



# Configuring Media Session Snooping and Reporting

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## SIP (Media Session) Snooping, CAC, and Reporting

This feature enables access points to detect the establishment, termination, and failure of Session Initiation Protocol (SIP) voice calls and then report them to the controller and Cisco Prime Infrastructure. You can enable or disable Voice over IP (VoIP) snooping and reporting for each WLAN.

When you enable VoIP Media Session Aware (MSA) snooping, the access point radios that advertise this WLAN look for SIP voice packets that comply with SIP RFC 3261. They do not look for non-RFC 3261-compliant SIP voice packets or Skinny Call Control Protocol (SCCP) voice packets. Any SIP packets destined to or originating from port number 5060 (the standard SIP signaling port) are considered for further inspection. The access points track when Wi-Fi Multimedia (WMM) and non-WMM clients are establishing a call, are already on an active call, or are in the process of ending a call. Upstream packet classification for both client types occurs at the access point. Downstream packet classification occurs at the controller for WMM clients and at the access point for non-WMM clients. The access points notify the controller and Cisco Prime Infrastructure of any major call events, such as call establishment, termination, and failure.

The controller provides detailed information for VoIP MSA calls. For failed calls, the controller generates a trap log with a timestamp and the reason for failure (in the GUI) and an error code (in the CLI) to aid in troubleshooting. For successful calls, the controller shows the number and duration of calls for usage tracking purposes. Cisco Prime Infrastructure displays failed VoIP call information in the Events page.

This section contains the following subsections:

## Restrictions for SIP (Media Session) Snooping, CAC, and Reporting

SIP snooping is not supported in FlexConnect in Release 8.5 and later releases.

## Configuring Media Session Snooping (GUI)

- Step 1** Choose **WLANs** to open the WLANs page.
- Step 2** Click the ID number of the WLAN for which you want to configure media session snooping.
- Step 3** On the **WLANs > Edit** page, click the **Advanced** tab.
- Step 4** Under Voice, select the **Media Session Snooping** check box to enable media session snooping or unselect it to disable this feature. The default value is unselected.
- Step 5** Click **Apply**.
- Step 6** Click **Save Configuration**.
- Step 7** See the VoIP statistics for your access point radios as follows:
- Choose **Monitor > Access Points > Radios > 802.11a/n** or **802.11b/g/n** to open the 802.11a/n (or 802.11b/g/n) Radios page.
  - Scroll to the right and click the **Detail** link for the access point for which you want to view VoIP statistics. The **Radio > Statistics** page appears.
- The VoIP Stats section shows the cumulative number and length of voice calls for this access point radio. Entries are added automatically when voice calls are successfully placed and deleted when the access point disassociates from the controller.
- Step 8** Choose **Management > SNMP > Trap Logs** to see the traps generated for failed calls. The Trap Logs page appears.
- For example, log 0 in the figure shows that a call failed. The log provides the date and time of the call, a description of the failure, and the reason why the failure occurred.

## Configuring Media Session Snooping (CLI)

- Step 1** Enable or disable VoIP snooping for a particular WLAN by entering this command:
- ```
config wlan call-snoop {enable | disable} wlan_id
```
- Step 2** Save your changes by entering this command:
- ```
save config
```
- Step 3** See the status of media session snooping on a particular WLAN by entering this command:
- ```
show wlan wlan_id
```
- Information similar to the following appears:

```
WLAN Identifier..... 1
Profile Name..... wpa2-psk
Network Name (SSID)..... wpa2-psk
Status..... Enabled
FlexConnect Local Switching..... Disabled
FlexConnect Learn IP Address..... Enabled
```

```

Infrastructure MFP protection..... Enabled (Global Infrastructure MFP
Disabled)
Client MFP..... Optional
Tkip MIC Countermeasure Hold-down Timer..... 60
Call Snooping..... Enabled

```

**Step 4** See the call information for an MSA client when media session snooping is enabled and the call is active by entering this command:

**show call-control client callInfo** *client\_MAC\_address*

Information similar to the following appears:

```

Uplink IP/port..... 192.11.1.71 / 23870
Downlonk IP/port..... 192.12.1.47 / 2070
UP..... 6
Calling Party..... sip:1054
Called Party..... sip:1000
Call ID..... 58635b00-850161b7-14853-1501a8
Number of calls for given client is.. 1

```

**Step 5** See the metrics for successful calls or the traps generated for failed calls by entering this command:

**show call-control ap {802.11a | 802.11b} Cisco\_AP {metrics | traps}**

Information similar to the following appears when you enter **show call-control ap {802.11a | 802.11b} Cisco\_AP metrics**:

```

Total Call Duration in Seconds..... 120
Number of Calls..... 10

```

Information similar to the following appears when you enter **show call-control ap {802.11a | 802.11b} 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

```

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

**Table 1: 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.     |

| 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        | notAcceptabl                | 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 text box 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, if it could not determine the location of the user in 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.                                               |

| Error Code | Integer                 | Description                                                                                                                                               |
|------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 420        | badExtension            | The server did not understand the protocol extension specified in a Proxy-Require or Require header text box.                                             |
| 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 text box 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.          |
| 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.                                    |

| Error Code | Integer              | Description                                                                                                                                                                 |
|------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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. |

**Note** If you experience any problems with media session snooping, enter the **debug call-control {all | event} {enable | disable}** command to debug all media session snooping messages or events.