pre>&gt; config ap flexconnect radius auth set primary 192.12.12.1</pre> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p>config ap mode flexconnect<br/>config ap flexconnect vlan wlan<br/>config ap flexconnect vlan<br/>config ap flexconnect vlan native</p> |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                 |                                             |
|-----------------|---------------------------------------------|
| <b>enable</b>   | Enables the access point's VLAN tagging.    |
| <b>disable</b>  | Disables the access point's VLAN tagging.   |
| <i>cisco_ap</i> | 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

|                 |                                                                   |
|-----------------|-------------------------------------------------------------------|
| <i>vlan-id</i>  | VLAN identifier.                                                  |
| <i>acl</i>      | ACL name that contains up to 32 alphanumeric characters.          |
| <i>in-acl</i>   | Inbound ACL name that contains up to 32 alphanumeric characters.  |
| <i>out-acl</i>  | Outbound ACL name that contains up to 32 alphanumeric characters. |
| <i>cisco_ap</i> | 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**

|                 |                                             |
|-----------------|---------------------------------------------|
| <i>vlan-id</i>  | VLAN identifier.                            |
| <i>cisco_ap</i> | 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 | <i>ip_address</i> | Name of the Cisco lightweight access point. |
|                    | <i>vlan-id</i>    | VLAN identifier.                            |
|                    | <i>cisco_ap</i>   | 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:<br>> <b>config ap flexconnect vlan wlan 192.12.12.1 6 AP02</b> |
|----------|------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                    |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <b>config ap mode flexconnect</b><br><b>config ap flexconnect radius auth set</b><br><b>config ap flexconnect vlan</b><br><b>config ap flexconnect vlan native</b> |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                 |                                                                                    |
|-----------------|------------------------------------------------------------------------------------|
| <b>abort</b>    | Aborts the predownload image process.                                              |
| <b>primary</b>  | Predownloads an image to a Cisco access point from the controller's primary image. |
| <b>backup</b>   | Predownloads an image to a Cisco access point from the controller's backup image.  |
| <i>cisco_ap</i> | Name of a Cisco lightweight access point.                                          |
| <b>all</b>      | 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

|                 |                                                             |
|-----------------|-------------------------------------------------------------|
| <i>cisco_ap</i> | Name of a Cisco lightweight access point.                   |
| <b>all</b>      | 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

|                 |                                           |
|-----------------|-------------------------------------------|
| <b>enable</b>   | Enables the access point's LED state.     |
| <b>disable</b>  | Disables the access point's LED state.    |
| <i>cisco_ap</i> | Name of a Cisco lightweight access point. |
| <b>all</b>      | 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

|                 |                                                      |
|-----------------|------------------------------------------------------|
| <b>enable</b>   | Enables the DTLS data encryption for access points.  |
| <b>disable</b>  | Disables the DTLS data encryption for access points. |
| <i>cisco_ap</i> | Name of a Cisco lightweight access point.            |
| <b>all</b>      | 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

|                 |                                                |
|-----------------|------------------------------------------------|
| <b>enable</b>   | Enables the link latency for an access point.  |
| <b>disable</b>  | Disables the link latency for an access point. |
| <b>reset</b>    | Resets all link latency for all access points. |
| <i>cisco_ap</i> | Name of the Cisco lightweight access point.    |
| <b>all</b>      | 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*

|                           |                 |                                                                         |
|---------------------------|-----------------|-------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>location</i> | Location name of the access point (enclosed by double quotation marks). |
|                           | <i>cisco_ap</i> | Name of the Cisco lightweight access point.                             |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                         |                                                                                     |
|-------------------------|-------------------------------------------------------------------------------------|
| <b>Usage Guidelines</b> | The Cisco lightweight access point must be disabled before changing this parameter. |
|-------------------------|-------------------------------------------------------------------------------------|

|                 |                                                                                                                                    |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure the descriptive location for access point AP1:<br>> <b>config ap location "Building 1" AP1</b> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                 |
|-------------------------|---------------------------------|
| <b>Related Commands</b> | <a href="#">show ap summary</a> |
|-------------------------|---------------------------------|

# 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. |
|--------------------|---------------------------------------------------------------------------|--------------------------------------------|
|                    | <i>AP_username</i>                                                        | Management username.                       |
| password           | Configures the password for AP management.                                |                                            |
|                    | <i>AP_password</i>                                                        | AP management password.                    |
| secret             | Configures the secret password for privileged AP management.              |                                            |
|                    | <i>secret</i>                                                             | AP management secret password.             |
| all                | Applies configuration to every AP that does not have a specific username. |                                            |
|                    | <i>cisco_ap</i>                                                           | 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 should not contain management username or reverse of username.
- The password should not contain words like Cisco, oscic, admin, nimda or any variant obtained by changing the capitalization of letters by substituting 1, l, 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**

|                 |               |
|-----------------|---------------|
| <i>cisco_ap</i> | 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 |                                                                                                            |
|--------------------|------------------------------------------------------------------------------------------------------------|
| <b>bridge</b>      | Converts from a lightweight access point to a mesh access point (bridge mode).                             |
| <b>flexconnect</b> | Enables FlexConnect mode on an access point.                                                               |
| <b>local</b>       | Converts from an indoor mesh access point (MAP or RAP) to a nonmesh lightweight access point (local mode). |
| <b>reap</b>        | Enables remote edge access point mode on an access point.                                                  |
| <b>rogue</b>       | Enables wired rogue detector mode on an access point.                                                      |
| <b>sniffer</b>     | Enables wireless sniffer mode on an access point.                                                          |
| <b>se-connect</b>  | Enables spectrum expert mode on an access point.                                                           |
| <b>submode</b>     | (Optional) Configures wIPS submode on an access point.                                                     |
| <b>none</b>        | Disables the wIPS on an access point.                                                                      |
| <b>wips</b>        | Enables the wIPS submode on an access point.                                                               |
| <i>cisco_ap</i>    | 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 WPS 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 | <b>802.11b fast-channel</b> | Configures 802.11b scanning channels for a monitor-mode access point. |
|                    | <b>no-optimization</b>      | Specifies no channel scanning optimization for the access point.      |
|                    | <b>tracking-opt</b>         | Enables tracking optimized channel scanning for the access point.     |
|                    | <b>wips-optimized</b>       | Enables wIPS optimized channel scanning for the access point.         |
|                    | <i>cisco_ap</i>             | 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 | <a href="#">config 802.11 enable</a><br><a href="#">config ap mode</a><br><a href="#">show ap config</a><br><a href="#">show ap monitor-mode summary</a><br><a href="#">show wps wips statistics</a><br><a href="#">show wps wips summary</a> |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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**

|                 |                                              |
|-----------------|----------------------------------------------|
| <i>new_name</i> | Desired Cisco lightweight access point name. |
| <i>old_name</i> | 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 | <i>MAC</i>  | Foreign access point MAC address.                   |
|                    | <i>port</i> | Port number for accessing the foreign access point. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                 |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure the port for a foreign access point MAC address:</p> <pre>&gt; config ap port 12:12:12:12:12:12 20</pre> |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |           |
|------------------|-----------|
| 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

|                   |                                                                               |
|-------------------|-------------------------------------------------------------------------------|
| <b>enable</b>     | Enables the power injector state for an access point.                         |
| <b>disable</b>    | Disables the power injector state for an access point.                        |
| <i>cisco_ap</i>   | Name of the Cisco lightweight access point.                                   |
| <b>all</b>        | Specifies all Cisco lightweight access points connected to the controller.    |
| <b>installed</b>  | Detects the MAC address of the current switch port that has a power injector. |
| <b>override</b>   | Overrides the safety checks and assumes a power injector is always installed. |
| <i>switch_MAC</i> | 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***

|                           |                 |                                                                                |
|---------------------------|-----------------|--------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>enable</b>   | Enables the inline power Cisco pre-standard switch state for an access point.  |
|                           | <b>disable</b>  | Disables the inline power Cisco pre-standard switch state for an access point. |
|                           | <i>cisco_ap</i> | Name of the Cisco lightweight access point.                                    |

|                        |           |
|------------------------|-----------|
| <b>Command Default</b> | Disabled. |
|------------------------|-----------|

|                 |                                                                                                                                                                          |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to enable the inline power Cisco pre-standard switch state for access point AP02:</p> <pre>&gt; config ap power pre-standard enable AP02</pre> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                           |
|-------------------------|---------------------------|
| <b>Related Commands</b> | <a href="#">config ap</a> |
|-------------------------|---------------------------|

# 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

|                                                                                                                                                                     |                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>controller_name</i>                                                                                                                                              | Name of the Cisco wireless LAN controller.                                                                                                                                                           |
| <i>cisco_ap</i>                                                                                                                                                     | Cisco lightweight access point name.                                                                                                                                                                 |
| <i>controller_ip_address</i>                                                                                                                                        | (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. |
| <b>Note</b> 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

|                 |                                            |
|-----------------|--------------------------------------------|
| <b>1</b>        | Specifies low priority.                    |
| <b>2</b>        | Specifies medium priority.                 |
| <b>3</b>        | Specifies high priority.                   |
| <b>4</b>        | Specifies the highest (critical) priority. |
| <i>cisco_ap</i> | 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**

---

|               |                                            |
|---------------|--------------------------------------------|
| <i>period</i> | 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 | <i>cisco_ap</i> Cisco lightweight access point name.                             |
| Command Default    | None.                                                                            |
| Examples           | This example shows how to reset an access point:<br>> <b>config ap reset</b> AP2 |
| Related Commands   | <a href="#">show ap config</a>                                                   |

# 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

|                 |                                                                   |
|-----------------|-------------------------------------------------------------------|
| <i>seconds</i>  | AP control packet retransmission timeout between 2 and 5 seconds. |
| <b>all</b>      | Specifies all access points.                                      |
| <i>cisco_ap</i> | 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

|                 |                                                                               |
|-----------------|-------------------------------------------------------------------------------|
| <i>count</i>    | Number of times control packet will be retransmitted (range is 3 to 8 times). |
| <b>all</b>      | All access points.                                                            |
| <i>cisco_ap</i> | 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

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| <b>rootAP</b>   | Designates the mesh access point as a root access point (RAP). |
| <b>meshAP</b>   | Designates the mesh access point as a mesh access point (MAP). |
| <i>cisco_ap</i> | 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 | <b>enable</b>   | Enables the Reset button for an access point.  |
|                    | <b>disable</b>  | Disables the Reset button for an access point. |
|                    | <i>cisco_ap</i> | Name of the Cisco lightweight access point.    |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                          |
|----------|--------------------------------------------------------------------------------------------------------------------------|
| Examples | This example shows how to configure the reset button for access point AP03:<br>> <b>config ap rst-button enable AP03</b> |
|----------|--------------------------------------------------------------------------------------------------------------------------|

|                  |                  |
|------------------|------------------|
| Related Commands | <b>config ap</b> |
|------------------|------------------|

# 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

|                                                                                                                                                                     |                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>controller_name</i>                                                                                                                                              | Name of the Cisco wireless LAN controller.                                                                                                                                                            |
| <i>cisco_ap</i>                                                                                                                                                     | Cisco lightweight access point name.                                                                                                                                                                  |
| <i>controller_ip_address</i>                                                                                                                                        | (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. |
| <b>Note</b> 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 | <b>802.11a</b>   | Specifies the 802.11a network.                                                                 |
|                    | <b>802.11b</b>   | Specifies the 802.11b network.                                                                 |
|                    | <b>enable</b>    | Enables sniffing on an access point.                                                           |
|                    | <i>channel</i>   | Channel to be sniffed.                                                                         |
|                    | <i>server_ip</i> | IP address of the remote machine running Omnipeek, Airopeek, AirMagnet, or Wireshark software. |
|                    | <b>disable</b>   | Disables sniffing on an access point.                                                          |
|                    | <i>cisco_ap</i>  | 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 | <p>This example shows how to enable SSH connectivity on access point Cisco_ap2:</p> <pre>&gt; config ap ssh enable cisco_ap2</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                 |
|------------------|-----------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">config ap</a></p> <p><a href="#">config network ssh</a></p> <p><a href="#">show ap stats</a></p> |
|------------------|-----------------------------------------------------------------------------------------------------------------|

# 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

|                       |                                                                                                                               |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>enable</b>         | Enables the Cisco lightweight access point static IP address.                                                                 |
| <b>disable</b>        | Disables the Cisco lightweight access point static IP address. The access point uses DHCP to get the IP address.              |
| <i>cisco_ap</i>       | Cisco lightweight access point name.                                                                                          |
| <i>ip_address</i>     | Cisco lightweight access point IP address                                                                                     |
| <i>net_mask</i>       | Cisco lightweight access point network mask.                                                                                  |
| <i>gateway</i>        | IP address of the Cisco lightweight access point gateway.                                                                     |
| <b>add</b>            | Adds a domain or DNS server.                                                                                                  |
| <b>domain</b>         | Specifies the domain to which a specific access point or all access points belong.                                            |
| <b>all</b>            | All access points.                                                                                                            |
| <i>domain_name</i>    | Specifies a domain name.                                                                                                      |
| <b>nameserver</b>     | Specifies a DNS server so that a specific access point or all access points can discover the controller using DNS resolution. |
| <i>dns_ip_address</i> | DNS server IP address.                                                                                                        |
| <b>delete</b>         | 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*

|                           |                                                                                                                                                                                                                                                 |                                                                   |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>period</i>                                                                                                                                                                                                                                   | Time in seconds from 0 to 65535. A zero value disables the timer. |
|                           | <i>cisco_ap</i>                                                                                                                                                                                                                                 | Cisco lightweight access point name.                              |
| <b>Command Default</b>    | 0 (disabled).                                                                                                                                                                                                                                   |                                                                   |
| <b>Usage Guidelines</b>   | 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. |                                                                   |
| <b>Examples</b>           | This example shows how to set the stats timer to 600 seconds for access point AP2:<br><br>> <b>config ap stats-timer 600 AP2</b>                                                                                                                |                                                                   |
| <b>Related Commands</b>   | <b>config ap disable</b>                                                                                                                                                                                                                        |                                                                   |

# 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 | <i>cisco_ap</i>                 | Cisco lightweight access point.  |
|                    | <i>syslog_server_IP_address</i> | 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:<br>> <b>config ap syslog host specific 0.0.0.0</b> |
|----------|---------------------------------------------------------------------------------------------------------|

|                  |                                                                                                      |
|------------------|------------------------------------------------------------------------------------------------------|
| Related Commands | <b>config ap syslog host global</b><br><b>show ap config global</b><br><b>show ap config general</b> |
|------------------|------------------------------------------------------------------------------------------------------|

# 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

|                 |                                                           |
|-----------------|-----------------------------------------------------------|
| <b>enable</b>   | Enables the TCP maximum segment size on an access point.  |
| <b>disable</b>  | Disables the TCP maximum segment size on an access point. |
| <i>cisco_ap</i> | Cisco access point name.                                  |
| <b>all</b>      | Specifies all access points.                              |
| <i>size</i>     | 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

|                 |                                                      |
|-----------------|------------------------------------------------------|
| <b>enable</b>   | Enables the Telnet connectivity on an access point.  |
| <b>disable</b>  | Disables the Telnet connectivity on an access point. |
| <i>cisco_ap</i> | 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

|                              |                                                                                                                                                                                                      |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>controller_name</i>       | Name of the Cisco wireless LAN controller.                                                                                                                                                           |
| <i>cisco_ap</i>              | Cisco lightweight access point name.                                                                                                                                                                 |
| <i>controller_ip_address</i> | (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. |
| <b>Note</b>                  | 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 tertiary 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 | <i>tftp_ip_address</i> | IP address of the TFTP server.                              |
|                    | <i>image_filename</i>  | Filename of the access point image file on the TFTP server. |
|                    | <i>ap_name</i>         | Access point name.                                          |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure the settings for downgrading access point ap1240_102301:</p> <pre>&gt; config ap tftp-downgrade 10.0.23.8 1238.tar ap1240_102301</pre> |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                              |
|------------------|--------------------------------------------------------------|
| Related Commands | <p><b>show running-config</b></p> <p><b>show version</b></p> |
|------------------|--------------------------------------------------------------|

# 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

|                |                                         |
|----------------|-----------------------------------------|
| <i>user_id</i> | Administrator username.                 |
| <i>passwd</i>  | Administrator password.                 |
| <b>all</b>     | (Optional) Specifies all access points. |
| <i>ap_name</i> | 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

|                    |                                                                                                                                                                                                                     |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>add</b>         | Adds venue information.                                                                                                                                                                                             |
| <i>venue_name</i>  | Specifies a venue name.                                                                                                                                                                                             |
| <i>venue_group</i> | Specifies the venue group category. See <a href="#">Table 2-4</a> .                                                                                                                                                 |
| <i>venue_type</i>  | Specifies a venue type. This value depends on the venue-group specified. See <a href="#">Table 2-4</a> .                                                                                                            |
| <i>lang_code</i>   | 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). |
| <i>cisco_ap</i>    | 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     | <ul style="list-style-type: none"> <li>• 0—UNSPECIFIED ASSEMBLY</li> <li>• 1—ARENA</li> <li>• 2—STADIUM</li> <li>• 3—PASSENGER TERMINAL (E.G., AIRPORT, BUS, FERRY, TRAIN STATION)</li> <li>• 4—AMPHITHEATER</li> <li>• 5—AMUSEMENT PARK</li> <li>• 6—PLACE OF WORSHIP</li> <li>• 7—CONVENTION CENTER</li> <li>• 8—LIBRARY</li> <li>• 9—MUSEUM</li> <li>• 10—RESTAURANT</li> <li>• 11—THEATER</li> <li>• 12—BAR</li> <li>• 13—COFFEE SHOP</li> <li>• 14—ZOO OR AQUARIUM</li> <li>• 15—EMERGENCY COORDINATION CENTER</li> </ul> |
| BUSINESS         | 2     | <ul style="list-style-type: none"> <li>• 0—UNSPECIFIED BUSINESS</li> <li>• 1—DOCTOR OR DENTIST OFFICE</li> <li>• 2—BANK</li> <li>• 3—FIRE STATION</li> <li>• 4—POLICE STATION</li> <li>• 6—POST OFFICE</li> <li>• 7—PROFESSIONAL OFFICE</li> <li>• 8—RESEARCH AND DEVELOPMENT FACILITY</li> <li>• 9—ATTORNEY OFFICE</li> </ul>                                                                                                                                                                                                 |
| EDUCATIONAL      | 3     | <ul style="list-style-type: none"> <li>• 0—UNSPECIFIED EDUCATIONAL</li> <li>• 1—SCHOOL, PRIMARY</li> <li>• 2—SCHOOL, SECONDARY</li> <li>• 3—UNIVERSITY OR COLLEGE</li> </ul>                                                                                                                                                                                                                                                                                                                                                   |

| Venue Group Name   | Value | Venue Type for Group                                                                                                                                                                                                                                                        |
|--------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FACTORY-INDUSTRIAL | 4     | <ul style="list-style-type: none"> <li>0—UNSPECIFIED FACTORY AND INDUSTRIAL</li> <li>1—FACTORY</li> </ul>                                                                                                                                                                   |
| INSTITUTIONAL      | 5     | <ul style="list-style-type: none"> <li>0—UNSPECIFIED INSTITUTIONAL</li> <li>1—HOSPITAL</li> <li>2—LONG-TERM CARE FACILITY (E.G., NURSING HOME, HOSPICE, ETC.)</li> <li>3—ALCOHOL AND DRUG RE-HABILITATION CENTER</li> <li>4—GROUP HOME</li> <li>5—PRISON OR JAIL</li> </ul> |
| MERCANTILE         | 6     | <ul style="list-style-type: none"> <li>0—UNSPECIFIED MERCANTILE</li> <li>1—RETAIL STORE</li> <li>2—GROCERY MARKET</li> <li>3—AUTOMOTIVE SERVICE STATION</li> <li>4—SHOPPING MALL</li> <li>5—GAS STATION</li> </ul>                                                          |
| RESIDENTIAL        | 7     | <ul style="list-style-type: none"> <li>0—UNSPECIFIED RESIDENTIAL</li> <li>1—PRIVATE RESIDENCE</li> <li>2—HOTEL OR MOTEL</li> <li>3—DORMITORY</li> <li>4—BOARDING HOUSE</li> </ul>                                                                                           |
| STORAGE 8          |       | UNSPECIFIED STORAGE                                                                                                                                                                                                                                                         |
| UTILITY-MISC       | 9     | 0—UNSPECIFIED UTILITY AND MISCELLANEOUS                                                                                                                                                                                                                                     |

| Venue Group Name | Value | Venue Type for Group                                                                                                                                                                                                                        |
|------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VEHICULAR        | 10    | <ul style="list-style-type: none"> <li>• 0—UNSPECIFIED VEHICULAR</li> <li>• 1—AUTOMOBILE OR TRUCK</li> <li>• 2—AIRPLANE</li> <li>• 3—BUS</li> <li>• 4—FERRY</li> <li>• 5—SHIP OR BOAT</li> <li>• 6—TRAIN</li> <li>• 7—MOTOR BIKE</li> </ul> |
| OUTDOOR          | 11    | <ul style="list-style-type: none"> <li>• 0—UNSPECIFIED OUTDOOR</li> <li>• 1—MUNI-MESH NETWORK</li> <li>• 2—CITY PARK</li> <li>• 3—REST AREA</li> <li>• 4—TRAFFIC CONTROL</li> <li>• 5—BUS STOP</li> <li>• 6—KIOSK</li> </ul>                |

**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

|                 |                                                              |
|-----------------|--------------------------------------------------------------|
| <b>enable</b>   | Enables the wireless LAN override on an access point.        |
| <b>disable</b>  | Disables the wireless LAN override on an access point.       |
| <b>802.11a</b>  | Specifies the 802.11a network.                               |
| <b>802.11b</b>  | Specifies the 802.11b network.                               |
| <i>wlan_id</i>  | Cisco wireless LAN controller ID assigned to a wireless LAN. |
| <i>cisco_ap</i> | 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

|               |                                                                          |
|---------------|--------------------------------------------------------------------------|
| <b>mic</b>    | Specifies that the access point has a manufacture-installed certificate. |
| <b>ssc</b>    | Specifies that the access point has a self-signed certificate.           |
| <i>AP_MAC</i> | MAC address of a Cisco lightweight access point.                         |
| <i>AP_key</i> | 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 | <b>authorize-ap enable</b>  | Enables the authorization policy.                           |
|                    | <b>authorize-ap disable</b> | Disables the AP authorization policy.                       |
|                    | <b>ssc enable</b>           | Allows the APs with self-signed certificates to connect.    |
|                    | <b>ssc disable</b>          | 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*

|                           |                                                                                                                                                 |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>AP_MAC</i> MAC address of a Cisco lightweight access point.                                                                                  |
| <b>Command Default</b>    | None.                                                                                                                                           |
| <b>Examples</b>           | This example shows how to delete an access point entry for MAC address 00:0b:85:02:0d:20:<br>> <b>config auth-list delete 00:0b:85:02:0d:20</b> |
| <b>Related Commands</b>   | <b>config auth-list add</b><br><b>config auth-list ap-policy</b>                                                                                |

## 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*

|                           |                                                                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>cycle_count</i> Value for the cycle count between 1 to 10.                                                                     |
| <b>Command Default</b>    | None.                                                                                                                             |
| <b>Examples</b>           | <p>This example shows how to set the probe cycle count for band select to 8:</p> <pre>&gt; config band-select cycle-count 8</pre> |
| <b>Related Commands</b>   | <p><b>config band-select cycle-threshold</b><br/><b>config band-select expire</b><br/><b>config band-select client-rssi</b></p>   |

# 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*

|                           |                                                                                                                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>cycle_threshold</i> Value for the cycle threshold between 1 and 1000 milliseconds.                                                                                             |
| <b>Command Default</b>    | None.                                                                                                                                                                             |
| <b>Examples</b>           | <p>This example shows how to set the time threshold for a new scanning cycle with threshold value of 700 milliseconds:</p> <pre>&gt; config band-select cycle-threshold 700</pre> |
| <b>Related Commands</b>   | <pre>config band-select cycle-threshold config band-select expire config band-select client-rssi</pre>                                                                            |

# 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***

|                           |                    |                                                                                                                                                              |
|---------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>suppression</b> | Sets the suppression expire to the band select.                                                                                                              |
|                           | <b>dual-band</b>   | Sets the dual band expire to the band select.                                                                                                                |
|                           | <i>seconds</i>     | <ul style="list-style-type: none"> <li>Value for suppression between 10 to 200 seconds.</li> <li>Value for a dual-band between 10 to 300 seconds.</li> </ul> |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                     |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to set the suppression expire to 70 seconds:</p> <pre>&gt; config band-select expire suppression 70</pre> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                   |
|-------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p>config band-select cycle-threshold<br/> config band-select cycle-count<br/> config band-select client-rssi</p> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------|



# 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*

|                           |                                                                                                                                  |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>client_rssi</i> Minimum dBm of a client RSSI to respond to probe between 20 and 90.                                           |
| <b>Command Default</b>    | None.                                                                                                                            |
| <b>Examples</b>           | <p>This example shows how to set the RSSI threshold for band select to 70:</p> <pre>&gt; config band-select client-rssi 70</pre> |
| <b>Related Commands</b>   | <p>config band-select cycle-threshold<br/>config band-select expire<br/>config band-select cycle-count</p>                       |

# config boot

To change a Cisco wireless LAN controller boot option, use the **config boot** command.

**config boot {primary | backup}**

|                           |                                                                                                                                                                         |                                   |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>Syntax Description</b> | <b>primary</b>                                                                                                                                                          | Sets the primary image as active. |
|                           | <b>backup</b>                                                                                                                                                           | Sets the backup image as active.  |
| <b>Command Default</b>    | primary.                                                                                                                                                                |                                   |
| <b>Usage Guidelines</b>   | 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.                   |                                   |
| <b>Examples</b>           | This example shows how to set the primary image as active so that the LAN controller can boot off the primary, last loaded image:<br><b>&gt; config boot primary</b>    |                                   |
|                           | 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:<br><b>&gt; config boot backup</b> |                                   |
| <b>Related Commands</b>   | <b>show boot</b>                                                                                                                                                        |                                   |

# config cdp timer

To configure the Cisco Discovery Protocol (CDP) maximum hold timer, use the **config cdp timer** command.

**config cdp timer** *seconds*

|                           |                |                                              |
|---------------------------|----------------|----------------------------------------------|
| <b>Syntax Description</b> | <i>seconds</i> | Maximum hold timer value (5 to 254 seconds). |
|---------------------------|----------------|----------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                 |
|-----------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure the CDP maximum hold timer to 150 seconds:<br>> <b>config cdp timer 150</b> |
|-----------------|-----------------------------------------------------------------------------------------------------------------|

# config certificate

To configure Secure Sockets Layer (SSL) certificates, use the **config certificate** command.

**config certificate {generate {webadmin | webauth} | compatibility {on | off} }**

## Syntax Description

|                      |                                                                                          |
|----------------------|------------------------------------------------------------------------------------------|
| <b>generate</b>      | Specifies authentication certificate generation settings.                                |
| <b>webadmin</b>      | Generates a new web administration certificate.                                          |
| <b>webauth</b>       | Generates a new web authentication certificate.                                          |
| <b>compatibility</b> | Specifies the compatibility mode for inter-Cisco wireless LAN controller IPsec settings. |
| <b>on</b>            | Enables the compatibility mode.                                                          |
| <b>off</b>           | 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

|                                           |                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>enable</b>                             | Enables LSC certificates on the controller.                                                                                                                                                                                                                                                               |
| <b>disable</b>                            | Disables LSC certificates on the controller.                                                                                                                                                                                                                                                              |
| <b>ca-server</b>                          | Specifies the Certificate Authority (CA) server settings.                                                                                                                                                                                                                                                 |
| <i>http://url:port/path</i>               | Domain name or IP address of the CA server.                                                                                                                                                                                                                                                               |
| <b>ca-cert</b>                            | Specifies CA certificate database settings.                                                                                                                                                                                                                                                               |
| <b>add</b>                                | Obtains a CA certificate from the CA server and adds it to the controller's certificate database.                                                                                                                                                                                                         |
| <b>delete</b>                             | Deletes a CA certificate from the controller's certificate database.                                                                                                                                                                                                                                      |
| <b>subject-params</b>                     | Specifies the device certificate settings.                                                                                                                                                                                                                                                                |
| <i>country state city orgn dept email</i> | Country, state, city, organization, department, and email of the certificate authority.                                                                                                                                                                                                                   |
|                                           | <b>Note</b> The common name (CN) is generated automatically on the access point using the current MIC/SSC format <i>Cxxx-MacAddr</i> , where <i>xxx</i> is the product number.                                                                                                                            |
| <b>other-params</b>                       | Specifies the device certificate key size settings.                                                                                                                                                                                                                                                       |
| <i>keysize</i>                            | Value from 384 to 2048 (in bits); the default value is 2048.                                                                                                                                                                                                                                              |
| <b>ap-provision</b>                       | Specifies the access point provision list settings.                                                                                                                                                                                                                                                       |
| <b>auth-list</b>                          | Specifies the provision list authorization settings.                                                                                                                                                                                                                                                      |
| <i>ap_mac</i>                             | MAC address of access point to be added or deleted from the provision list.                                                                                                                                                                                                                               |
| <b>revert-cert</b>                        | Specifies the number of times the access point attempts to join the controller using an LSC before reverting to the default certificate.                                                                                                                                                                  |
| <i>retries</i>                            | Value from 0 to 255; the default value is 3.                                                                                                                                                                                                                                                              |
|                                           | <b>Note</b> 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*

|                           |                                                      |
|---------------------------|------------------------------------------------------|
| <b>Syntax Description</b> | <i>client_mac_address</i> MAC address of the client. |
|---------------------------|------------------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                   |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to clear the test results of the client MAC address 172.19.28.40:<br>> <b>config client ccx clear-results 172.19.28.40</b> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>config client ccx default-gw-ping</b><br><b>config client ccx</b><br><b>config client ccx dns-ping</b><br><b>config client ccx dns-resolve</b><br><b>config client ccx test-association</b><br><b>config client ccx test-dot1x</b><br><b>config client ccx test-profile</b><br><b>config client ccx test-abort</b><br><b>config client ccx send-message</b><br><b>show client ccx last-test-status</b><br><b>show client ccx last-response-status</b><br><b>show client ccx results</b><br><b>show client ccx frame-data</b> |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>client_mac_address</i> MAC address of the client.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Usage Guidelines</b>   | This test does not require the client to use the diagnostic channel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Examples</b>           | <p>This example shows how to send a request to the client 00:E0:77:31:A3:55 to perform the DHCP test:</p> <pre>&gt; config client ccx dhcp-test 00:E0:77:31:A3:55</pre>                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Related Commands</b>   | <ul style="list-style-type: none"><li>config client ccx default-gw-ping</li><li>config client ccx dns-ping</li><li>config client ccx dns-resolve</li><li>config client ccx test-association</li><li>config client ccx test-dot1x</li><li>config client ccx test-profile</li><li>config client ccx test-abort</li><li>config client ccx clear-results</li><li>config client ccx send-message</li><li>show client ccx last-test-status</li><li>show client ccx last-response-status</li><li>show client ccx results</li><li>show client ccx frame-data</li></ul> |

# 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

|                           |                            |
|---------------------------|----------------------------|
| <i>client_mac_address</i> | MAC address of the client. |
| <i>host_name</i>          | 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*

|                           |                                                      |
|---------------------------|------------------------------------------------------|
| <b>Syntax Description</b> | <i>client_mac_address</i> MAC address of the client. |
|---------------------------|------------------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to send a request to the client 172.19.28.40 to send its profile details:<br>> <b>config client ccx get-profiles 172.19.28.40</b> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>config client ccx get-operating-parameters</b><br><b>config client ccx get-manufacturer-info</b><br><b>config client ccx get-client-capability</b><br><b>config client ccx clear-reports</b><br><b>show client ccx profiles</b><br><b>show client ccx operating-parameters</b><br><b>show client ccx manufacturer-info</b><br><b>show client ccx client-capability</b><br><b>config client ccx stats-request</b><br><b>show client ccx stats-report</b> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                           |                                                                         |
|---------------------------|-------------------------------------------------------------------------|
| <b>roam</b>               | (Optional) Specifies the request to specify the client CCX roaming log. |
| <b>rsna</b>               | (Optional) Specifies the request to specify the client CCX RSNA log.    |
| <b>syslog</b>             | (Optional) Specifies the request to specify the client CCX system log.  |
| <i>client_mac_address</i> | 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**

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>client_mac_address</i>   | MAC address of the client.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <i>message_id</i>           | <p>Message type that involves one of the following:</p> <ul style="list-style-type: none"> <li>• 1—The SSID is invalid.</li> <li>• 2—The network settings are invalid.</li> <li>• 3—There is a WLAN credibility mismatch.</li> <li>• 4—The user credentials are incorrect.</li> <li>• 5—Please call support.</li> <li>• 6—The problem is resolved.</li> <li>• 7—The problem has not been resolved.</li> <li>• 8—Please try again later.</li> <li>• 9—Please correct the indicated problem.</li> <li>• 10—Troubleshooting is refused by the network.</li> <li>• 11—Retrieving client reports.</li> <li>• 12—Retrieving client logs.</li> <li>• 13—Retrieval complete.</li> <li>• 14—Beginning association test.</li> <li>• 15—Beginning DHCP test.</li> <li>• 16—Beginning network connectivity test.</li> <li>• 17—Beginning DNS ping test.</li> <li>• 18—Beginning name resolution test.</li> <li>• 19—Beginning 802.1X authentication test.</li> <li>• 20—Redirecting client to a specific profile.</li> <li>• 21—Test complete.</li> <li>• 22—Test passed.</li> <li>• 23—Test failed.</li> <li>• 24—Cancel diagnostic channel operation or select a WLAN profile to resume normal operation.</li> <li>• 25—Log retrieval refused by the client.</li> <li>• 26—Client report retrieval refused by the client.</li> <li>• 27—Test request refused by the client.</li> <li>• 28—Invalid network (IP) setting.</li> <li>• 29—There is a known outage or problem with the network.</li> <li>• 30—Scheduled maintenance period.</li> </ul> <p>(continued on next page)</p> |
| <i>message_type (cont.)</i> | <ul style="list-style-type: none"> <li>• 31—The WLAN security method is not correct.</li> <li>• 32—The WLAN encryption method is not correct.</li> <li>• 33—The WLAN authentication method is not correct.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

---

**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                     |                                         |
|----------------------------------------|-----------------------------------------|
| <i>measurement_duration stats_name</i> | Measurement duration in seconds.        |
| <b>dot11</b>                           | (Optional) Specifies dot11 counters.    |
| <b>security</b>                        | (Optional) Specifies security counters. |
| <i>client_mac_address</i>              | 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

|                           |                                |
|---------------------------|--------------------------------|
| <i>client_mac_address</i> | MAC address of the client.     |
| <i>ssid</i>               | Network name.                  |
| <i>bssid</i>              | Basic SSID.                    |
| <b>802.11a</b>            | Specifies the 802.11a network. |
| <b>802.11b</b>            | Specifies the 802.11b network. |
| <b>802.11g</b>            | Specifies the 802.11g network. |
| <i>channel</i>            | 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-dot1x 172.19.28.40 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

|                           |                                                                                                        |
|---------------------------|--------------------------------------------------------------------------------------------------------|
| <i>client_mac_address</i> | MAC address of the client.                                                                             |
| <i>profile_id</i>         | Test profile name.                                                                                     |
| <b>Note</b>               | The <i>profile_id</i> 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*

|                           |                                                                                                                          |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>MAC</i> Client MAC address.                                                                                           |
| <b>Command Default</b>    | None.                                                                                                                    |
| <b>Examples</b>           | <p>This example shows how to deauthenticate a client:</p> <pre>&gt; config client deauthenticate 11:11:11:11:11:11</pre> |
| <b>Related Commands</b>   | <pre>show client summary show client detail</pre>                                                                        |

# 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 | <b>enable</b>      | (Optional) Specifies that client location calibration is enabled.  |
|                    | <i>mac_address</i> | MAC address of the client.                                         |
|                    | <i>interval</i>    | Measurement interval in seconds.                                   |
|                    | <b>disable</b>     | (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 | <b>show client location-calibration summary</b> |
|------------------|-------------------------------------------------|

# config coredump

To enable or disable the controller to generate a core dump file following a crash, use the **config coredump** command.

**config coredump {enable | disable}**

---

**Syntax Description**

|                |                                                       |
|----------------|-------------------------------------------------------|
| <b>enable</b>  | Enables the controller to generate a core dump file.  |
| <b>disable</b> | 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*

|                           |                                                                                                                                                                                                                                                 |                                                                                |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>server_ip_address</i>                                                                                                                                                                                                                        | IP address of the FTP server to which the controller sends its core dump file. |
|                           | <i>filename</i>                                                                                                                                                                                                                                 | Name given to the controller core dump file.                                   |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                           |                                                                                |
| <b>Usage Guidelines</b>   | The controller must be able to reach the FTP server to use this command.                                                                                                                                                                        |                                                                                |
| <b>Examples</b>           | This example shows how to configure the controller to upload a core dump file named <i>core_dump_controller</i> to an FTP server at network address <i>192.168.0.13</i> :<br><br>> <b>config coredump ftp 192.168.0.13 core_dump_controller</b> |                                                                                |
| <b>Related Commands</b>   | <a href="#">config coredump</a><br><a href="#">config coredump username</a><br><a href="#">show coredump summary</a>                                                                                                                            |                                                                                |

# 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

|                     |                            |
|---------------------|----------------------------|
| <i>ftp_username</i> | FTP server login username. |
| <i>ftp_password</i> | 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**

|                     |                                          |
|---------------------|------------------------------------------|
| <i>country_code</i> | 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**

|                |                                             |
|----------------|---------------------------------------------|
| <b>enable</b>  | Enables CTS connections on the controller.  |
| <b>disable</b> | 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 | <b>delete</b>     | Deletes the CTS connection on the controller.                          |
|                    | <b>peer</b>       | Configures the next hop switch with which the controller is connected. |
|                    | <i>ip-address</i> | IPv4 address of the peer.                                              |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|                  |                                                                      |
|------------------|----------------------------------------------------------------------|
| Usage Guidelines | Default password should be configured before adding CTS connections. |
|------------------|----------------------------------------------------------------------|

|          |                                                                                                                                        |
|----------|----------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure a peer for a CTS connection:</p> <pre>&gt; config cts sxp connection peer 209.165.200.224</pre> |
|----------|----------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                           |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">config cts sxp</a><br/><a href="#">config cts sxp default password</a><br/><a href="#">config cts sxp retry period</a></p> |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------|

## 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**

|                 |                                                                                                                   |
|-----------------|-------------------------------------------------------------------------------------------------------------------|
| <i>password</i> | 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 | <i>time-in-seconds</i> | 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:<br>> <b>config cts sxp retry period 20</b> |
|----------|--------------------------------------------------------------------------------------------------------------------|
|----------|--------------------------------------------------------------------------------------------------------------------|

| Related Commands | <a href="#">config cts sxp</a><br><a href="#">config cts sxp connection</a><br><a href="#">config cts sxp default password</a> |
|------------------|--------------------------------------------------------------------------------------------------------------------------------|
|------------------|--------------------------------------------------------------------------------------------------------------------------------|

# 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**

|                |                                                           |
|----------------|-----------------------------------------------------------|
| <b>enable</b>  | Enables the external URL web-based client authorization.  |
| <b>disable</b> | 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  
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**

|            |                                              |
|------------|----------------------------------------------|
| <i>URL</i> | 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**  
**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

|                   |                                                                                                                   |
|-------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>add</b>        | Adds an external web server.                                                                                      |
| <i>index</i>      | Index of the external web server in the list of external web server. The index must be a number between 1 and 20. |
| <i>IP_address</i> | IP address of the external web server.                                                                            |
| <b>delete</b>     | 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 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*

|                           |                                                                                                                                                                                                                                                            |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>URL</i> URL that is redirected to the specified address.                                                                                                                                                                                                |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                      |
| <b>Examples</b>           | <p>This example shows how to configure the URL that is redirected to abc.com:</p> <pre>&gt; config custom-web redirectUrl abc.com</pre>                                                                                                                    |
| <b>Related Commands</b>   | <p><b>config custom-web weblogo</b></p> <p><b>config custom-web webmessage</b></p> <p><b>config custom-web webtitle</b></p> <p><b>config custom-web ext-webauth-mode</b></p> <p><b>config custom-web ext-webauth-url</b></p> <p><b>show custom-web</b></p> |

# 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

|                   |                                                 |
|-------------------|-------------------------------------------------|
| <b>internal</b>   | Sets the web authentication type to internal.   |
| <b>customized</b> | Sets the web authentication type to customized. |
| <b>external</b>   | 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**  
**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

|                |                                                         |
|----------------|---------------------------------------------------------|
| <b>enable</b>  | Enables the web authentication logo settings.           |
| <b>disable</b> | 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**  
**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**

|                |                                      |
|----------------|--------------------------------------|
| <i>message</i> | 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**

|              |                                           |
|--------------|-------------------------------------------|
| <i>title</i> | 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**

|              |                                          |
|--------------|------------------------------------------|
| <i>count</i> | 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

|                                                                                     |                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>address-pool</b> <i>scope start end</i>                                          | Configures an address range to allocate. You must specify the scope name and the first and last addresses of the address range.                                                                |
| <b>create-scope</b> <i>name</i>                                                     | Creates a new DHCP scope. You must specify the scope name.                                                                                                                                     |
| <b>default-router</b> <i>scope router_1</i> [ <i>router_2</i> ] [ <i>router_3</i> ] | 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.                 |
| <b>delete-scope</b> <i>scope</i>                                                    | Deletes the specified DHCP scope.                                                                                                                                                              |
| <b>disable</b> <i>scope</i>                                                         | Disables the specified DHCP scope.                                                                                                                                                             |
| <b>dns-servers</b> <i>scope dns1</i> [ <i>dns2</i> ] [ <i>dns3</i> ]                | 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.                              |
| <b>domain</b> <i>scope domain</i>                                                   | Configures the DNS domain name. You must specify the scope and domain names.                                                                                                                   |
| <b>enable</b> <i>scope</i>                                                          | Enables the specified dhcp scope.                                                                                                                                                              |
| <b>lease</b> <i>scope lease_duration</i>                                            | Configures the lease duration (in seconds) for the specified scope.                                                                                                                            |
| <b>netbios-name-server</b> <i>scope wins1</i> [ <i>wins2</i> ] [ <i>wins3</i> ]     | 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. |
| <b>network</b> <i>scope network netmask</i>                                         | Configures the network and netmask. You must specify the scope name, the network address, and the network mask.                                                                                |
| <b>opt-82 remote-id</b>                                                             | Configures the DHCP Option 82 Remote ID Field Format.                                                                                                                                          |
| <i>ap_mac</i>                                                                       | MAC address of the access point to the DHCP option 82 payload.                                                                                                                                 |
| <i>ap_mac:ssid</i>                                                                  | MAC address and SSID of the access point to the DHCP option 82 payload.                                                                                                                        |
| <i>ap-ethmac</i>                                                                    | Remote ID format as <b>AP Ethernet MAC Address</b> .                                                                                                                                           |

## 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 | <b>enable</b>          | Allows the controller to modify the DHCP packets without a limit. |
|                    | <b>disable</b>         | Reduces the DHCP packet modification to the level of a relay.     |
|                    | <b>bootp-broadcast</b> | 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 wireless 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 | <i>timeout-value</i> | 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:<br>> <b>config dhcp timeout 10</b> |
|----------|--------------------------------------------------------------------------------------------------|
|----------|--------------------------------------------------------------------------------------------------|

| Related Commands | <a href="#">config dhcp</a><br><a href="#">config interface dhcp</a><br><a href="#">config wlan dhcp_server</a><br><a href="#">config wlan passive-client</a><br><a href="#">debug dhcp</a><br><a href="#">debug dhcp service-port</a><br><a href="#">debug disable-all</a><br><a href="#">show dhcp</a><br><a href="#">show dhcp proxy</a> |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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 | <b>config exclusionlist</b> | Configures the exclusion list.                                      |
|                    | <b>add</b>                  | Creates a local exclusion-list entry.                               |
|                    | <b>delete</b>               | Deletes a local exclusion-list entry                                |
|                    | <b>description</b>          | Specifies the description for an exclusion-list entry.              |
|                    | <i>MAC</i>                  | MAC address of the local Excluded entry.                            |
|                    | <i>description</i>          | (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 | <b>create</b>         | Creates a wired LAN settings.                    |
|                    | <b>delete</b>         | Deletes a wired LAN settings:                    |
|                    | <i>guest_lan_id</i>   | LAN identifier between 1 and 5 (inclusive).      |
|                    | <i>interface_name</i> | Interface name up to 32 alphanumeric characters. |
|                    | <b>enable</b>         | Enables a wireless LAN.                          |
|                    | <b>disable</b>        | Disables a wireless LAN.                         |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                            |
|----------|------------------------------------------------------------------------------------------------------------|
| Examples | This example shows how to enable a wireless LAN with the LAN ID 16:<br>> <b>config guest-lan enable 16</b> |
|----------|------------------------------------------------------------------------------------------------------------|

|                  |                           |
|------------------|---------------------------|
| Related Commands | <a href="#">show wlan</a> |
|------------------|---------------------------|

## 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

|                     |                                                   |
|---------------------|---------------------------------------------------|
| <i>ext_web_url</i>  | URL for the external server.                      |
| <i>guest_lan_id</i> | 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*

|                           |                                                                                                                                                                                 |                     |                                                   |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------|
| <b>Syntax Description</b> | <table><tr><td><i>guest_lan_id</i></td><td>Guest LAN identifier between 1 and 5 (inclusive).</td></tr></table>                                                                  | <i>guest_lan_id</i> | Guest LAN identifier between 1 and 5 (inclusive). |
| <i>guest_lan_id</i>       | Guest LAN identifier between 1 and 5 (inclusive).                                                                                                                               |                     |                                                   |
| <b>Command Default</b>    | None.                                                                                                                                                                           |                     |                                                   |
| <b>Usage Guidelines</b>   | If you enter the <b>config guest-lan custom-web global enable</b> <i>guest_lan_id</i> command, the custom web authentication configuration at the global level is used.         |                     |                                                   |
| <b>Examples</b>           | <p>This example shows how to disable the global web configuration for guest LAN ID 1:</p> <pre>&gt; config guest-lan custom-web global disable 1</pre>                          |                     |                                                   |
| <b>Related Commands</b>   | <pre>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</pre> |                     |                                                   |

# 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

|                     |                                                   |
|---------------------|---------------------------------------------------|
| <i>page_name</i>    | Name of the customized web login page.            |
| <i>guest_lan_id</i> | 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***

|                           |                     |                                                                                    |
|---------------------------|---------------------|------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>internal</b>     | Displays the default web login page for the controller. This is the default value. |
|                           | <b>customized</b>   | Displays the custom web login page that was previously configured.                 |
|                           | <b>external</b>     | Redirects users to the URL that was previously configured.                         |
|                           | <i>guest_lan_id</i> | Guest LAN identifier between 1 and 5 (inclusive).                                  |

|                        |           |
|------------------------|-----------|
| <b>Command Default</b> | Internal. |
|------------------------|-----------|

|                 |                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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**

|                         |                                                                                                                 |
|-------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>config guest-lan</b><br><b>config guest-lan create</b><br><b>config guest-lan custom-web ext-webauth-url</b> |
|-------------------------|-----------------------------------------------------------------------------------------------------------------|

## 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

|                       |                                                   |
|-----------------------|---------------------------------------------------|
| <i>guest_lan_id</i>   | Guest LAN identifier between 1 and 5 (inclusive). |
| <i>interface_name</i> | 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*

|                           |                       |                                                   |
|---------------------------|-----------------------|---------------------------------------------------|
| <b>Syntax Description</b> | <i>guest_lan_id</i>   | Guest LAN identifier between 1 and 5 (inclusive). |
|                           | <i>interface_name</i> | Interface name.                                   |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                                                                    |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>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:</p> <pre>&gt; config guest-lan interface 1 guest01</pre> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                        |
|-------------------------|----------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><b>config ingress-interface guest-lan</b></p> <p><b>config guest-lan create</b></p> |
|-------------------------|----------------------------------------------------------------------------------------|

# 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

|                  |                                    |
|------------------|------------------------------------|
| <b>add</b>       | Adds a mobility anchor.            |
| <b>delete</b>    | Deletes a mobility anchor.         |
| <i>wlan_id</i>   | WLAN identifier.                   |
| <i>anchor_ip</i> | 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 | <b>enable</b>       | Enables the NAC out-of-band support.              |
|                    | <b>disable</b>      | Disables the NAC out-of-band support.             |
|                    | <i>guest_lan_id</i> | Guest LAN identifier between 1 and 5 (inclusive). |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                       |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable the NAC out-of-band support for guest LAN ID 3:</p> <pre>&gt; config guest-lan nac enable 3</pre> |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                   |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">show nac statistics</a><br/><a href="#">show nac summary</a><br/><a href="#">config wlan nac</a><br/><a href="#">debug nac</a></p> |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|

## 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

|                          |                                                                                     |
|--------------------------|-------------------------------------------------------------------------------------|
| <b>web-auth</b>          | Specifies web authentication.                                                       |
| <b>enable</b>            | Enables the web authentication settings.                                            |
| <b>disable</b>           | Disables the web authentication settings.                                           |
| <b>acl</b>               | Configures an access control list.                                                  |
| <b>server-precedence</b> | Configures the authentication server precedence order for web authentication users. |
| <i>guest_lan_id</i>      | LAN identifier between 1 and 5 (inclusive).                                         |
| <b>web-passthrough</b>   | Specifies the web captive portal with no authentication required.                   |
| <b>email-input</b>       | 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

|                 |                                                          |
|-----------------|----------------------------------------------------------|
| <b>apply</b>    | Applies an ACL to the data path.                         |
| <b>create</b>   | Creates an ACL.                                          |
| <b>delete</b>   | Deletes an ACL.                                          |
| <i>acl_name</i> | 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

|                            |                                                          |
|----------------------------|----------------------------------------------------------|
| <b>action</b>              | Configures whether to permit or deny access.             |
| <i>rule_name</i>           | ACL name that contains up to 32 alphanumeric characters. |
| <i>rule_index</i>          | Rule index between 1 and 32.                             |
| <b>permit</b>              | Permits the rule action.                                 |
| <b>deny</b>                | Denies the rule action.                                  |
| <b>add</b>                 | Adds a new rule.                                         |
| <b>change</b>              | Changes a rule's index.                                  |
| <b>index</b>               | Specifies a rule index.                                  |
| <b>delete</b>              | Deletes a rule.                                          |
| <b>destination address</b> | Configures a rule's destination IP address and netmask.  |
| <i>ip_address</i>          | IP address of the rule.                                  |
| <i>netmask</i>             | Netmask of the rule.                                     |
| <i>start_port</i>          | Start port number (between 0 and 65535).                 |
| <i>end_port</i>            | End port number (between 0 and 65535).                   |
| <b>direction</b>           | Configures a rule's direction to in, out, or any.        |
| <b>in</b>                  | Configures a rule's direction to in.                     |
| <b>out</b>                 | Configures a rule's direction to out.                    |
| <b>any</b>                 | Configures a rule's direction to any.                    |
| <b>dscp</b>                | Configures a rule's DSCP.                                |
| <i>dscp</i>                | Number between 0 and 63, or <b>any</b> .                 |
| <b>protocol</b>            | Configures a rule's DSCP.                                |
| <i>protocol</i>            | Number between 0 and 255, or <b>any</b> .                |
| <b>source address</b>      | Configures a rule's source IP address and netmask.       |
| <b>source port range</b>   | Configures a rule's source port range.                   |
| <b>swap</b>                | Swaps two rules' indices.                                |



|                |                                              |
|----------------|----------------------------------------------|
| <i>index_1</i> | The rule first index to swap.                |
| <i>index_2</i> | 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

|                      |                                                                                  |
|----------------------|----------------------------------------------------------------------------------|
| <i>group_name</i>    | Group name.                                                                      |
| <b>add</b>           | Adds a FlexConnect group.                                                        |
| <b>delete</b>        | Deletes a FlexConnect group.                                                     |
| <b>ap</b>            | Adds or deletes an access point to a FlexConnect group.                          |
| <i>ap-mac</i>        | MAC address of the access point.                                                 |
| <b>radius server</b> | Configures a primary or secondary RADIUS server for a FlexConnect group.         |
| <b>primary</b>       | Designates a RADIUS server as primary server.                                    |
| <b>secondary</b>     | Designates a RADIUS server as secondary server.                                  |
| <i>server_index</i>  | 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.                             |
| <b>pre-download</b>  | 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 pnt in the FlexConnect group as the master AP.     |
| ap_name              | Access point name.                                                               |
| slave                | Manually designates an access point in the FlexConnect group as the slave AP.    |
| <b>retry-count</b>   | Number of times the slave access point must try the predownload from the master. |
| <b>cisco_ap</b>      | 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 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

|                 |                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------|
| <b>enable</b>   | Enables the access point to choose the controller with the least latency when joining.  |
| <b>disable</b>  | Disables the access point to choose the controller with the least latency when joining. |
| <i>cisco_ap</i> | 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 Cisco 5500 Series Controller that responds first.

## 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

|                                  |                                                     |
|----------------------------------|-----------------------------------------------------|
| <b>enable</b>                    | Enables the OfficeExtend mode for an access point.  |
| <b>disable</b>                   | Disables the OfficeExtend mode for an access point. |
| <b>clear-personalssid-config</b> | Clears only the access point's personal SSID.       |
| <i>cisco_ap</i>                  | 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

|                                    |                                                                                                          |
|------------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>create</b>                      | Adds a new interface group.                                                                              |
| <i>interface-group-name</i>        | Interface group's name.                                                                                  |
| <i>interface-group-description</i> | Interface group's description to be entered within double-quotes.<br>Valid range is up to 32 characters. |
| <b>delete</b>                      | Deletes an interface group.                                                                              |
| <b>interface</b>                   | Edits the list of interface represented by the interface group.                                          |
| <b>add</b>                         | Adds a new interface to the interface group.                                                             |
| <b>delete</b>                      | Deletes an interface from the interface group.                                                           |
| <b>description</b>                 | 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** }

|                           |                       |                                                |
|---------------------------|-----------------------|------------------------------------------------|
| <b>Syntax Description</b> | <b>ap-manager</b>     | Configures the access point manager interface. |
|                           | <b>management</b>     | Configures the management interface.           |
|                           | <i>interface_name</i> | Interface name.                                |
|                           | <i>ACL</i>            | ACL name up to 32 alphanumeric characters.     |
|                           | <b>none</b>           | 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    |      |                                                                            |
|-----------------------|------|----------------------------------------------------------------------------|
| <b>ap-manager</b>     |      | Specifies the access point manager interface.                              |
| <i>IP_address</i>     |      | IP address.                                                                |
| <i>netmask</i>        |      | Network mask.                                                              |
| <i>gateway</i>        |      | IP address of the gateway.                                                 |
| <b>management</b>     |      | Specifies the management interface.                                        |
| <b>service-port</b>   |      | Specifies the out-of-band service port interface.                          |
| <b>virtual</b>        |      | Specifies the virtual gateway interface.                                   |
| <b>interface-name</b> |      | Specifies the interface identified by the <i>interface-name</i> parameter. |
| <i>interface-name</i> | Inte | rface 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

|                       |                                                                |
|-----------------------|----------------------------------------------------------------|
| <b>management</b>     | Specifies the management interface.                            |
| <i>interface_name</i> | Dynamic interface name.                                        |
| <b>enable</b>         | Enables access point manager features on a dynamic interface.  |
| <b>disable</b>        | 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

|                       |                  |
|-----------------------|------------------|
| <i>interface_name</i> | Interface name.  |
| <i>vlan-id</i>        | 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*

|                           |                                                                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>interface-name</i> Interface name.                                                                           |
| <b>Command Default</b>    | None.                                                                                                           |
| <b>Examples</b>           | This example shows how to delete a dynamic interface named VLAN501:<br>> <b>config interface delete VLAN501</b> |
| <b>Related Commands</b>   | <b>show interface</b>                                                                                           |

# 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

|                          |                                                                                                                               |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>ap-manager</b>        | Configures the access point manager interface.                                                                                |
| <b>primary</b>           | (Optional) Specifies the primary DHCP server.                                                                                 |
| <i>dhcp_server</i>       | IP address of the server.                                                                                                     |
| <b>secondary</b>         | (Optional) Specifies the secondary DHCP server.                                                                               |
| <b>option-82</b>         | (Optional) Configures DHCP Option 82 on the interface.                                                                        |
| <b>enable</b>            | (Optional) Enables the feature.                                                                                               |
| <b>disable</b>           | (Optional) Disables the feature.                                                                                              |
| <b>management</b>        | Configures the management interface.                                                                                          |
| <b>service-port</b>      | Specifies the DHCP for the out-of-band service port.                                                                          |
| <b>dynamic-interface</b> | Specifies the interface and the primary DHCP server. Optionally, you can also enter the address of the alternate DHCP server. |
| <i>name</i>              | 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
```

## ■ config interface dhcp

```
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

|                             |                                                                                                                                                                                        |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>create</b>               | Adds a new interface group.                                                                                                                                                            |
| <b>delete</b>               | Deletes an interface group.                                                                                                                                                            |
| <i>interface_group_name</i> | Interface group name that can be up to 32 alphanumeric characters.<br><br><b>Note</b> To display details of all interface groups, use the <b>show interface group summary</b> command. |
| <b>description</b>          | Adds a description to the specified interface group.                                                                                                                                   |
| <i>description_details</i>  | Description of the interface group to be entered. The description can be up to 32 alphanumeric characters within double-quotes, including the double-quotes.                           |
| <b>interface</b>            | Edits the list of interfaces in an interface group.                                                                                                                                    |
| <b>add</b>                  | Adds a new interface to an interface group.                                                                                                                                            |
| <b>delete</b>               | Deletes an interface from an interface group.                                                                                                                                          |
| <i>interface_name</i>       | Interface name that can be up to 32 alphanumeric characters.<br><br><b>Note</b> To display details of all the interfaces, use the <b>show interface summary</b> 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

|                       |                         |
|-----------------------|-------------------------|
| <i>interface_name</i> | Interface name.         |
| <b>enable</b>         | Enables the guest LAN.  |
| <b>disable</b>        | 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

|                 |                                                                                                                                                                                                                                                                      |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>virtual</b>  | Specifies the virtual gateway interface to use the specified virtual address of the fully qualified DNS name.<br><br>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. |
| <i>DNS_host</i> | 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

|                                                |                                                   |
|------------------------------------------------|---------------------------------------------------|
| <b>management</b>                              | Specifies the management interface.               |
| <b>dynamic-interface</b> <i>interface_name</i> | Specifies the dynamic interface name.             |
| <b>enable</b>                                  | Enables one-to-one mapping NAT on the interface.  |
| <b>disable</b>                                 | Disables one-to-one mapping NAT on the interface. |
| <i>public_IP_address</i>                       | 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 NAT 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 | <b>management</b>                                                                                                             | Specifies the management interface.        |
|                    | <i>interface_name</i>                                                                                                         | Interface name.                            |
|                    | <i>primary_port</i>                                                                                                           | Primary physical port number.              |
|                    | <i>secondary_port</i>                                                                                                         | (Optional) Secondary physical port number. |
| Command Default    | None.                                                                                                                         |                                            |
| Usage Guidelines   | You can use the <b>management</b> 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:<br>> <b>config interface port lab02 3</b> |                                            |
| Related Commands   | <b>show interface</b><br><b>config interface create</b>                                                                       |                                            |

# 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

|                       |                                           |
|-----------------------|-------------------------------------------|
| <i>interface-name</i> | Interface's name.                         |
| <i>vlan_id</i>        | VLAN identifier.                          |
| <b>Note</b>           | 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*

|                           |                       |                                                |
|---------------------------|-----------------------|------------------------------------------------|
| <b>Syntax Description</b> | <b>ap-manager</b>     | Configures the access point manager interface. |
|                           | <b>management</b>     | Configures the management interface.           |
|                           | <i>interface_name</i> | Interface name.                                |
|                           | <i>vlan</i>           | VLAN identifier.                               |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure VLAN ID 10 on the management interface:</p> <pre>&gt; config interface vlan management 01</pre> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|

|                         |                |
|-------------------------|----------------|
| <b>Related Commands</b> | show interface |
|-------------------------|----------------|

# config lag

To enable or disable link aggregation (LAG), use the **config lag** command.

**config lag {enable | disable}**

## Syntax Description

|                |                                               |
|----------------|-----------------------------------------------|
| <b>enable</b>  | Enables the link aggregation (LAG) settings.  |
| <b>disable</b> | 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

|                           |                                                            |
|---------------------------|------------------------------------------------------------|
| <b>add</b>                | Specifies that an LDAP server is being added.              |
| <b>delete</b>             | Specifies that an LDAP server is being deleted.            |
| <b>enable</b>             | Specifies that an LDAP serve is enabled.                   |
| <b>disable</b>            | Specifies that an LDAP server is disabled.                 |
| <b>retransmit-timeout</b> | Changes the default retransmit timeout for an LDAP server. |
| <i>index</i>              | 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 ldap add** *index server\_ip\_address port user\_base user\_attr user\_type*

## Syntax Description

|                          |                                                                    |
|--------------------------|--------------------------------------------------------------------|
| <i>index</i>             | LDAP server index.                                                 |
| <i>server_ip_address</i> | IP address of the LDAP server.                                     |
| <i>port</i>              | Port number.                                                       |
| <i>user_base</i>         | Distinguished name for the subtree that contains all of the users. |
| <i>user_attr</i>         | Attribute that contains the username.                              |
| <i>user_type</i>         | 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 | <b>anonymous</b>     | Allows anonymous access to the LDAP server.                                            |
|                    | <i>index</i>         | LDAP server index.                                                                     |
|                    | <b>authenticated</b> | Specifies that a username and password be entered to secure access to the LDAP server. |
|                    | <i>username</i>      | Username for the authenticated bind method.                                            |
|                    | <i>password</i>      | Password for the authenticated bind method.                                            |

|                 |                                               |
|-----------------|-----------------------------------------------|
| Command Default | The default bind method is <b>anonymous</b> . |
|-----------------|-----------------------------------------------|

|          |                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------|
| 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 | <a href="#">config ldap</a><br><a href="#">config ldap add</a><br><a href="#">show ldap summary</a> |
|------------------|-----------------------------------------------------------------------------------------------------|

# 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

|                      |                                                                                                |
|----------------------|------------------------------------------------------------------------------------------------|
| <b>default</b>       | Specifies the default license agent.                                                           |
| <b>disable</b>       | Disables the feature.                                                                          |
| <b>authenticate</b>  | Enables authentication.                                                                        |
| <b>none</b>          | (Optional) Disables authentication.                                                            |
| <b>listener http</b> | Configures the license agent to receive license requests from the Cisco License Manager (CLM). |
| <b>plaintext</b>     | Disables encryption (HTTP).                                                                    |
| <b>encrypt</b>       | Enables encryption (HTTPS).                                                                    |
| <i>url</i>           | URL where the license agent receives the requests.                                             |
| <b>acl</b>           | Specifies the access control list.                                                             |
| <i>acl</i>           | (Optional) Specifies the access control list for license requests.                             |
| <b>max-message</b>   | Specifies the maximum message size for license requests.                                       |
| <i>size</i>          | The maximum message size for license request is from 0 to 65535.                               |
| <b>max-session</b>   | Specifies the maximum number of sessions allowed.                                              |
| <i>sessions</i>      | The maximum number of sessions allowed for the license agent is from 1 to 25.                  |
| <b>notify</b>        | Configures the license agent to send license notifications to the CLM.                         |
| <i>username</i>      | Username used in license agent notification.                                                   |
| <i>password</i>      | 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

|              |                                 |
|--------------|---------------------------------|
| <b>base</b>  | Specifies the base boot level.  |
| <b>wplus</b> | Specifies the wplus boot level. |
| <b>auto</b>  | 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

|                     |                                                                                  |
|---------------------|----------------------------------------------------------------------------------|
| <b>window</b>       | Specifies the aggressive load balancing client window.                           |
| <i>client_count</i> | Aggressive load balancing client window with the number of clients from 1 to 20. |
| <b>status</b>       | Sets the load balancing status.                                                  |
| <b>enable</b>       | Enables load balancing feature.                                                  |
| <b>disable</b>      | Disables load balancing feature.                                                 |
| <b>denial</b>       | Specifies the number of association denials during load balancing.               |
| <i>denial_count</i> | 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

|                |                                                            |
|----------------|------------------------------------------------------------|
| <i>timeout</i> | 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  |                                                                                                                                                                                                           |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>add</b>          | (Optional) Specifies that an EAP profile or method is being added.                                                                                                                                        |
| <b>delete</b>       | (Optional) Specifies that an EAP profile or method is being deleted.                                                                                                                                      |
| <i>profile_name</i> | EAP profile name (upto 63 alphanumeric characters). Do not include spaces within a profile name.                                                                                                          |
| <b>cert-issuer</b>  | (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. |
| <b>Cisco</b>        | Specifies the Cisco certificate issuer.                                                                                                                                                                   |
| <b>Vendor</b>       | Specifies the third-party vendor.                                                                                                                                                                         |
| <b>method</b>       | Configures an EAP profile method.                                                                                                                                                                         |
| <i>method</i>       | EAP profile method name. The supported methods are leap, fast, tls, and peap.                                                                                                                             |
| <b>local-cert</b>   | (For use with EAP-FAST) Specifies whether the device certificate on the controller is required for authentication.                                                                                        |
| <b>enable</b>       | Specifies that the parameter is enabled.                                                                                                                                                                  |
| <b>disable</b>      | Specifies that the parameter is disabled.                                                                                                                                                                 |
| <b>client-cert</b>  | (For use with EAP-FAST) Specifies whether wireless clients are required to send their device certificates to the controller in order to authenticate.                                                     |
| <b>peer-verify</b>  | Configures the peer certificate verification options.                                                                                                                                                     |
| <b>ca-issuer</b>    | (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. |
| <b>cn-verify</b>    | (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.             |
| <b>date-valid</b>   | (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  |  |                                                                                                                                                                                               |
|---------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>anon-prov</b>    |  | 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. |
| <b>enable</b>       |  | (Optional) Specifies that the parameter is enabled.                                                                                                                                           |
| <b>disable</b>      |  | (Optional) Specifies that the parameter is disabled.                                                                                                                                          |
| <b>authority-id</b> |  | Configures the authority identifier of the local EAP-FAST server.                                                                                                                             |
| <i>auth_id</i>      |  | Authority identifier of the local EAP-FAST server (2 to 32 hexadecimal digits).                                                                                                               |
| <b>pac-ttl</b>      |  | Configures the number of days for the Protected Access Credentials (PAC) to remain viable (also known as the time-to-live [TTL] value).                                                       |
| <i>days</i>         |  | Time-to-live value (TTL) value (1 to 1000 days).                                                                                                                                              |
| <b>server-key</b>   |  | Configures the server key to encrypt or decrypt PACs.                                                                                                                                         |
| <i>key_value</i>    |  | 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

|              |                                                                                                                           |
|--------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>local</b> | Specifies that the local database is searched for the user credentials.                                                   |
| <b>ldap</b>  | (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

|                           |                                                                                                                                                                                                                         |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>add</b>                | Adds a location element.                                                                                                                                                                                                |
| <i>location</i>           | Location element name.                                                                                                                                                                                                  |
| <i>description</i>        | Element description. Optional with the <b>add</b> command, and required with the <b>description</b> command.                                                                                                            |
| <b>delete</b>             | Deletes a location element.                                                                                                                                                                                             |
| <b>enable</b>             | Enables the access point location-based overrides.                                                                                                                                                                      |
| <b>disable</b>            | Disables the access point location-based overrides.                                                                                                                                                                     |
| <b>algorithm</b>          | <p><b>Note</b> We recommend that you do not use or modify the <b>config location algorithm</b> command. It is set to optimal default values.</p> <p>Configures the algorithm used to average RSSI and SNR values.</p>   |
| <b>simple</b>             | Specifies a faster algorithm that requires low CPU overhead but provides less accuracy.                                                                                                                                 |
| <b>rssi-average</b>       | Specifies a more accurate algorithm but requires more CPU overhead.                                                                                                                                                     |
| <b>rssi-half-life</b>     | <p><b>Note</b> We recommend that you do not use or modify the <b>config location rssi-half-life</b> command. It is set to optimal default values.</p> <p>Configures the half-life when averaging two RSSI readings.</p> |
| <b>expiry</b>             | <p><b>Note</b> We recommend that you do not use or modify the <b>config location expiry</b> command. It is set to optimal default values.</p> <p>Configures the timeout for RSSI values.</p>                            |
| <b>client</b>             | (Optional) Specifies the parameter applies to client devices.                                                                                                                                                           |
| <b>calibrating-client</b> | (Optional) Specifies the parameter is used for calibrating client devices.                                                                                                                                              |
| <b>tags</b>               | (Optional) Specifies the parameter applies to radio frequency identification (RFID) tags.                                                                                                                               |
| <b>rogue-aps</b>          | (Optional) Specifies the parameter applies to rogue access points.                                                                                                                                                      |
| <i>seconds</i>            | Time value (0, 1, 2, 5, 10, 20, 30, 60, 90, 120, 180, 300 seconds).                                                                                                                                                     |
| <b>notify-threshold</b>   | <p><b>Note</b> We recommend that you do not use or modify the <b>config location notify-threshold</b> command. It is set to optimal default values.</p> <p>NMSP notification threshold for RSSI measurements.</p>       |
| <i>threshold</i>          | Threshold parameter. The range is 0 to 10 dB, and the default value is 0 dB.                                                                                                                                            |
| <b>interface-mapping</b>  | Adds or deletes a new location, wireless LAN, or interface mapping element.                                                                                                                                             |

|                       |                                                                                              |
|-----------------------|----------------------------------------------------------------------------------------------|
| <i>wlan_id</i>        | WLAN identification name.                                                                    |
| <i>interface_name</i> | Name of interface to which mapping element applies.                                          |
| <b>plm</b>            | Specifies the path loss measurement (S60) request for normal clients or calibrating clients. |
| <b>client</b>         | Specifies normal, noncalibrating clients.                                                    |
| <i>burst_interval</i> | Burst interval. The range is 1 to 3600 seconds, and the default value is 60 seconds.         |
| <b>calibrating</b>    | Specifies calibrating clients.                                                               |
| <b>uniband</b>        | Specifies the associated 802.11a or 802.11b/g radio (uniband).                               |
| <b>multiband</b>      | 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***

|                           |                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>security_level</i>                                                                                                               | Security level. Choose one of the following: <ul style="list-style-type: none"><li>emergencies—Severity level 0</li><li>alerts—Severity level 1</li><li>critical—Severity level 2</li><li>errors—Severity level 3</li><li>warnings—Severity level 4</li><li>notifications—Severity level 5</li><li>informational—Severity level 6</li><li>debugging—Severity level 7</li></ul> |
| <b>Command Default</b>    | None.                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Examples</b>           | This example shows how to set the controller buffer severity level for logging messages to 4:<br>> <b>config logging buffered 4</b> |                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Related Commands</b>   | <a href="#">config logging syslog facility</a><br><a href="#">config logging syslog level</a><br><a href="#">show logging</a>       |                                                                                                                                                                                                                                                                                                                                                                                |

# 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 | <b>buffered</b> | Saves debug messages to the controller buffer.  |
|                    | <b>console</b>  | Saves debug messages to the controller console. |
|                    | <b>syslog</b>   | Saves debug messages to the syslog server.      |
|                    | <b>enable</b>   | Enables logging of debug messages.              |
|                    | <b>disable</b>  | 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**

|                |                                                                                                |
|----------------|------------------------------------------------------------------------------------------------|
| <b>enable</b>  | Includes information about the source file in the message logs.                                |
| <b>disable</b> | 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 | <b>enable</b>  | Includes process information in the message logs.                                |
|--------------------|----------------|----------------------------------------------------------------------------------|
|                    | <b>disable</b> | Prevents the controller from displaying process information in the message logs. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                    |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to enable the controller to include the process information in the message logs:<br>> <b>config logging procinfo enable</b> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                     |
|-------------------------|---------------------|
| <b>Related Commands</b> | <b>show logging</b> |
|-------------------------|---------------------|

# 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

|                |                                                                                    |
|----------------|------------------------------------------------------------------------------------|
| <b>enable</b>  | Includes traceback information in the message logs.                                |
| <b>disable</b> | 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*}

|                           |                                                                                                                                                                    |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>host_IP_address</i> IP address for the remote host.                                                                                                             |
| <b>Command Default</b>    | None.                                                                                                                                                              |
| <b>Usage Guidelines</b>   | To remove a remote host that was configured for sending syslog messages, enter the <b>config logging syslog host</b> <i>host_IP_address</i> <b>delete</b> command. |
| <b>Examples</b>           | This example shows how to configure a remote host 10.92.125.52 for sending the syslog messages:<br>> <b>config logging syslog host 10.92.125.51</b>                |
| <b>Related Commands</b>   | <b>config logging syslog facility</b><br><b>config logging syslog level</b><br><b>show logging</b>                                                                 |

# 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 login session close

To close all active Telnet session(s), use the **config login session close** command.

**config login session close** {*session\_id* | **all**}

|                    |                   |                             |
|--------------------|-------------------|-----------------------------|
| Syntax Description | <i>session_id</i> | ID of the session to close. |
|                    | <b>all</b>        | Closes all Telnet sessions. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                        |
|----------|--------------------------------------------------------------------------------------------------------|
| Examples | This example shows how to close all active Telnet sessions:<br>> <b>config login session close all</b> |
|----------|--------------------------------------------------------------------------------------------------------|

|                  |                                    |
|------------------|------------------------------------|
| Related Commands | <a href="#">show login session</a> |
|------------------|------------------------------------|

# 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**

|                |                                     |
|----------------|-------------------------------------|
| <b>enable</b>  | Enables LSC on mesh access points.  |
| <b>disable</b> | Disables 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 login session](#)



## 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

|                            |                                                               |
|----------------------------|---------------------------------------------------------------|
| <b>apply</b>               | Apply an IPv6 ACL.                                            |
| <b>create</b>              | Create an IPv6 ACL.                                           |
| <b>delete</b>              | Delete an IPv6 ACL.                                           |
| <b>rule</b>                | Configure the IPv6 ACL.                                       |
| <i>ipv6_acl_name</i>       | IPv6 ACL name that contains up to 32 alphanumeric characters. |
| <b>action</b>              | Configures whether to permit or deny access.                  |
| <i>rule_name</i>           | ACL name that contains up to 32 alphanumeric characters.      |
| <i>rule_index</i>          | Rule index between 1 and 32.                                  |
| <b>permit</b>              | Permits the rule action.                                      |
| <b>deny</b>                | Denies the rule action.                                       |
| <b>add</b>                 | Adds a new rule.                                              |
| <b>change</b>              | Changes a rule's index.                                       |
| <b>index</b>               | Specifies a rule index.                                       |
| <b>delete</b>              | Deletes a rule.                                               |
| <b>destination address</b> | Configures a rule's destination IP address and netmask.       |
| <i>ip_address</i>          | IP address of the rule.                                       |
| <i>netmask</i>             | Netmask of the rule.                                          |
| <i>start_port</i>          | Start port number (between 0 and 65535).                      |
| <i>end_port</i>            | End port number (between 0 and 65535).                        |
| <b>direction</b>           | Configures a rule's direction to in, out, or any.             |
| <b>in</b>                  | Configures a rule's direction to in.                          |
| <b>out</b>                 | Configures a rule's direction to out.                         |
| <b>any</b>                 | Configures a rule's direction to any.                         |
| <b>dscp</b>                | Configures a rule's DSCP.                                     |
| <i>dscp</i>                | Number between 0 and 63, or <b>any</b> .                      |
| <b>protocol</b>            | Configures a rule's DSCP.                                     |

|                          |                                                    |
|--------------------------|----------------------------------------------------|
| <i>protocol</i>          | Number between 0 and 255, or <b>any</b> .          |
| <b>source address</b>    | Configures a rule's source IP address and netmask. |
| <b>source port range</b> | Configures a rule's source port range.             |
| <b>swap</b>              | 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 Neighbor Binding table on the Cisco wireless LAN controller, use the **config ipv6 neighbor-binding** command.

```
config ipv6 neighbor-binding [ timers { down-lifetime down_time | reachable-lifetime
    reachable_time | stale-lifetime stale_time } ] | [ ra-throttle { allow at-least at_least_value } | {
    enable | disable } ] | { interval-option { ignore | passthrough | throttle } } | { max-through {
    no_mcast_RA | no-limit } } | { throttle-period throttle_period }
```

| Syntax Description        |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>down-lifetime</b>      | Configure the down lifetime.                                                                                   |
| <i>down_time</i>          | Enter the down lifetime in seconds. The range is from 0 to 86400. The default is 86400 seconds.                |
| <b>reachable-lifetime</b> | Configure the reachable lifetime.                                                                              |
| <i>reachable_time</i>     | Enter the reachable lifetime in seconds. The range is from 0 to 86400. The default is 300 seconds.             |
| <b>stale-lifetime</b>     | Configure the stale lifetime.                                                                                  |
| <i>stale_time</i>         | Enter the stale lifetime in seconds. The range is from 0 to 86400. The default is 86400 seconds.               |
| <i>at_least_value</i>     | Enter the Number of multicast RAs from router before throttling. The range is from 0 to 32. The default is 1.  |
| <b>enable</b>             | Enable IPv6 RA Throttling.                                                                                     |
| <b>disable</b>            | Disable IPv6 RA Throttling.                                                                                    |
| <b>interval-option</b>    | Adjust the behavior on RA with RFC3775 interval option.                                                        |
| <b>ignore</b>             | Interval option has no influence on throttling.                                                                |
| <b>passthrough</b>        | All RAs with RFC3775 interval option will be forwarded (default).                                              |
| <b>throttle</b>           | All RAs with RFC3775 interval option will be throttled.                                                        |
| <b>max-through</b>        | Cap unthrottled multicast RAs per VLAN per throttle period.                                                    |
| <i>no_mcast_RA</i>        | Number of multicast RAs on vlan by which throttling is enforced. The default multicast RAs on vlan is 10.      |
| <b>no-limit</b>           | No upper bound at the vlan level.                                                                              |
| <b>throttle-period</b>    | To adjust the throttle period.                                                                                 |
| <i>throttle_period</i>    | 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 Neighbor Binding table :

```
> config ipv6 neighbor-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 | <b>enable</b>  | Enables NS Multicast forwarding on CacheMiss.  |
|--------------------|----------------|------------------------------------------------|
|                    | <b>disable</b> | Disables NS Multicast forwarding on CacheMiss. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure an NS Multicast Forwarding:<br>> <b>config ipv6 ns-mcast-fwd enable</b> |
|-----------------|-------------------------------------------------------------------------------------------------------------|

|                         |                                   |
|-------------------------|-----------------------------------|
| <b>Related Commands</b> | <a href="#">show ipv6 summary</a> |
|-------------------------|-----------------------------------|

## 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**

|                |                                            |
|----------------|--------------------------------------------|
| <b>enable</b>  | Enables Router Advertisement Guard on AP.  |
| <b>disable</b> | 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                                                                                                                                                             |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>add</b>            | Adds a MAC filter entry on the controller.                                                                                                                              |
| <b>client_MAC</b>     | Client MAC address.                                                                                                                                                     |
| <b>wlan_id</b>        | Wireless LAN identifier with which the MAC filter entry should associate. A zero value associates the entry with any wireless LAN.                                      |
| <b>interface_name</b> | Name of the interface. Enter <b>0</b> to specify no interface.                                                                                                          |
| <b>description</b>    | (Optional) Short description of the interface (up to 32 characters) in double quotes.<br><br><b>Note</b> A description is mandatory if <i>macfilterIP</i> is specified. |
| <b>macfilter_IP</b>   | (Optional) IP address of the local MAC filter database.                                                                                                                 |
| <b>delete</b>         | 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 filter entry 00:E0:77:31:A3:55 with the wireless LAN ID 1, interface name labconnect, and MAC filter IP 10.92.125.51 on the controller:

```
> 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 | <i>MAC</i>                                                                                                                                                                       | Client MAC address.                                                |
|                    | <i>description</i>                                                                                                                                                               | (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 <b>11:11:11:11:11:11</b> :<br>> <b>config macfilter description 11:11:11:11:11:11 "MAC Filter 01"</b> |                                                                    |
| Related Commands   | <a href="#">show macfilter</a>                                                                                                                                                   |                                                                    |

# config macfilter interface

To create a MAC filter client interface, use the **config macfilter interface** command.

**config macfilter interface** *MAC interface*

|                           |                  |                                                           |
|---------------------------|------------------|-----------------------------------------------------------|
| <b>Syntax Description</b> | <i>MAC</i>       | Client MAC address.                                       |
|                           | <i>interface</i> | Interface name. A value of zero is equivalent to no name. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                             |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to create a MAC filter interface Lab01 on client <b>11:11:11:11:11:11</b>:</p> <pre>&gt; config macfilter interface 11:11:11:11:11:11 Lab01</pre> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                |
|-------------------------|--------------------------------|
| <b>Related Commands</b> | <a href="#">show macfilter</a> |
|-------------------------|--------------------------------|

# 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 | <i>MAC_address</i> | Client MAC address.                                                     |
|                    | <i>IP_address</i>  | 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 <b>10.92.125.51</b> for a MAC <b>00:E0:77:31:A3:55</b> in the local MAC filter database: |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|

```
> config macfilter ip-address 00:E0:77:31:A3:55 10.92.125.51
```

|                  |                                                                    |
|------------------|--------------------------------------------------------------------|
| Related Commands | <a href="#">show macfilter</a><br><a href="#">config macfilter</a> |
|------------------|--------------------------------------------------------------------|

# 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

|                      |                                                                     |
|----------------------|---------------------------------------------------------------------|
| <b>none</b>          | Disables the delimiters (for example, xxxxxxxxxxx).                 |
| <b>colon</b>         | Sets the delimiter to a colon (for example, xx:xx:xx:xx:xx:xx).     |
| <b>hyphen</b>        | Sets the delimiter to a hyphen (for example, xx-xx-xx-xx-xx-xx).    |
| <b>single-hyphen</b> | 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 }**

|                           |              |                                                                                          |
|---------------------------|--------------|------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>Cisco</b> | Configures the Cisco ACS compatibility mode (password is the MAC address of the server). |
|                           | <b>free</b>  | Configures the Free RADIUS server compatibility mode (password is secret).               |
|                           | <b>other</b> | Configures for other server behaviors (no password is necessary).                        |

|                        |        |
|------------------------|--------|
| <b>Command Default</b> | Other. |
|------------------------|--------|

|                 |                                                                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure the Cisco ACS compatibility mode to “other”:</p> <pre>&gt; config macfilter radius-compat other</pre> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                |
|-------------------------|--------------------------------|
| <b>Related Commands</b> | <a href="#">show macfilter</a> |
|-------------------------|--------------------------------|

# 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 | <i>MAC</i>     | Client MAC address.                                                        |
|                    | <i>wlan_id</i> | Wireless LAN identifier to associate with. A value of zero is not allowed. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                                          |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to modify client wireless LAN ID 2 for a MAC filter <b>11:11:11:11:11:11</b>:</p> <pre>&gt; config macfilter wlan-id 11:11:11:11:11:11 2</pre> |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                        |
|------------------|------------------------------------------------------------------------|
| Related Commands | <p><a href="#">show macfilter</a></p> <p><a href="#">show wlan</a></p> |
|------------------|------------------------------------------------------------------------|

# 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 | <b>enable</b>        | Enables a remote LAN.                                      |
|                    | <b>disable</b>       | Disables a remote LAN.                                     |
|                    | <i>remote-lan-id</i> | Remote LAN identifier. Valid values are between 1 and 512. |
|                    | <b>all</b>           | 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

|                      |                                                            |
|----------------------|------------------------------------------------------------|
| <b>enable</b>        | Enables user policy override through AAA on a remote LAN.  |
| <b>disable</b>       | Disables user policy override through AAA on a remote LAN. |
| <i>remote-lan-id</i> | 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 | <i>remote-lan-id</i> | Remote LAN identifier. Valid values are between 1 and 512.          |
|                    | <i>acl_name</i>      | ACL name.                                                           |
|                    | <b>Note</b>          | Use the <b>show acl summary</b> command to know the ACLs available. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to specify ACL1 for a remote LAN whose ID is 2:</p> <p>&gt; <b>config remote-lan acl 2 ACL1</b></p> |
|----------|-------------------------------------------------------------------------------------------------------------------------------|

|                  |                                 |
|------------------|---------------------------------|
| Related Commands | <a href="#">show remote-lan</a> |
|------------------|---------------------------------|

# 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**

|                      |                                                                     |
|----------------------|---------------------------------------------------------------------|
| <i>remote-lan-id</i> | Remote LAN identifier. Valid values are between 1 and 512.          |
| <i>name</i>          | 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

|                        |                                                                     |
|------------------------|---------------------------------------------------------------------|
| <b>ext-webauth-url</b> | Configures an external web authentication URL.                      |
| <i>URL</i>             | Web authentication URL for the Login page.                          |
| <i>remote-lan-id</i>   | Remote LAN identifier. Valid values are between 1 and 512.          |
| <b>global</b>          | Configures the global status for the remote LAN.                    |
| <b>enable</b>          | Enables the global status for the remote LAN.                       |
| <b>disable</b>         | Disables the global status for the remote LAN.                      |
| <b>login-page</b>      | Configures a login page.                                            |
| <i>page-name</i>       | Login page name.                                                    |
| <b>none</b>            | Configures no login page.                                           |
| <b>logout-page</b>     | Configures a logout page.                                           |
| <b>none</b>            | Configures no logout page.                                          |
| <b>webauth-type</b>    | Configures the web authentication type for the remote LAN.          |
| <b>internal</b>        | Displays the default login page.                                    |
| <b>customized</b>      | Displays a downloaded login page.                                   |
| <b>external</b>        | Displays a login page that is on an external server.                |
| <i>name</i>            | 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*

|                           |                                                                                                 |
|---------------------------|-------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>remote-lan-id</i> Remote LAN identifier. Valid values are between 1 and 512.                 |
| <b>Command Default</b>    | None.                                                                                           |
| <b>Examples</b>           | This example shows how to delete a remote LAN with ID 3:<br>> <b>config remote-lan delete 3</b> |
| <b>Related Commands</b>   | <a href="#">show remote-lan</a>                                                                 |

## 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

|                      |                                                            |
|----------------------|------------------------------------------------------------|
| <i>remote-lan-id</i> | Remote LAN identifier. Valid values are between 1 and 512. |
| <i>ip_address</i>    | 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**}

|                           |                      |                                                                                     |
|---------------------------|----------------------|-------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>remote-lan-id</i> | Remote LAN identifier. Valid values are between 1 and 512.                          |
|                           | <i>seconds</i>       | Exclusion list timeout in seconds. A value of 0 requires an administrator override. |
|                           | <b>disabled</b>      | Disables exclusion listing.                                                         |
|                           | <b>enabled</b>       | Enables exclusion listing.                                                          |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                 |
|-------------------------|---------------------------------|
| <b>Related Commands</b> | <a href="#">show remote-lan</a> |
|-------------------------|---------------------------------|

# 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.                                            |
|                    | <b>Note</b> 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 | <b>add</b>           | Adds a link to a configured LDAP server (maximum of three). |
|                    | <b>delete</b>        | Deletes a link to a configured LDAP server.                 |
|                    | <i>remote-lan-id</i> | Remote LAN identifier. Valid values are between 1 and 512.  |
|                    | <i>index</i>         | 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 | <b>enable</b>        | Enables MAC filtering on a remote LAN.                     |
|                    | <b>disable</b>       | Disables MAC filtering on a remote LAN.                    |
|                    | <i>remote-lan-id</i> | Remote LAN identifier. Valid values are between 1 and 512. |

|                 |          |
|-----------------|----------|
| Command Default | Enabled. |
|-----------------|----------|

|          |                                                                                                                                             |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to disable MAC filtering on a remote LAN with ID 3:</p> <pre>&gt; config remote-lan mac-filtering disable 3</pre> |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                 |
|------------------|---------------------------------|
| Related Commands | <a href="#">show remote-lan</a> |
|------------------|---------------------------------|

# 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*

|                           |                      |                                                                      |
|---------------------------|----------------------|----------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>remote-lan-id</i> | Remote LAN identifier. Valid values are between 1 and 512.           |
|                           | <i>max-clients</i>   | Configures the maximum number of client connections on a remote LAN. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure 10 client connections on a remote LAN with ID 3:</p> <pre>&gt; config remote-lan max-client-associated 3 10</pre> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                 |
|-------------------------|---------------------------------|
| <b>Related Commands</b> | <a href="#">show remote-lan</a> |
|-------------------------|---------------------------------|

# 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

|                      |                                                            |
|----------------------|------------------------------------------------------------|
| <b>acct</b>          | Configures a RADIUS accounting server.                     |
| <b>add</b>           | Adds a link to a configured RADIUS server.                 |
| <b>delete</b>        | Deletes a link to a configured RADIUS server.              |
| <i>remote-lan-id</i> | Remote LAN identifier. Valid values are between 1 and 512. |
| <i>server-index</i>  | RADIUS server index.                                       |
| <b>enable</b>        | Enables RADIUS accounting for this remote LAN.             |
| <b>disable</b>       | 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 | <b>web-auth</b>          | Specifies web authentication.                                                       |
|--------------------|--------------------------|-------------------------------------------------------------------------------------|
|                    | <b>enable</b>            | Enables the web authentication settings.                                            |
|                    | <b>disable</b>           | Disables the web authentication settings.                                           |
|                    | <b>acl</b>               | Configures an access control list.                                                  |
|                    | <b>server-precedence</b> | Configures the authentication server precedence order for web authentication users. |
|                    | <i>remote-lan-id</i>     | Remote LAN identifier. Valid values are between 1 and 512.                          |
|                    | <b>email-input</b>       | Configures the web captive portal using an e-mail address.                          |
|                    | <b>web-passthrough</b>   | Specifies the web captive portal with no authentication required.                   |
|                    |                          |                                                                                     |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure the security web authentication policy for remote LAN ID 1:<br>> <b>config remote-lan security web-auth enable 1</b> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                 |
|-------------------------|---------------------------------|
| <b>Related Commands</b> | <a href="#">show remote-lan</a> |
|-------------------------|---------------------------------|

# 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*

|                           |                                                                                                                                                                     |                                                                                      |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>remote-lan-id</i>                                                                                                                                                | Remote LAN identifier. Valid values are between 1 and 512.                           |
|                           | <i>seconds</i>                                                                                                                                                      | Timeout or session duration in seconds. A value of zero is equivalent to no timeout. |
| <b>Command Default</b>    | None.                                                                                                                                                               |                                                                                      |
| <b>Examples</b>           | This example shows how to configure the client session timeout to 6000 seconds for a remote LAN with ID 1:<br><br>> <b>config remote-lan session-timeout 1 6000</b> |                                                                                      |
| <b>Related Commands</b>   | <a href="#">show remote-lan</a>                                                                                                                                     |                                                                                      |

# 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 | <i>remote-lan-id</i> | Remote LAN identifier. Valid values are between 1 and 512. |
|                    | <b>enable</b>        | Enables web authentication exclusion on the remote LAN.    |
|                    | <b>disable</b>       | Disables web authentication exclusion on the remote LAN.   |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                            |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable web authentication exclusion on a remote LAN with ID 1:</p> <pre>&gt; config remote-lan webauth-exclude 1 enable</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                 |
|------------------|---------------------------------|
| Related Commands | <a href="#">show remote-lan</a> |
|------------------|---------------------------------|

## 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**

|                |                                              |
|----------------|----------------------------------------------|
| <b>enable</b>  | Enables the monitoring for memory settings.  |
| <b>disable</b> | 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

|                    |                                                                                                           |
|--------------------|-----------------------------------------------------------------------------------------------------------|
| <i>low_thresh</i>  | Value below which free memory cannot fall without crashing. This value cannot be set lower than 10000 KB. |
| <i>high_thresh</i> | 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

|                            |                                                                                                                                                                                     |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>max-hop</b>             | Sets the maximum number of hops before triggering an alarm for traffic over the mesh network. The valid values are 1 to 16 (inclusive).                                             |
| <b>max-children</b>        | 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 1 to 16 (inclusive). |
| <b>low-snr</b>             | Sets the low-end signal-to-noise ratio (SNR) value before triggering an alarm. The valid values are 1 to 30 (inclusive).                                                            |
| <b>high-snr</b>            | Sets the high-end SNR value before triggering an alarm. The valid values are 1 to 30 (inclusive).                                                                                   |
| <b>association</b>         | Sets the mesh alarm association count value before triggering an alarm. The valid values are 1 to 30 (inclusive).                                                                   |
| <b>parent-change count</b> | Sets the number of times a MAP can change its RAP association before triggering an alarm. The valid values are 1 to 30 (inclusive).                                                 |
| <i>value</i>               | 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 | <b>enable</b>  | Enables this feature for all outdoor mesh access points.  |
|--------------------|----------------|-----------------------------------------------------------|
|                    | <b>disable</b> | Disables this feature for all outdoor mesh access points. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                           |
|-----------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to enable anti-stranding on all outdoor mesh access points:<br>> <b>config mesh astools enable</b> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                         |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config mesh security</a><br><a href="#">show mesh ap</a><br><a href="#">show mesh astools stats</a><br><a href="#">show mesh config</a><br><a href="#">show mesh stats</a><br><a href="#">show mgmtuser</a> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                            |                                                                                 |
|----------------------------|---------------------------------------------------------------------------------|
| <b>all (optional)</b>      | Grants <i>universal access</i> privileges on mesh access points.                |
| <b>bronze(optional)</b>    | Grants <i>background-level</i> client access privileges on mesh access points.  |
| <b>silver(optional)</b>    | Grants <i>best effort-level</i> client access privileges on mesh access points. |
| <b>gold(optional)</b>      | Grants <i>video-level</i> client access privileges on mesh access points.       |
| <b>platinum (optional)</b> | Grants <i>voice-level</i> client access privileges on mesh access points.       |
| <b>enable</b>              | Enables this backhaul access level for mesh access points.                      |
| <b>disable</b>             | 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
```

|                           |                 |                                                                                          |
|---------------------------|-----------------|------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>slot_id</i>  | Slot number between 0 and 2.                                                             |
|                           | <b>enable</b>   | Enables the entered slot radio as a downlink backhaul.                                   |
|                           | <b>disable</b>  | Disables the entered slot radio as a downlink backhaul.                                  |
|                           | <i>cisco_ap</i> | Name of the Root AP of the sector on which the backhaul needs to be enabled or disabled. |

|                        |           |
|------------------------|-----------|
| <b>Command Default</b> | Disabled. |
|------------------------|-----------|

|                         |                                                                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Usage Guidelines</b> | 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 <b>config mesh backhaul slot</b> command is applicable only to AP1522. |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                 |                                                                                                                                                       |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to enable slot 1 as the preferred backhaul for the root AP myrootap1:<br>> <b>config mesh backhaul slot 1 enable myrootap1</b> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">show mesh ap</a><br><a href="#">show mesh config</a><br><a href="#">show mesh stats</a> |
|-------------------------|-----------------------------------------------------------------------------------------------------|

## 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

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| <b>enable</b>   | Enables the battery-state for 1520 series mesh access points.  |
| <b>disable</b>  | Disables the battery-state for 1520 series mesh access points. |
| <b>all</b>      | Applies this command to all mesh access points.                |
| <i>cisco_ap</i> | 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

|                            |                                                                                                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>enable</b>              | Allows wireless client association over the mesh access point backhaul 802.11a radio.                         |
| <b>extended (Optional)</b> | Enables client access over both the backhaul radios for 1524 serial backhaul access points.                   |
| <b>disable</b>             | 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

|                |                                          |
|----------------|------------------------------------------|
| <b>enable</b>  | Bridges packets as if they are untagged. |
| <b>disable</b> | 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 ordisable 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

|                |                                      |
|----------------|--------------------------------------|
| <b>enable</b>  | Enables DFS for mesh access points.  |
| <b>disable</b> | 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 RADIUS 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.71d.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

|                    |                                                                                                                                                                                                                                                                                                                             |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>source_ap</i>   | Source access point.                                                                                                                                                                                                                                                                                                        |
| <i>dest_ap</i>     | Destination access point.                                                                                                                                                                                                                                                                                                   |
| <i>dest_MAC</i>    | Destination MAC address.                                                                                                                                                                                                                                                                                                    |
| <i>datarate</i>    | <ul style="list-style-type: none"> <li>Data rate for 802.11a radios. Valid values are 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps.</li> <li>Data rate for 802.11b radios. Valid values are 6, 12, 18, 24, 36, 54, or 100 Mbps.</li> <li>Data rate for 802.11n radios. Valid values are MCS rates between m0 to m15.</li> </ul> |
| <i>packet_rate</i> | Number of packets per second. Valid range is 1 through 3000, but the recommended default is 100.                                                                                                                                                                                                                            |
| <i>packet_size</i> | (Optional) Packet size in bytes. If not specified, packet size defaults to 1500 bytes.                                                                                                                                                                                                                                      |
| <i>duration</i>    | (Optional) Duration of the test in seconds. Valid values are <b>10-300</b> 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<br>[odb...60dB]      | Histogram samples received between 0 to 60 dB. The different columns 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<br>[-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

|                |                                        |
|----------------|----------------------------------------|
| <b>enable</b>  | Enables an LSC on mesh access points.  |
| <b>disable</b> | 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

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>regular</b> | Multicasts the video across the entire mesh network and all its segments by bridging-enabled root access points (RAPs) and mesh access points (MAPs).                                                                                                                                                                                                                                                                                                                                      |
| <b>in</b>      | 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.                                                                                                                         |
| <b>in-out</b>  | Configures the RAP and MAP to multicast, but each in a different manner:<br><br>If multicast packets are received at a MAP over Ethernet, they are sent to the RAP; however, they are not sent to other MAP Ethernet networks, and the MAP-to-MAP packets are filtered out of the multicast.<br><br>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

|                    |                                      |
|--------------------|--------------------------------------|
| <i>cisco_ap</i>    | Name of the child access point.      |
| <i>mac_address</i> | MAC address of the preferred parent. |
| <b>none</b>        | 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

|                |                                                                                                                                                                                                                                                                                                                  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>index</i>   | RADIUS authentication method. Options are as follows: <ul style="list-style-type: none"><li>Enter <b>eap</b> to designate Extensible Authentication Protocol (EAP) for the mesh RADIUS server setting.</li><li>Enter <b>psk</b> to designate Preshared Keys (PSKs) for the mesh RADIUS server setting.</li></ul> |
| <b>enable</b>  | Enables the external authentication for mesh access points.                                                                                                                                                                                                                                                      |
| <b>disable</b> | 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 | <i>distance</i> | (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 | <a href="#">config mesh astools</a><br><a href="#">config mesh ethernet-bridging vlan-transparent</a><br><a href="#">config mesh full-sector-dfs</a><br><a href="#">config mesh linkdata</a><br><a href="#">config mesh linktest</a><br><a href="#">show mesh ap</a><br><a href="#">show mesh stats</a> |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



# 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                  |                                                                                                                                                                                                                                                                         |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>enable</b>                       | Enables the secondary backhaul configuration.                                                                                                                                                                                                                           |
| <b>force-same-secondary-channel</b> | (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. |
| <b>disable</b>                      | Specifies the secondary backhaul configuration is disabled.                                                                                                                                                                                                             |
| <b>rll-transmit</b>                 | Uses reliable link layer (RLL) at the second hop and beyond.                                                                                                                                                                                                            |
| <b>rll-retransmit</b>               | Extends the number of RLL retry attempts in an effort to improve reliability.                                                                                                                                                                                           |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|



|                         |                                                                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Usage Guidelines</b> | <b>Note</b> 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.

|                 |                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how 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
```

|                         |                                                                                                                                                                                                          |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config mesh battery-state</a><br><a href="#">config mesh backhaul slot</a><br><a href="#">show mesh client-access</a><br><a href="#">show mesh config</a><br><a href="#">show mesh stats</a> |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                       |                                                                                        |
|-----------------------|----------------------------------------------------------------------------------------|
| <b>rad-mac-filter</b> | Enables a RADIUS MAC address filter for the mesh security setting.                     |
| <b>force-ext-auth</b> | Disables forced external authentication for the mesh security setting.                 |
| <b>enable</b>         | Enables the setting.                                                                   |
| <b>disable</b>        | Disables the setting.                                                                  |
| <b>eap</b>            | Designates the Extensible Authentication Protocol (EAP) for the mesh security setting. |
| <b>psk</b>            | 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

|                |                                                  |
|----------------|--------------------------------------------------|
| <b>enable</b>  | Enables slot bias for serial backhaul mesh APs.  |
| <b>disable</b> | 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*]

|                           |                    |                                                                                                                      |
|---------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>username</i>    | Account username. The username can be up to 24 alphanumeric characters.                                              |
|                           | <i>password</i>    | Account password. The password can be up to 24 alphanumeric characters.                                              |
|                           | <b>read-write</b>  | Creates a management user with read-write access.                                                                    |
|                           | <b>read-only</b>   | Creates a management user with read-only access.                                                                     |
|                           | <i>description</i> | (Optional) Description of the account. The description can be up to 32 alphanumeric characters within double quotes. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to create a management user account with read-write access:</p> <pre>&gt; config mgmtuser add admin admin read-write "Main account"</pre> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |               |
|-------------------------|---------------|
| <b>Related Commands</b> | 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*

|                           |                 |                                                                         |
|---------------------------|-----------------|-------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>username</i> | Account username. The username can be up to 24 alphanumeric characters. |
|---------------------------|-----------------|-------------------------------------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to delete a management user account admin from the Cisco wireless LAN controller: |
|-----------------|----------------------------------------------------------------------------------------------------------|

```
> config mgmtuser delete admin
```

```
Deleted user admin
```

|                         |                      |
|-------------------------|----------------------|
| <b>Related Commands</b> | <b>show mgmtuser</b> |
|-------------------------|----------------------|

# 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

|                    |                                                                                                           |
|--------------------|-----------------------------------------------------------------------------------------------------------|
| <i>username</i>    | Account username. The username can be up to 24 alphanumeric characters.                                   |
| <i>description</i> | 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 “master-user” to the management user “admin”:  
> **config mgmtuser description admin “master-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**

|                 |                                                                         |
|-----------------|-------------------------------------------------------------------------|
| <i>username</i> | Account username. The username can be up to 24 alphanumeric characters. |
| <i>password</i> | 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**

|                   |                                  |
|-------------------|----------------------------------|
| <i>dscp_value</i> | 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

|                     |                                                        |
|---------------------|--------------------------------------------------------|
| <b>add</b>          | Adds or changes a mobility anchor to a wireless LAN.   |
| <b>delete</b>       | Deletes a mobility anchor from a wireless LAN.         |
| <b>wlan</b>         | Specifies the wireless LAN anchor settings.            |
| <i>wlan_id</i>      | Wireless LAN identifier between 1 and 512 (inclusive). |
| <b>guest-lan</b>    | Specifies the guest LAN anchor settings.               |
| <i>guest_lan_id</i> | Guest LAN identifier between 1 and 5 (inclusive).      |
| <i>anchor_ip</i>    | 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*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>domain_name</i> Domain name. The domain name can be up to 31 case-sensitive characters.                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Examples</b>           | <p>This example shows how to configure a mobility domain name lab1:</p> <pre>&gt; config mobility group domain lab1</pre>                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Related Commands</b>   | <ul style="list-style-type: none"><li>config mobility group anchor</li><li>config mobility group keepalive count</li><li>config mobility group keepalive interval</li><li>config mobility group member</li><li>config mobility group multicast-address</li><li>config mobility multicast-mode</li><li>config mobility secure-mode</li><li>config mobility statistics reset</li><li>debug mobility</li><li>show mobility anchor</li><li>show mobility statistics</li><li>show mobility summary</li></ul> |

# 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

|              |                                                                                                                                                                   |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>count</i> | 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*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>interval</i><br>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.                                                                                                                                                                                                                                                                                                                         |
| <b>Command Default</b>    | 10 seconds.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Examples</b>           | <p>This example shows how to specify the amount of time between each ping request sent to a mobility group member to 10 seconds:</p> <pre>&gt; config mobility group keepalive interval 10</pre>                                                                                                                                                                                                                                                                                            |
| <b>Related Commands</b>   | <ul style="list-style-type: none"><li>config mobility group anchor</li><li>config mobility group domain</li><li>config mobility group keepalive count</li><li>config mobility group member</li><li>config mobility group multicast-address</li><li>config mobility multicast-mode</li><li>config mobility secure-mode</li><li>config mobility statistics reset</li><li>debug mobility</li><li>show mobility anchor</li><li>show mobility statistics</li><li>show mobility summary</li></ul> |

# 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

|                   |                                                                                 |
|-------------------|---------------------------------------------------------------------------------|
| <b>add</b>        | Adds or changes a mobility group member to the list.                            |
| <i>MAC</i>        | Member switch MAC address.                                                      |
| <i>IP_address</i> | Member switch IP address.                                                       |
| <i>group_name</i> | (Optional) Member switch group name (if different from the default group name). |
| <b>delete</b>     | (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

|                   |                                                                      |
|-------------------|----------------------------------------------------------------------|
| <i>group_name</i> | Member switch group name (if different from the default group name). |
| <i>IP_address</i> | 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

|                                      |                                                                                                                        |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>enable</b>                        | Enables the multicast mode; the controller uses multicast mode to send Mobile Announce messages to the local group.    |
| <b>disable</b>                       | Disables the multicast mode; the controller uses unicast mode to send the Mobile Announce messages to the local group. |
| <i>local_group_multicast_address</i> | 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

|                |                                              |
|----------------|----------------------------------------------|
| <b>enable</b>  | Enables the mobility group message security. |
| <b>disable</b> | 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                         |                                                                                                              |
|-------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Usage Guidelines</b> | The message log always collects and displays critical messages, regardless of the message log level setting. |
|-------------------------|--------------------------------------------------------------------------------------------------------------|

---

|                 |                                                                                                                                            |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure the message log severity level and display critical messages:<br>> <b>config msglog level critical</b> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|

---

|                         |                    |
|-------------------------|--------------------|
| <b>Related Commands</b> | <b>show msglog</b> |
|-------------------------|--------------------|

# 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

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to reset the message log to collect and display critical and noncritical error messages:</p> <pre>&gt; config msglog level error</pre> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |             |
|-------------------------|-------------|
| <b>Related Commands</b> | 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

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                                                                       |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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**

---

|                         |                    |
|-------------------------|--------------------|
| <b>Related Commands</b> | <b>show msglog</b> |
|-------------------------|--------------------|



# 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to reset the message logs so that it collects and display all messages:<br>> <b>config msglog level verbose</b> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|

|                         |                    |
|-------------------------|--------------------|
| <b>Related Commands</b> | <b>show msglog</b> |
|-------------------------|--------------------|

# 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

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>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:</p> <pre>&gt; config msglog level warning</pre> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

---

|                         |                          |
|-------------------------|--------------------------|
| <b>Related Commands</b> | <code>show msglog</code> |
|-------------------------|--------------------------|

## 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          |  |                                                                                                |
|-----------------------------|--|------------------------------------------------------------------------------------------------|
| <b>802.11a</b>              |  | Specifies the 802.11a network.                                                                 |
| <b>802.11b</b>              |  | Specifies the 802.11b/g network.                                                               |
| <b>admission-besteffort</b> |  | Admits media stream to best-effort queue.                                                      |
| <b>client-maximum</b>       |  | Specifies the maximum number of streams allowed on a client.                                   |
| <b>radio-maximum</b>        |  | Specifies the maximum number of streams allowed on a 2.4-GHz or a 5-GHz band.                  |
| <i>value</i>                |  | Number of streams allowed on a client or on a 2.4-GHz or a 5-GHz band, between 1 to 20.        |
| <b>no-limit</b>             |  | Specifies the unlimited number of streams allowed on a client or on a 2.4-GHz or a 5-GHz band. |
| <b>enable</b>               |  | Enables multicast-direct on a 2.4-GHz or a 5-GHz band.                                         |
| <b>disable</b>              |  | 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}**

|                           |                |                                  |
|---------------------------|----------------|----------------------------------|
| <b>Syntax Description</b> | <b>802.11a</b> | Specifies the 802.11a network.   |
|                           | <b>802.11b</b> | Specifies the 802.11b/g network. |
|                           | <b>enable</b>  | Enables traffic redirection.     |
|                           | <b>disable</b> | 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

|                  |                                                                                                                                                                                  |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>data-rate</i> | 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. |
| <i>ap-name</i>   | Specific AP radio in this datarate.                                                                                                                                              |
| <b>default</b>   | 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

|                |                          |
|----------------|--------------------------|
| <b>enable</b>  | Enables a media stream.  |
| <b>disable</b> | 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

|                     |                                                  |
|---------------------|--------------------------------------------------|
| <b>state</b>        | Specifies the media stream message state.        |
| <b>enable</b>       | Enables the session announcement message state.  |
| <b>disable</b>      | Disables the session announcement message state. |
| <b>url</b>          | Configures the URL.                              |
| <i>url</i>          | Session announcement URL.                        |
| <b>email</b>        | Configures the email ID.                         |
| <i>email</i>        | Specifies the session announcement e-mail.       |
| <b>phone</b>        | Configures the phone number.                     |
| <i>phone_number</i> | Session announcement phone number.               |
| <b>note</b>         | Configure the notes.                             |
| <i>note</i>         | 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       |  |                                                                                         |
|--------------------------|--|-----------------------------------------------------------------------------------------|
| <b>multicast-direct</b>  |  | Specifies the media stream for the multicast-direct setting.                            |
| <i>media_stream_name</i> |  | Media-stream name.                                                                      |
| <i>start-IP</i>          |  | IP multicast destination start address.                                                 |
| <i>end-IP</i>            |  | IP multicast destination end address                                                    |
| <b>template</b>          |  | (Optional) Configures the media stream from templates.                                  |
| <b>very coarse</b>       |  | Applies a very-coarse template.                                                         |
| <b>coarse</b>            |  | Applies a coarse template.                                                              |
| <b>ordinary</b>          |  | Applies an ordinary template.                                                           |
| <b>low-resolution</b>    |  | Applies a low-resolution template.                                                      |
| <b>med-resolution</b>    |  | Applies a medium-resolution template.                                                   |
| <b>high-resolution</b>   |  | Applies a high-resolution template.                                                     |
| <b>detail</b>            |  | Configures the media stream with specific parameters.                                   |
| <i>bandwidth</i>         |  | Maximum expected stream bandwidth.                                                      |
| <i>packet-size</i>       |  | Average packet size.                                                                    |
| <b>periodic</b>          |  | Specifies the periodic admission evaluation.                                            |
| <b>initial</b>           |  | Specifies the Initial admission evaluation.                                             |
| <i>qos</i>               |  | AIR QoS class (video only).                                                             |
| <i>priority</i>          |  | Specifies the media-stream priority.                                                    |
| <b>drop</b>              |  | Specifies that the stream is dropped on a periodic reevaluation.                        |
| <b>fallback</b>          |  | 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

|                          |                          |
|--------------------------|--------------------------|
| <i>media_stream_name</i> | 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*

|                           |                                                                                                                          |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>media_stream_name</i> Media-stream name.                                                                              |
| <b>Command Default</b>    | None.                                                                                                                    |
| <b>Usage Guidelines</b>   | Media-stream multicast-direct requires load-based Call Admission Control (CAC) to run.                                   |
| <b>Examples</b>           | This example shows how to configure the media stream named abc:<br>> <b>config media-stream delete abc</b>               |
| <b>Related Commands</b>   | <b>show 802.11a media-stream name</b><br><b>show media-stream group summary</b><br><b>show media-stream group detail</b> |

## 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 |  |                                                                                                                                |
|--------------------|--|--------------------------------------------------------------------------------------------------------------------------------|
| <i>username</i>    |  | Guest username. The username can be up to 50 alphanumeric characters.                                                          |
| <i>password</i>    |  | User password. The password can be up to 24 alphanumeric characters.                                                           |
| <b>wlan</b>        |  | Specifies the wireless LAN identifier to associate with or zero for any wireless LAN.                                          |
| <i>wlan_id</i>     |  | Wireless LAN identifier assigned to the user. A zero value associates the user with any wireless LAN.                          |
| <b>guestlan</b>    |  | Specifies the guest LAN identifier to associate with or zero for any wireless LAN.                                             |
| <i>guestlan_id</i> |  | Guest LAN ID.                                                                                                                  |
| <b>userType</b>    |  | Specifies the user type.                                                                                                       |
| <b>guest</b>       |  | Specifies the guest for the guest user.                                                                                        |
| <b>lifetime</b>    |  | Specifies the lifetime.                                                                                                        |
| <i>lifetime</i>    |  | Lifetime value (60 to 259200 or 0) in seconds for the guest user.<br><b>Note</b> A value of 0 indicates an unlimited lifetime. |
| <i>description</i> |  | 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 username 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 username 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*

|                           |                                                                                                                                                                  |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>username</i> Network username. The username can be up to 24 alphanumeric characters.                                                                          |
| <b>Command Default</b>    | None.                                                                                                                                                            |
| <b>Usage Guidelines</b>   | Local network usernames must be unique because they are stored in the same database.                                                                             |
| <b>Examples</b>           | <p>This example shows how to delete an existing username named able1 from the network:</p> <pre>&gt; config netuser delete able1</pre> <p>Deleted user able1</p> |
| <b>Related Commands</b>   | <b>show netuser</b>                                                                                                                                              |



# config netuser description

To add a description to an existing net user, use the **config netuser description** command.

**config netuser description** *username description*

|                           |                    |                                                                                                                 |
|---------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>username</i>    | Network username. The username can contain up to 24 alphanumeric characters.                                    |
|                           | <i>description</i> | (Optional) User description. The description can be up to 32 alphanumeric characters enclosed in double quotes. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                                |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to add a user description “HQ1 Contact” to an existing network user named able 1:</p> <pre>&gt; config netuser description able1 "HQ1 Contact"</pre> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |              |
|-------------------------|--------------|
| <b>Related Commands</b> | 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

|                 |                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------|
| <i>username</i> | Network username. The username can be 24 alphanumeric characters.                                                   |
| <i>lan_id</i>   | 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

|                  |                      |
|------------------|----------------------|
| <i>username</i>  | Name of the user.    |
| <i>role_name</i> | 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**

|                  |                      |
|------------------|----------------------|
| <i>role name</i> | 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**

|                  |                                           |
|------------------|-------------------------------------------|
| <i>role name</i> | 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

|                  |                                           |
|------------------|-------------------------------------------|
| <i>role_name</i> | Quality of service (QoS) guest role name. |
| <i>rate</i>      | 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

|                  |                                           |
|------------------|-------------------------------------------|
| <i>role_name</i> | Quality of service (QoS) guest role name. |
| <i>rate</i>      | 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

|                  |                                           |
|------------------|-------------------------------------------|
| <i>role_name</i> | Quality of service (QoS) guest role name. |
| <i>rate</i>      | 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

|                  |                                           |
|------------------|-------------------------------------------|
| <i>role_name</i> | Quality of service (QoS) guest role name. |
| <i>rate</i>      | 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*

|                           |                 |                                                                         |
|---------------------------|-----------------|-------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>username</i> | Network username. The username can be up to 50 alphanumeric characters. |
|                           | <i>time</i>     | Enter lifetime between 60 to 2592000 seconds or 0 for no limit.         |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                          |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure a the lifetime for a Guest Network User:</p> <pre>&gt; config netuser lifetime guest1 22450</pre> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                            |
|-------------------------|------------------------------------------------------------|
| <b>Related Commands</b> | <p><b>show netuser</b></p> <p><b>show wlan summary</b></p> |
|-------------------------|------------------------------------------------------------|

# 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*

|                           |                                                                                                                                            |                                                                                                     |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>count</i>                                                                                                                               | Maximum number of login sessions for a single user. The allowed values are from 0 (unlimited) to 8. |
| <b>Command Default</b>    | 0 (unlimited)                                                                                                                              |                                                                                                     |
| <b>Examples</b>           | This example shows how to configure the maximum number of login sessions for a single user to 8:<br>> <b>config netuser maxUserLogin 8</b> |                                                                                                     |
| <b>Related Commands</b>   | 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**

|                 |                                                                                   |
|-----------------|-----------------------------------------------------------------------------------|
| <i>username</i> | Network username. The username can be up to 24 alphanumeric characters.           |
| <i>password</i> | 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*

|                           |                 |                                                                                                             |
|---------------------------|-----------------|-------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>username</i> | Network username. The username can be 24 alphanumeric characters.                                           |
|                           | <i>wlan_id</i>  | Wireless LAN identifier to associate with the user. A zero value associates the user with any wireless LAN. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                            |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure a wireless LAN ID 2 to associate with the user named aire1:<br>> <b>config netuser wlan-id aire1 2</b> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                 |
|-------------------------|-------------------------------------------------|
| <b>Related Commands</b> | <b>show netuser</b><br><b>show wlan summary</b> |
|-------------------------|-------------------------------------------------|

## 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 | <b>enable</b>  | Enables the 802.3 bridging.  |
|                    | <b>disable</b> | Disables the 802.3 bridging. |

|                 |           |
|-----------------|-----------|
| Command Default | Disabled. |
|-----------------|-----------|

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Usage Guidelines | <p>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.</p> <p>To determine the status of 802.3 bridging, enter the <a href="#">show netuser guest-roles</a> command.</p> |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|          |                                                                                                                  |
|----------|------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable the 802.3 bridging:</p> <pre>&gt; config network 802.3-bridging enable</pre> |
|----------|------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                     |
|------------------|-------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">show netuser guest-roles</a></p> <p><a href="#">show network</a></p> |
|------------------|-------------------------------------------------------------------------------------|

## 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

|                |                                  |
|----------------|----------------------------------|
| <b>enable</b>  | Enables the switch association.  |
| <b>disable</b> | 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

|                |                                                                        |
|----------------|------------------------------------------------------------------------|
| <b>enable</b>  | Enables use of NAT IP only in discovery response. This is the default. |
| <b>disable</b> | 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 | <b>enable</b>  | Enables the Cisco lightweight access point fallback.  |
|--------------------|----------------|-------------------------------------------------------|
|                    | <b>disable</b> | Disables the Cisco lightweight access point fallback. |

|                        |          |
|------------------------|----------|
| <b>Command Default</b> | Enabled. |
|------------------------|----------|

|                 |                                                                                                                             |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to enable the Cisco lightweight access point fallback:<br>> <b>config network ap-fallback enable</b> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------|

|                         |                             |
|-------------------------|-----------------------------|
| <b>Related Commands</b> | <b>show network summary</b> |
|-------------------------|-----------------------------|

# 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}**

|                           |                |                                                                  |
|---------------------------|----------------|------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>enable</b>  | Enables the lightweight access point priority reauthentication.  |
|                           | <b>disable</b> | Disables the lightweight access point priority reauthentication. |

|                        |           |
|------------------------|-----------|
| <b>Command Default</b> | Disabled. |
|------------------------|-----------|

|                 |                                                                                                                                       |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to enable the lightweight access point priority reauthorization:<br>> <b>config network ap-priority enable</b> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                               |
|-------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config ap priority</a><br><a href="#">show ap summary</a><br><a href="#">show network summary</a> |
|-------------------------|---------------------------------------------------------------------------------------------------------------|

# 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:<br>> 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*

|                           |                                                                                                                     |
|---------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>seconds</i> Timeout in seconds. The minimum value is 10. The default value is 300.                               |
| <b>Command Default</b>    | 300.                                                                                                                |
| <b>Examples</b>           | This example shows how to set the ARP entry timeout value to 240 seconds:<br>> <b>config network arptimeout 240</b> |
| <b>Related Commands</b>   | <b>show network summary</b>                                                                                         |

# 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*

|                           |                                                                                                                                                                                                            |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>shared_secret</i> Bridging shared secret string. The string can contain up to 10 bytes.                                                                                                                 |
| <b>Command Default</b>    | Enabled.                                                                                                                                                                                                   |
| <b>Usage Guidelines</b>   | <p>This command creates a secret that encrypts backhaul user data for the mesh access points that connect to the switch.</p> <p>The zero-touch configuration must be enabled for this command to work.</p> |
| <b>Examples</b>           | <p>This example shows how to configure the bridging shared secret string “shhh1”:</p> <pre>&gt; config network bridging-shared-secret shhh2</pre>                                                          |
| <b>Related Commands</b>   | 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

|                |                                           |
|----------------|-------------------------------------------|
| <b>enable</b>  | Enables the broadcast packet forwarding.  |
| <b>disable</b> | 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

|                |                                                      |
|----------------|------------------------------------------------------|
| <b>enable</b>  | Enables the fast SSID changing for mobile stations   |
| <b>disable</b> | 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

|                |                        |
|----------------|------------------------|
| <b>enable</b>  | Enables this command.  |
| <b>disable</b> | 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 master, use the **config network master-base** command.

**config network master-base {enable | disable}**

---

**Syntax Description**

|                |                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------|
| <b>enable</b>  | Enables the Cisco wireless LAN controller acting as a Cisco lightweight access point default master.  |
| <b>disable</b> | Disables the Cisco wireless LAN controller acting as a Cisco lightweight access point default master. |

---

---

**Command Default**

None.

---

**Usage Guidelines**

This setting is only used upon network installation and should be disabled after the initial network configuration. Because the Master Cisco wireless LAN controller is normally not used in a deployed network, the Master Cisco wireless LAN controller setting is automatically disabled upon reboot or OS code upgrade.

---

**Examples**

This example shows how to enable the Cisco wireless LAN controller as a default master:

> **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

|                |                                                           |
|----------------|-----------------------------------------------------------|
| <b>enable</b>  | Enables the switch management from a wireless interface.  |
| <b>disable</b> | 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 Ciscolightweight 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**

|                |                                        |
|----------------|----------------------------------------|
| <b>enable</b>  | Enables the multicast global support.  |
| <b>disable</b> | 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*

|                           |                                                                                                                                                                                                                                                                                                                                              |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>value</i><br>Frequency at which controller sends IGMP query messages. The range is from 15 to 2400 seconds.                                                                                                                                                                                                                               |
| <b>Command Default</b>    | 20 seconds.                                                                                                                                                                                                                                                                                                                                  |
| <b>Usage Guidelines</b>   | <p>To configure IGMP query interval, ensure that you do the following:</p> <ul style="list-style-type: none"><li>• Enable the global multicast by entering the <b>config network multicast global enable</b> command.</li><li>• Enable IGMP snooping by entering the <b>config network multicast igmp snooping enable</b> command.</li></ul> |
| <b>Examples</b>           | <p>This example shows how to configure the IGMP query interval at 20 seconds:</p> <pre>&gt; config network multicast igmp query interval 20</pre>                                                                                                                                                                                            |
| <b>Related Commands</b>   | <p><a href="#">config network multicast global</a><br/><a href="#">config network multicast igmp snooping</a><br/><a href="#">config network multicast igmp timeout</a></p>                                                                                                                                                                  |

# 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

|                |                         |
|----------------|-------------------------|
| <b>enable</b>  | Enables IGMP snooping.  |
| <b>disable</b> | 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*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>value</i> Timeout range from 30 to 7200 seconds.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Usage Guidelines</b>   | <p>You can enter a timeout value between 30 and 7200 seconds. The controller sends three queries in one timeout value at an interval of <i>timeout</i>/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.</p> |
| <b>Examples</b>           | <p>This example shows how to configure the timeout value 50 for IGMP network settings:</p> <pre>&gt; config network multicast igmp timeout 50</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Related Commands</b>   | <p><a href="#">config network multicast global</a><br/><a href="#">config network multicast igmp snooping</a><br/><a href="#">config network multicast igmp query interval</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

# 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

|                       |                                                                           |
|-----------------------|---------------------------------------------------------------------------|
| <b>enable</b>         | Enables Layer 2 multicast.                                                |
| <b>disable</b>        | Disables Layer 2 multicast.                                               |
| <b>all</b>            | Applies to all interfaces.                                                |
| <i>interface-name</i> | 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

|                       |                                                                                   |
|-----------------------|-----------------------------------------------------------------------------------|
| <b>query interval</b> | Query interval to send MLD query messages.                                        |
| <i>interval-value</i> | Query interval in seconds. The valid value is between 15 seconds to 2400 seconds. |
| <b>snooping</b>       | Configures MLD snooping.                                                          |
| <b>enable</b>         | Enables MLD snooping.                                                             |
| <b>disable</b>        | Disables MLD snooping.                                                            |
| <b>timeout</b>        | Configures MLD timeout.                                                           |
| <i>timeout-value</i>  | 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure the multicast mode to send a single copy of data to multiple receivers: |
|-----------------|-------------------------------------------------------------------------------------------------------------|

> **config network multicast mode multicast**

---

|                         |                                                                                                                           |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>config network multicast global</b><br><b>config network broadcast</b><br><b>config network multicast mode unicast</b> |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------|

# 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                          |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure the controller to use the unicast mode:</p> <pre>&gt; config network multicast mode unicast</pre> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><b>config network multicast global</b></p> <p><b>config network broadcast</b></p> <p><b>config network multicast mode multicast</b></p> |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|

# 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**

|                |                                 |
|----------------|---------------------------------|
| <b>enable</b>  | Enables the OTAP provisioning.  |
| <b>disable</b> | 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*

|                           |                                                                                                                      |
|---------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>name</i> RF-Network name. The name can contain up to 19 characters.                                               |
| <b>Command Default</b>    | None.                                                                                                                |
| <b>Examples</b>           | This example shows how to set the RF-network name to travelers:<br>> <b>config network rf-network-name travelers</b> |
| <b>Related Commands</b>   | <b>show network summary</b>                                                                                          |

# 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

|                |                                                        |
|----------------|--------------------------------------------------------|
| <b>enable</b>  | Enables the secure web interface for management users. |
| <b>disable</b> | 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 | <b>high</b>    | Configures whether or not 128-bit ciphers are required for web administration and web authentication. |
|                    | <b>sslv2</b>   | Configures SSLv2 for both web administration and web authentication.                                  |
|                    | <b>enable</b>  | Enables the secure web interface.                                                                     |
|                    | <b>disable</b> | 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**

|                |                                 |
|----------------|---------------------------------|
| <b>enable</b>  | Allows the new SSH sessions.    |
| <b>disable</b> | 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 | <b>enable</b>  | Allows new Telnet sessions.    |
|                    | <b>disable</b> | Disallows new Telnet sessions. |

|                 |           |
|-----------------|-----------|
| Command Default | Disabled. |
|-----------------|-----------|

|          |                                                                                                                     |
|----------|---------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure the new Telnet sessions:</p> <p>&gt; <b>config network telnet enable</b></p> |
|----------|---------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                     |
|------------------|-------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">config ap telnet</a></p> <p><a href="#">show network summary</a></p> |
|------------------|-------------------------------------------------------------------------------------|

# config network usertimeout

To change the timeout for idle client sessions, use the **config network usertimeout** command.

**config network usertimeout** *seconds*

| Syntax Description | <i>seconds</i> | 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 | <p>This example shows how to configure the idle session timeout to 1200 seconds:</p> <pre>&gt; config network usertimeout 1200</pre> |
|----------|--------------------------------------------------------------------------------------------------------------------------------------|
|----------|--------------------------------------------------------------------------------------------------------------------------------------|

| 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 | <b>enable</b>  | Allows the controller to support bypass of captive portals.    |
|--------------------|----------------|----------------------------------------------------------------|
|                    | <b>disable</b> | Disallows the controller to support bypass of captive portals. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                    |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure the controller to support bypass of captive portals:<br>> <b>config network web-auth captive-bypass enable</b> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                             |
|-------------------------|-----------------------------|
| <b>Related Commands</b> | <b>show network summary</b> |
|-------------------------|-----------------------------|

## 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**

---

|             |                                                  |
|-------------|--------------------------------------------------|
| <i>port</i> | 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 | <b>enable</b>  | Allows proxy redirect support for web authentication clients.    |
|--------------------|----------------|------------------------------------------------------------------|
|                    | <b>disable</b> | Disallows proxy redirect support for web authentication clients. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                   |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to enable proxy redirect support for web authentication clients:<br>> <b>config network web-auth proxy-redirect enable</b> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                             |
|-------------------------|-----------------------------|
| <b>Related Commands</b> | <b>show network summary</b> |
|-------------------------|-----------------------------|

# 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**

|                |                                                          |
|----------------|----------------------------------------------------------|
| <b>enable</b>  | Allows secure web (https) authentication for clients.    |
| <b>disable</b> | Disallows secure web (https) authentication for clients. |

---

---

**Command Default**

Enabled.

---

**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 | <b>enable</b>  | Enables the web interface.  |
|--------------------|----------------|-----------------------------|
|                    | <b>disable</b> | Disables the web interface. |

|                        |          |
|------------------------|----------|
| <b>Command Default</b> | Enabled. |
|------------------------|----------|

|                 |                                                                                                      |
|-----------------|------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to disable the web interface mode:<br>> <b>config network webmode disable</b> |
|-----------------|------------------------------------------------------------------------------------------------------|

|                         |                             |
|-------------------------|-----------------------------|
| <b>Related Commands</b> | <b>show network summary</b> |
|-------------------------|-----------------------------|

# 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}}
```

|                           |                       |                                                                   |
|---------------------------|-----------------------|-------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>port</b>           | Configures additional ports for web authentication redirection.   |
|                           | <i>port-number</i>    | Port number (between 0 and 65535).                                |
|                           | <b>proxy-redirect</b> | Configures proxy redirect support for web authentication clients. |
|                           | <b>enable</b>         | Enables proxy redirect support for web authentication clients.    |
|                           | <b>disable</b>        | Disables 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.

**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}**

|                           |                |                                                      |
|---------------------------|----------------|------------------------------------------------------|
| <b>Syntax Description</b> | <b>enable</b>  | Enables the bridge access point ZeroConfig support.  |
|                           | <b>disable</b> | Disables the bridge access point ZeroConfig support. |

|                        |          |
|------------------------|----------|
| <b>Command Default</b> | Enabled. |
|------------------------|----------|

|                 |                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to enable the bridge access point ZeroConfig support:<br>> <b>config network zero-config enable</b> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------|

|                         |                             |
|-------------------------|-----------------------------|
| <b>Related Commands</b> | <b>show network summary</b> |
|-------------------------|-----------------------------|

# config paging

To enable or disable scrolling of the page, use the **config paging** command.

**config paging** {enable | disable}

---

**Syntax Description**

|                |                                     |
|----------------|-------------------------------------|
| <b>enable</b>  | Enables the scrolling of the page.  |
| <b>disable</b> | 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

|                |                                                  |
|----------------|--------------------------------------------------|
| <b>enable</b>  | Enables the display of passwords in plain text.  |
| <b>disable</b> | 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](#)

# config 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 **config pmk-cache delete** command.

**config pmk-cache delete** {all | *mac\_address*}

---

**Syntax Description**

|                    |                                                             |
|--------------------|-------------------------------------------------------------|
| <b>all</b>         | Deletes all Cisco wireless LAN controllers.                 |
| <i>mac_address</i> | 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:

```
> config pmk-cache delete all
```

---

**Related Commands**

show pmk-cache

## 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

|                |                               |
|----------------|-------------------------------|
| <b>all</b>     | Configures all ports.         |
| <i>port</i>    | Number of the port.           |
| <b>enable</b>  | Enables the specified ports.  |
| <b>disable</b> | 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 physicalmode](#)  
[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

|                |                               |
|----------------|-------------------------------|
| <b>all</b>     | Configures all ports.         |
| <i>port</i>    | Number of the port.           |
| <b>enable</b>  | Enables the specified ports.  |
| <b>disable</b> | Disables the specified ports. |

## Command Default

The default for all ports is that autonegotiation is enabled.

## Usage Guidelines

You must disable port autoconfiguration before you make physical mode manual settings by using the **config port physicalmode** command. The **config port autoneg** command overrides settings that you made using the **config port physicalmode** command.

## 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 physicalmode](#)  
[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

|                |                               |
|----------------|-------------------------------|
| <b>all</b>     | Configures all ports.         |
| <i>port</i>    | Number of the port.           |
| <b>enable</b>  | Enables the specified ports.  |
| <b>disable</b> | 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 physicalmode](#)  
[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** }

|                           |                |                               |
|---------------------------|----------------|-------------------------------|
| <b>Syntax Description</b> | <b>all</b>     | Configures all ports.         |
|                           | <i>port</i>    | Number of the port.           |
|                           | <b>enable</b>  | Enables the specified ports.  |
|                           | <b>disable</b> | Disables the specified ports. |

|                        |          |
|------------------------|----------|
| <b>Command Default</b> | Enabled. |
|------------------------|----------|

|                 |                                                                                                                                                                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to enable multicast appliance service on all ports:</p> <pre>&gt; config port multicast appliance all enable</pre> <p>This example shows how to disable multicast appliance service on port 8:</p> <pre>&gt; config port multicast appliance 8 disable</pre> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">config port adminmode</a><br><a href="#">config port autoneg</a><br><a href="#">config port linktrap</a><br><a href="#">config port physicalmode</a><br><a href="#">config port power</a><br><a href="#">show port</a><br><a href="#">transfer download port</a> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# config port physicalmode

To set any or all front-panel 10/100BASE-T Ethernet ports for dedicated 10 Mbps or 100 Mbps, half-duplex or full-duplex operation, use the **config port physicalmode** command.

**config port physicalmode** {**all** | *port*} {**100h** | **100f** | **10h** | **10f**}

## Syntax Description

|             |                                           |
|-------------|-------------------------------------------|
| <b>all</b>  | Configures all ports.                     |
| <i>port</i> | Number of the port.                       |
| <b>100h</b> | Specifies 100-Mbps/half-duplex operation. |
| <b>100f</b> | Specifies 100-Mbps/full-duplex operation. |
| <b>10h</b>  | Specifies 10-Mbps/half-duplex operation.  |
| <b>10f</b>  | Specifies 10-Mbps/full-duplex operation.  |

## Command Default

The default is that all ports are set to autonegotiate.

## Usage Guidelines

You must disable autonegotiation by using the **config port autoneg** command before manually configuring any port's physical mode. The **config port autoneg** command overrides settings that you made using the **config port physicalmode** command.

## Examples

This example shows how to set all ports to 100-Mbps/full-duplex operation:

```
> config port physicalmode all 100f
```

This example shows how to set port 20 to 100-Mbps/half-duplex operation:

```
> config port physicalmode 20 100h
```

This example shows how to set port 21 to 10-Mbps/full-duplex operation:

```
> config port physicalmode 21 10f
```

This example shows how to set port 22 to 10-Mbps/half-duplex operation:

```
> config port physicalmode 22 10h
```

## Related Commands

[config port adminmode](#)  
[config port autoneg](#)  
[config port linktrap](#)  
[config port multicast appliance](#)  
[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 | <b>all</b>     | Configures all ports.        |
|                    | <i>port</i>    | Port number.                 |
|                    | <b>enable</b>  | Enables the specified ports. |
|                    | <b>disable</b> | Disable the specified ports. |

|                 |          |
|-----------------|----------|
| Command Default | Enabled. |
|-----------------|----------|

|          |                                                                                                                                                                                                            |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable PoE on all ports:</p> <pre>&gt; config port power all enable</pre> <p>This example shows how to disable PoE on port 8:</p> <pre>&gt; config port power 8 disable</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                                                                                                                                                           |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">config port adminmode</a></p> <p><a href="#">config port autoneg</a></p> <p><a href="#">config port linktrap</a></p> <p><a href="#">config port multicast appliance</a></p> <p><a href="#">config port physicalmode</a></p> <p><a href="#">show port</a></p> <p><a href="#">transfer download port</a></p> |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# config prompt

To change the CLI system prompt, use the **config prompt** command.

**config prompt** *prompt*

---

**Syntax Description**

---

|               |                                                                                                                            |
|---------------|----------------------------------------------------------------------------------------------------------------------------|
| <i>prompt</i> | 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**

|                           |                 |                                                                                                                                                              |
|---------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>bronze</b>   | Specifies the average data rate for the queue bronze.                                                                                                        |
|                           | <b>silver</b>   | Specifies the average data rate for the queue silver.                                                                                                        |
|                           | <b>gold</b>     | Specifies the average data rate for the queue gold.                                                                                                          |
|                           | <b>platinum</b> | Specifies the average data rate for the queue platinum.                                                                                                      |
|                           | <b>rate</b>     | 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. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                 |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure the average data rate 0 Kbps for the queue gold:</p> <pre>&gt; config qos average-data-rate gold 0</pre> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                            |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p>show qos description</p> <p>config qos burst-data-rate</p> <p>config qos average-realtime-rate</p> <p>config qos burst-realtime-rate</p> <p>config qos max-rf-usage</p> |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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

|                 |                                                                                                                                                                        |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>bronze</b>   | Specifies the average real-time data rate for the queue bronze.                                                                                                        |
| <b>silver</b>   | Specifies the average real-time data rate for the queue silver.                                                                                                        |
| <b>gold</b>     | Specifies the average real-time data rate for the queue gold.                                                                                                          |
| <b>platinum</b> | Specifies the average real-time data rate for the queue platinum.                                                                                                      |
| <i>rate</i>     | 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 | <b>bronze</b>   | Specifies the peak data rate for the queue bronze.                                                                                                        |
|                    | <b>silver</b>   | Specifies the peak data rate for the queue silver.                                                                                                        |
|                    | <b>gold</b>     | Specifies the peak data rate for the queue gold.                                                                                                          |
|                    | <b>platinum</b> | Specifies the peak data rate for the queue platinum.                                                                                                      |
|                    | <i>rate</i>     | 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 | <p>This example shows how to configure the peak rate 30000 Kbps for the queue gold:</p> <pre>&gt; config qos burst-data-rate gold 30000</pre> |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                              |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p>show qos description</p> <p>config qos average-data-rate</p> <p>config qos average-realtime-rate</p> <p>config qos burst-realtime-rate</p> <p>config qos max-rf-usage</p> |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                 |                                                                                                                                                                      |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>bronze</b>   | Specifies the burst real-time data rate for the queue bronze.                                                                                                        |
| <b>silver</b>   | Specifies the burst real-time data rate for the queue silver.                                                                                                        |
| <b>gold</b>     | Specifies the burst real-time data rate for the queue gold.                                                                                                          |
| <b>platinum</b> | Specifies the burst real-time data rate for the queue platinum.                                                                                                      |
| <i>rate</i>     | 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 | <b>bronze</b>      | Specifies the QoS profile description for the queue bronze.   |
|                    | <b>silver</b>      | Specifies the QoS profile description for the queue silver.   |
|                    | <b>gold</b>        | Specifies the QoS profile description for the queue gold.     |
|                    | <b>platinum</b>    | Specifies the QoS profile description for the queue platinum. |
|                    | <i>description</i> | QoS profile description.                                      |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                          |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure the QoS profile description “description” for the queue gold:</p> <pre>&gt; config qos description gold abc</pre> |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                                                     |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><b>show qos average-data-rate</b></p> <p><b>config qos burst-data-rate</b></p> <p><b>config qos average-realtime-rate</b></p> <p><b>config qos burst-realtime-rate</b></p> <p><b>config qos max-rf-usage</b></p> |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                         |                                                                      |
|-------------------------|----------------------------------------------------------------------|
| <b>bronze</b>           | Specifies the maximum percentage of RF usage for the queue bronze.   |
| <b>silver</b>           | Specifies the maximum percentage of RF usage for the queue silver.   |
| <b>gold</b>             | Specifies the maximum percentage of RF usage for the queue gold.     |
| <b>platinum</b>         | Specifies the maximum percentage of RF usage for the queue platinum. |
| <i>usage_percentage</i> | 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

|                  |                                                      |
|------------------|------------------------------------------------------|
| <b>bronze</b>    | Specifies the QoS 802.1p tag for the queue bronze.   |
| <b>silver</b>    | Specifies the QoS 802.1p tag for the queue silver.   |
| <b>gold</b>      | Specifies the QoS 802.1p tag for the queue gold.     |
| <b>platinum</b>  | Specifies the QoS 802.1p tag for the queue platinum. |
| <i>dot1p_tag</i> | 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

|                                   |                                                                                                                                                                            |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>bronze</b>                     | Specifies a Bronze profile of the WLAN.                                                                                                                                    |
| <b>silver</b>                     | Specifies a Silver profile of the WLAN.                                                                                                                                    |
| <b>gold</b>                       | Specifies a Gold profile of the WLAN.                                                                                                                                      |
| <b>platinum</b>                   | Specifies a Platinum profile of the WLAN.                                                                                                                                  |
| <i>maximum-priority</i>           | Maximum QoS priority as one of the following: <ul style="list-style-type: none"> <li>• besteffort</li> <li>• background</li> <li>• video</li> <li>• voice</li> </ul>       |
| <i>default-unicast-priority</i>   | Default unicast priority as one of the following: <ul style="list-style-type: none"> <li>• besteffort</li> <li>• background</li> <li>• video</li> <li>• voice</li> </ul>   |
| <i>default-multicast-priority</i> | Default multicast priority as one of the following: <ul style="list-style-type: none"> <li>• besteffort</li> <li>• background</li> <li>• video</li> <li>• voice</li> </ul> |

## 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

|                 |                                                      |
|-----------------|------------------------------------------------------|
| <b>bronze</b>   | Specifies the QoS 802.1p tag for the queue bronze.   |
| <b>silver</b>   | Specifies the QoS 802.1p tag for the queue silver.   |
| <b>gold</b>     | Specifies the QoS 802.1p tag for the queue gold.     |
| <b>platinum</b> | Specifies the QoS 802.1p tag for the queue platinum. |
| <b>none</b>     | Specifies when no specific protocol is assigned.     |
| <i>dot1p</i>    | 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

|                     |                                                  |
|---------------------|--------------------------------------------------|
| <b>bronze</b>       | Specifies the QoS length for the queue bronze.   |
| <b>silver</b>       | Specifies the QoS length for the queue silver.   |
| <b>gold</b>         | Specifies the QoS length for the queue gold.     |
| <b>platinum</b>     | Specifies the QoS length for the queue platinum. |
| <i>queue_length</i> | 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

|                        |                                                               |
|------------------------|---------------------------------------------------------------|
| <b>enable</b>          | Enables a RADIUS accounting server.                           |
| <b>disable</b>         | Disables a RADIUS accounting server.                          |
| <b>delete</b>          | Deletes a RADIUS accounting server.                           |
| <i>index</i>           | RADIUS server index. The controller begins the search with 1. |
| <b>add</b>             | Adds a RADIUS accounting server.                              |
| <i>index_server_ip</i> | IP address of RADIUS server.                                  |
| <i>port</i>            | RADIUS server's UDP port number for the interface protocols.  |
| <b>ascii</b>           | Specifies the RADIUS server's secret type: <b>ascii</b> .     |
| <b>hex</b>             | Specifies the RADIUS server's secret type: <b>hex</b> .       |
| <i>secret</i>          | 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 | <b>hmac-md5</b>  | Enables IPsec HMAC-MD5 authentication.  |
|                    | <b>hmac-sha1</b> | Enables IPsec HMAC-SHA1 authentication. |
|                    | <i>index</i>     | 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*

|                           |                                                                                                                                        |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>index</i> RADIUS server index.                                                                                                      |
| <b>Command Default</b>    | None.                                                                                                                                  |
| <b>Examples</b>           | This example shows how to enable the IPsec support for RADIUS accounting server index 1:<br>> <b>config radius acct ipsec enable 1</b> |
| <b>Related Commands</b>   | <b>show radius acct statistics</b>                                                                                                     |

# 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

|              |                                                |
|--------------|------------------------------------------------|
| <b>3des</b>  | Enables IPsec 3DES encryption.                 |
| <b>aes</b>   | Enables IPsec AES encryption.                  |
| <b>des</b>   | Enables IPsec DES encryption.                  |
| <i>index</i> | 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 |  |                                        |
|--------------------|--|----------------------------------------|
| <b>IPsec</b>       |  | Configures the IPsec.                  |
| <b>ike</b>         |  | Configures the IKE.                    |
| <b>dh-group</b>    |  | Specifies the Dixie-Hellman group.     |
| <b>group-1</b>     |  | Configures the DH Group 1 (768 bits).  |
| <b>group-2</b>     |  | Configures the DH Group 2 (1024 bits). |
| <b>group-5</b>     |  | Configures the DH Group 5 (1024 bits). |
| <b>lifetime</b>    |  | Configures the IKE lifetime.           |
| <i>seconds</i>     |  | IKE lifetime in seconds.               |
| <b>phase1</b>      |  | Configures the IKE phase1 node.        |
| <b>aggressive</b>  |  | Enables the aggressive mode.           |
| <b>main</b>        |  | Enables the main mode.                 |
| <i>index</i>       |  | RADIUS server index.                   |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure an IKE lifetime of 23 seconds for RADIUS server index 1:</p> <pre>&gt; <b>config radius acct ipsec ike lifetime 23 1</b></pre> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                    |
|-------------------------|------------------------------------|
| <b>Related Commands</b> | <b>show radius acct statistics</b> |
|-------------------------|------------------------------------|

# 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

|                      |                                                                     |
|----------------------|---------------------------------------------------------------------|
| <b>colon</b>         | Sets the delimiter to a colon (for example, xx:xx:xx:xx:xx:xx).     |
| <b>hyphen</b>        | Sets the delimiter to a hyphen (for example, xx-xx-xx-xx-xx-xx).    |
| <b>single-hyphen</b> | Sets the delimiter to a single hyphen (for example, xxxxxx-xxxxxx). |
| <b>none</b>          | 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 | <i>index</i>   | RADIUS server index.                                           |
|                    | <b>enable</b>  | Enables the server as a network user's default RADIUS server.  |
|                    | <b>disable</b> | Disables the server as a network user's default RADIUS server. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                                                    |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure a default RADIUS accounting server for the network users with RADIUS server index1:</p> <pre>&gt; config radius acct network 1 enable</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                             |
|------------------|-----------------------------|
| 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**

|                |                                                           |
|----------------|-----------------------------------------------------------|
| <i>index</i>   | RADIUS server index.                                      |
| <i>timeout</i> | 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

|                  |                                                                  |
|------------------|------------------------------------------------------------------|
| <b>enable</b>    | Enables a RADIUS authentication server.                          |
| <b>disable</b>   | Disables a RADIUS authentication server.                         |
| <b>delete</b>    | Deletes a RADIUS authentication server.                          |
| <i>index</i>     | RADIUS server index. The controller begins the search with 1.    |
| <b>add</b>       | Adds a RADIUS authentication server. See the “Defaults” section. |
| <i>server_ip</i> | IP address of the RADIUS server.                                 |
| <i>port</i>      | RADIUS server’s UDP port number for the interface protocols.     |
| <b>ascii</b>     | Specifies RADIUS server’s secret type: <b>ascii</b> .            |
| <b>hex</b>       | Specifies RADIUS server’s secret type: <b>hex</b> .              |
| <i>secret</i>    | 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 | <b>hmac-md5</b>  | Enables IPsec HMAC-MD5 authentication.  |
|                    | <b>hmac-sha1</b> | Enables IPsec HMAC-SHA1 authentication. |
|                    | <i>index</i>     | RADIUS server index.                    |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                                                    |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure the IPsec hmac-md5 support for RADIUS authentication server index 1:</p> <pre>&gt; config radius auth IPsec authentication hmac-md5 1</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                    |
|------------------|------------------------------------|
| Related Commands | <b>show radius acct statistics</b> |
|------------------|------------------------------------|

# 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

|                |                                                          |
|----------------|----------------------------------------------------------|
| <b>enable</b>  | Enables the IPsec support for an authentication server.  |
| <b>disable</b> | Disables the IPsec support for an authentication server. |
| <i>index</i>   | 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 | <b>3des</b>  | Enables the IPsec 3DES encryption. |
|--------------------|--------------|------------------------------------|
|                    | <b>aes</b>   | Enables the IPsec AES encryption.  |
|                    | <b>des</b>   | Enables the IPsec DES encryption.  |
|                    | <b>index</b> | RADIUS server index.               |
|                    |              |                                    |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                        |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure IPsec 3dec encryption RADIUS authentication server index 3:<br>> <b>config radius auth IPsec encryption 3des 3</b> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                    |
|-------------------------|------------------------------------|
| <b>Related Commands</b> | <b>show radius acct statistics</b> |
|-------------------------|------------------------------------|

# 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 |                   |                                          |
|--------------------|-------------------|------------------------------------------|
|                    | <b>dh-group</b>   | Configures the IKE Diffie-Hellman group. |
|                    | <b>group-1</b>    | Configures the DH Group 1 (768 bits).    |
|                    | <b>group-2</b>    | Configures the DH Group 2 (1024 bits).   |
|                    | <b>group-5</b>    | Configures the DH Group 2 (1024 bits).   |
|                    | <b>lifetime</b>   | Configures the IKE lifetime.             |
|                    | <i>seconds</i>    | Lifetime in seconds.                     |
|                    | <b>phase1</b>     | Configures the IKE phase1 mode.          |
|                    | <b>aggressive</b> | Enables the aggressive mode.             |
|                    | <b>main</b>       | Enables the main mode.                   |
|                    | <i>index</i>      | 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 | <b>enable</b>  | Enables AES key wrap.                                                             |
|                    | <b>disable</b> | Disables AES key wrap.                                                            |
|                    | <b>add</b>     | Configures AES key wrap attributes.                                               |
|                    | <b>ascii</b>   | Configures key wrap in an ASCII format.                                           |
|                    | <b>hex</b>     | Configures key wrap in a hexadecimal format.                                      |
|                    | <i>kek</i>     | 16-byte Key Encryption Key (KEK).                                                 |
|                    | <i>mack</i>    | 20-byte Message Authentication Code Key (MACK).                                   |
|                    | <i>index</i>   | 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:<br>> <b>config radius auth keywrap enable</b> |
|----------|-------------------------------------------------------------------------------------------------------------------------------------|

|                  |                             |
|------------------|-----------------------------|
| 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

|                      |                                                                   |
|----------------------|-------------------------------------------------------------------|
| <b>colon</b>         | Sets a delimiter to a colon (for example, xx:xx:xx:xx:xx:xx).     |
| <b>hyphen</b>        | Sets a delimiter to a hyphen (for example, xx-xx-xx-xx-xx-xx).    |
| <b>single-hyphen</b> | Sets a delimiter to a single hyphen (for example, xxxxxx-xxxxxx). |
| <b>none</b>          | 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

|                |                                                                   |
|----------------|-------------------------------------------------------------------|
| <i>index</i>   | RADIUS server index.                                              |
| <b>enable</b>  | Enables the server as a management user's default RADIUS server.  |
| <b>disable</b> | 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

|                           |                                              |
|---------------------------|----------------------------------------------|
| <i>index</i>              | RADIUS server index.                         |
| <i>retransmit-timeout</i> | 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 | <i>index</i>   | RADIUS server index.                                         |
|                    | <b>enable</b>  | Enables the server as a network user default RADIUS server.  |
|                    | <b>disable</b> | Disables the server as a network user default RADIUS server. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                           |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure a default RADIUS server for network users:</p> <pre>&gt; config radius auth network 1 enable</pre> |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                    |
|------------------|------------------------------------------------------------------------------------|
| Related Commands | <p><b>show radius acct statistics</b></p> <p><b>config radius acct network</b></p> |
|------------------|------------------------------------------------------------------------------------|

## 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**

|                |                                                           |
|----------------|-----------------------------------------------------------|
| <i>index</i>   | RADIUS server index.                                      |
| <i>timeout</i> | 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

|                |                                                         |
|----------------|---------------------------------------------------------|
| <b>enable</b>  | Enables RFC-3576 support for an authentication server.  |
| <b>disable</b> | Disables RFC-3576 support for an authentication server. |
| <i>index</i>   | 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**

|                |                                              |
|----------------|----------------------------------------------|
| <i>index</i>   | RADIUS server index.                         |
| <i>timeout</i> | 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                            |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure the controller to mark a RADIUS server as down:<br>> <b>config radius aggressive-failover disabled</b> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                     |
|-------------------------|---------------------|
| <b>Related Commands</b> | 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**

|                |                                                   |
|----------------|---------------------------------------------------|
| <b>enable</b>  | Enables RADIUS vendor ID backward compatibility.  |
| <b>disable</b> | 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

|               |                                                                 |
|---------------|-----------------------------------------------------------------|
| <b>legacy</b> | Sends Call Station IDs for layer 2 auth to RADIUS in uppercase. |
| <b>lower</b>  | Sends all Call Station IDs to RADIUS in lowercase.              |
| <b>upper</b>  | Sends all Call Station IDs to RADIUS in uppercase.              |

## Command Default

Enabled.

## Examples

This example shows how to send the callstation 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

|                        |                                                                                                                                  |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>ipaddr</b>          | Configures the Call Station ID type to use the IP address (only Layer 3).                                                        |
| <b>macaddr</b>         | Configures the Call Station ID type to use the system's MAC address (Layers 2 and 3).                                            |
| <b>ap-macaddr-only</b> | Configures the Call Station ID type to use the access point's MAC address (Layers 2 and 3).                                      |
| <b>ap-macaddr-ssid</b> | 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

|                 |                                                                                                                                                                                                                                                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>mode</b>     | Specifies the mode.                                                                                                                                                                                                                                                                                                     |
| <b>off</b>      | Disables RADIUS server fallback.                                                                                                                                                                                                                                                                                        |
| <b>passive</b>  | 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.                                   |
| <b>active</b>   | 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. |
| <b>username</b> | Specifies the username.                                                                                                                                                                                                                                                                                                 |
| <i>username</i> | Username. The username can be up to 16 alphanumeric characters.                                                                                                                                                                                                                                                         |
| <b>interval</b> | Specifies the probe interval value.                                                                                                                                                                                                                                                                                     |
| <i>interval</i> | 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**

|                |                                |
|----------------|--------------------------------|
| <b>enable</b>  | Enables an automatic timeout.  |
| <b>disable</b> | 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

|                |                            |
|----------------|----------------------------|
| <b>enable</b>  | Enables RFID tag tracking. |
| <b>disable</b> | 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**

|                |                                       |
|----------------|---------------------------------------|
| <i>seconds</i> | 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 2-864](#)
- [config rf-profile data-rates, page 2-865](#)
- [config rf-profile delete, page 2-866](#)
- [config rf-profile description, page 2-867](#)
- [config rf-profile tx-power-control-thresh-v1, page 2-868](#)
- [config rf-profile tx-power-control-thresh-v2, page 2-869](#)
- [config rf-profile tx-power-max, page 2-870](#)
- [config rf-profile tx-power-min, page 2-871](#)

# 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 | <b>802.11a</b>      | Configures the RF profile for the 2.4GHz band. |
|                    | <b>802.11b/g</b>    | Configures the RF profile for the 5GHz band.   |
|                    | <i>profile-name</i> | Name of the RF profile.                        |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                         |
|----------|-------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to create a new RF profile:</p> <pre>&gt; config rf-profile create 802.11a RFtestgroup1</pre> |
|----------|-------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">config rogue auto-contain level</a><br/><a href="#">show rogue ignore-list</a><br/><a href="#">show rogue rule detailed</a><br/><a href="#">show rogue rule summary</a></p> |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



# 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 | <b>disabled</b>  | Disables a rate.                                                                                                            |
|                    | <b>mandatory</b> | Sets a rate to mandatory.                                                                                                   |
|                    | <b>supported</b> | 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 | <p>This example shows how to set a data-rate to mandatory for a RF profile:</p> <pre>&gt; config rf-profile data-rates mandatory 24 RFGroup1</pre> |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                                     |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">config rogue auto-contain level</a></p> <p><a href="#">show rogue ignore-list</a></p> <p><a href="#">show rogue rule detailed</a></p> <p><a href="#">show rogue rule summary</a></p> |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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 description 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 | <p>This example shows how to configure TPCv2 on a RF profile:</p> <pre>&gt; config rf-profile tx-power-control-thresh-v2 RFGroup1</pre> |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                                     |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">config rogue auto-contain level</a></p> <p><a href="#">show rogue ignore-list</a></p> <p><a href="#">show rogue rule detailed</a></p> <p><a href="#">show rogue rule summary</a></p> |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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 | <p>This example shows how to configure tx-power-min on a RF profile:</p> <pre>&gt; config rf-profile tx-power-min RFGGroup1</pre> |
|----------|-----------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                                     |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">config rogue auto-contain level</a></p> <p><a href="#">show rogue ignore-list</a></p> <p><a href="#">show rogue rule detailed</a></p> <p><a href="#">show rogue rule summary</a></p> |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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  |  |                                                                                                                                             |
|---------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>enable</b>       |  | Globally enables detection and reporting of ad-hoc rogues.                                                                                  |
| <b>disable</b>      |  | Globally disables detection and reporting of ad-hoc rogues.                                                                                 |
| <b>external</b>     |  | Acknowledges the presence of the ad-hoc rogue.                                                                                              |
| <i>rogue_MAC</i>    |  | MAC address of the ad-hoc rogue access point.                                                                                               |
| <b>alert</b>        |  | Generates an SMNP trap upon detection of the ad-hoc rogue, and generates an immediate alert to the system administrator for further action. |
| <b>all</b>          |  | Enables alerts for all ad-hoc rogue access points.                                                                                          |
| <b>auto-contain</b> |  | Contains all wired ad-hoc rogues detected by the controller.                                                                                |
| <i>monitor_ap</i>   |  | (Optional) IP address of the ad-hoc rogue access point.                                                                                     |
| <b>contain</b>      |  | Contains the offending device so that its signals no longer interfere with authorized clients.                                              |
| <i>1234_aps</i>     |  | 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  |  |                                                                                                                            |
|---------------------|--|----------------------------------------------------------------------------------------------------------------------------|
| <b>friendly</b>     |  | Classifies a rogue access point as friendly.                                                                               |
| <b>state</b>        |  | Specifies a response to classification.                                                                                    |
| <b>internal</b>     |  | Configures the controller to trust this rogue access point.                                                                |
| <b>external</b>     |  | Configures the controller to acknowledge the presence of this access point.                                                |
| <i>ap_mac</i>       |  | MAC address of the rogue access point.                                                                                     |
| <b>malicious</b>    |  | Classifies a rogue access point as potentially malicious.                                                                  |
| <b>unclassified</b> |  | Classifies a rogue access point as unknown.                                                                                |
| <b>alert</b>        |  | Configures the controller to forward an immediate alert to the system administrator for further action.                    |
| <b>contain</b>      |  | 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

|               |                                                                       |
|---------------|-----------------------------------------------------------------------|
| <b>add</b>    | Adds this rogue access point from the friendly MAC address list.      |
| <b>delete</b> | Deletes this rogue access point from the friendly MAC address list.   |
| <i>ap_mac</i> | 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

|                          |                                                                                                                                                                                                        |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>alarm-only</b>        | When entered without the optional argument <i>monitor_ap_only</i> , enables RLDP on all access points.                                                                                                 |
| <b>auto-contain</b>      | When entered without the optional argument <i>monitor_ap_only</i> , automatically contains all rogue access points.                                                                                    |
| <i>monitor_ap_only</i>   | (Optional) RLDP is enabled (when used with <b>alarm-only</b> keyword), or automatically contained (when used with <b>auto-contain</b> keyword) is enabled only on the designated monitor access point. |
| <b>initiate</b>          | Initiates RLDP on a specific rogue access point.                                                                                                                                                       |
| <i>rogue_mac_address</i> | MAC address of specific rogue access point.                                                                                                                                                            |
| <b>disable</b>           | 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

|                     |                                                                                                        |
|---------------------|--------------------------------------------------------------------------------------------------------|
| <b>alarm</b>        | Generates only an alarm when a rogue access point is discovered to be advertising your network's SSID. |
| <b>auto-contain</b> | 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

|                        |                                                                                                                                   |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <i>level</i>           | Configures rogue auto-containment level in the range of 1 to 4.                                                                   |
| <b>Note</b>            | 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. |
| <b>monitor_ap_only</b> | (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

|                     |                                                                                                       |
|---------------------|-------------------------------------------------------------------------------------------------------|
| <b>alarm</b>        | Generates only an alarm when a rogue access point is discovered to be associated with a valid client. |
| <b>auto-contain</b> | 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

|                   |                                                                                                                            |
|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>aaa</b>        | Configures AAA server or local database to validate whether rogue clients are valid clients.                               |
| <b>enable</b>     | Enables the AAA server or local database to check rogue client MAC addresses for validity.                                 |
| <b>disable</b>    | Disables the AAA server or local database to check rogue client MAC addresses for validity.                                |
| <b>alert</b>      | Configures the controller to forward an immediate alert to the system administrator for further action.                    |
| <i>ap_mac</i>     | Access point MAC address.                                                                                                  |
| <b>contain</b>    | Configures the controller to contain the offending device so that its signals no longer interfere with authorized clients. |
| <i>client_mac</i> | MAC address of the rogue client.                                                                                           |
| <i>num_of_APs</i> | 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

|                 |                                                |
|-----------------|------------------------------------------------|
| <b>enable</b>   | Enables rogue detection on this access point.  |
| <b>disable</b>  | Disables rogue detection on this access point. |
| <i>cisco_ap</i> | Cisco access point.                            |
| <b>all</b>      | 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

|                    |                                                                                                     |
|--------------------|-----------------------------------------------------------------------------------------------------|
| <i>rssi-in-dBm</i> | 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

|                                 |                                                                                                                                                                                              |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>report-interval</b>          | Interval at which rogue reports are sent.                                                                                                                                                    |
| <b>transient-rogue-interval</b> | Interval at which rogues are consistently scanned for by APs after the first time the rogues are scanned for.                                                                                |
| <i>time-in-seconds</i>          | Time in seconds. The valid range is as follows: <ul style="list-style-type: none"><li>10 to 300 for <b>report-interval</b></li><li>120 to 1800 for <b>transient-rogue-interval</b></li></ul> |

## 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

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>add ap priority</b> | Adds a rule with <b>match any</b> criteria and the priority that you specify.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>priority</i>        | Priority of this rule within the list of rules.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>classify</b>        | Specifies the classification of a rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>friendly</b>        | Classifies a rule as friendly.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>malicious</b>       | Classifies a rule as malicious.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>rule_name</i>       | Rule to which the command applies, or the name of a new rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>condition ap</b>    | Specifies the conditions for a rule that the rogue access point must meet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>set</b>             | Adds conditions to a rule that the rogue access point must meet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>delete</b>          | Removes conditions to a rule that the rogue access point must meet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <i>condition_type</i>  | Type of the condition to be configured. The condition types are listed below: <ul style="list-style-type: none"> <li>• <b>client-count</b>—Requires that a minimum number of clients be associated to the rogue access point. The valid range is 1 to 10 (inclusive).</li> <li>• <b>duration</b>—Requires that the rogue access point be detected for a minimum period of time. The valid range is 0 to 3600 seconds (inclusive).</li> <li>• <b>managed-ssid</b>—Requires that the rogue access point's SSID be known to the controller.</li> <li>• <b>no-encryption</b>—Requires that the rogue access point's advertised WLAN does not have encryption enabled.</li> <li>• <b>rss</b>i—Requires that the rogue access point have a minimum RSSI value. The valid range is -95 to -50 dBm (inclusive).</li> <li>• <b>ssid</b>—Requires that the rogue access point have a specific SSID.</li> </ul> |
| <i>condition_value</i> | Value of the condition. This value is dependent upon the <i>condition_type</i> . For instance, if the condition type is <b>ssid</b> , then the condition value is either the SSID name or <b>all</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>enable</b>          | Enables all rules or a single specific rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>delete</b>          | Deletes all rules or a single specific rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>disable</b>         | Deletes all rules or a single specific rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>match</b>           | Specifies whether a detected rogue access point must meet <b>all</b> or <b>any</b> 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>all</b>             | Specifies all rules defined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



|                 |                                                                                    |
|-----------------|------------------------------------------------------------------------------------|
| <b>any</b>      | Specifies any rule meeting certain criteria.                                       |
| <b>priority</b> | 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

|                   |                                                  |
|-------------------|--------------------------------------------------|
| <i>ip_address</i> | Network IP address.                              |
| <i>netmask</i>    | Subnet mask for the network.                     |
| <i>gateway</i>    | 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*

|                           |                                                                                                                                    |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>ip_address</i> Network IP address.                                                                                              |
| <b>Command Default</b>    | None.                                                                                                                              |
| <b>Examples</b>           | <p>This example shows how to delete a route from the network IP address 10.1.1.0:</p> <pre>&gt; config route delete 10.1.1.0</pre> |
| <b>Related Commands</b>   | <p>show route all<br/>config route add</p>                                                                                         |

# 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 }**

|                           |              |                                                     |
|---------------------------|--------------|-----------------------------------------------------|
| <b>Syntax Description</b> | <b>1200</b>  | Specifies the supported connection speeds to 1200.  |
|                           | <b>2400</b>  | Specifies the supported connection speeds to 2400.  |
|                           | <b>4800</b>  | Specifies the supported connection speeds to 4800.  |
|                           | <b>9600</b>  | Specifies the supported connection speeds to 9600.  |
|                           | <b>19200</b> | Specifies the supported connection speeds to 19200. |
|                           | <b>38400</b> | Specifies the supported connection speeds to 38400. |
|                           | <b>57600</b> | Specifies the supported connection speeds to 57600. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | 9600. |
|------------------------|-------|

|                 |                                                                                                                                                      |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure a serial baud rate with the default connection speed of 9600:</p> <pre>&gt; config serial baudrate 9600</pre> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                       |
|-------------------------|-----------------------|
| <b>Related Commands</b> | 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*

|                           |                                                                                                                                                            |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>minutes</i> Timeout in minutes from 0 to 160. A value of 0 indicates no timeout.                                                                        |
| <b>Command Default</b>    | 0 (no timeout).                                                                                                                                            |
| <b>Usage Guidelines</b>   | 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. |
| <b>Examples</b>           | This example shows how to configure the timeout of a serial port session to 10 minutes:<br>> <b>config serial timeout 10</b>                               |
| <b>Related Commands</b>   | <b>config serial timeout</b>                                                                                                                               |

# 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

|                 |                                                                      |
|-----------------|----------------------------------------------------------------------|
| <b>debug</b>    | Configures timestamps in debug messages.                             |
| <b>log</b>      | Configures timestamps in log messages.                               |
| <b>datetime</b> | Specifies to timestamp message logs with the standard date and time. |
| <b>disable</b>  | 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*

|                           |                                                                                                                        |
|---------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>session_num</i> Number of sessions from 0 to 5.                                                                     |
| <b>Command Default</b>    | 5.                                                                                                                     |
| <b>Usage Guidelines</b>   | Up to five sessions are possible while a setting of zero prohibits any Telnet CLI sessions.                            |
| <b>Examples</b>           | This example shows how to configure the number of allowed CLI sessions to 2:<br>> <b>config sessions maxsessions 2</b> |
| <b>Related Commands</b>   | 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**

|                |                                                                                          |
|----------------|------------------------------------------------------------------------------------------|
| <i>timeout</i> | 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  |                                                                    |
|---------------------|--------------------------------------------------------------------|
| <i>slot_id</i>      | Slot downlink radio to which the channel is assigned.              |
| <b>enable</b>       | Enables the slot.                                                  |
| <b>disable</b>      | Disables the slot.                                                 |
| <b>channel</b>      | Configures the channel for the slot.                               |
| <b>ap</b>           | Configures one 802.11a Cisco access point.                         |
| <b>chan_width</b>   | Configures channel width for the slot.                             |
| <b>txpower</b>      | Configures Tx power for the slot.                                  |
| <b>antenna</b>      | Configures the 802.11a antenna.                                    |
| <b>extAntGain</b>   | Configures the 802.11a external antenna gain.                      |
| <i>antenna_gain</i> | External antenna gain value in .5 dBi units (such as 2.5 dBi = 5). |
| <b>rts</b>          | Configures RTS/CTS for an AP.                                      |
| <i>cisco_ap</i>     | 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

|             |                              |
|-------------|------------------------------|
| <b>ro</b>   | Specifies a read-only mode.  |
| <b>rw</b>   | Specifies a read/write mode. |
| <i>name</i> | 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*

|                           |                                                                                                                                                                                                           |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>name</i> SNMP community name of up to 16 characters.                                                                                                                                                   |
| <b>Command Default</b>    | None.                                                                                                                                                                                                     |
| <b>Usage Guidelines</b>   | Use this command to create a new community with the default configuration.                                                                                                                                |
| <b>Examples</b>           | <p>This example shows how to create a new SNMP community named test:</p> <pre>&gt; config snmp community create test</pre>                                                                                |
| <b>Related Commands</b>   | <p> <b>show snmp community</b><br/> <b>config snmp community mode</b><br/> <b>config snmp community accessmode</b><br/> <b>config snmp community delete</b><br/> <b>config snmp community ipaddr</b> </p> |

# config snmp community delete

To delete an SNMP community, use the **config snmp community delete** command.

**config snmp community delete** *name*

|                           |                                                                                                                                                      |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>name</i> SNMP community name.                                                                                                                     |
| <b>Command Default</b>    | None.                                                                                                                                                |
| <b>Examples</b>           | <p>This example shows how to delete an SNMP community named test:</p> <pre>&gt; config snmp community delete test</pre>                              |
| <b>Related Commands</b>   | <pre>show snmp community config snmp community mode config snmp community accessmode config snmp community create config snmp community ipaddr</pre> |

# 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

|                   |                             |
|-------------------|-----------------------------|
| <i>ip_address</i> | SNMP community IP address.  |
| <i>ip_mask</i>    | SNMP community subnet mask. |
| <i>name</i>       | 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 | <b>enable</b>  | Enables the community.  |
|                    | <b>disable</b> | Disables the community. |
|                    | <i>name</i>    | SNMP community name.    |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                    |
|----------|------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable the SNMP community named public:</p> <pre>&gt; config snmp community mode disable public</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                                       |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><b>show snmp community</b><br/><b>config snmp community accessmode</b><br/><b>config snmp community create</b><br/><b>config snmp community delete</b><br/><b>config snmp community ipaddr</b></p> |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# config snmp engineID

To configure the SNMP engine ID, use the **config snmp engineID** command.

**config snmp engineID** {*engine\_id* | **default**}

## Syntax Description

|                  |                                                                                                   |
|------------------|---------------------------------------------------------------------------------------------------|
| <i>engine_id</i> | Engine ID in hexadecimal characters (a minimum of 10 and a maximum of 24 characters are allowed). |
| <b>default</b>   | 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 ffffffff:

```
> config snmp engineID ffffffff
```

## Related Commands

[show snmpengineID](#)



# config snmp syscontact

To set the SNMP system contact name, use the **config snmp syscontact** command.

**config snmp syscontact** *contact*

|                           |                                                                                                                                                                     |                                                                                |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>contact</i>                                                                                                                                                      | SNMP system contact name. The contact can be up to 31 alphanumeric characters. |
| <b>Command Default</b>    | None.                                                                                                                                                               |                                                                                |
| <b>Examples</b>           | This example shows how to set the SMNP system contact named Cisco WLAN Solution_administrator:<br>> <b>config snmp syscontact Cisco WLAN Solution_administrator</b> |                                                                                |
| <b>Related Commands</b>   | show snmpcommunity                                                                                                                                                  |                                                                                |

# config snmp syslocation

To configure the SNMP system location name, use the **config snmp syslocation** command.

**config snmp syslocation** *location*

|                           |                                                                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>location</i> SNMP system location name. The location can be up to 31 alphanumeric characters.                                  |
| <b>Command Default</b>    | None.                                                                                                                             |
| <b>Examples</b>           | This example shows how to configure the SNMP system location name to Building_2a:<br>> <b>config snmp syslocation Building_2a</b> |
| <b>Related Commands</b>   | <b>show snmpcommunity</b>                                                                                                         |

# 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 | <i>name</i>                                                                                                                                                                      | SNMP community name. The name contain up to 16 characters. |
|                    | <i>ip_address</i>                                                                                                                                                                | 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:<br><br>> <b>config snmp trapreceiver create test 10.1.1.1</b> |                                                            |
| 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*

|                           |                                                                            |
|---------------------------|----------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>name</i> SNMP community name. The name can contain up to 16 characters. |
|---------------------------|----------------------------------------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to delete a server named test from the SNMP trap receiver list:<br>> <b>config snmp trapreceiver delete test</b> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------|

|                         |                       |
|-------------------------|-----------------------|
| <b>Related Commands</b> | <b>show snmp trap</b> |
|-------------------------|-----------------------|

# 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 | <b>enable</b>                                                                                                                                                   | Enables an SNMP trap receiver.  |
|                    | <b>disable</b>                                                                                                                                                  | Disables an SNMP trap receiver. |
|                    | <i>name</i>                                                                                                                                                     | 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:<br>> <b>config snmp trapreceiver mode disable server1</b> |                                 |
| Related Commands   | <b>show snmp trap</b>                                                                                                                                           |                                 |

## 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

|                    |                                                                                                        |
|--------------------|--------------------------------------------------------------------------------------------------------|
| <i>username</i>    | Version 3 SNMP username.                                                                               |
| <b>ro</b>          | Specifies a read-only user privilege.                                                                  |
| <b>rw</b>          | Specifies a read-write user privilege.                                                                 |
| <b>none</b>        | Specifies if no authentication is required.                                                            |
| <b>hmacmd5</b>     | Specifies Hashed Message Authentication Coding Message Digest 5 (HMAC-MD5) for authentication.         |
| <b>hmacsha</b>     | Specifies Hashed Message Authentication Coding-Secure Hashing Algorithm (HMAC-SHA) for authentication. |
| <b>none</b>        | Specifies if no encryption is required.                                                                |
| <b>des</b>         | Specifies to use Cipher Block Chaining-Digital Encryption Standard (CBC-DES) encryption.               |
| <b>aescfb128</b>   | Specifies to use Cipher Feedback Mode-Advanced Encryption Standard-128 (CFB-AES-128) encryption.       |
| <i>auth_key</i>    | (Optional) Authentication key for the HMAC-MD5 or HMAC-SHA authentication protocol.                    |
| <i>encrypt_key</i> | (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*

|                           |                                                                                                      |
|---------------------------|------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>username</i> Username to delete.                                                                  |
| <b>Command Default</b>    | None.                                                                                                |
| <b>Examples</b>           | This example shows how to remove an SNMP user named test:<br>> <b>config snmp v3user delete test</b> |
| <b>Related Commands</b>   | <b>show snmp v3user</b>                                                                              |

# 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 | <b>v1</b>      | Specifies an SNMP version to enable or disable. |
|                    | <b>v2</b>      | Specifies an SNMP version to enable or disable. |
|                    | <b>v3</b>      | Specifies an SNMP version to enable or disable. |
|                    | <b>enable</b>  | Enables a specified version.                    |
|                    | <b>disable</b> | Disables a specified version.                   |

|                 |                      |
|-----------------|----------------------|
| Command Default | All versions enabled |
|-----------------|----------------------|

|          |                                                                                             |
|----------|---------------------------------------------------------------------------------------------|
| Examples | This example shows how to enable SNMP version v1:<br>> <b>config snmp version v1 enable</b> |
|----------|---------------------------------------------------------------------------------------------|

|                  |                         |
|------------------|-------------------------|
| Related Commands | <b>show snmpversion</b> |
|------------------|-------------------------|



## 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

|               |                                             |
|---------------|---------------------------------------------|
| <b>off</b>    | Disables STP for the specified ports.       |
| <b>802.1d</b> | Specifies a supported port mode as 802.1D.  |
| <b>fast</b>   | Specifies a supported port mode as fast.    |
| <i>port</i>   | Port number (1 through 12 or 1 through 24). |
| <b>all</b>    | 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

|             |                                                                                   |
|-------------|-----------------------------------------------------------------------------------|
| <i>cost</i> | Cost in decimal as determined by the network planner.                             |
| <b>auto</b> | Specifies the default cost.                                                       |
| <i>port</i> | Port number (1 through 12 or 1 through 24), or <b>all</b> to configure all ports. |
| <b>all</b>  | 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

|                     |                                             |
|---------------------|---------------------------------------------|
| <i>priority_num</i> | Priority number from 0 to 255.              |
| <i>port</i>         | 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*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>priority_num</i> Priority number between 0 and 65535.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Command Default</b>    | The default is 32768.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Usage Guidelines</b>   | <div> <b>Note</b> 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.</div> <p>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.</p> |
| <b>Examples</b>           | <p>This example shows how to configure spanning tree values on a per switch basis with the bridge priority 40230:</p> <pre>&gt; config spanningtree switch bridgepriority 40230</pre>                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Related Commands</b>   | <pre>show spanningtree switch config spanningtree switch forwarddelay config spanningtree switch hellotime config spanningtree switch maxage config spanningtree switch mode</pre>                                                                                                                                                                                                                                                                                                                                                                                                                    |

# 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*

|                           |                                                                                                                                                                                                    |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>seconds</i> STP hello time in seconds.                                                                                                                                                          |
| <b>Command Default</b>    | The default is 15.                                                                                                                                                                                 |
| <b>Usage Guidelines</b>   | 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. |
| <b>Examples</b>           | <p>This example shows how to configure the STP hello time to 4 seconds:</p> <pre>&gt; config spanningtree switch hellotime 4</pre>                                                                 |
| <b>Related Commands</b>   | <pre>show spanningtree switch spanningtree switch bridgepriority config spanningtree switch forwarddelay config spanningtree switch maxage config spanningtree switch mode</pre>                   |

# config spanningtree switch maxage

To set the maximum age, use the **config spanningtree switch maxage** command.

**config spanningtree switch maxage** *seconds*

## Syntax Description

|                |                                    |
|----------------|------------------------------------|
| <i>seconds</i> | 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

|                |                             |
|----------------|-----------------------------|
| <b>enable</b>  | Enables STP on the switch.  |
| <b>disable</b> | 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

|                |                                                                                          |
|----------------|------------------------------------------------------------------------------------------|
| <b>enable</b>  | Enables the breaking into boot prompt by pressing the <b>Esc</b> key at system startup.  |
| <b>disable</b> | Disables the breaking into boot prompt by pressing the <b>Esc</b> 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

|                |                                                                 |
|----------------|-----------------------------------------------------------------|
| <b>enable</b>  | Enables the features that are prerequisites for the FIPS mode.  |
| <b>disable</b> | 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

|                          |                                                                                                                  |
|--------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>case-check</b>        | Checks at least three combinations: lower-case characters, upper-case characters, digits, or special characters. |
| <b>consecutive-check</b> | Checks the occurrence of the same character three times.                                                         |
| <b>default-check</b>     | Checks for default values or use of their variants.                                                              |
| <b>username-check</b>    | Checks whether the username is specified or not.                                                                 |
| <b>all-checks</b>        | Checks all cases.                                                                                                |
| <b>enable</b>            | Enables a strong password check for the AP and controller.                                                       |
| <b>disable</b>           | 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}**

|                           |                |                               |
|---------------------------|----------------|-------------------------------|
| <b>Syntax Description</b> | <b>enable</b>  | Enables 802.3x flow control.  |
|                           | <b>disable</b> | Disables 802.3x flow control. |

|                        |           |
|------------------------|-----------|
| <b>Command Default</b> | Disabled. |
|------------------------|-----------|

|                 |                                                                                                                                                      |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to enable 802.3x flow control on Cisco wireless LAN controller parameters:<br>> <b>config switchconfig flowcontrol enable</b> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                   |
|-------------------------|-------------------|
| <b>Related Commands</b> | 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**

|           |                                          |
|-----------|------------------------------------------|
| <b>L2</b> | Specifies Layer 2 as the transport mode. |
| <b>L3</b> | 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 | <b>enable</b>                                                                                                                                                                                      | Enables secret obfuscation.  |
|                    | <b>disable</b>                                                                                                                                                                                     | 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:<br>> <b>config switchconfig secret-obfuscation enable</b>                                                                                     |                              |
| Related Commands   | <b>show switchconfig</b>                                                                                                                                                                           |                              |

# config sysname

To set the Cisco wireless LAN controller system name, use the **config sysname** command.

**config sysname** *name*

|                           |                                                                                 |
|---------------------------|---------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>name</i> System name. The name can contain up to 31 alphanumeric characters. |
|---------------------------|---------------------------------------------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure the system named Ent_01:<br>> <b>config sysname Ent_01</b> |
|-----------------|------------------------------------------------------------------------------------------------|

|                         |                     |
|-------------------------|---------------------|
| <b>Related Commands</b> | <b>show sysinfo</b> |
|-------------------------|---------------------|



## 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

|                           |                                                                |
|---------------------------|----------------------------------------------------------------|
| <b>add</b>                | Adds a new TACACS+ accounting server.                          |
| <i>server_index</i>       | TACACS+ accounting server index (1 to 3).                      |
| <i>ip_address</i>         | IP address for the TACACS+ accounting server.                  |
| <i>port</i>               | Controller port used for the TACACS+ accounting server.        |
| <i>type</i>               | Type of secret key being used (ASCII or HEX).                  |
| <i>secret_key</i>         | Secret key in ASCII or hexadecimal characters.                 |
| <b>delete</b>             | Deletes a TACACS+ server.                                      |
| <b>disable</b>            | Disables a TACACS+ server.                                     |
| <b>enable</b>             | Enables a TACACS+ server.                                      |
| <b>retransmit-timeout</b> | Changes the default retransmit timeout for the TACACS+ server. |
| <i>seconds</i>            | 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

|                           |                                                                                  |
|---------------------------|----------------------------------------------------------------------------------|
| <b>add</b>                | Adds a new TACACS+ authorization server.                                         |
| <i>server_index</i>       | TACACS+ authorization server index (1 to 3).                                     |
| <i>ip_address</i>         | IP address for the TACACS+ authorization server.                                 |
| <i>port</i>               | Controller port used for the TACACS+ authorization server.                       |
| <i>type</i>               | Type of secret key being used (ASCII or HEX).                                    |
| <i>secret_key</i>         | Secret key in ASCII or hexadecimal characters.                                   |
| <b>delete</b>             | Deletes a TACACS+ server.                                                        |
| <b>disable</b>            | Disables a TACACS+ server.                                                       |
| <b>enable</b>             | Enables a TACACS+ server.                                                        |
| <b>retransmit-timeout</b> | Changes the default retransmit timeout for the TACACS+ server for network users. |
| <i>seconds</i>            | 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

|                |                                              |
|----------------|----------------------------------------------|
| <i>index</i>   | TACACS+ authorization server index.          |
| <i>timeout</i> | 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        |                                                                                             |
|---------------------------|---------------------------------------------------------------------------------------------|
| <b>add</b>                | (Optional) Adds a new TACACS+ authentication server.                                        |
| <i>server_index</i>       | TACACS+ authentication server index (1 to 3).                                               |
| <i>ip_address</i>         | IP address for the TACACS+ authentication server.                                           |
| <i>port</i>               | Controller port used for the TACACS+ authentication server.                                 |
| <i>type</i>               | Type of secret key being used (ASCII or HEX).                                               |
| <i>secret_key</i>         | Secret key in ASCII or hexadecimal characters.                                              |
| <b>delete</b>             | (Optional) Deletes a TACACS+ server.                                                        |
| <b>disable</b>            | (Optional) Disables a TACACS+ server.                                                       |
| <b>enable</b>             | (Optional) Enables a TACACS+ server.                                                        |
| <b>retransmit-timeout</b> | (Optional) Changes the default retransmit timeout for the TACACS+ server for network users. |
| <i>seconds</i>            | 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

|                |                                              |
|----------------|----------------------------------------------|
| <i>index</i>   | TACACS+ authentication server index.         |
| <i>timeout</i> | 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 | <i>MM/DD/YY</i> | Date. |
|                    | <i>HH:MM:SS</i> | Time. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                       |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure the system date to 04/04/2010 and time to 15:29:00:</p> <pre>&gt; config time manual 04/04/2010 15:29:00</pre> |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                  |
|------------------|------------------|
| Related Commands | <b>show time</b> |
|------------------|------------------|

# 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

|                     |                                                                |
|---------------------|----------------------------------------------------------------|
| <b>auth</b>         | Configures the NTP authentication.                             |
| <b>enable</b>       | Enables the NTP authentication.                                |
| <i>server_index</i> | NTP server index.                                              |
| <i>key_index</i>    | Key index between 1 and 4294967295.                            |
| <b>disable</b>      | Disables the NTP authentication.                               |
| <b>interval</b>     | Configures the NTP polling interval.                           |
| <i>seconds</i>      | NTP polling interval in seconds (between 3600 and 604800).     |
| <b>key-auth</b>     | Configures the NTP authentication key.                         |
| <b>add</b>          | Adds an NTP authentication key.                                |
| <b>md5</b>          | Specifies the authentication protocol.                         |
| <b>ascii</b>        | Specifies the ASCII key format (a maximum of 16 characters).   |
| <b>hex</b>          | Specifies the hexadecimal key format (a maximum of 32 digits). |
| <b>delete</b>       | Deletes an authentication key.                                 |
| <b>server</b>       | Configures the NTP servers.                                    |
| <i>ip_address</i>   | 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 | <b>enable</b>      | Enables daylight saving time.                                    |
|                    | <b>disable</b>     | Disables daylight saving time.                                   |
|                    | <i>delta_hours</i> | Local hour difference from the Universal Coordinated Time (UCT). |
|                    | <i>delta_mins</i>  | 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 | <i>location_index</i> | <p>Number representing the time zone required. The time zones are as follows:</p> <ul style="list-style-type: none"> <li>• (GMT-12:00) International Date Line West</li> <li>• (GMT-11:00) Samoa</li> <li>• (GMT-10:00) Hawaii</li> <li>• (GMT-9:00) Alaska</li> <li>• (GMT-8:00) Pacific Time (US and Canada)</li> <li>• (GMT-7:00) Mountain Time (US and Canada)</li> <li>• (GMT-6:00) Central Time (US and Canada)</li> <li>• (GMT-5:00) Eastern Time (US and Canada)</li> <li>• (GMT-4:00) Atlantic Time (Canada)</li> <li>• (GMT-3:00) Buenos Aires (Argentina)</li> <li>• (GMT-2:00) Mid-Atlantic</li> <li>• (GMT-1:00) Azores</li> <li>• (GMT) London, Lisbon, Dublin, Edinburgh (default value)</li> <li>• (GMT +1:00) Amsterdam, Berlin, Rome, Vienna</li> <li>• (GMT +2:00) Jerusalem</li> <li>• (GMT +3:00) Baghdad</li> <li>• (GMT +4:00) Muscat, Abu Dhabi</li> <li>• (GMT +4:30) Kabul</li> <li>• (GMT +5:00) Karachi, Islamabad, Tashkent</li> <li>• (GMT +5:30) Colombo, Kolkata, Mumbai, New Delhi</li> <li>• (GMT +5:45) Katmandu</li> <li>• (GMT +6:00) Almaty, Novosibirsk</li> <li>• (GMT +6:30) Rangoon</li> <li>• (GMT +7:00) Saigon, Hanoi, Bangkok, Jakarta</li> <li>• (GMT +8:00) Hong Kong, Beijing, Chongqing</li> <li>• (GMT +9:00) Tokyo, Osaka, Sapporo</li> <li>• (GMT +9:30) Darwin</li> <li>• (GMT+10:00) Sydney, Melbourne, Canberra</li> <li>• (GMT+11:00) Magadan, Solomon Is., New Caledonia</li> <li>• (GMT+12:00) Kamchatka, Marshall Is., Fiji</li> <li>• (GMT+12:00) Auckland (New Zealand)</li> </ul> |
|--------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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**

|                |                                                 |
|----------------|-------------------------------------------------|
| <b>enable</b>  | Enables sending 802.11 security-related traps.  |
| <b>disable</b> | 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}**

|                           |                |                                                                                                              |
|---------------------------|----------------|--------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>auth</b>    | Enables trap sending when an AAA authentication failure occurs for management user, net user, or MAC filter. |
|                           | <b>servers</b> | Enables trap sending when no RADIUS servers are responding.                                                  |
|                           | <b>enable</b>  | Enables the sending of AAA server-related traps.                                                             |
|                           | <b>disable</b> | 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

|                    |                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------|
| <b>register</b>    | Enables sending a trap when a Cisco lightweight access point registers with Cisco switch. |
| <b>interfaceUp</b> | Enables sending a trap when a Cisco lightweight access point interface (A or B) comes up. |
| <b>enable</b>      | Enables sending access point-related traps.                                               |
| <b>disable</b>     | 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

|                |                                                  |
|----------------|--------------------------------------------------|
| <b>enable</b>  | Enables sending traps with invalid SNMP access.  |
| <b>disable</b> | 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-disassociate | 802.11-deauthenticate | 802.11-authfail |
                        802.11-assocfail | excluded } { enable | disable }
```

| Syntax Description           |  |                                                                    |
|------------------------------|--|--------------------------------------------------------------------|
| <b>802.11-disassociate</b>   |  | Enables the sending of Dot11 disassociation traps to clients.      |
| <b>802.11-deauthenticate</b> |  | Enables the sending of Dot11 deauthentication traps to clients.    |
| <b>802.11-authfail</b>       |  | Enables the sending of Dot11 authentication fail traps to clients. |
| <b>802.11-assocfail</b>      |  | Enables the sending of Dot11 association fail traps to clients.    |
| <b>excluded</b>              |  | Enables the sending of excluded trap to clients.                   |
| <b>enable</b>                |  | Enables sending of client-related DOT11 traps.                     |
| <b>disable</b>               |  | 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

|                |                                                    |
|----------------|----------------------------------------------------|
| <b>enable</b>  | Enables sending of configuration-saved traps.      |
| <b>disable</b> | 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

|                       |                                                                               |
|-----------------------|-------------------------------------------------------------------------------|
| <b>esp-auth</b>       | Enables the sending of IPsec traps when an ESP authentication failure occurs. |
| <b>esp-reply</b>      | Enables the sending of IPsec traps when an ESP replay failure occurs.         |
| <b>invalidSPI</b>     | Enables the sending of IPsec traps when an ESP invalid SPI is detected.       |
| <b>ike-neg</b>        | Enables the sending of IPsec traps when an IKE negotiation failure occurs.    |
| <b>suite-neg</b>      | Enables the sending of IPsec traps when a suite negotiation failure occurs.   |
| <b>invalid-cookie</b> | Enables the sending of IPsec traps when a Isakamp invalid cookie is detected. |
| <b>enable</b>         | Enables sending of IPsec traps.                                               |
| <b>disable</b>        | 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 | <p>This example shows how to enable the Cisco wireless LAN controller level link up/down trap:</p> <pre>&gt; config trapflags linkmode disable</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                |
|------------------|--------------------------------|
| Related Commands | <a href="#">show trapflags</a> |
|------------------|--------------------------------|

# 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**

|                |                                                                |
|----------------|----------------------------------------------------------------|
| <b>enable</b>  | Enables the sending of traps when multiple logins are active.  |
| <b>disable</b> | 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 | <b>enable</b>  | Enables the sending of rogue access point detection traps.  |
|--------------------|----------------|-------------------------------------------------------------|
|                    | <b>disable</b> | Disables the sending of rogue access point detection traps. |

|                        |         |
|------------------------|---------|
| <b>Command Default</b> | Enabled |
|------------------------|---------|

|                 |                                                                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to disable the sending of rogue access point detection traps:</p> <pre>&gt; config trapflags rogueap disable</pre> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><a href="#">config rogue ap classify</a><br/><a href="#">config rogue ap friendly</a><br/><a href="#">config rogue ap rldp</a><br/><a href="#">config rogue ap ssid</a><br/><a href="#">config rogue ap timeout</a><br/><a href="#">config rogue ap valid-client</a><br/><a href="#">show rogue ap clients</a><br/><a href="#">show rogue ap detailed</a><br/><a href="#">show rogue ap summary</a><br/><a href="#">show rogue ap friendly summary</a><br/><a href="#">show rogue ap malicious summary</a><br/><a href="#">show rogue ap unclassified summary</a><br/><a href="#">show trapflags</a></p> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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

|                 |                                                                                                                                     |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>tx-power</b> | Enables trap sending when the RF manager automatically changes the tx-power level for the Cisco lightweight access point interface. |
| <b>channel</b>  | Enables trap sending when the RF manager automatically changes the channel for the Cisco lightweight access point interface.        |
| <b>antenna</b>  | Enables trap sending when the RF manager automatically changes the antenna for the Cisco lightweight access point interface.        |
| <b>enable</b>   | Enables the sending of RRM parameter-related traps.                                                                                 |
| <b>disable</b>  | 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}**

|                           |                     |                                                                                        |
|---------------------------|---------------------|----------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>load</b>         | Enables trap sending when the load profile maintained by the RF manager fails.         |
|                           | <b>noise</b>        | Enables trap sending when the noise profile maintained by the RF manager fails.        |
|                           | <b>interference</b> | Enables trap sending when the interference profile maintained by the RF manager fails. |
|                           | <b>coverage</b>     | Enables trap sending when the coverage profile maintained by the RF manager fails.     |
|                           | <b>enable</b>       | Enables the sending of RRM profile-related traps.                                      |
|                           | <b>disable</b>      | Disables the sending of RRM profile-related traps.                                     |

|                        |          |
|------------------------|----------|
| <b>Command Default</b> | Enabled. |
|------------------------|----------|

|                 |                                                                                                                                   |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to disable the sending of RRM profile-related traps:<br>> <b>config trapflags rrm-profile load disable</b> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------|

|                         |                                |
|-------------------------|--------------------------------|
| <b>Related Commands</b> | <a href="#">show trapflags</a> |
|-------------------------|--------------------------------|

# 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**

|                |                                              |
|----------------|----------------------------------------------|
| <b>enable</b>  | Enables the sending of spanning tree traps.  |
| <b>disable</b> | 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

|                |                            |
|----------------|----------------------------|
| <b>enable</b>  | Enables WPS trap sending.  |
| <b>disable</b> | 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}**

|                           |                |                                                                                       |
|---------------------------|----------------|---------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>enable</b>  | Enables wired clients behind a WGB to connect to an anchor controller in a DMZ.       |
|                           | <b>disable</b> | Disables wired clients behind a WGB from connecting to an anchor controller in a DMZ. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to enable WGB VLAN client support:</p> <pre>&gt; config wgb vlan enable</pre> |
|-----------------|---------------------------------------------------------------------------------------------------------|

## 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

|                  |                                                                |
|------------------|----------------------------------------------------------------|
| <b>enable</b>    | Enables a wireless LAN.                                        |
| <b>disable</b>   | Disables a wireless LAN.                                       |
| <b>create</b>    | Creates a wireless LAN.                                        |
| <b>delete</b>    | Deletes a wireless LAN.                                        |
| <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512.                     |
| <i>name</i>      | (Optional) WLAN profile name up to 32 alphanumeric characters. |
| <b>foreignAp</b> | (Optional) Specifies the third-party access point settings.    |
| <i>ssid</i>      | SSID (network name) up to 32 alphanumeric characters.          |
| <b>all</b>       | (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 | <b>ap-cac-limit</b>     | Supports phones that <b>require client-controlled Call Admission Control (CAC) that</b> expect the Cisco vendor-specific information element (IE). |
|                    | <b>client-cac-limit</b> | Supports phones that <b>require access point-controlled CAC that</b> expect the IEEE 802.11e Draft 6 QBSS-load.                                    |
|                    | <b>enable</b>           | Enables phone support.                                                                                                                             |
|                    | <b>disable</b>          | Disables phone support.                                                                                                                            |
|                    | <i>wlan_id</i>          | 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 | <p>This example shows how to enable the phone support that requires client-controlled CAC with wireless LAN ID 8:</p> <pre>&gt; config wlan 7920-support ap-cac-limit enable 8</pre> |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                           |
|------------------|---------------------------|
| Related Commands | <a href="#">show wlan</a> |
|------------------|---------------------------|

# 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

|                |                                                       |
|----------------|-------------------------------------------------------|
| <b>allow</b>   | Allows 802.11e-enabled clients on the wireless LAN.   |
| <b>disable</b> | Disables 802.11e on the wireless LAN.                 |
| <b>require</b> | Requires 802.11e-enabled clients on the wireless LAN. |
| <i>wlan_id</i> | 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

|                  |                                            |
|------------------|--------------------------------------------|
| <b>enable</b>    | Enables policy override.                   |
| <b>disable</b>   | Disables policy override.                  |
| <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512. |
| <b>foreignAp</b> | 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 | <i>wlan_id</i>  | Wireless LAN identifier (1 to 512).                                |
|                    | <i>acl_name</i> | (Optional) ACL name.                                               |
|                    | <b>none</b>     | (Optional) Clears the ACL settings for the specified wireless LAN. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                         |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure a WLAN access control list with WLAN ID 1 and ACL named office_1:</p> <pre>&gt; config wlan acl 1 office_1</pre> |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                           |
|------------------|---------------------------|
| Related Commands | <a href="#">show wlan</a> |
|------------------|---------------------------|

# 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}
```

## Syntax Description

|                             |                                                                                                                                                       |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>add</b>                  | Creates a new access point group (AP-Group).                                                                                                          |
| <i>apgroup_name</i>         | Access point group name.                                                                                                                              |
| <i>wlan_id</i>              | Wireless LAN identifier between 1 and 512.                                                                                                            |
| <i>interface_name</i>       | (Optional) Interface to which you want to map the AP-Group.                                                                                           |
| <i>interface_group_name</i> | (Optional) Interface group to which you want to map the AP-Group.                                                                                     |
| <b>delete</b>               | Removes a wireless LAN from an AP-Group.                                                                                                              |
| <b>description</b>          | Describes an AP-Group.                                                                                                                                |
| <i>description</i>          | Description of the AP-Group.                                                                                                                          |
| <b>interface-mapping</b>    | Assigns or removes a Wireless LAN from an AP-Group.                                                                                                   |
| <b>nac-snmp</b>             | Configure NAC SNMP functionality on given AP-Group. Enables or disables Network Admission Control (NAC) out-of-band support on an access point group. |
| <b>enable</b>               | Turns on NAC out-of-band support on an AP-Group.                                                                                                      |
| <b>disable</b>              | Turns off NAC out-of-band support on an AP-Group.                                                                                                     |
| <b>profile-mapping</b>      | Configure RF Profile mapping on a given AP-Group.                                                                                                     |
| <b>venue</b>                | Configure Venue info for the specified AP-Group.                                                                                                      |
| <b>wlan-radio-policy</b>    | Configure WLAN Radio Policy on given AP-Group.                                                                                                        |

## 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 | <b>enable</b>  | Enables SSID broadcasts on a wireless LAN.  |
|                    | <b>disable</b> | Disables SSID broadcasts on a wireless LAN. |
|                    | <i>wlan_id</i> | Wireless LAN identifier between 1 and 512.  |

|                 |           |
|-----------------|-----------|
| Command Default | Disabled. |
|-----------------|-----------|

|          |                                                                                                                                        |
|----------|----------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure an SSID broadcast on wireless LAN ID 1:</p> <pre>&gt; config wlan broadcast-ssid enable 1</pre> |
|----------|----------------------------------------------------------------------------------------------------------------------------------------|

|                  |                           |
|------------------|---------------------------|
| Related Commands | <a href="#">show wlan</a> |
|------------------|---------------------------|

# 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

|                |                                            |
|----------------|--------------------------------------------|
| <b>enable</b>  | Enables VoIP snooping on a wireless LAN.   |
| <b>disable</b> | Disables VoIP snooping on a wireless LAN.  |
| <i>wlan_id</i> | 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

|                |                                             |
|----------------|---------------------------------------------|
| <i>wlan_id</i> | Wireless LAN identifier between 1 and 512.  |
| <b>enable</b>  | Enables SSID broadcasts on a wireless LAN.  |
| <b>disable</b> | 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

|                |                                            |
|----------------|--------------------------------------------|
| <b>enable</b>  | Enables the Aironet information elements.  |
| <b>disable</b> | 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

|                 |                                                                             |
|-----------------|-----------------------------------------------------------------------------|
| <i>priority</i> | User priority value (0 to 7).                                               |
| <b>enable</b>   | (Optional) Enables packet at given priority to defer off channel scanning.  |
| <b>disable</b>  | (Optional) Disables packet at given priority to defer off channel scanning. |
| <i>wlan_id</i>  | 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

|                |                                                          |
|----------------|----------------------------------------------------------|
| <i>msecs</i>   | Deferral time in milliseconds (0 to 60000 milliseconds). |
| <i>wlan_id</i> | 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**]

|                           |                   |                                                                      |
|---------------------------|-------------------|----------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>wlan_id</i>    | Wireless LAN identifier between 1 and 512.                           |
|                           | <b>foreignAp</b>  | Specifies third-party access points.                                 |
|                           | <i>ip_address</i> | IP address of the internal DHCP server (this parameter is required). |
|                           | <b>required</b>   | (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 | <b>enable</b>  | (Optional) Enables the wireless LAN diagnostic channel.  |
|                    | <b>disable</b> | (Optional) Disables the wireless LAN diagnostic channel. |
|                    | <i>wlan_id</i> | Wireless LAN identifier (1 to 512).                      |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                              |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable the wireless LAN diagnostic channel for WLAN ID 1:</p> <pre>&gt; config wlan diag-channel enable 1</pre> |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                      |
|------------------|----------------------------------------------------------------------|
| Related Commands | <p><a href="#">show run-config</a><br/><a href="#">show wlan</a></p> |
|------------------|----------------------------------------------------------------------|

# 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
```

|                           |                |                                                |
|---------------------------|----------------|------------------------------------------------|
| <b>Syntax Description</b> | <b>802.11a</b> | Configures DTIM for the 802.11a radio network. |
|                           | <b>802.11b</b> | Configures DTIM for the 802.11b radio network. |
|                           | <i>dtim</i>    | Value for DTIM (between 1 to 255 inclusive).   |
|                           | <i>wlan_id</i> | Number of the WLAN to be configured.           |

|                        |                        |
|------------------------|------------------------|
| <b>Command Default</b> | The default is DTIM 1. |
|------------------------|------------------------|

|                 |                                                                                                       |
|-----------------|-------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                           |
|-------------------------|---------------------------|
| <b>Related Commands</b> | <a href="#">show wlan</a> |
|-------------------------|---------------------------|

# 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]}
```

|                           |                  |                                                                                                  |
|---------------------------|------------------|--------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>wlan_id</i>   | Wireless LAN identifier (1 to 512).                                                              |
|                           | <b>enabled</b>   | (Optional) Enables the exclusion list for the specified wireless LAN or foreign access point.    |
|                           | <b>disabled</b>  | (Optional) Disables the exclusion list for the specified wireless LAN or a foreign access point. |
|                           | <i>time</i>      | (Optional) Exclusion list timeout in seconds. A value of zero (0) specifies infinite time.       |
|                           | <b>foreignAp</b> | 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

|                |                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------|
| <b>ap-auth</b> | Configures local authentication of clients associated with an FlexConnect on a locally switched WLAN. |
| <i>wlan_id</i> | Wireless LAN identifier between 1 and 512.                                                            |
| <b>enable</b>  | Enables AP authentication on a WLAN.                                                                  |
| <b>disable</b> | 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

|                |                                                        |
|----------------|--------------------------------------------------------|
| <i>wlan_id</i> | Wireless LAN identifier between 1 and 512.             |
| <b>enable</b>  | Enables client IP address learning on a wireless LAN.  |
| <b>disable</b> | 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

|                |                                             |
|----------------|---------------------------------------------|
| <b>enable</b>  | Enables local switching on a wireless LAN.  |
| <b>disable</b> | Disables local switching on a wireless LAN. |
| <i>wlan_id</i> | 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*

|                           |                             |                                               |
|---------------------------|-----------------------------|-----------------------------------------------|
| <b>Syntax Description</b> | <i>wlan_id</i>              | (Optional) Wireless LAN identifier (1 to 512) |
|                           | <b>foreignAp</b>            | Specifies third-party access points.          |
|                           | <i>interface-name</i>       | Interface name.                               |
|                           | <i>interface-group-name</i> | Interface group name.                         |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to configure an interface named VLAN901:<br>> <b>config wlan interface 16 VLAN901</b> |
|-----------------|--------------------------------------------------------------------------------------------------------------|

|                         |                           |
|-------------------------|---------------------------|
| <b>Related Commands</b> | <a href="#">show wlan</a> |
|-------------------------|---------------------------|

# 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 | <i>wlan_id</i>  | Wireless LAN identifier between 1 and 512. |
|                    | <i>acl_name</i> | IPv6 ACL name.                             |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                |
|----------|--------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure an IPv6 ACL for local switching:</p> <pre>&gt; config wlan ipv6 acl 22 acl_sample</pre> |
|----------|--------------------------------------------------------------------------------------------------------------------------------|

|                  |                           |
|------------------|---------------------------|
| Related Commands | <a href="#">show wlan</a> |
|------------------|---------------------------|

## 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

|                |                                            |
|----------------|--------------------------------------------|
| <b>enable</b>  | Enables the KTS-based CAC policy.          |
| <b>disable</b> | Disables the KTS-based CAC policy.         |
| <i>wlan_id</i> | 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

|                  |                                               |
|------------------|-----------------------------------------------|
| <b>add</b>       | Adds a link to a configured LDAP server.      |
| <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512.    |
| <i>server_id</i> | LDAP server index.                            |
| <b>delete</b>    | Removes the link to a configured LDAP server. |
| <b>all</b>       | 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

|                |                                            |
|----------------|--------------------------------------------|
| <b>enable</b>  | Enables band selection on a wireless LAN.  |
| <b>disable</b> | Disables band selection on a wireless LAN. |
| <i>wlan_id</i> | 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 | <b>enable</b>    | Enables MAC filtering on a wireless LAN.   |
|                    | <b>disable</b>   | Disables MAC filtering on a wireless LAN.  |
|                    | <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512. |
|                    | <b>foreignAp</b> | 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**

|                    |                                                                    |
|--------------------|--------------------------------------------------------------------|
| <i>max_clients</i> | Specifies the maximum number of client connections to be accepted. |
| <i>wlan_id</i>     | 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*

|                           |                          |                                                                                                                             |
|---------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>max_radio_clients</i> | Specifies the maximum number of client connections to be accepted per access point radio. The valid range is from 1 to 200. |
|                           | <i>wlan_id</i>           | Wireless LAN identifier between 1 and 512.                                                                                  |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                 |
|-----------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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**

|                         |                           |
|-------------------------|---------------------------|
| <b>Related Commands</b> | <a href="#">show wlan</a> |
|-------------------------|---------------------------|

# 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

|                         |                                                             |
|-------------------------|-------------------------------------------------------------|
| <b>multicast-direct</b> | Configures multicast-direct for a wireless LAN media stream |
| <i>wlan_id</i>          | Wireless LAN identifier between 1 and 512.                  |
| <b>all</b>              | Configures the wireless LAN on all media streams.           |
| <b>enable</b>           | Enables global multicast to unicast conversion.             |
| <b>disable</b>          | 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 | <b>client</b>                    | Configures client MFP for the wireless LAN.                        |
|                    | <b>enable</b>                    | (Optional) Enables the feature.                                    |
|                    | <b>disable</b>                   | (Optional) Disables the feature.                                   |
|                    | <i>wlan_id</i>                   | Wireless LAN identifier (1 to 512).                                |
|                    | <b>infrastructure protection</b> | (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:<br>> config wlan mfp client enable 1 |
|----------|----------------------------------------------------------------------------------------------------------------------------|

|                  |                                                              |
|------------------|--------------------------------------------------------------|
| Related Commands | <a href="#">show run-config</a><br><a href="#">show wlan</a> |
|------------------|--------------------------------------------------------------|

# 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

|                     |                                                      |
|---------------------|------------------------------------------------------|
| <b>3gpp-info</b>    | Configures 3GPP cellular information on the network. |
| <b>add</b>          | Adds mobile cellular network information.            |
| <i>index</i>        |                                                      |
| <i>country_code</i> | Mobile country code (BCD format).                    |
| <i>network_code</i> | Mobile network code (BCD format).                    |
| <i>wlan_id</i>      | WLAN id.                                             |
| <b>delete</b>       | Deletes mobile cellular network information.         |
| <b>disable</b>      | Disables 802.11u.                                    |
| <b>domain</b>       | Configures a domain.                                 |
| <b>add</b>          | Adds a domain.                                       |
| <b>delete</b>       | Deletes a domain.                                    |
| <b>modify</b>       | Modifies a domain.                                   |
| <i>domain-index</i> | Enter domain index in the range 1 to 32.             |
| <i>domain-name</i>  | Enter domain name.                                   |
| <b>enable</b>       | Enables 802.11u.                                     |
| <b>hessid</b>       | Configures HESSID                                    |
| <b>ip-addr-type</b> | Configures IP address availability type.             |
| <b>add</b>          | Adds IP address available type information.          |

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>ipv4_type</i>               | IPv4 type address. Enter one of the following values:<br>0—IPv4 address not available<br>1—Public IPv4 address available<br>2—Port-restricted IPv4 address available<br>3—Single NAT enabled private IPv4 address available<br>4—Double NAT enabled private IPv4 address available<br>5—Port-restricted IPv4 address and single NAT enabled IPv4 address available<br>6—Port-restricted IPv4 address and double NAT enabled IPv4 address available<br>7— Availability of the IPv4 address is not known |
| <i>ipv6_type</i>               | IPv6 type address. Enter one of the following values:<br>0—IPv6 address not available<br>1—IPv6 address available<br>2—Availability of the IPv6 address is not known                                                                                                                                                                                                                                                                                                                                   |
| <i>delete</i>                  | Deletes IP address available type information.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>net-auth-type</b>           | Configures Network authentication type.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <i>network-auth-type-value</i> | Network authentication that you would like to configure for this WLAN. Enter one of the following values:<br>0—Acceptance of terms and conditions<br>1—On-line enrollment<br>2—HTTP/HTTPS redirection                                                                                                                                                                                                                                                                                                  |
| <b>oui</b>                     | Configures the Organizational Unique Identifier (OUI).                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>add</i>                     | Adds an OUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>delete</i>                  | Deletes an OUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>modify</i>                  | Modifies an OUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>oui-index</i>               | OUI index in the range 1–32.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>oui-name</i>                | OUI name. The OUI must be a valid 6 digit number.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>is-beacon</i>               | OUI presence that should contain the beacon. Valid values are 0 (disable) and 1 (enable).                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>params</b>                  | Configures 802.11u Parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <i>network-type</i>            | Network type. Enter one of the following values: <ul style="list-style-type: none"> <li>0—Private Network</li> <li>1—Private Network with Guest Access</li> <li>2—Chargeable Public Network</li> <li>3—Free Public Network</li> <li>4—Personal Device Network</li> <li>5—Emergency Services Only Network</li> <li>14—Test or Experimental</li> <li>15—Wildcard</li> </ul>                                                                                                                              |

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>ipv4_type</i>               | IPv4 type address. Enter one of the following values:<br>0—IPv4 address not available<br>1—Public IPv4 address available<br>2—Port-restricted IPv4 address available<br>3—Single NAT enabled private IPv4 address available<br>4—Double NAT enabled private IPv4 address available<br>5—Port-restricted IPv4 address and single NAT enabled IPv4 address available<br>6—Port-restricted IPv4 address and double NAT enabled IPv4 address available<br>7— Availability of the IPv4 address is not known |
| <i>ipv6_type</i>               | IPv6 type address. Enter one of the following values:<br>0—IPv6 address not available<br>1—IPv6 address available<br>2—Availability of the IPv6 address is not known                                                                                                                                                                                                                                                                                                                                   |
| <i>delete</i>                  | Deletes IP address available type information.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>net-auth-type</b>           | Configures Network authentication type.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <i>network-auth-type-value</i> | Network authentication that you would like to configure for this WLAN. Enter one of the following values:<br>0—Acceptance of terms and conditions<br>1—On-line enrollment<br>2—HTTP/HTTPS redirection                                                                                                                                                                                                                                                                                                  |
| <b>oui</b>                     | Configures the Organizational Unique Identifier (OUI).                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>add</i>                     | Adds an OUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>delete</i>                  | Deletes an OUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>modify</i>                  | Modifies an OUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>oui-index</i>               | OUI index in the range 1–32.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>oui-name</i>                | OUI name. The OUI must be a valid 6 digit number.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>is-beacon</i>               | OUI presence that should contain the beacon. Valid values are 0 (disable) and 1 (enable).                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>params</b>                  | Configures 802.11u Parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <i>network-type</i>            | Network type. Enter one of the following values: <ul style="list-style-type: none"> <li>0—Private Network</li> <li>1—Private Network with Guest Access</li> <li>2—Chargeable Public Network</li> <li>3—Free Public Network</li> <li>4—Personal Device Network</li> <li>5—Emergency Services Only Network</li> <li>14—Test or Experimental</li> <li>15—Wildcard</li> </ul>                                                                                                                              |

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>ipv4_type</i>               | IPv4 type address. Enter one of the following values:<br>0—IPv4 address not available<br>1—Public IPv4 address available<br>2—Port-restricted IPv4 address available<br>3—Single NAT enabled private IPv4 address available<br>4—Double NAT enabled private IPv4 address available<br>5—Port-restricted IPv4 address and single NAT enabled IPv4 address available<br>6—Port-restricted IPv4 address and double NAT enabled IPv4 address available<br>7— Availability of the IPv4 address is not known |
| <i>ipv6_type</i>               | IPv6 type address. Enter one of the following values:<br>0—IPv6 address not available<br>1—IPv6 address available<br>2—Availability of the IPv6 address is not known                                                                                                                                                                                                                                                                                                                                   |
| <i>delete</i>                  | Deletes IP address available type information.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>net-auth-type</b>           | Configures Network authentication type.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <i>network-auth-type-value</i> | Network authentication that you would like to configure for this WLAN. Enter one of the following values:<br>0—Acceptance of terms and conditions<br>1—On-line enrollment<br>2—HTTP/HTTPS redirection                                                                                                                                                                                                                                                                                                  |
| <b>oui</b>                     | Configures the Organizational Unique Identifier (OUI).                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>add</i>                     | Adds an OUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>delete</i>                  | Deletes an OUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>modify</i>                  | Modifies an OUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>oui-index</i>               | OUI index in the range 1–32.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>oui-name</i>                | OUI name. The OUI must be a valid 6 digit number.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>is-beacon</i>               | OUI presence that should contain the beacon. Valid values are 0 (disable) and 1 (enable).                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>params</b>                  | Configures 802.11u Parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <i>network-type</i>            | Network type. Enter one of the following values: <ul style="list-style-type: none"> <li>• 0—Private Network</li> <li>• 1—Private Network with Guest Access</li> <li>• 2—Chargeable Public Network</li> <li>• 3—Free Public Network</li> <li>• 4—Personal Device Network</li> <li>• 5—Emergency Services Only Network</li> <li>• 14—Test or Experimental</li> <li>• 15—Wildcard</li> </ul>                                                                                                              |

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>ipv4_type</i>               | IPv4 type address. Enter one of the following values:<br>0—IPv4 address not available<br>1—Public IPv4 address available<br>2—Port-restricted IPv4 address available<br>3—Single NAT enabled private IPv4 address available<br>4—Double NAT enabled private IPv4 address available<br>5—Port-restricted IPv4 address and single NAT enabled IPv4 address available<br>6—Port-restricted IPv4 address and double NAT enabled IPv4 address available<br>7— Availability of the IPv4 address is not known |
| <i>ipv6_type</i>               | IPv6 type address. Enter one of the following values:<br>0—IPv6 address not available<br>1—IPv6 address available<br>2—Availability of the IPv6 address is not known                                                                                                                                                                                                                                                                                                                                   |
| <i>delete</i>                  | Deletes IP address available type information.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>net-auth-type</b>           | Configures Network authentication type.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <i>network-auth-type-value</i> | Network authentication that you would like to configure for this WLAN. Enter one of the following values:<br>0—Acceptance of terms and conditions<br>1—On-line enrollment<br>2—HTTP/HTTPS redirection                                                                                                                                                                                                                                                                                                  |
| <b>oui</b>                     | Configures the Organizational Unique Identifier (OUI).                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>add</i>                     | Adds an OUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>delete</i>                  | Deletes an OUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>modify</i>                  | Modifies an OUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>oui-index</i>               | OUI index in the range 1–32.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>oui-name</i>                | OUI name. The OUI must be a valid 6 digit number.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>is-beacon</i>               | OUI presence that should contain the beacon. Valid values are 0 (disable) and 1 (enable).                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>params</b>                  | Configures 802.11u Parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <i>network-type</i>            | Network type. Enter one of the following values: <ul style="list-style-type: none"> <li>0—Private Network</li> <li>1—Private Network with Guest Access</li> <li>2—Chargeable Public Network</li> <li>3—Free Public Network</li> <li>4—Personal Device Network</li> <li>5—Emergency Services Only Network</li> <li>14—Test or Experimental</li> <li>15—Wildcard</li> </ul>                                                                                                                              |



|                     |                                                                |
|---------------------|----------------------------------------------------------------|
| <i>internet-bit</i> | If Internet is available. Valid values are 0 (no) and 1 (yes). |
| <b>realm</b>        | 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

|                       |                                                                                                                                                                                                            |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>add</b>            | Adds a realm.                                                                                                                                                                                              |
| <b>delete</b>         | Deletes a realm.                                                                                                                                                                                           |
| <b>modify</b>         | Modifies a realm.                                                                                                                                                                                          |
| <b>auth-method</b>    | The authentication method used.                                                                                                                                                                            |
| <b>eap-method</b>     | Specifies the EAP method used.                                                                                                                                                                             |
| <b>realm-name</b>     | Specifies the name of the realm to add, delete, or modify.                                                                                                                                                 |
| <i>wlan_id</i>        | WLAN ID.                                                                                                                                                                                                   |
| <i>realm-index</i>    | Realm index. The range is 1-32                                                                                                                                                                             |
| <i>eap-index</i>      | EAP index. The range is 1-4.                                                                                                                                                                               |
| <i>auth-index</i>     | Authentication index value. The range is 1-10.                                                                                                                                                             |
| <i>auth-method</i>    | Authentication method to be used. The range is 1-4. The following options are available:<br>1—Non-Eap Inner Auth Method<br>2—Inner Auth Type<br>3—Credential Type<br>4—Tunneled EAP Method Credential Type |
| <i>auth-parameter</i> | 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

|                      |                                                                                                                                                                                                                    |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>disable</b>       | Disables HotSpot2.                                                                                                                                                                                                 |
| <b>enable</b>        | Enables HotSpot2.                                                                                                                                                                                                  |
| <b>operator-name</b> | Specifies the name of the 802.11an operator.                                                                                                                                                                       |
| <b>add</b>           | Adds the operator-name, port-config, or wan-metrics parameters on the WLAN.                                                                                                                                        |
| <i>wlan-id</i>       | The WLAN identifier.                                                                                                                                                                                               |
| <i>index</i>         | Specifies the index of the operator. The range is 1-32.                                                                                                                                                            |
| <i>opreator-name</i> | Specifies the name of the operator.                                                                                                                                                                                |
| <i>language-code</i> | Language used. An ISO-14962-1997 encoded string that defines the language. This string is a threecharacter language code. Enter the first three letters of the language in English (for example, eng for English). |
| <b>delete</b>        | Deletes the operator-name, port-config, or wan-metrics parameters on the WLAN.                                                                                                                                     |
| <b>modify</b>        | Modifies the operator-name, port-config, or wan-metrics parameters on the WLAN.                                                                                                                                    |
| <i>port-config</i>   | Configures the port configuration values.                                                                                                                                                                          |
| <i>ip-protocol</i>   | Protocol to use. The following options are available:<br>1—ICMP<br>6—FTP/SSH/TLS/PPTP-VPN/VoIP<br>17—IKEv2 (IPSec-VPN/VoIP/ESP)<br>50—ESP (IPSec-VPN)                                                              |
| <i>port-number</i>   | Port number. The following options are available:<br>0—ICMP/ESP (IPSec-VPN)<br>20—FTP<br>22—SSH<br>443—TLS-VPN<br>500—IKEv2<br>1723—PPTP-VPN<br>4500—IKEv2<br>5060—VoIP                                            |

|                    |                                                                                                                                                                                                                                                                                         |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status             | Sets the status. The following options are available:<br>0—Closed<br>1—Open<br>2—Unknown                                                                                                                                                                                                |
| port-config-index  | Port config index. The range is 1–10.                                                                                                                                                                                                                                                   |
| <b>wan-metrics</b> | Configures the WAN metrics.                                                                                                                                                                                                                                                             |
| link-status        | Link status. The following options are available:<br><ul style="list-style-type: none"> <li>• Link up</li> <li>• Link down</li> <li>• Link in test state</li> </ul>                                                                                                                     |
| symet-link         | Specifies the symmetric link status. The following options are available:<br><ul style="list-style-type: none"> <li>• 0—link speed is different for the uplink and downlink. For example: ADSL</li> <li>• 1—link speed for the same in uplink and downlink. For example: DS1</li> </ul> |
| 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 Advertisement 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

|                  |                               |
|------------------|-------------------------------|
| <b>disable</b>   | Disables MSAP on the WLAN.    |
| <b>enable</b>    | Enables MSAP on the WLAN.     |
| <b>server-id</b> | Specifies the MSAP server-id. |
| <i>server-id</i> | Server ID to assign.          |
| <i>wlan-id</i>   | 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

|                   |                                                          |
|-------------------|----------------------------------------------------------|
| <b>add</b>        | Enables MAC filtering on a wireless LAN.                 |
| <b>delete</b>     | Disables MAC filtering on a wireless LAN.                |
| <i>wlan_id</i>    | Wireless LAN identifier between 1 and 512.               |
| <i>ip_address</i> | 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}
```

|                           |                             |                                                                              |
|---------------------------|-----------------------------|------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>add</b>                  | Adds an interface or interface group to the map of foreign controllers.      |
|                           | <b>delete</b>               | Deletes an interface or interface group from the map of foreign controllers. |
|                           | <i>wlan_id</i>              | Wireless LAN identifier between 1 and 512.                                   |
|                           | <i>foreign_mac_address</i>  | Foreign switch MAC address on WLAN.                                          |
|                           | <i>interface_name</i>       | Interface name up to 32 alphanumeric characters.                             |
|                           | <i>interface_group_name</i> | Interface group name up to 32 alphanumeric characters.                       |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                                                                                                     |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>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:</p> <pre>&gt; <b>config wlan mobility foreign-map add 4 00:21:1b:ea:36:60 mygroup1</b></pre> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                             |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">show mobility foreign-map</a><br><a href="#">config mobility group member</a><br><a href="#">config wlan mobility anchor</a><br><a href="#">debug mobility</a><br><a href="#">show mobility anchor</a><br><a href="#">show mobility summary</a> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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*

|                           |                    |                                                                                                                                                                |
|---------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | enable             | Enables the multicast interface feature for a wireless LAN.                                                                                                    |
|                           | disable            | Disables the multicast interface feature on a wireless LAN.                                                                                                    |
|                           | <i>buffer-size</i> | 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

|                                                                                |                                                         |
|--------------------------------------------------------------------------------|---------------------------------------------------------|
| <i>wlan_id</i>                                                                 | Wireless LAN identifier between 1 and 512.              |
| <b>enable</b>                                                                  | Enables multicast interface feature for a wireless LAN. |
| <b>delete</b>                                                                  | Disables multicast interface feature on a wireless LAN. |
| <i>interface_name</i>                                                          | Interface name.                                         |
| <b>Note</b> 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

|                |                                    |
|----------------|------------------------------------|
| <b>snmp</b>    | Configures SNMP NAC support.       |
| <b>radius</b>  | Configures RADIUS NAC support      |
| <b>enable</b>  | Enables NAC for the WLAN.          |
| <b>disable</b> | Disables NAC for the WLAN.         |
| <i>wlan_id</i> | 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

|                |                                                |
|----------------|------------------------------------------------|
| <b>enable</b>  | Enables the passive-client feature on a WLAN.  |
| <b>disable</b> | Disables the passive-client feature on a WLAN. |
| <i>wlan_id</i> | 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 | <b>disable</b>          | Disables peer-to-peer blocking and bridge traffic locally within the controller whenever possible.                                          |
|                    | <b>drop</b>             | Causes the controller to discard the packets.                                                                                               |
|                    | <b>forward-upstream</b> | Causes the packets to be forwarded on the upstream VLAN. The device above the controller decides what action to take regarding the packets. |
|                    | <i>wlan_id</i>          | WLAN identifier between 1 and 512.                                                                                                          |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                       |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to disable the peer-to-peer blocking for WLAN ID 1:</p> <pre>&gt; config wlan peer-blocking disable 1</pre> |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|

|                  |                           |
|------------------|---------------------------|
| Related Commands | <a href="#">show wlan</a> |
|------------------|---------------------------|

# 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}
```

|                           |                  |                                            |
|---------------------------|------------------|--------------------------------------------|
| <b>Syntax Description</b> | <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512. |
|                           | <b>foreignAp</b> | Specifies third-party access points.       |
|                           | <b>bronze</b>    | Specifies the bronze QoS policy.           |
|                           | <b>silver</b>    | Specifies the silver QoS policy.           |
|                           | <b>gold</b>      | Specifies the gold QoS policy.             |
|                           | <b>platinum</b>  | Specifies the platinum QoS policy.         |

|                        |         |
|------------------------|---------|
| <b>Command Default</b> | Silver. |
|------------------------|---------|

|                 |                                                                                                                                    |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to set the highest level of service on wireless LAN 1:</p> <pre>&gt; <b>config wlan qos 1 gold</b></pre> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------|

|                         |                           |
|-------------------------|---------------------------|
| <b>Related Commands</b> | <a href="#">show wlan</a> |
|-------------------------|---------------------------|

# config wlan radio

To set the Cisco radio policy on a wireless LAN, use the **config wlan radio** command.

**config wlan radio** *wlan\_id* {all | 802.11a | 802.11bg | 802.11g | 802.11ag}

| Syntax Description |                 |                                                                                      |
|--------------------|-----------------|--------------------------------------------------------------------------------------|
|                    | <i>wlan_id</i>  | Wireless LAN identifier between 1 and 512.                                           |
|                    | <b>all</b>      | Configures the wireless LAN on all radio bands.                                      |
|                    | <b>802.11a</b>  | Configures the wireless LAN on only 802.11a.                                         |
|                    | <b>802.11bg</b> | Configures the wireless LAN on only 802.11b/g (only 802.11b if 802.11g is disabled). |
|                    | <b>802.11g</b>  | Configures the wireless LAN on 802.11g only.                                         |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure the wireless LAN on all radio bands:</p> <pre>&gt; config wlan radio 1 all</pre> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p> <b>config 802.11a enable</b><br/> <b>config 802.11a disable</b><br/> <b>config 802.11b enable</b><br/> <b>config 802.11b disable</b><br/> <b>config 802.11b 11gSupport enable</b><br/> <b>config 802.11b 11gSupport disable</b><br/> <b>show wlan</b> </p> |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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 | <b>enable</b>    | Enables RADIUS accounting for the WLAN.                  |
|                    | <b>disable</b>   | Disables RADIUS accounting for the WLAN.                 |
|                    | <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512.               |
|                    | <b>add</b>       | Adds a link to a configured RADIUS accounting server.    |
|                    | <i>server_id</i> | RADIUS server index.                                     |
|                    | <b>delete</b>    | Deletes a link to a configured RADIUS accounting server. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                                                                                                                                                |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable RADIUS accounting for the WLAN 2:</p> <pre>&gt; config wlan radius_server acct enable 2</pre> <p>This example shows how to add a link to a configured RADIUS accounting server:</p> <pre>&gt; config wlan radius_server acct add 2 5</pre> |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                   |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <pre>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</pre> |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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*

|                           |                       |                                                                                           |
|---------------------------|-----------------------|-------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>interim-update</b> | Configures the interim update of the RADIUS accounting server.                            |
|                           | <i>interval</i>       | Interim update interval that you specify. The valid range is 180 seconds to 3600 seconds. |
|                           | <b>enable</b>         | Enables interim update of the RADIUS accounting server for the WLAN.                      |
|                           | <b>disable</b>        | Disables interim update of the RADIUS accounting server for the WLAN.                     |
|                           | <i>wlan_id</i>        | 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 | <b>auth</b>      | Configures a RADIUS authentication              |
|                    | <b>enable</b>    | Enables RADIUS authentication for this WLAN.    |
|                    | <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512.      |
|                    | <b>disable</b>   | Disables RADIUS authentication for this WLAN.   |
|                    | <b>add</b>       | Adds a link to a configured RADIUS server.      |
|                    | <i>server_id</i> | RADIUS server index.                            |
|                    | <b>delete</b>    | Deletes a link to a configured RADIUS server.   |
|                    | <b>all</b>       | 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<br>config 802.11a disable<br>config 802.11b enable<br>config 802.11b disable<br>config 802.11b 11gSupport enable<br>config 802.11b 11gSupport disable<br>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}
```

|                           |                 |                                                             |
|---------------------------|-----------------|-------------------------------------------------------------|
| <b>Syntax Description</b> | <b>enable</b>   | Enables RADIUS authentication or accounting for this WLAN.  |
|                           | <i>wlan_id</i>  | Wireless LAN identifier between 1 and 512.                  |
|                           | <b>disable</b>  | Disables RADIUS authentication or accounting for this WLAN. |
|                           | <i>interval</i> | 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

|                |                                                  |
|----------------|--------------------------------------------------|
| <b>enable</b>  | Enables RADIUS dynamic interface for this WLAN.  |
| <b>disable</b> | Disables RADIUS dynamic interface for this WLAN. |
| <i>wlan_id</i> | 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

|                |                                               |
|----------------|-----------------------------------------------|
| <b>enable</b>  | Enables the roamed client's reanchor policy.  |
| <b>disable</b> | Disables the roamed client's reanchor policy. |
| <i>wlan_id</i> | 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

|                |                                                        |
|----------------|--------------------------------------------------------|
| <b>enable</b>  | Enables a client disassociation on a SIP CAC failure.  |
| <b>disable</b> | Disables a client disassociation on a SIP CAC failure. |
| <i>wlan_id</i> | 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

|                |                                                                 |
|----------------|-----------------------------------------------------------------|
| <b>enable</b>  | Enables sending a SIP 486 busy message upon a SIP CAC failure.  |
| <b>disable</b> | Disables sending a SIP 486 busy message upon a SIP CAC failure. |
| <i>wlan_id</i> | 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 | <b>tunneling</b> | Configures static IP client tunneling support on a WLAN. |
|                    | <b>enable</b>    | Enables static IP client tunneling support on a WLAN.    |
|                    | <b>disable</b>   | Disables static IP client tunneling support on a WLAN.   |
|                    | <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512.               |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                            |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable static IP client tunneling support for WLAN ID 3:</p> <pre>&gt; config wlan static-ip tunneling enable enable 34</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                     |
|------------------|---------------------------------------------------------------------|
| Related Commands | <p><a href="#">config wlan</a></p> <p><a href="#">show wlan</a></p> |
|------------------|---------------------------------------------------------------------|

## 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

|                  |                                                                                     |
|------------------|-------------------------------------------------------------------------------------|
| <b>enable</b>    | Enables the 802.1X settings.                                                        |
| <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512.                                          |
| <b>foreignAp</b> | Specifies third-party access points.                                                |
| <b>disable</b>   | Disables the 802.1X settings.                                                       |
| <b>0</b>         | Specifies a WEP key size of 0 (no encryption) bits. The default value is 104.       |
|                  |    |
| <b>Note</b>      | All keys within a wireless LAN must be the same size.                               |
| <b>40</b>        | Specifies a WEP key size of 40 bits. The default value is 104.                      |
|                  |    |
| <b>Note</b>      | All keys within a wireless LAN must be the same size.                               |
| <b>104</b>       | Specifies a WEP key size of 104 bits. The default value is 104.                     |
|                  |  |
| <b>Note</b>      | 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     |                                                                                                                                                       |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>enable</b>          | Enables CKIP security.                                                                                                                                |
| <b>disable</b>         | Disables CKIP security.                                                                                                                               |
| <i>wlan_id</i>         | WLAN to which you apply the command.                                                                                                                  |
| <b>akm psk set-key</b> | (Optional) Configures encryption key management for the CKIP wireless LAN.                                                                            |
| <b>hex</b>             | Specifies a hexadecimal encryption key.                                                                                                               |
| <b>ascii</b>           | Specifies an ASCII encryption key.                                                                                                                    |
| <b>40</b>              | 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.    |
| <b>104</b>             | 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. |
| <b>key</b>             | Specifies the CKIP WLAN key settings.                                                                                                                 |
| <i>key_index</i>       | Configured PSK key index.                                                                                                                             |
| <b>mmh-mic</b>         | (Optional) Configures multi-modular hash message integrity check (MMH MIC) validation for the CKIP wireless LAN.                                      |
| <b>kp</b>              | (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 | <b>enable</b>  | Enables conditional web redirect.          |
|                    | <b>disable</b> | Disables conditional web redirect.         |
|                    | <i>wlan_id</i> | 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:<br>> <b>config wlan security cond-web-redir enable 2</b> |
|----------|------------------------------------------------------------------------------------------------------------------------------------|

|                  |                           |
|------------------|---------------------------|
| Related Commands | <a href="#">show wlan</a> |
|------------------|---------------------------|

# 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

|                  |                                            |
|------------------|--------------------------------------------|
| <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512. |
| <b>foreignAp</b> | 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** }

|                           |                  |                                            |
|---------------------------|------------------|--------------------------------------------|
| <b>Syntax Description</b> | <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512. |
|                           | <b>foreignAp</b> | Specifies third-party access points.       |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to enable the IPsec for WLAN ID 16:<br>> <b>config wlan security IPsec enable 16</b> |
|-----------------|-------------------------------------------------------------------------------------------------------------|

|                         |                           |
|-------------------------|---------------------------|
| <b>Related Commands</b> | <a href="#">show wlan</a> |
|-------------------------|---------------------------|

# 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

|                   |                                                         |
|-------------------|---------------------------------------------------------|
| <b>hmac-md5</b>   | Specifies the IPsec HMAC-MD5 authentication protocol.   |
| <b>hmac-sha-1</b> | Specifies the IPsec HMAC-SHA-1 authentication protocol. |
| <i>wlan_id</i>    | Wireless LAN identifier between 1 and 512.              |
| <b>foreignAp</b>  | 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 | <p>This example shows how to configure the IPsec aes encryption:</p> <pre>&gt; config wlan security IPsec encryption aes 1</pre> |
|----------|----------------------------------------------------------------------------------------------------------------------------------|

|                  |                           |
|------------------|---------------------------|
| Related Commands | <a href="#">show wlan</a> |
|------------------|---------------------------|

## 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

|                   |                                                         |
|-------------------|---------------------------------------------------------|
| <b>qotd</b>       | Configures the quote-of-the day server IP for cfg-mode. |
| <i>ip_address</i> | Quote-of-the-day server IP for cfg-mode.                |
| <i>wlan_id</i>    | Wireless LAN identifier between 1 and 512.              |
| <b>foreignAp</b>  | 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 }
```

|                           |                      |                                            |
|---------------------------|----------------------|--------------------------------------------|
| <b>Syntax Description</b> | <b>certificates</b>  | Enables the IKE certificate mode.          |
|                           | <i>wlan_id</i>       | Wireless LAN identifier between 1 and 512. |
|                           | <b>foreignAp</b>     | Specifies third-party access points.       |
|                           | <b>pre-share-key</b> | Enables the IKE Xauth with preshared keys. |
|                           | <b>xauth-psk</b>     | Enables the IKE preshared key.             |
|                           | <i>key</i>           | Key required for preshare and xauth-psk.   |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                      |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure the IKE certification mode:</p> <pre>&gt; config wlan security IPsec ike authentication certificates 16</pre> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                           |
|-------------------------|---------------------------|
| <b>Related Commands</b> | <a href="#">show wlan</a> |
|-------------------------|---------------------------|

# 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

|                  |                                            |
|------------------|--------------------------------------------|
| <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512. |
| <b>foreignAp</b> | Specifies third-party access points.       |
| <b>group-1</b>   | Specifies DH group 1 (768 bits).           |
| <b>group-2</b>   | Specifies DH group 2 (1024 bits).          |
| <b>group-5</b>   | Specifies DH group 5 (1536 bits).          |

## Command Default

None.

## Examples

This example shows how to configure the Diffie 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

|                  |                                                   |
|------------------|---------------------------------------------------|
| <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512.        |
| <b>foreignAp</b> | Specifies third-party access points.              |
| <i>seconds</i>   | 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

|                   |                                            |
|-------------------|--------------------------------------------|
| <b>aggressive</b> | Enables the IKE aggressive mode.           |
| <b>main</b>       | Enables the IKE main mode.                 |
| <i>wlan_id</i>    | Wireless LAN identifier between 1 and 512. |
| <b>foreignAp</b>  | 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 | <b>enable</b>    | Enables contivity support for this WLAN.   |
|                    | <b>disable</b>   | Disables contivity support for this WLAN.  |
|                    | <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512. |
|                    | <b>foreignAp</b> | Specifies third-party access points.       |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                          |
|----------|------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to modify Contivity VPN client support:</p> <pre>&gt; config wlan security IPsec ike contivity enable 14</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                           |
|------------------|---------------------------|
| Related Commands | <a href="#">show wlan</a> |
|------------------|---------------------------|

# 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

|                   |                                                                                         |
|-------------------|-----------------------------------------------------------------------------------------|
| <b>enable</b>     | Enables IPsec pass-through.                                                             |
| <b>disable</b>    | Disables IPsec pass-through.                                                            |
| <i>wlan_id</i>    | Wireless LAN identifier between 1 and 512.                                              |
| <b>foreignAp</b>  | Specifies third-party access points.                                                    |
| <i>ip_address</i> | (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 | <b>enable</b>  | Enables splash page web redirect.          |
|                    | <b>disable</b> | Disables splash page web redirect.         |
|                    | <i>wlan_id</i> | Wireless LAN identifier between 1 and 512. |

|                 |           |
|-----------------|-----------|
| Command Default | Disabled. |
|-----------------|-----------|

|          |                                                                                                                            |
|----------|----------------------------------------------------------------------------------------------------------------------------|
| Examples | This example shows how to enable splash page web redirect:<br>> <b>config wlan security splash-page-web-redir enable 2</b> |
|----------|----------------------------------------------------------------------------------------------------------------------------|

|                  |                           |
|------------------|---------------------------|
| Related Commands | <a href="#">show wlan</a> |
|------------------|---------------------------|

# 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

|                   |                                            |
|-------------------|--------------------------------------------|
| <b>shared-key</b> | Enables shared key authentication.         |
| <b>open</b>       | Enables open system authentication.        |
| <i>wlan_id</i>    | 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*

|                           |                                                                                                                                |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>wlan_id</i> Wireless LAN identifier between 1 and 512.                                                                      |
| <b>Command Default</b>    | None.                                                                                                                          |
| <b>Examples</b>           | This example shows how to disable the static WEP keys for WLAN ID 1:<br>> <b>config wlan security static-wep-key disable 1</b> |
| <b>Related Commands</b>   | <b>config wlan security wpa encryption</b>                                                                                     |

## 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**

---

|                |                                            |
|----------------|--------------------------------------------|
| <i>wlan_id</i> | 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

|                  |                                                         |
|------------------|---------------------------------------------------------|
| <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512.              |
| <b>40</b>        | Specifies the encryption level: 40.                     |
| <b>104</b>       | Specifies the encryption level: 104.                    |
| <b>hex</b>       | Specifies to use hexadecimal characters to enter key.   |
| <b>ascii</b>     | Specifies whether to use ASCII characters to enter key. |
| <i>key</i>       | WEP key in ASCII.                                       |
| <i>key-index</i> | 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} [acl_name | none]}
                               | {on-macfilter-failure wlan_id} | {server-precedence wlan_id [local | ldap | radius]}
```

| Syntax Description          |  |                                                                           |
|-----------------------------|--|---------------------------------------------------------------------------|
| <b>acl</b>                  |  | Configures the access control list.                                       |
| <b>enable</b>               |  | Enables web authentication.                                               |
| <b>disable</b>              |  | Disables web authentication.                                              |
| <i>wlan_id</i>              |  | Wireless LAN identifier between 1 and 512.                                |
| <b>foreignAp</b>            |  | Specifies third-party access points.                                      |
| <i>acl_name</i>             |  | ACL name (up to 32 alphanumeric characters).                              |
| <b>none</b>                 |  | Specifies <b>no ACL name</b> .                                            |
| <b>on-macfilter-failure</b> |  | Enables web authentication on MAC filter failure.                         |
| <b>server-precedence</b>    |  | Configures the authentication server precedence order for Web-Auth users. |
| <b>local</b>                |  | Specifies the server type.                                                |
| <b>ldap</b>                 |  | Specifies the server type.                                                |
| <b>radius</b>               |  | Specifies the server type.                                                |

**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 | <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512.   |
|                    | <b>foreignAp</b> | Specifies third-party access points.         |
|                    | <i>acl_name</i>  | ACL name (up to 32 alphanumeric characters). |
|                    | <b>none</b>      | Specifies that there is no ACL.              |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                              |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to add an ACL to the wireless LAN definition:</p> <pre>&gt; config wlan security web-passthrough acl 1 ACL03</pre> |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                           |
|------------------|---------------------------|
| Related Commands | <a href="#">show wlan</a> |
|------------------|---------------------------|

# 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

|                  |                                            |
|------------------|--------------------------------------------|
| <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512. |
| <b>foreignAp</b> | 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 }**

|                           |                    |                                                          |
|---------------------------|--------------------|----------------------------------------------------------|
| <b>Syntax Description</b> | <b>email-input</b> | Configures a web captive portal using an e-mail address. |
|                           | <b>enable</b>      | Enables a web captive portal using an e-mail address.    |
|                           | <b>disable</b>     | Disables a web captive portal using an e-mail address.   |
|                           | <i>wlan_id</i>     | Wireless LAN identifier between 1 and 512.               |
|                           | <b>foreignAp</b>   | Specifies third-party access points.                     |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                    |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure a web captive portal using an e-mail address:</p> <pre>&gt; config wlan security web-passthrough email-input enable 1</pre> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                           |
|-------------------------|---------------------------|
| <b>Related Commands</b> | <a href="#">show wlan</a> |
|-------------------------|---------------------------|

## 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**

|                  |                                            |
|------------------|--------------------------------------------|
| <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512. |
| <b>foreignAp</b> | 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

|                |                                            |
|----------------|--------------------------------------------|
| <b>enable</b>  | Enables the 802.1X support                 |
| <b>disable</b> | Disables the 802.1X support                |
| <i>wlan_id</i> | 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

|                            |                                                                                                                 |
|----------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>enable</b>              | Enables CCKM support.                                                                                           |
| <b>disable</b>             | Disables CCKM support.                                                                                          |
| <i>wlan_id</i>             | Wireless LAN identifier between 1 and 512.                                                                      |
| <i>timestamp-tolerance</i> | 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 reassociation deadline interval.                      |
|                    | seconds               | Reassociation deadline interval in seconds.                      |
|                    | enable                | Enables 802.11r fast transition 802.1X support.                  |
|                    | disable               | Disables 802.11r fast transition 802.1X support.                 |
|                    | <i>wlan_id</i>        | Wireless LAN identifier between 1 and 512.                       |

**Command Default** None.

**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

|                   |                                                    |
|-------------------|----------------------------------------------------|
| <b>enable</b>     | Enables WPA-PSK.                                   |
| <b>disable</b>    | Disables WPA-PSK.                                  |
| <b>set-key</b>    | Configures a pre shared key.                       |
| <i>key-format</i> | Specifies key format. Either ASCII or hexadecimal. |
| <i>key</i>        | WPA preshared key.                                 |
| <i>wlan_id</i>    | 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*

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>wlan_id</i> Wireless LAN identifier between 1 and 512.                             |
| <b>Command Default</b>    | None.                                                                                 |
| <b>Examples</b>           | This example shows how to disable WPA:<br>> <b>config wlan security wpa disable 1</b> |
| <b>Related Commands</b>   | <a href="#">show wlan</a>                                                             |

# config wlan security wpa enable

To enable WPA1, use the **config wlan security wpa enable** command.

**config wlan security wpa enable** *wlan\_id*

|                           |                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>wlan_id</i> Wireless LAN identifier between 1 and 512.                                               |
| <b>Command Default</b>    | None.                                                                                                   |
| <b>Examples</b>           | This example shows how to configure the WPA on WLAN ID 1:<br>> <b>config wlan security wpa enable 1</b> |
| <b>Related Commands</b>   | <a href="#">show wlan</a>                                                                               |

# 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.        |
| <b>enable</b>  | Enables WPA AES/TKIP mode.                 |
| <b>disable</b> | 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*

|                           |                                                                                             |
|---------------------------|---------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>wlan_id</i> Wireless LAN identifier between 1 and 512.                                   |
| <b>Command Default</b>    | None.                                                                                       |
| <b>Examples</b>           | This example shows how to disable WPA1:<br>> <b>config wlan security wpa wpa1 disable 1</b> |
| <b>Related Commands</b>   | <a href="#">show wlan</a>                                                                   |



# 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 | <i>wlan_id</i> Wireless LAN identifier between 1 and 512.                                 |
| Command Default    | None.                                                                                     |
| Examples           | This example shows how to enable WPA1:<br>> <b>config wlan security wpa wpa1 enable 1</b> |
| Related Commands   | <a href="#">show wlan</a>                                                                 |

# 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*

|                           |                                                                                             |
|---------------------------|---------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>wlan_id</i> Wireless LAN identifier between 1 and 512.                                   |
| <b>Command Default</b>    | None.                                                                                       |
| <b>Examples</b>           | This example shows how to disable WPA2:<br>> <b>config wlan security wpa wpa2 disable 1</b> |
| <b>Related Commands</b>   | <a href="#">show wlan</a>                                                                   |

# 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 | <i>wlan_id</i> Wireless LAN identifier between 1 and 512.                                 |
| Command Default    | None.                                                                                     |
| Examples           | This example shows how to enable WPA2:<br>> <b>config wlan security wpa wpa2 enable 1</b> |
| Related Commands   | <a href="#">show wlan</a>                                                                 |

# 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

|                  |                                                                                      |
|------------------|--------------------------------------------------------------------------------------|
| <i>wlan_id</i>   | Wireless LAN identifier between 1 and 512.                                           |
| <b>foreignAp</b> | Specifies third-party access points.                                                 |
| <i>seconds</i>   | 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 | <i>wlan_id</i> | Wireless LAN identifier (1 to 512).    |
|                    | <b>enable</b>  | Enables web authentication exclusion.  |
|                    | <b>disable</b> | 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: |
|          | > <b>config wlan webauth-exclude 5 enable</b>                                    |

|                  |                                                                                             |
|------------------|---------------------------------------------------------------------------------------------|
| Related Commands | <a href="#">config dhcp</a><br><a href="#">show run-config</a><br><a href="#">show wlan</a> |
|------------------|---------------------------------------------------------------------------------------------|

# 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*

|                           |                |                                                               |
|---------------------------|----------------|---------------------------------------------------------------|
| <b>Syntax Description</b> | <b>allow</b>   | Allows WMM on the wireless LAN.                               |
|                           | <b>disable</b> | Disables WMM on the wireless LAN.                             |
|                           | <b>require</b> | Specifies that clients use WMM on the specified wireless LAN. |
|                           | <i>wlan_id</i> | 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 example 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

|                        |                                                                        |
|------------------------|------------------------------------------------------------------------|
| <b>enable</b>          | (Optional) Enables WMM on the wireless LAN.                            |
| <b>disable</b>         | (Optional) Disables WMM on the wireless LAN.                           |
| <b>threshold</b>       | (Optional) Specifies that WMM-enabled clients are on the wireless LAN. |
| <i>threshold_value</i> | 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

|                |                                   |
|----------------|-----------------------------------|
| <b>enable</b>  | Enables the auto-immune feature.  |
| <b>disable</b> | 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                                            |
|-----------------------|--------------------------------------------------------|
| <b>add</b>            | (Optional) Configures a new IDS sensor.                |
| <i>index</i>          | IDS sensor internal index.                             |
| <i>ip_address</i>     | IDS sensor IP address.                                 |
| <i>username</i>       | IDS sensor username.                                   |
| <i>password</i>       | IDS sensor password.                                   |
| <b>delete</b>         | (Optional) Deletes an IDS sensor.                      |
| <b>enable</b>         | (Optional) Enables an IDS sensor.                      |
| <b>disable</b>        | (Optional) Disables an IDS sensor.                     |
| <b>port</b>           | (Optional) Configures the IDS sensor's port number.    |
| <i>port</i>           | Port number.                                           |
| <b>interval</b>       | (Optional) Specifies the IDS sensor's query interval.  |
| <i>query_interval</i> | Query interval setting.                                |
| <b>fingerprint</b>    | (Optional) Specifies the IDS sensor's TLS fingerprint. |
| <b>sha1</b>           | (Optional) Specifies the TLS fingerprint.              |
| <i>fingerprint</i>    | TLS fingerprint.                                       |

|                        |                                               |                                                 |
|------------------------|-----------------------------------------------|-------------------------------------------------|
| <b>Command Default</b> | 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 |
|                        | Query state                                   | Disabled                                        |

|                 |                                                                                                                                                                                                                                                                                 |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>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:</p> <pre>&gt; config wps cids-sensor add 1 10.0.0.51 Sensor_user0doc1 password01</pre> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**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  |  |                                                                                                                              |
|---------------------|--|------------------------------------------------------------------------------------------------------------------------------|
| <b>802.11-assoc</b> |  | Specifies that the controller excludes clients on the sixth 802.11 association attempt, after five consecutive failures.     |
| <b>802.11-auth</b>  |  | Specifies that the controller excludes clients on the sixth 802.11 authentication attempt, after five consecutive failures.  |
| <b>802.1x-auth</b>  |  | Specifies that the controller excludes clients on the sixth 802.11X authentication attempt, after five consecutive failures. |
| <b>ip-theft</b>     |  | Specifies that the control excludes clients if the IP address is already assigned to another device.                         |
| <b>web-auth</b>     |  | Specifies that the controllerexcludes clients on the fourth web authentication attempt, after three consecutive failures.    |
| <b>all</b>          |  | Specifies that the controller excludes clients for all of the above reasons.                                                 |
| <b>enable</b>       |  | Enables client exclusion policies.                                                                                           |
| <b>disable</b>      |  | Disables client exclusion policies.                                                                                          |

|                        |                           |
|------------------------|---------------------------|
| <b>Command Default</b> | All policies are enabled. |
|------------------------|---------------------------|

|                 |                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | 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
```

|                         |                                  |
|-------------------------|----------------------------------|
| <b>Related Commands</b> | <a href="#">show wps summary</a> |
|-------------------------|----------------------------------|

# config wps mfp

To configure Management Frame Protection (MFP), use the **config wps mfp** command.

**config wps mfp infrastructure {enable | disable}**

|                    |                       |                                    |
|--------------------|-----------------------|------------------------------------|
| Syntax Description | <b>infrastructure</b> | Configures the MFP infrastructure. |
|                    | <b>enable</b>         | Enables the MFP feature.           |
|                    | <b>disable</b>        | Disables the MFP feature.          |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                      |
|----------|----------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable the infrastructure MFP:</p> <pre>&gt; config wps mfp infrastructure enable</pre> |
|----------|----------------------------------------------------------------------------------------------------------------------|

|                  |                              |
|------------------|------------------------------|
| Related Commands | <a href="#">show wps mfp</a> |
|------------------|------------------------------|

# 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                 |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to configure the controller to synchronize with other controllers for the shun list:</p> <pre>&gt; config wps shun-list re-sync</pre> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                    |
|-------------------------|------------------------------------|
| <b>Related Commands</b> | <a href="#">show wps shun-list</a> |
|-------------------------|------------------------------------|

# 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

|                     |                                                                   |
|---------------------|-------------------------------------------------------------------|
| <b>standard</b>     | Configures a standard IDS signature.                              |
| <b>custom</b>       | Configures a standard IDS signature.                              |
| <b>state</b>        | Specifies the state of the IDS signature.                         |
| <i>signature_id</i> | Identifier for the signature to be enabled or disabled.           |
| <b>enable</b>       | Enables the IDS signature processing or a specific IDS signature. |
| <b>disable</b>      | 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*

|                           |                     |                                                                                                                                                                        |
|---------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>signature_id</i> | Identifier for the signature to be configured.                                                                                                                         |
|                           | <i>frequency</i>    | 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

|                     |                                                                                                                          |
|---------------------|--------------------------------------------------------------------------------------------------------------------------|
| <i>signature_id</i> | Identifier for the signature to be configured.                                                                           |
| <i>interval</i>     | 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*

|                           |                      |                                                                                                                                                                          |
|---------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>signature_id</i>  | Identifier for the signature to be configured.                                                                                                                           |
|                           | <i>mac_frequency</i> | 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

|                     |                                                                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>signature_id</i> | Identifier for the signature to be configured.                                                                                                           |
| <i>quiet_time</i>   | 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

|                     |                                                        |
|---------------------|--------------------------------------------------------|
| <i>signature_id</i> | Identifier for the specific IDS signature to be reset. |
| <b>all</b>          | 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

|                   |                               |
|-------------------|-------------------------------|
| <i>ip_address</i> | 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

|                  |                 |
|------------------|-----------------|
| <i>user_name</i> | Dot1x username. |
| <i>password</i>  | 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

|                  |                               |
|------------------|-------------------------------|
| <i>host_name</i> | 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.

## 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 10.0.0.1 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*

|                                                                                                  |                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b>                                                                        | <i>default_gateway</i> Default gateway address of the capwap access point.                                                                                                                                                                                                                                                  |
| <b>Command Default</b>                                                                           | None.                                                                                                                                                                                                                                                                                                                       |
| <b>Usage Guidelines</b>                                                                          | This command must be entered from an access point's console port.                                                                                                                                                                                                                                                           |
| <br><b>Note</b> | The access point must be running Cisco IOS Release 12.3(11)JX1 or higher releases.                                                                                                                                                                                                                                          |
| <b>Examples</b>                                                                                  | <p>This example shows how to configure the capwap access point with the default gateway address 10.0.0.1:</p> <pre>&gt; capwap ap ip default-gateway 10.0.0.1</pre>                                                                                                                                                         |
| <b>Related Commands</b>                                                                          | <ul style="list-style-type: none"><li>capwap ap controller ip address</li><li>capwap ap dot1x</li><li>capwap ap hostname</li><li>capwap ap ip address</li><li>capwap ap log-server</li><li>capwap ap primary-base</li><li>capwap ap primed-timer</li><li>capwap ap secondary-base</li><li>capwap ap tertiary-base</li></ul> |

# 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

|                              |                                       |
|------------------------------|---------------------------------------|
| <i>controller_name</i>       | Name of the primary controller.       |
| <i>controller_ip_address</i> | 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

|                |                                     |
|----------------|-------------------------------------|
| <b>enable</b>  | Enables the primed timer settings   |
| <b>disable</b> | 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

|                              |                                         |
|------------------------------|-----------------------------------------|
| <i>controller_name</i>       | Name of the secondary controller.       |
| <i>controller_ip_address</i> | 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

|                              |                                        |
|------------------------------|----------------------------------------|
| <i>controller_name</i>       | Name of the tertiary controller.       |
| <i>controller_ip_address</i> | 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

|                   |                               |
|-------------------|-------------------------------|
| <i>ip_address</i> | 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                            |
|-----------------|----------------------------------------------------------------------------|
| <b>Examples</b> | 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!
```

|                         |                              |
|-------------------------|------------------------------|
| <b>Related Commands</b> | <a href="#">show sysinfo</a> |
|-------------------------|------------------------------|

# 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 | <i>acl_name</i> ACL name.                                                                                                                                                                                                                                              |
| Command Default    | None.                                                                                                                                                                                                                                                                  |
| Usage Guidelines   | <br><b>Note</b> 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:<br>> <b>clear acl counters acl1</b>                                                                                                                                                                     |
| Related Commands   | <a href="#">config acl counter</a><br><a href="#">show acl</a>                                                                                                                                                                                                         |

# 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*

|                           |                                                                                                                                                                                                                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>ap_name</i> Access point name.                                                                                                                                                                                                                                                 |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                             |
| <b>Usage Guidelines</b>   | Entering this command does not clear the static IP address of the access point.                                                                                                                                                                                                   |
| <b>Examples</b>           | <p>This example shows how to clear the access point's configuration settings for the access point named ap1240_322115:</p> <pre>&gt; clear ap-config ap1240_322115</pre> <p>Clear ap-config will clear ap config and reboot the AP. Are you sure you want continue?<br/>(y/n)</p> |
| <b>Related Commands</b>   | <a href="#">show ap config</a>                                                                                                                                                                                                                                                    |

# 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 | <b>specific</b> | Specifies a specific access point log file.                            |
|                    | <i>ap_name</i>  | Name of the access point for which the event log file will be emptied. |
|                    | <b>all</b>      | 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 | <a href="#">show ap eventlog</a> |
|------------------|----------------------------------|

# 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

|               |                              |
|---------------|------------------------------|
| <b>all</b>    | Specifies all access points. |
| <i>ap_mac</i> | 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                                                            |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to clear the ARP table:</p> <pre>&gt; clear arp</pre> <p>Are you sure you want to clear the ARP cache? (y/n)</p> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|

---

|                         |                                                                                                                                                                                                                                                                                                         |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p>clear transfer<br/>clear download filename<br/>clear download mode<br/>clear download path<br/>clear download serverip<br/>clear download start<br/>clear upload datatype<br/>clear upload filename<br/>clear upload mode<br/>clear upload path<br/>clear upload serverip<br/>clear upload start</p> |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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

|                   |                                                  |
|-------------------|--------------------------------------------------|
| <b>802.11a</b>    | Specifies the 802.11a network.                   |
| <b>802.11b</b>    | Specifies the 802.11b network.                   |
| <i>client_mac</i> | MAC address of the client.                       |
| <i>ap_mac</i>     | MAC address of a Cisco lightweight access point. |
| <b>all</b>        | 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

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                             |
|-----------------|-----------------------------------------------------------------------------|
| <b>Examples</b> | 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!
```

---

|                         |                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>clear transfer</b><br><b>clear download filename</b><br><b>clear download mode</b><br><b>clear download path</b><br><b>clear download serverip</b><br><b>clear download start</b><br><b>clear upload datatype</b><br><b>clear upload filename</b><br><b>clear upload mode</b><br><b>clear upload path</b><br><b>clear upload serverip</b><br><b>clear upload start</b> |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                 |                                |
|-----------------|--------------------------------|
| <b>counters</b> | Clears the counter statistics. |
| <b>sessions</b> | 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

|                    |                                                 |
|--------------------|-------------------------------------------------|
| <i>mac_address</i> | MAC address of a specific RFID tag.             |
| <b>all</b>         | 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                        |
|-----------------|--------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to clear RFID statistics:</p> <pre>&gt; clear location statistics rfid</pre> |
|-----------------|--------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                             |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><a href="#">clear location statistics rfid</a><br/><a href="#">config location</a><br/><a href="#">show location</a></p> |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|

# 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to clear the login banner file:</p> <pre>&gt; clear login-banner</pre> |
|-----------------|--------------------------------------------------------------------------------------------------|

|                         |                                            |
|-------------------------|--------------------------------------------|
| <b>Related Commands</b> | <a href="#">transfer download datatype</a> |
|-------------------------|--------------------------------------------|

# 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to delete the NMSP statistics log file:</p> <pre>&gt; clear nmsp statistics</pre> |
|-----------------|-------------------------------------------------------------------------------------------------------------|

|                         |                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><a href="#">clear loop statistics</a></p> <p><a href="#">show nmsp status</a></p> |
|-------------------------|--------------------------------------------------------------------------------------|

# 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

|              |                                                     |
|--------------|-----------------------------------------------------|
| <i>index</i> | (Optional) Index of the RADIUS accounting server.   |
| <b>all</b>   | (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

|              |                                                         |
|--------------|---------------------------------------------------------|
| <i>index</i> | (Optional) Index of the RADIUS authentication server.   |
| <b>all</b>   | (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 customweb authentication redirect URL on the Ciscowireless LAN controller, use the **clear redirect-url** command.

**clear redirect-url**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                             |
|-----------------|-----------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to clear the custom web authentication redirect URL: |
|-----------------|-----------------------------------------------------------------------------|

```
> clear redirect-url
```

```
URL cleared.
```

---

|                         |                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>clear transfer</b><br><b>clear download datatype</b><br><b>clear download filename</b><br><b>clear download mode</b><br><b>clear download path</b><br><b>clear download start</b><br><b>clear upload datatype</b><br><b>clear upload filename</b><br><b>clear upload mode</b><br><b>clear upload path</b><br><b>clear upload serverip</b><br><b>clear upload start</b> |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# clear stats ap wlan

To clear the WLAN statistics, use the **clear stats ap wlan** command.

**clear stats ap wlan** *cisco\_ap*

|                           |                                                                                                                                                                                          |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>cisco_ap</i> Selected configuration elements.                                                                                                                                         |
| <b>Command Default</b>    | None.                                                                                                                                                                                    |
| <b>Examples</b>           | <p>This example shows how to clear the WLAN configuration elements of the access point <i>cisco_ap</i>:</p> <pre>&gt; clear stats ap wlan cisco-ap</pre> <p>WLAN statistics cleared.</p> |
| <b>Related Commands</b>   | <a href="#">show ap stats</a><br><a href="#">show ap wlan</a>                                                                                                                            |

# 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to clear mobility manager statistics:<br><br>> <b>clear stats mobility</b><br><br>Mobility stats cleared. |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>clear transfer</b><br><b>clear download datatype</b><br><b>clear download filename</b><br><b>clear download mode</b><br><b>clear download serverip</b><br><b>clear download start</b><br><b>clear upload datatype</b><br><b>clear upload filename</b><br><b>clear upload mode</b><br><b>clear upload path</b><br><b>clear upload serverip</b><br><b>clear upload start</b><br><b>clear stats port</b> |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# clear stats port

To clear statistics counters for a specific port, use the **clear stats port** command.

**clear stats port** *port*

---

**Syntax Description**

|             |                                 |
|-------------|---------------------------------|
| <i>port</i> | 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*}

|                           |              |                                                  |
|---------------------------|--------------|--------------------------------------------------|
| <b>Syntax Description</b> | <b>auth</b>  | Clears statistics regarding authentication.      |
|                           | <b>acct</b>  | Clears statistics regarding accounting.          |
|                           | <i>index</i> | Index number of the RADIUS server to be cleared. |
|                           | <b>all</b>   | 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**]

|                           |              |                                                                 |
|---------------------------|--------------|-----------------------------------------------------------------|
| <b>Syntax Description</b> | <b>auth</b>  | (Optional) Clears the TACACS+ authentication server statistics. |
|                           | <b>athr</b>  | (Optional) Clears the TACACS+ authorization server statistics.  |
|                           | <b>acct</b>  | (Optional) Clears the TACACS+ accounting server statistics.     |
|                           | <i>index</i> | Index of the TACACS+ server.                                    |
|                           | <b>all</b>   | (Optional) Specifies all TACACS+ servers.                       |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to clear the TACACS+ accounting server statistics for index 1:</p> <pre>&gt; clear stats tacacs acct 1</pre> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|

|                         |                     |
|-------------------------|---------------------|
| <b>Related Commands</b> | show tacacs summary |
|-------------------------|---------------------|

# clear transfer

To clear the transfer information, use the **clear transfer** command.

## clear transfer

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to clear the transfer information:</p> <pre>&gt; clear transfer</pre> <p>Are you sure you want to clear the transfer information? (y/n) y</p> <p>Transfer Information Cleared.</p> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

---

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><a href="#">transfer upload datatype</a></p> <p><a href="#">transfer upload filename</a></p> <p><a href="#">transfer upload mode</a></p> <p><a href="#">transfer upload pac</a></p> <p><a href="#">transfer upload password</a></p> <p><a href="#">transfer upload path</a></p> <p><a href="#">transfer upload port</a></p> <p><a href="#">transfer upload serverip</a></p> <p><a href="#">transfer upload start</a></p> <p><a href="#">transfer upload username</a></p> |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# clear traplog

To clear the trap log, use the **clear traplog** command.

## clear traplog

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to clear the trap log:</p> <pre>&gt; clear traplog</pre> <p>Are you sure you want to clear the trap log? (y/n) y</p> <p>Trap Log Cleared.</p> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <ul style="list-style-type: none"><li>clear transfer</li><li>clear download datatype</li><li>clear download filename</li><li>clear download mode</li><li>clear download path</li><li>clear download serverip</li><li>clear download start</li><li>clear upload filename</li><li>clear upload mode</li><li>clear upload path</li><li>clear upload serverip</li><li>clear upload start</li></ul> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# clear webimage

To clear the custom web authentication image, use the **clear webimage** command.

**clear webimage**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                 |
|-----------------|-------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to clear the custom web authentication image:<br>> <b>clear webimage</b> |
|-----------------|-------------------------------------------------------------------------------------------------|

---

|                         |                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>clear transfer</b><br><b>clear download datatype</b><br><b>clear download filename</b><br><b>clear download mode</b><br><b>clear download path</b><br><b>clear download serverip</b><br><b>clear download start</b><br><b>clear upload filename</b><br><b>clear upload mode</b><br><b>clear upload path</b><br><b>clear upload serverip</b><br><b>clear upload start</b> |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# clear webmessage

To clear the custom web authentication message, use the **clear webmessage** command.

**clear webmessage**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to clear the custom web authentication message:</p> <pre>&gt; clear webmessage</pre> <p>Message cleared.</p> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|

---

|                         |                                                                                                                                                                                                                                                                                                           |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p>clear transfer<br/>clear download datatype<br/>clear download filename<br/>clear download mode<br/>clear download path<br/>clear download serverip<br/>clear download start<br/>clear upload filename<br/>clear upload mode<br/>clear upload path<br/>clear upload serverip<br/>clear upload start</p> |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# clear webtitle

To clear the custom web authentication title, use the **clear webtitle** command.

**clear webtitle**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to clear the custom web authentication title:</p> <pre>&gt; clear webtitle</pre> <p>Title cleared.</p> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------|

---

|                         |                                                                                                                                                                                                                                                                                                           |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p>clear transfer<br/>clear download datatype<br/>clear download filename<br/>clear download mode<br/>clear download path<br/>clear download serverip<br/>clear download start<br/>clear upload filename<br/>clear upload mode<br/>clear upload path<br/>clear upload serverip<br/>clear upload start</p> |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



# 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]**

|                           |                    |                                                             |
|---------------------------|--------------------|-------------------------------------------------------------|
| <b>Syntax Description</b> | YYYY-MM-DD         | Date.                                                       |
|                           | HH: MM: SS         | Time in 24-hour format.                                     |
|                           | <b>image</b>       | Configures the image to be rebooted.                        |
|                           | <b>swap</b>        | Changes the active boot image.                              |
|                           | <b>no-swap</b>     | Boots from the active image.                                |
|                           | <b>reset-aps</b>   | Resets all access points during the system reset.           |
|                           | <b>save-config</b> | (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**

|                           |                    |                                                   |
|---------------------------|--------------------|---------------------------------------------------|
| <b>Syntax Description</b> | <b>HH :MM :SS</b>  | Delay in duration.                                |
|                           | <b>image</b>       | Configures the image to be rebooted.              |
|                           | <b>swap</b>        | Changes the active boot image                     |
|                           | <b>no-swap</b>     | Boots from the active image.                      |
|                           | <b>reset-aps</b>   | Resets all access points during the system reset. |
|                           | <b>save-config</b> | Saves the configuration before the system reset.  |
|                           |                    |                                                   |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                        |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to reset the system after a delay of 00:01:01:</p> <pre>&gt; reset system in 00:01:01 image swap reset-aps save-config</pre> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                        |
|-------------------------|--------------------------------------------------------|
| <b>Related Commands</b> | <p>reset system notify-time</p> <p>reset system at</p> |
|-------------------------|--------------------------------------------------------|

# reset system cancel

To cancel a scheduled reset, use the **reset system cancel** command.

**reset system cancel**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                     |
|-----------------|-------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to cancel a scheduled reset:<br>> <b>reset system cancel</b> |
|-----------------|-------------------------------------------------------------------------------------|

---

|                         |                                                                                     |
|-------------------------|-------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>reset system at</b><br><b>reset system in</b><br><b>reset system notify-time</b> |
|-------------------------|-------------------------------------------------------------------------------------|

# 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*

|                           |                                                                                                                                                       |         |                                                                            |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------|
| <b>Syntax Description</b> | <table><tr><td>minutes</td><td>Number of minutes before each scheduled reset at which to generate a trap.</td></tr></table>                           | minutes | Number of minutes before each scheduled reset at which to generate a trap. |
| minutes                   | Number of minutes before each scheduled reset at which to generate a trap.                                                                            |         |                                                                            |
| <b>Command Default</b>    | The default is 10 minutes.                                                                                                                            |         |                                                                            |
| <b>Examples</b>           | <p>This example shows how to configure the trap generation to 10 minutes before the scheduled resets:</p> <pre>&gt; reset system notify-time 55</pre> |         |                                                                            |
| <b>Related Commands</b>   | <p><b>reset system in</b></p> <p><b>reset system at</b></p>                                                                                           |         |                                                                            |

# Uploading and Downloading Files and Configurations

Use the **transfer** command to transfer files to or from the Cisco wireless LAN controller.

# transfer download certpassword

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

|                      |                                                               |
|----------------------|---------------------------------------------------------------|
| <b>config</b>        | Downloads the configuration file.                             |
| <b>code</b>          | Downloads an executable image to the system.                  |
| <b>image</b>         | Downloads a web page login to the system.                     |
| <b>signature</b>     | Downloads a signature file to the system.                     |
| <b>webadmincert</b>  | Downloads a certificate for web administration to the system. |
| <b>webauthbundle</b> | Downloads a custom webauth bundle to the system.              |
| <b>eapdevcert</b>    | Downloads an EAP dev certificate to the system.               |
| <b>eapcacert</b>     | 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*

|                           |                                                                                                                                                                                                                                                                                                                                              |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>filename</i> Filename that contains up to 512 alphanumeric characters.                                                                                                                                                                                                                                                                    |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                        |
| <b>Examples</b>           | <p>This example shows how to transfer a file named build603:</p> <pre>&gt; transfer download filename build603</pre>                                                                                                                                                                                                                         |
| <b>Related Commands</b>   | <p>clear transfer<br/>transfer download certpassword<br/>transfer download mode<br/>transfer download path<br/>transfer download serverip<br/>transfer download start<br/>transfer upload datatype<br/>transfer upload filename<br/>transfer upload mode<br/>transfer upload path<br/>transfer upload serverip<br/>transfer upload start</p> |

# transfer download mode

To set the transfer mode, use the **transfer download mode** command.

**transfer download mode {ftp | tftp}**

## Syntax Description

|             |                                 |
|-------------|---------------------------------|
| <b>ftp</b>  | Sets the transfer mode to FTP.  |
| <b>tftp</b> | 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*

|                           |                                                                                                                                |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>password</i> Password.                                                                                                      |
| <b>Command Default</b>    | None.                                                                                                                          |
| <b>Examples</b>           | This example shows how to set the password for FTP transfer to pass01:<br>> <b>transfer download password pass01</b>           |
| <b>Related Commands</b>   | <a href="#">transfer download mode</a><br><a href="#">transfer download port</a><br><a href="#">transfer download username</a> |

# transfer download path

To set a specific FTP or TFTP path, use the **transfer download path** command.

**transfer download path** *path*

## Syntax Description

*path* D

irectory 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*

|                           |                                                                                                                                    |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>port</i> FTP port.                                                                                                              |
| <b>Command Default</b>    | The default FTP <i>port</i> is <b>21</b> .                                                                                         |
| <b>Examples</b>           | This example shows how to specify FTP port number 23:<br>> <b>transfer download port 23</b>                                        |
| <b>Related Commands</b>   | <a href="#">transfer download mode</a><br><a href="#">transfer download password</a><br><a href="#">transfer download username</a> |

# 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

|                    |                    |
|--------------------|--------------------|
| <i>TFTP_server</i> | TFTP IP address.   |
| <i>ip_address</i>  | 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**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to initiate a download:</p> <pre>&gt; transfer download start</pre> <pre>Mode..... TFTP Data Type..... Site Cert TFTP Server IP..... 172.16.16.78 TFTP Path..... directory path TFTP Filename..... webadmincert_name</pre> <p>This may take some time.<br/>Are you sure you want to start? (y/n) Y<br/>TFTP Webadmin cert transfer starting.<br/>Certificate installed.<br/>Please restart the switch (reset system) to use the new certificate.</p> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><b>clear transfer</b><br/>transfer download certpassword<br/><b>transfer download filename</b><br/><b>transfer download mode</b><br/><b>transfer download path</b><br/><b>transfer download serverip</b><br/><b>transfer upload datatype</b><br/><b>transfer upload filename</b><br/><b>transfer upload mode</b><br/><b>transfer upload path</b><br/><b>transfer upload serverip</b><br/><b>transfer upload start</b></p> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# transfer download tftpPktTimeout

To specify the TFTP packet timeout, use the **transfer download tftpPktTimeout** command.

**transfer download tftpPktTimeout** *timeout*

|                           |                |                                       |
|---------------------------|----------------|---------------------------------------|
| <b>Syntax Description</b> | <i>timeout</i> | Timeout in seconds between 1 and 254. |
|---------------------------|----------------|---------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to transfer a file with the TFTP packet timeout of 55 seconds:</p> <pre>&gt; transfer download tftpPktTimeout 55</pre> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p>clear transfer<br/> transfer download certpassword<br/> <b>transfer download filename</b><br/> <b>transfer download mode</b><br/> <b>transfer download path</b><br/> <b>transfer download serverip</b><br/> <b>transfer download start</b><br/> <b>transfer upload datatype</b><br/> <b>transfer upload filename</b><br/> <b>transfer upload mode</b><br/> <b>transfer upload path</b><br/> <b>transfer upload serverip</b><br/> <b>transfer upload start</b></p> |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



# transfer download tftpMaxRetries

To specify the number of allowed TFTP packet retries, use the **transfer download tftpMaxRetries** command.

**transfer download tftpMaxRetries** *retries*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>retries</i> Number of allowed TFTP packet retries between 1 and 254 seconds.                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Examples</b>           | This example shows how to set the number of allowed TFTP packet retries to 55:<br>> <b>transfer download tftpMaxRetries 55</b>                                                                                                                                                                                                                                                                                                                      |
| <b>Related Commands</b>   | <b>clear transfer</b><br><b>transfer download certpassword</b><br><b>transfer download filename</b><br><b>transfer download mode</b><br><b>transfer download path</b><br><b>transfer download serverip</b><br><b>transfer download start</b><br><b>transfer upload datatype</b><br><b>transfer upload filename</b><br><b>transfer upload mode</b><br><b>transfer upload path</b><br><b>transfer upload serverip</b><br><b>transfer upload start</b> |

# transfer download username

To specify the FTP username, use the **transfer download username** command.

**transfer download username** *username*

|                           |                                                                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>username</i> Use <i>rname</i> .                                                                                                      |
| <b>Command Default</b>    | None.                                                                                                                                   |
| <b>Examples</b>           | <p>This example shows how to set the FTP username to ftp_username:</p> <pre>&gt; transfer download username ftp_username</pre>          |
| <b>Related Commands</b>   | <p><a href="#">transfer download mode</a><br/><a href="#">transfer download password</a><br/><a href="#">transfer download port</a></p> |

# transfer encrypt

To configure encryption for configuration file transfers, use the **transfer encrypt** command.

**transfer encrypt** { **enable** | **disable** | **set-key** *key* }

|                    |                |                                                                |
|--------------------|----------------|----------------------------------------------------------------|
| Syntax Description | <b>enable</b>  | Enables the encryption settings.                               |
|                    | <b>disable</b> | Disables the encryption settings.                              |
|                    | <b>set-key</b> | Specifies the encryption key for configuration file transfers. |
|                    | <i>key</i>     | 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

|                            |                                                                                                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>config</b>              | Uploads the system configuration file.                                                                        |
| <b>coredump</b>            | Uploads the core-dump file.                                                                                   |
| <b>crashfile</b>           | Uploads the system crash file.                                                                                |
| <b>errorlog</b>            | Uploads the system error log file.                                                                            |
| <b>invalid-config</b>      | Uploads the system invalid-config file.                                                                       |
| <b>pac</b>                 | Uploads a Protected Access Credential (PAC).                                                                  |
| <b>packet-capture</b>      | Uploads a packet capture file.                                                                                |
| <b>panic-crash-file</b>    | Uploads the kernel panic information file.                                                                    |
| <b>radio-core-dump</b>     | Uploads the system error log.                                                                                 |
| <b>signature</b>           | Uploads the system signature file.                                                                            |
| <b>systemtrace</b>         | Uploads the system trace file.                                                                                |
| <b>traplog</b>             | Uploads the system trap log.                                                                                  |
| <b>watchdog-crash-file</b> | 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*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>filename</i> Filename that contains up to 16 alphanumeric characters.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Examples</b>           | <p>This example shows how to upload a file build603:</p> <pre>&gt; transfer upload filename build603</pre>                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Related Commands</b>   | <ul style="list-style-type: none"><li><a href="#">clear transfer</a></li><li><a href="#">transfer upload datatype</a></li><li><a href="#">transfer upload mode</a></li><li><a href="#">transfer upload pac</a></li><li><a href="#">transfer upload password</a></li><li><a href="#">transfer upload path</a></li><li><a href="#">transfer upload port</a></li><li><a href="#">transfer upload serverip</a></li><li><a href="#">transfer upload start</a></li><li><a href="#">transfer upload username</a></li></ul> |

# transfer upload mode

To configure the transfer mode, use the **transfer upload mode** command.

**transfer upload mode {ftp | tftp}**

|                    |             |                                 |
|--------------------|-------------|---------------------------------|
| Syntax Description | <b>ftp</b>  | Sets the transfer mode to FTP.  |
|                    | <b>tftp</b> | Sets the transfer mode to TFTP. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                           |
|----------|-----------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to set the transfer mode to TFTP:</p> <pre>&gt; transfer upload mode tftp</pre> |
|----------|-----------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">clear transfer</a><br/><a href="#">transfer upload datatype</a><br/><a href="#">transfer upload filename</a><br/><a href="#">transfer upload pac</a><br/><a href="#">transfer upload password</a><br/><a href="#">transfer upload path</a><br/><a href="#">transfer upload port</a><br/><a href="#">transfer upload serverip</a><br/><a href="#">transfer upload start</a><br/><a href="#">transfer upload username</a></p> |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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

|                 |                                    |
|-----------------|------------------------------------|
| <i>username</i> | User identity of the PAC.          |
| <i>validity</i> | Validity period (days) of the PAC. |
| <i>password</i> | 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*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>password</i> Password needed to access the FTP server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Examples</b>           | <p>This example shows how to configure the password for the FTP transfer to pass01:</p> <pre>&gt; transfer upload password pass01</pre>                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Related Commands</b>   | <ul style="list-style-type: none"> <li><a href="#">clear transfer</a></li> <li><a href="#">transfer upload datatype</a></li> <li><a href="#">transfer upload filename</a></li> <li><a href="#">transfer upload mode</a></li> <li><a href="#">transfer upload pac</a></li> <li><a href="#">transfer upload path</a></li> <li><a href="#">transfer upload port</a></li> <li><a href="#">transfer upload serverip</a></li> <li><a href="#">transfer upload start</a></li> <li><a href="#">transfer upload username</a></li> </ul> |



# transfer upload path

To set a specific upload path, use the **transfer upload path** command.

**transfer upload path** *path*

|                           |                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>path</i> Server path to file.                                                                                                                                                                                                                                                                                                                        |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                                   |
| <b>Examples</b>           | <p>This example shows how to set the upload path to c:\install\version2:</p> <pre>&gt; transfer upload path c:\install\version2</pre>                                                                                                                                                                                                                   |
| <b>Related Commands</b>   | <ul style="list-style-type: none"><li>clear transfer</li><li>transfer upload datatype</li><li>transfer upload filename</li><li>transfer upload mode</li><li>transfer upload pac</li><li>transfer upload password</li><li>transfer upload port</li><li>transfer upload serverip</li><li>transfer upload start</li><li>transfer upload username</li></ul> |

# 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*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>ip_address</i> Server IP address.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Examples</b>           | <p>This example shows how to set the IP address of the TFTP server to 175.31.56.78:</p> <pre>&gt; transfer upload serverip 175.34.56.78</pre>                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Related Commands</b>   | <ul style="list-style-type: none"><li><a href="#">clear transfer</a></li><li><a href="#">transfer upload datatype</a></li><li><a href="#">transfer upload filename</a></li><li><a href="#">transfer upload mode</a></li><li><a href="#">transfer upload pac</a></li><li><a href="#">transfer upload password</a></li><li><a href="#">transfer upload path</a></li><li><a href="#">transfer upload port</a></li><li><a href="#">transfer upload start</a></li><li><a href="#">transfer upload username</a></li></ul> |

# 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*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>username</i><br>Username required to access the FTP server. The username can contain up to 31 characters.                                                                                                                                                                                                                                                                                                           |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Examples</b>           | This example shows how to set the FTP username to ftp_username:<br>> <b>transfer upload username ftp_username</b>                                                                                                                                                                                                                                                                                                      |
| <b>Related Commands</b>   | <a href="#">clear transfer</a><br><a href="#">transfer upload datatype</a><br><a href="#">transfer upload filename</a><br><a href="#">transfer upload mode</a><br><a href="#">transfer upload pac</a><br><a href="#">transfer upload password</a><br><a href="#">transfer upload path</a><br><a href="#">transfer upload port</a><br><a href="#">transfer upload serverip</a><br><a href="#">transfer upload start</a> |

# 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*

|                           |                                                                                                                                                                                                       |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>license_name</i> Name of the license.                                                                                                                                                              |
| <b>Command Default</b>    | None.                                                                                                                                                                                                 |
| <b>Usage Guidelines</b>   | 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. |
| <b>Examples</b>           | This example shows how to remove the license settings of the license named wplus-ap-count:<br><br><b>&gt; license clear wplus-ap-count</b>                                                            |
| <b>Related Commands</b>   | <a href="#">license comment</a><br><a href="#">license install</a><br><a href="#">license revoke</a><br><a href="#">license save</a><br><a href="#">show license all</a>                              |

# 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.   |
| <i>license_name</i>   | Name of the license. |
| <i>comment_string</i> | 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*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>url</i> URL of the TFTP server ( <b>tftp://server_ip/path/filename</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Command Default</b>    | None.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Usage Guidelines</b>   | <p>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.</p> <p>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.</p> |
| <b>Examples</b>           | <p>This example shows how to install a license on the controller from the URL tftp://10.10.10.10/path/license.lic:</p> <pre>&gt; license install tftp://10.10.10.10/path/license.lic</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Related Commands</b>   | <p><a href="#">license clear</a><br/><a href="#">license modify priority</a><br/><a href="#">license revoke</a><br/><a href="#">license save</a><br/><a href="#">show license all</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

# 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

|                     |                                                          |
|---------------------|----------------------------------------------------------|
| <i>license_name</i> | Ap-count evaluation license.                             |
| <b>high</b>         | Modifies the priority of an ap-count evaluation license. |
| <b>low</b>          | 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

|                              |                                                                                                         |
|------------------------------|---------------------------------------------------------------------------------------------------------|
| <i>permission_ticket_url</i> | URL of the TFTP server ( <b>tftp://server_ip/path/filename</b> ) where you saved the permission ticket. |
| <b>rehost</b>                | Specifies the rehost license settings.                                                                  |
| <i>rehost_ticket_url</i>     | URL of the TFTP server ( <b>tftp://server_ip/path/filename</b> ) 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*

|                           |                   |                                                                   |
|---------------------------|-------------------|-------------------------------------------------------------------|
| <b>Syntax Description</b> | <i>credential</i> | Saves device credential information to a file.                    |
|                           | <i>url</i>        | URL of the TFTP server ( <b>tftp://server_ip/path/filename</b> ). |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                         |                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Usage Guidelines</b> | Save the device credentials before you revoke the license by using the <b>license revoke</b> command. |
|-------------------------|-------------------------------------------------------------------------------------------------------|

|                 |                                                                                                                                                                                                                    |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>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:</p> <pre>&gt; license save credential tftp://10.10.10.10/path/cred.lic</pre> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><b>license clear</b><br/><b>license install</b><br/><b>license modify priority</b><br/><b>license revoke</b><br/><b>show license all</b></p> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|

# 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 | <b>all</b>        | (Optional) Specifies debugging of all AAA messages.                                              |
|                    | <b>detail</b>     | (Optional) Specifies debugging of AAA errors.                                                    |
|                    | <b>events</b>     | (Optional) Specifies debugging of AAA events.                                                    |
|                    | <b>packet</b>     | (Optional) Specifies debugging of AAA packets.                                                   |
|                    | <b>ldap</b>       | (Optional) Specifies debugging of the AAA Lightweight Directory Access Protocol (LDAP) events.   |
|                    | <b>local-auth</b> | (Optional) Specifies debugging of the AAA local Extensible Authentication Protocol (EAP) events. |
|                    | <b>tacacs</b>     | (Optional) Specifies debugging of the AAA TACACS+ events.                                        |
|                    | <b>enable</b>     | (Optional) Starts the debugging feature.                                                         |
|                    | <b>disable</b>    | (Optional) Stops the debugging feature.                                                          |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                 |
|----------|-----------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable the debugging of AAA LDAP events:</p> <pre>&gt; debug aaa ldap enable</pre> |
|----------|-----------------------------------------------------------------------------------------------------------------|

|                  |                                                                    |
|------------------|--------------------------------------------------------------------|
| Related Commands | <pre>debug aaa local-auth eap</pre> <pre>show running-config</pre> |
|------------------|--------------------------------------------------------------------|

# 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

|                  |                                                                                                |
|------------------|------------------------------------------------------------------------------------------------|
| <b>db</b>        | Configures debugging of the AAA local authentication back-end messages and events.             |
| <b>shim</b>      | Configures debugging of the AAA local authentication shim layer events.                        |
| <b>eap</b>       | Configures debugging of the AAA local Extensible Authentication Protocol (EAP) authentication. |
| <b>framework</b> | Configures debugging of the local EAP framework.                                               |
| <b>method</b>    | Configures debugging of local EAP methods.                                                     |
| <b>all</b>       | Specifies debugging of local EAP messages.                                                     |
| <b>errors</b>    | Specifies debugging of local EAP errors.                                                       |
| <b>events</b>    | Specifies debugging of local EAP events.                                                       |
| <b>packets</b>   | Specifies debugging of local EAP packets.                                                      |
| <b>sm</b>        | Specifies debugging of the local EAP state machine.                                            |
| <b>enable</b>    | Starts the debugging feature.                                                                  |
| <b>disable</b>   | 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 airewave-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 | <p>This example shows how to enable the debugging of Airewave Director profile events:</p> <pre>&gt; debug airewave-director profile enable</pre> |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                              |
|------------------|----------------------------------------------|
| Related Commands | <p>show sysinfo</p> <p>debug disable-all</p> |
|------------------|----------------------------------------------|

# 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

|                 |                                                                                                                                                                                                                                                                                                                      |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>enable</b>   | Enables debugging on a lightweight access point.<br><br><b>Note</b> The debugging information is displayed only to the controller console and does not send output to a controller Telnet/SSH CLI session.                                                                                                           |
| <b>disable</b>  | Disables debugging on a lightweight access point.<br><br><b>Note</b> The debugging information is displayed only to the controller console and does not send output to a controller Telnet/SSH CLI session.                                                                                                          |
| <b>command</b>  | Specifies that a CLI command is to be executed on the access point.                                                                                                                                                                                                                                                  |
| <i>cmd</i>      | Command to be executed.<br><br><b>Note</b> The command to be executed must be enclosed in double quotes, such as <b>debug ap command "led flash 30" AP03</b> .<br><br><b>Note</b> The output of the command displays only to the controller console and does not send output to a controller Telnet/SSH CLI session. |
| <i>cisco_ap</i> | 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

|                 |                                                                                                                                                                                                                                                                                                                      |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>enable</b>   | Enables remote debugging.<br><br><b>Note</b> The debugging information is displayed only to the controller console and does not send output to a controller Telnet/SSH CLI session.                                                                                                                                  |
| <b>disable</b>  | Disables remote debugging.                                                                                                                                                                                                                                                                                           |
| <b>command</b>  | Specifies that a CLI command is to be executed on the access point.                                                                                                                                                                                                                                                  |
| <i>cmd</i>      | Command to be executed.<br><br><b>Note</b> The command to be executed must be enclosed in double quotes, such as <b>debug ap command “led flash 30” AP03</b> .<br><br><b>Note</b> The output of the command displays only to the controller console and does not send output to a controller Telnet/SSH CLI session. |
| <i>cisco_ap</i> | 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   |  |                                                             |
|----------------------|--|-------------------------------------------------------------|
| <b>802.11a</b>       |  | Specifies the 802.11a network.                              |
| <b>802.11b</b>       |  | Specifies the 802.11b/g network.                            |
| <i>cisco_ap</i>      |  | Cisco lightweight access point name.                        |
| <b>tx-queue</b>      |  | Displays the transmit queue traffic statistics of the AP.   |
| <b>packet</b>        |  | Displays the packet statistics of the AP.                   |
| <b>load</b>          |  | Displays the QBSS and other statistics of the AP.           |
| <b>multicast</b>     |  | Displays the multicast supported rate statistics of the AP. |
| <b>client</b>        |  | Displays the specified client metric statistics.            |
| <i>client_MAC</i>    |  | MAC address of the client.                                  |
| <b>video</b>         |  | Displays video statistics of all clients on the AP.         |
| <b>all</b>           |  | Displays statistics of all clients on the AP.               |
| <b>video metrics</b> |  | 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

|                       |                                                                                            |
|-----------------------|--------------------------------------------------------------------------------------------|
| <i>cisco_ap</i>       | Cisco lightweight access point name.                                                       |
| <b>multicast mgid</b> | Displays multicast database related information for the specified MGID of an access point. |
| <i>mgid_value</i>     | Layer 2 MGID database number between 1 to 4095.                                            |
| <b>admission</b>      | Displays the video admission control.                                                      |
| <b>bandwidth</b>      | 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

|                |                                              |
|----------------|----------------------------------------------|
| <b>all</b>     | Configures debugging of all ARP logs.        |
| <b>detail</b>  | Configures debugging of ARP detail messages. |
| <b>error</b>   | Configures debugging of ARP errors.          |
| <b>message</b> | Configures debugging of ARP messages.        |
| <b>enable</b>  | Enables ARP debugging.                       |
| <b>disable</b> | 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:

```
> debug 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 | <b>all</b>     | Configures debugging of all broadcast logs.          |
|--------------------|----------------|------------------------------------------------------|
|                    | <b>error</b>   | Configures debugging of broadcast errors.            |
|                    | <b>message</b> | Configures debugging of broadcast messages.          |
|                    | <b>igmp</b>    | Configures debugging of broadcast IGMP messages.     |
|                    | <b>detail</b>  | Configures debugging of broadcast detailed messages. |
|                    | <b>enable</b>  | Enables the broadcast debugging.                     |
|                    | <b>disable</b> | Disables the broadcast debugging.                    |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                                                                                                             |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to enable broadcast debug settings:</p> <pre>&gt; debug bcast message enable</pre> <p>This example shows how to disable broadcast debug settings:</p> <pre>&gt; debug bcast message disable</pre> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                      |
|-------------------------|------------------------------------------------------|
| <b>Related Commands</b> | <pre>show sysinfo</pre> <pre>debug disable-all</pre> |
|-------------------------|------------------------------------------------------|

# 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

|                |                                                          |
|----------------|----------------------------------------------------------|
| <b>all</b>     | Configures debugging options for all CAC messages.       |
| <b>event</b>   | Configures debugging options for CAC events.             |
| <b>packet</b>  | Configures debugging options for selected CAC packets.   |
| <b>kts</b>     | Configures debugging options for KTS-based CAC messages. |
| <b>enable</b>  | Enables the debugging.                                   |
| <b>disable</b> | 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}**

|                           |                |                                                                 |
|---------------------------|----------------|-----------------------------------------------------------------|
| <b>Syntax Description</b> | <b>all</b>     | Configures debugging options for all SIP call control messages. |
|                           | <b>event</b>   | Configures debugging options for SIP call control events.       |
|                           | <b>enable</b>  | Enables the SIP call control debugging settings.                |
|                           | <b>disable</b> | Disables the SIP call control debugging settings.               |

|                        |           |
|------------------------|-----------|
| <b>Command Default</b> | Disabled. |
|------------------------|-----------|

|                 |                                                                                                                                   |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to enable debugging of all SIP call control messages:</p> <pre>&gt; debug call-control all enable</pre> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------|

# 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

|                       |                                                                       |
|-----------------------|-----------------------------------------------------------------------|
| <b>detail</b>         | Configures debugging for CAPWAP detail settings.                      |
| <b>dtls-keepalive</b> | Configures debugging for CAPWAP DTLS data keepalive packets settings. |
| <b>errors</b>         | Configures debugging for CAPWAP error settings.                       |
| <b>events</b>         | Configures debugging for CAPWAP events settings.                      |
| <b>hexdump</b>        | Configures debugging for CAPWAP hexadecimal dump settings.            |
| <b>info</b>           | Configures debugging for CAPWAP info settings.                        |
| <b>packet</b>         | Configures debugging for CAPWAP packet settings.                      |
| <b>payload</b>        | Configures debugging for CAPWAP payload settings.                     |
| <b>enable</b>         | Enables debugging of the CAPWAP command.                              |
| <b>disable</b>        | 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]**

|                           |             |                                                                                                                                        |
|---------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Syntax Description</b> | <b>mgmt</b> | (Optional) Configures debugging for client authentication and association messages.                                                    |
|                           | <b>load</b> | (Optional) Configures debugging for payload activities, which is useful when the FlexConnect access point boots up in standalone mode. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to debug FlexConnect client authentication and association messages:</p> <pre>&gt; debug capwap reap mgmt</pre> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><a href="#">clear lwapp private-config</a><br/><a href="#">debug disable-all</a></p> |
|-------------------------|-----------------------------------------------------------------------------------------|

# 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**

|                    |                            |
|--------------------|----------------------------|
| <i>mac_address</i> | 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 | <b>all</b>      | Configures debugging of all hardware crypto messages.  |
|                    | <b>sessions</b> | Configures debugging of hardware crypto sessions.      |
|                    | <b>trace</b>    | Configures debugging of hardware crypto sessions.      |
|                    | <b>warning</b>  | Configures debugging of hardware crypto sessions.      |
|                    | <b>enable</b>   | Enables the hardware cryptographic debugging.          |
|                    | <b>disable</b>  | Disables the hardware cryptographic debugging setting. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                 |
|----------|---------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable the debugging of hardware crypto sessions:</p> <pre>&gt; debug crypto sessions enable</pre> |
|----------|---------------------------------------------------------------------------------------------------------------------------------|

|                  |                                              |
|------------------|----------------------------------------------|
| Related Commands | <p>show sysinfo</p> <p>debug disable-all</p> |
|------------------|----------------------------------------------|

# debug dhcp

To configure DHCP debug options, use the **debug dhcp** command.

**debug dhcp {message | packet} {enable | disable}**

|                    |                |                                              |
|--------------------|----------------|----------------------------------------------|
| Syntax Description | <b>message</b> | Configures debugging of DHCP error messages. |
|                    | <b>packet</b>  | Configures debugging of DHCP packets.        |
|                    | <b>enable</b>  | Enables the DHCP debugging.                  |
|                    | <b>disable</b> | 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 | <b>enable</b>  | Enables the debugging of DHCP packets on the service port.  |
|--------------------|----------------|-------------------------------------------------------------|
|                    | <b>disable</b> | Disables the debugging of DHCP packets on the service port. |

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                                                     |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to enable debugging of DHCP packets on a service port:</p> <pre>&gt; debug dhcp service-port enable</pre> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><a href="#">config dhcp</a><br/><a href="#">config dhcp proxy</a><br/><a href="#">config interface dhcp</a><br/><a href="#">config wlan dhcp_server</a><br/><a href="#">debug dhcp</a><br/><a href="#">debug disable-all</a><br/><a href="#">show dhcp</a><br/><a href="#">show dhcp proxy</a></p> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# debug disable-all

To disable all debug messages, use the **debug disable-all** command.

**debug disable-all**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |           |
|------------------------|-----------|
| <b>Command Default</b> | Disabled. |
|------------------------|-----------|

---

|                 |                                                                                     |
|-----------------|-------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to disable all debug messages:<br>> <b>debug disable-all</b> |
|-----------------|-------------------------------------------------------------------------------------|



# 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

|                       |                                                           |
|-----------------------|-----------------------------------------------------------|
| <b>all</b>            | Configures debugging of all 802.11 messages.              |
| <b>load-balancing</b> | Configures debugging of 802.11 load balancing events.     |
| <b>management</b>     | Configures debugging of 802.11 MAC management messages.   |
| <b>mobile</b>         | Configures debugging of 802.11 mobile events.             |
| <b>nmsp</b>           | Configures debugging of the 802.11 NMSP interface events. |
| <b>rldp</b>           | Configures debugging of 802.11 Rogue Location Discovery.  |
| <b>rogue</b>          | Configures debugging of 802.11 rogue events.              |
| <b>state</b>          | Configures debugging of 802.11 mobile state transitions.  |
| <b>enable</b>         | Enables dot11 debugging.                                  |
| <b>disable</b>        | 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                           |
|-----------------|-----------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to debug dot11 management interface events:<br>> <b>debug dot11 mgmt interface</b> |
|-----------------|-----------------------------------------------------------------------------------------------------------|

---

|                         |                                                                                                                                                                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">debug disable-all</a><br><a href="#">debug dot11</a><br><a href="#">debug dot11 mgmt msg</a><br><a href="#">debug dot11 mgmt ssid</a><br><a href="#">debug dot11 mgmt state-machine</a><br><a href="#">debug dot11 mgmt station</a> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# debug dot11 mgmt msg

To debug 802.11 management messages, use the **debug dot11 mgmt msg** command.

**debug dot11 mgmt msg**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

|                 |                                                                                                        |
|-----------------|--------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | <p>This example shows how to debug dot11 management messages:</p> <pre>&gt; debug dot11 mgmt msg</pre> |
|-----------------|--------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                                                   |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <p><a href="#">debug disable-all</a><br/><a href="#">debug dot11</a><br/><a href="#">debug dot11 mgmt interface</a><br/><a href="#">debug dot11 mgmt ssid</a><br/><a href="#">debug dot11 mgmt state-machine</a><br/><a href="#">debug dot11 mgmt station</a></p> |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to debug dot11 state machine settings:<br>> <b>debug dot11 mgmt state-machine</b> |
|-----------------|----------------------------------------------------------------------------------------------------------|

---

|                         |                                                                                                                                                                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">debug disable-all</a><br><a href="#">debug dot11</a><br><a href="#">debug dot11 mgmt interface</a><br><a href="#">debug dot11 mgmt msg</a><br><a href="#">debug dot11 mgmt ssid</a><br><a href="#">debug dot11 mgmt station</a> |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# debug dot11 mgmt station

To debug client events, use the **debug dot11 mgmt station** command.

**debug dot11 mgmt station**

---

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Syntax Description</b> | This command has no arguments or keywords. |
|---------------------------|--------------------------------------------|

---

|                        |       |
|------------------------|-------|
| <b>Command Default</b> | None. |
|------------------------|-------|

---

|                 |                                                                                                   |
|-----------------|---------------------------------------------------------------------------------------------------|
| <b>Examples</b> | This example shows how to debug management station settings:<br>> <b>debug dot11 mgmt station</b> |
|-----------------|---------------------------------------------------------------------------------------------------|

---

|                         |                                                                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <a href="#">debug disable-all</a><br><a href="#">debug dot11</a><br><a href="#">debug dot11 mgmt interface</a><br><a href="#">debug dot11 mgmt msg</a><br><a href="#">debug dot11 mgmt ssid</a><br><a href="#">debug dot11 mgmt state-machine</a> |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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 group

To enable or disable debugging of access point groups, use the **debug group** command.

**debug group {enable | disable}**

## Syntax Description

|                |                                        |
|----------------|----------------------------------------|
| <b>enable</b>  | Enables access point group debugging.  |
| <b>disable</b> | 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 | <b>event</b>   | Configures debugging for FlexConnect RADIUS server events. |
|                    | <b>error</b>   | Configures debugging for FlexConnect RADIUS server errors. |
|                    | <b>enable</b>  | Enables debugging of FlexConnect RADIUS server settings.   |
|                    | <b>disable</b> | Disables debugging of FlexConnect RADIUS server settings.  |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                           |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable debugging of FlexConnect RADIUS server events:</p> <pre>&gt; debug flexconnect aaa event enable</pre> |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                                                                                                                                                           |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">debug disable-all</a><br/><a href="#">debug flexconnect cckm</a><br/><a href="#">debug flexconnect group</a><br/><a href="#">config flexconnect group</a><br/><a href="#">show flexconnect group detail</a><br/><a href="#">show flexconnect group summary</a><br/><a href="#">show radius summary</a></p> |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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**

|                |                                         |
|----------------|-----------------------------------------|
| <b>enable</b>  | Enables debugging of FlexConnect ACLs.  |
| <b>disable</b> | 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 | <b>enable</b>  | Enables debugging of FlexConnect CCKM fast roaming settings.  |
|--------------------|----------------|---------------------------------------------------------------|
|                    | <b>disable</b> | Disables debugging of FlexConnect CCKM fast roaming settings. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                                |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable debugging of FlexConnect CCKM fast roaming events:</p> <pre>&gt; debug flexconnect cckm event enable</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                                                                                                                                                                                          |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">debug disable-all</a><br/><a href="#">debug flexconnect aaa</a><br/><a href="#">debug flexconnect group</a><br/><a href="#">config flexconnect group</a><br/><a href="#">show flexconnect group detail</a><br/><a href="#">show flexconnect group summary</a><br/><a href="#">show radius summary</a></p> |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 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**

|                |                                                        |
|----------------|--------------------------------------------------------|
| <b>enable</b>  | Enables debugging of FlexConnect access point groups.  |
| <b>disable</b> | 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 | <b>enable</b>  | Enables Layer2 age debug settings.  |
|                    | <b>disable</b> | Disables Layer2 age debug settings. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                            |
|----------|--------------------------------------------------------------------------------------------|
| Examples | This example shows how to enable Layer2 age debug settings:<br>> <b>debug l2age enable</b> |
|----------|--------------------------------------------------------------------------------------------|

|                  |                                   |
|------------------|-----------------------------------|
| Related Commands | <a href="#">debug disable-all</a> |
|------------------|-----------------------------------|

# 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 | <b>disable</b> | Disables MAC debugging.           |
|                    | <b>addr</b>    | Configures MAC address debugging. |
|                    | <i>MAC</i>     | MAC address.                      |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                             |
|----------|-----------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to configure MAC address debugging settings:</p> <pre>&gt; debug mac addr 00.0c.41.07.33.a6</pre> |
|----------|-----------------------------------------------------------------------------------------------------------------------------|

|                  |                   |
|------------------|-------------------|
| 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

|                  |                                                                     |
|------------------|---------------------------------------------------------------------|
| <b>admission</b> | Configures debugging of the media stream admission.                 |
| <b>config</b>    | Configures debugging of the media stream configuration.             |
| <b>errors</b>    | Configures debugging of the media stream errors.                    |
| <b>event</b>     | Configures debugging of the media stream events.                    |
| <b>history</b>   | Configures debugging of the media stream history.                   |
| <b>rrc</b>       | Configures debugging of the media stream radio resource management. |
| <b>enable</b>    | Enables debugging of the media stream.                              |
| <b>disable</b>   | 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 | <b>errors</b>  | Troubleshoots memory leak errors.         |
|                    | <b>events</b>  | Troubleshoots memory leak events.         |
|                    | <b>enable</b>  | Enables debugging of memory leak events.  |
|                    | <b>disable</b> | Disables debugging of memory leak events. |

|                 |           |
|-----------------|-----------|
| Command Default | Disabled. |
|-----------------|-----------|

|          |                                                                                                                        |
|----------|------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable debugging of memory leak events:</p> <p>&gt; <b>debug memory events enable</b></p> |
|----------|------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                                                   |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">config memory monitor errors</a></p> <p><a href="#">config memory monitor leaks</a></p> <p><a href="#">show memory monitor</a></p> |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|

# 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 | <b>all</b>     | Debugs all mesh security messages.                  |
|                    | <b>events</b>  | Debugs mesh security event messages.                |
|                    | <b>errors</b>  | Debugs mesh security error messages.                |
|                    | <b>enable</b>  | Enables debugging of mesh security error messages.  |
|                    | <b>disable</b> | Disables debugging of mesh security error messages. |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                         |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable debugging of mesh security error messages:</p> <p>&gt; <b>debug mesh security errors enable</b></p> |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                             |
|------------------|---------------------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">config mesh security</a></p> <p><a href="#">show mesh security-stats</a></p> |
|------------------|---------------------------------------------------------------------------------------------|

# 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

|                   |                                                           |
|-------------------|-----------------------------------------------------------|
| <b>directory</b>  | Starts debugging of wireless mobility error messages.     |
| <b>handoff</b>    | Starts debugging of wireless mobility packets.            |
| <b>multicast</b>  | Starts debugging of multicast mobility packets.           |
| <b>enable</b>     | Enables debugging of the wireless mobility feature.       |
| <b>disable</b>    | Disables debugging of the wireless mobility feature.      |
| <b>keep-alive</b> | Starts debugging of wireless mobility keepalive messages. |
| <i>IP_address</i> | 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

|                |                                      |
|----------------|--------------------------------------|
| <b>events</b>  | Configures debugging of NAC events.  |
| <b>packet</b>  | Configures debugging of NAC packets. |
| <b>enable</b>  | Enables NAC debugging.               |
| <b>disable</b> | 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

|                   |                                                              |
|-------------------|--------------------------------------------------------------|
| <b>all</b>        | Configures debugging for all NMSP messages.                  |
| <b>connection</b> | Configures debugging for NMSP connection events.             |
| <b>detail</b>     | Configures debugging for NMSP events in detail.              |
| <b>error</b>      | Configures debugging for NMSP error messages.                |
| <b>event</b>      | Configures debugging for NMSP events.                        |
| <b>message</b>    | Configures debugging for NMSP transmit and receive messages. |
| <b>packet</b>     | 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

|                |                                                |
|----------------|------------------------------------------------|
| <b>detail</b>  | Configures debugging of detailed NTP messages. |
| <b>low</b>     | Configures debugging of NTP messages.          |
| <b>packet</b>  | Configures debugging of NTP packets.           |
| <b>enable</b>  | Enables NTP debugging.                         |
| <b>disable</b> | 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 pem

To configure the access policy manager debug options, use the **debug pem** command.

**debug pem { events | state } { enable | disable }**

|                           |                |                                                           |
|---------------------------|----------------|-----------------------------------------------------------|
| <b>Syntax Description</b> | <b>events</b>  | Configures debugging of the policy manager events.        |
|                           | <b>state</b>   | Configures debugging of the policy manager state machine. |
|                           | <b>enable</b>  | Enables access policy manager debugging.                  |
|                           | <b>disable</b> | 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

|                    |                                                                         |
|--------------------|-------------------------------------------------------------------------|
| <b>all disable</b> | Disables all debugging in the policy manager module.                    |
| <b>config</b>      | Configures debugging of the policy manager configuration.               |
| <b>hwcrypto</b>    | Configures debugging of hardware offload events.                        |
| <b>ikemsg</b>      | Configures debugging of Internet Key Exchange (IKE) messages.           |
| <b>init</b>        | Configures debugging of policy manager initialization events.           |
| <b>list</b>        | Configures debugging of policy manager list mgmt.                       |
| <b>message</b>     | Configures debugging of policy manager message queue events.            |
| <b>pki</b>         | Configures debugging of Public Key Infrastructure (PKI) related events. |
| <b>rng</b>         | Configures debugging of random number generation.                       |
| <b>rules</b>       | Configures debugging of Layer 3 policy events.                          |
| <b>sa-export</b>   | Configures debugging of SA export (mobility).                           |
| <b>sa-import</b>   | Configures debugging of SA import (mobility).                           |
| <b>ssh-l2tp</b>    | Configures debugging of policy manager l2TP handling.                   |
| <b>ssh-appgw</b>   | Configures debugging of application gateways.                           |
| <b>ssh-engine</b>  | Configures debugging of the policy manager engine.                      |
| <b>ssh-int</b>     | Configures debugging of the policy manager interceptor.                 |
| <b>ssh-pmgr</b>    | Configures debugging of the policy manager.                             |
| <b>ssh-ppp</b>     | Configures debugging of policy manager PPP handling.                    |
| <b>ssh-tcp</b>     | Configures debugging of policy manager TCP handling.                    |
| <b>enable</b>      | Enables the debugging.                                                  |
| <b>disable</b>     | 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 | <b>detail</b>  | Configures debugging of PoE detail logs. |
|                    | <b>error</b>   | Configures debugging of PoE error logs.  |
|                    | <b>message</b> | Configures debugging of PoE messages.    |
|                    | <b>enable</b>  | Enables the PoE debugging.               |
|                    | <b>disable</b> | Disables the PoE debugging.              |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                      |
|----------|------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable PoE debug settings:</p> <pre>&gt; debug poe message enable</pre> |
|----------|------------------------------------------------------------------------------------------------------|

|                  |                          |
|------------------|--------------------------|
| Related Commands | <b>debug disable-all</b> |
|------------------|--------------------------|

# debug rbc

To configure Router Blade Control (RBC) debug options, use the **debug rbc** command.

**debug rbc** { **all** | **detail** | **errors** | **packet** } { **enable** | **disable** }

## Syntax Description

|                |                                           |
|----------------|-------------------------------------------|
| <b>all</b>     | Configures debugging of RBC.              |
| <b>detail</b>  | Configures debugging of RBC detail.       |
| <b>errors</b>  | Configures debugging of RBC errors.       |
| <b>packet</b>  | Configures debugging of RBC packet trace. |
| <b>enable</b>  | Enables RBC debugging.                    |
| <b>disable</b> | Disables RBC debugging.                   |

## Command Default

None.

## Examples

This example shows how to enable RBC debug settings:

```
> debug rbc 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** | **nmosp** | **receive** } { **enable** | **disable** }

|                    |                |                                                                                  |
|--------------------|----------------|----------------------------------------------------------------------------------|
| Syntax Description | <b>all</b>     | Configures debugging of all RFID.                                                |
|                    | <b>detail</b>  | Configures debugging of RFID detail.                                             |
|                    | <b>errors</b>  | Configures debugging of RFID error messages.                                     |
|                    | <b>nmosp</b>   | Configures debugging of RFID Network Mobility Services Protocol (NMSP) messages. |
|                    | <b>receive</b> | Configures debugging of incoming RFID tag messages.                              |
|                    | <b>enable</b>  | Enables RFID debugging.                                                          |
|                    | <b>disable</b> | Disables RFID debugging.                                                         |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                    |
|----------|--------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable debugging of RFID error messages:</p> <pre>&gt; debug rfid errors enable</pre> |
|----------|--------------------------------------------------------------------------------------------------------------------|

|                  |                                   |
|------------------|-----------------------------------|
| Related Commands | <a href="#">debug disable-all</a> |
|------------------|-----------------------------------|

# 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** | **nmosp** | **packet** } { **enable** | **disable** }

|                    |                |                                                                                                |
|--------------------|----------------|------------------------------------------------------------------------------------------------|
| Syntax Description | <b>all</b>     | Configures debugging of all access point status messages.                                      |
|                    | <b>error</b>   | Configures debugging of access point monitor error events.                                     |
|                    | <b>event</b>   | Configures debugging of access point monitor events.                                           |
|                    | <b>nmosp</b>   | Configures debugging of access point monitor Network Mobility Services Protocol (NMSP) events. |
|                    | <b>packet</b>  | Configures debugging of access point monitor packets.                                          |
|                    | <b>enable</b>  | Enables debugging for access point monitor service.                                            |
|                    | <b>disable</b> | Disables debugging for access point monitor service.                                           |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                          |
|----------|--------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to debug access point monitor NMSP events:</p> <pre>&gt; debug service ap-monitor events</pre> |
|----------|--------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                |
|------------------|--------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">debug disable-all</a><br/><a href="#">show nmosp status</a></p> |
|------------------|--------------------------------------------------------------------------------|

# debug snmp

To configure SNMP debug options, use the **debug snmp** command.

**debug snmp** { agent | all | mib | trap } { enable | disable }

|                    |                |                                            |
|--------------------|----------------|--------------------------------------------|
| Syntax Description | <b>agent</b>   | Configures debugging of the SNMP agent.    |
|                    | <b>all</b>     | Configures debugging of all SNMP messages. |
|                    | <b>mib</b>     | Configures debugging of the SNMP MIB.      |
|                    | <b>trap</b>    | Configures debugging of SNMP traps.        |
|                    | <b>enable</b>  | Enables SNMP debugging.                    |
|                    | <b>disable</b> | Disables SNMP debugging.                   |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                   |
|----------|-----------------------------------------------------------------------------------|
| Examples | This example shows how to enable SNMP debug settings:<br>> 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 | <b>all</b>     | Configures debugging of all transfer messages. |
|                    | <b>tftp</b>    | Configures debugging of TFTP transfers.        |
|                    | <b>trace</b>   | Configures debugging of transfer/upgrade.      |
|                    | <b>enable</b>  | Enables transfer debugging.                    |
|                    | <b>disable</b> | Disables transfer debugging.                   |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                     |
|----------|-----------------------------------------------------------------------------------------------------|
| Examples | This example shows how to enable transfer/upgrade settings:<br>> <b>debug transfer trace enable</b> |
|----------|-----------------------------------------------------------------------------------------------------|

|                  |                          |
|------------------|--------------------------|
| Related Commands | <b>debug disable-all</b> |
|------------------|--------------------------|

# 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 | <b>enable</b>      | Enables voice diagnostics for voice client(s) involved in a call.                          |
|                    | <i>client_mac1</i> | MAC address of a voice client.                                                             |
|                    | <i>client_mac2</i> | (Optional) MAC address of an additional voice client.                                      |
|                    | <b>Note</b>        | Voice diagnostics can be enabled or disabled for a maximum of two voice clients at a time. |
|                    | <b>verbose</b>     | (Optional) Enables debug information to be displayed on the console.                       |
|                    | <b>Note</b>        | When voice diagnostics is enabled from the WCS, the verbose option is not available.       |
|                    | <b>disable</b>     | 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 wcp

To configure WLAN Control Protocol (WCP) debug options, use the **debug wcp** command.

**debug wcp {events | packet} {enable | disable}**

## Syntax Description

|                |                                      |
|----------------|--------------------------------------|
| <b>events</b>  | Configures debugging of WCP events.  |
| <b>packet</b>  | Configures debugging of WCP packets. |
| <b>enable</b>  | Enables WCP debugging settings.      |
| <b>disable</b> | 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

|                |                                      |
|----------------|--------------------------------------|
| <b>enable</b>  | Enables debugging for WPS settings.  |
| <b>disable</b> | 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 | <b>client</b>  | Configures debugging for client MFP messages.                                   |
|                    | <b>capwap</b>  | Configures debugging for MFP messages between the controller and access points. |
|                    | <b>detail</b>  | Configures detailed debugging for MFP messages.                                 |
|                    | <b>report</b>  | Configures debugging for MFP reporting.                                         |
|                    | <b>mm</b>      | Configures debugging for MFP mobility (inter-controller) messages.              |
|                    | <b>enable</b>  | Enables debugging for WPS MFP settings.                                         |
|                    | <b>disable</b> | Disables debugging for WPS MFP settings.                                        |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                    |
|----------|--------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable debugging of WPS MFP settings:</p> <pre>&gt; debug wps mfp detail enable</pre> |
|----------|--------------------------------------------------------------------------------------------------------------------|

|                  |                                                                               |
|------------------|-------------------------------------------------------------------------------|
| Related Commands | <p><a href="#">debug disable-all</a></p> <p><a href="#">debug wps sig</a></p> |
|------------------|-------------------------------------------------------------------------------|

# 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 | <i>ip-addr</i> | IP address of the IMM |
|                    | <i>netmask</i> | Netmask of the IMM    |
|                    | <i>gateway</i> | Gateway of the IMM    |

|                 |       |
|-----------------|-------|
| Command Default | None. |
|-----------------|-------|

|          |                                                                                                                                            |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to set the static IP address of an IMM:</p> <pre>&gt; imm address 209.165.200.225 255.255.255.224 10.1.1.1</pre> |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------|

|                  |                                                                                                                  |
|------------------|------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><b>imm dhcp</b><br/><b>imm mode</b><br/><b>imm restart</b><br/><b>imm summary</b><br/><b>imm username</b></p> |
|------------------|------------------------------------------------------------------------------------------------------------------|

# imm dhcp

To configure DHCP for the IMM, use the **imm dhcp** command.

**imm dhcp {enable | disable | fallback}**

|                    |                 |                                                                           |
|--------------------|-----------------|---------------------------------------------------------------------------|
| Syntax Description | <b>enable</b>   | Enables DHCP for the IMM                                                  |
|                    | <b>disable</b>  | Disables DHCP for the IMM                                                 |
|                    | <b>fallback</b> | Enables DHCP for the IMM, but if it fails, then uses static IP of the IMM |

|                 |          |
|-----------------|----------|
| Command Default | Enabled. |
|-----------------|----------|

|          |                                                                                           |
|----------|-------------------------------------------------------------------------------------------|
| Examples | <p>This example shows how to enable DHCP for the IMM:</p> <pre>&gt; imm dhcp enable</pre> |
|----------|-------------------------------------------------------------------------------------------|

|                  |                                                                                                                     |
|------------------|---------------------------------------------------------------------------------------------------------------------|
| Related Commands | <p><b>imm address</b><br/><b>imm mode</b><br/><b>imm restart</b><br/><b>imm summary</b><br/><b>imm username</b></p> |
|------------------|---------------------------------------------------------------------------------------------------------------------|

# imm mode

To configure the IMM mode, use the **imm mode** command.

**imm mode {shared | dedicated}**

---

**Syntax Description**

|                  |                            |
|------------------|----------------------------|
| <b>shared</b>    | Sets IMM in shared mode    |
| <b>dedicated</b> | 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<br>imm dhcp<br>imm mode<br>imm summary<br>imm username |                                          |

# imm summary

To view the IMM parameters, use the **imm summary** command.

**imm summary**

## Syntax Description

|                |                          |
|----------------|--------------------------|
| <b>summary</b> | 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

|                 |                       |
|-----------------|-----------------------|
| <i>username</i> | Username for the user |
| <i>password</i> | 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**

 imm username