



## SIP Out-of-Dialog OPTIONS Ping Group

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This feature groups the monitoring of SIP dial-peers endpoints and servers by consolidating dial peers with the same SIP Out-of-Dialog (OOD) OPTIONS ping setup.

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## Information About SIP Out-Of-dialog OPTIONS Ping Group

### SIP Out-of-Dialog OPTIONS Ping Group Overview

The SIP Out-Of-Dialog OPTIONS (OODO) Ping Group feature is an existing mechanism that is used by CUBE to monitor the status of a single SIP dial-peer destination (keepalive). A generic heartbeat mechanism allows you to monitor the status of SIP servers or endpoints and provide the option of marking a dial peer as inactive (busyout) upon total heartbeat failure.

You can now consolidate the sending of SIP OODO ping packets by grouping dial peers with the same SIP OODO ping setup. A keepalive profile is created and referenced by different SIP dial peers. An OODO Options ping heartbeat keepalive connection is set up for each dial-peer destination of a keepalive profile. If a heartbeat failure occurs for any of the dial peers of the profile, the status of the respective dial peer is changed to inactive (busyout) by CUBE.



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**Note** Configuring the same OPTIONS KEEPALIVE profile on two or more dial-peers with different bind interfaces configured is not supported. This leads to a scenario wherein the OPTIONS SIP message is not sent from all bind interfaces except the first configured one. But the dial-peer is always marked as ACTIVE. Similarly, it is also not supported in multi VRF setup.

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You can use the **shutdown** command to suspend monitoring of all dial peers associated with a keepalive profile.

The new command **voice-class sip options-keepalive profile tag** is used to monitor a group of SIP servers or endpoints and the existing **voice-class sip options-keepalive** command is used to monitor a single SIP endpoint or server.

You can configure a server group to be a part of a SIP OODO ping group. A SIP dial peer is updated to BUSY state only if all targets of its server group does not response to the OODO ping

# How to Configure SIP Out-Of-dialog OPTIONS Ping Group

## Configuring SIP Out-of-Dialog OPTIONS Ping Group

**Before you begin**

Configure SIP profiles and server groups.

### SUMMARY STEPS

- enable**
- configure terminal**
- voice class sip-options-keepalive** *keepalive-group-profile-id*
- description** *text*
- transport {tcp [tls] | udp | system}**
- sip-profiles** *profile-number*
- down-interval** *down-interval*
- up-interval** *up-interval*
- retry** *retry-interval*
- exit**
- dial-peer voice** *dial-peer-id* **voip**
- session protocol sipv2**
- voice-class sip options-keepalive profile** *keepalive-group-profile-id*
- session server-group** *server-group-id*
- end**
- show voice class sip-options-keepalive** *keepalive-group-profile-id*

### DETAILED STEPS

#### Procedure

	Command or Action	Purpose
Step 1	<b>enable</b>  <b>Example:</b>  Device> <b>enable</b>	Enters privileged EXEC mode.  <ul style="list-style-type: none"><li>Enter your password if prompted.</li></ul>

	Command or Action	Purpose
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> <pre>Device# configure terminal</pre>	Enters global configuration mode.
<b>Step 3</b>	<b>voice class sip-options-keepalive</b> <i>keepalive-group-profile-id</i> <b>Example:</b> <pre>Device(config)# voice class sip-options-keepalive 171</pre>	Configures a keepalive profile and enters voice class configuration mode. <ul style="list-style-type: none"> <li>You can use the <b>shutdown</b> command to suspend keepalive activity for all dial peers associated with the keepalive profile.</li> </ul>
<b>Step 4</b>	<b>description</b> <i>text</i> <b>Example:</b> <pre>Device(config-class)# description Target Boston</pre>	Configures a textual description for the keepalive heartbeat connection.
<b>Step 5</b>	<b>transport {tcp [tls]   udp   system}</b> <b>Example:</b> <pre>Device(config-class)# transport tcp</pre>	Defines the transport protocol used for the keepalive heartbeat connection. <ul style="list-style-type: none"> <li>The default value is system.</li> </ul>
<b>Step 6</b>	<b>sip-profiles</b> <i>profile-number</i> <b>Example:</b> <pre>Device(config-class)# sip-profiles 100</pre>	Specifies the SIP profile that is to be used to send this message. <ul style="list-style-type: none"> <li>To configure a SIP profile, refer to “Configuring SIP Parameter Modification”.</li> </ul>
<b>Step 7</b>	<b>down-interval</b> <i>down-interval</i> <b>Example:</b> <pre>Device(config-class)# down-interval 35</pre>	Configures the time (in seconds) at which an SIP OODO ping is sent to the dial-peer endpoint when the heartbeat connection to the endpoint is in Down status. <ul style="list-style-type: none"> <li>The default value is 30.</li> </ul>
<b>Step 8</b>	<b>up-interval</b> <i>up-interval</i> <b>Example:</b> <pre>Device(config-class)# up-interval 65</pre>	Configures the time (in seconds) at which an SIP OODO ping is sent to the dial-peer endpoint when the heartbeat connection to the endpoint is in Up status. <ul style="list-style-type: none"> <li>The default value is 60.</li> </ul>
<b>Step 9</b>	<b>retry</b> <i>retry-interval</i> <b>Example:</b> <pre>Device(config-class)# retry 30</pre>	Configures the maximum number of OODO ping retrials permitted for a dial-peer destination. After receiving failed responses for the configured number of OODO ping, the heartbeat connection status should be switched from Up to Down. <ul style="list-style-type: none"> <li>The default value is 5.</li> <li>If a successful response is received for an OODO ping, the retry counter is set to zero.</li> </ul>

	Command or Action	Purpose
<b>Step 10</b>	<b>exit</b> <b>Example:</b> Device(config-class) # <b>exit</b>	Exits voice class configuration mode and enters global configuration mode.
<b>Step 11</b>	<b>dial-peer voice</b> <i>dial-peer-id</i> <b>voip</b> <b>Example:</b> Device(config) # <b>dial-peer voice 123 voip</b>	Defines a local dial peer and enters dial peer configuration mode.
<b>Step 12</b>	<b>session protocol sipv2</b> <b>Example:</b> Device(config-dial-peer) # <b>session protocol sipv2</b>	Specifies SIP version 2 as the session protocol for calls between local and remote routers using the packet network.
<b>Step 13</b>	<b>voice-class sip options-keepalive profile</b> <i>keepalive-group-profile-id</i> <b>Example:</b> Device(config-dial-peer) # <b>voice-class sip options-keepalive profile 171</b>	Associates the dial peer with the specified keepalive group profile. The dial peer is monitored by CUBE according to the parameters defined by this profile.
<b>Step 14</b>	<b>session server-group</b> <i>server-group-id</i> <b>Example:</b> Device(config-dial-peer) # <b>session server-group 151</b>	Associates the dial peer with the specified keepalive group profile. The dial peer is monitored by the device according to the parameters defined by this profile.
<b>Step 15</b>	<b>end</b> <b>Example:</b> Device(config-dial-peer) # <b>end</b>	Exits dial peer configuration mode and enters privileged EXEC mode.
<b>Step 16</b>	<b>show voice class sip-options-keepalive</b> <i>keepalive-group-profile-id</i> <b>Example:</b> Device# <b>show voice class sip-options-keepalive 171</b>	Displays information about voice class server group.

## Configuration Examples For SIP Out-of-Dialog OPTIONS Ping Group

### Example: SIP Out-of-Dialog OPTIONS Ping for Group of SIP Endpoints

```
!Configuring the SIP profile
Device(config) # voice class sip-profiles 100
```

```
Device(config-class)# request INVITE sip-header SIP-Req-URI modify "; SIP/2.0" ";user=phone
SIP/2.0"
```

!Configuring the SIP Keepalive Group

```
Device(config)# voice class sip-options-keepalive 171
Device(config-class)# transport tcp
Device(config-class)# sip-profile 100
Device(config-class)# down-interval 30
Device(config-class)# up-interval 60
Device(config-class)# retry 5
Device(config-class)# description Target New York
Device(config-class)# exit
```

!Configuring an outbound SIP Dial Peer

```
Device(config)# dial-peer voice 123 voip
Device(config-dial-peer)# session protocol sipv2
!Associating the Dial Peer with a keepalive profile group
Device(config-dial-peer)# voice-class sip options-keepalive profile 171
Device(config-dial-peer)# end
```

!Verifying the Keepalive group configurations

```
Device# show voice class sip-options-keepalive 171
```

```
Voice class sip-options-keepalive: 171          AdminStat: Up
Description: Target New York
Transport: system          Sip Profiles: 100
Interval(seconds) Up: 60   Down: 30
Retry: 5
```

Peer Tag	Server Group	OOD SessID	OOD Stat	IfIndex
-----	-----	-----	-----	-----
123				100

### Example: SIP Out-of-dialog OPTIONS Ping for Group of SIP Servers

!Configuring the Server Group

```
Device(config)# voice class server-group 151
Device(config-class)# ipv4 10.1.1.1 preference 1
Device(config-class)# ipv4 10.1.1.2 preference 2
Device(config-class)# ipv4 10.1.1.3 preference 3
Device(config-class)# hunt-scheme round-robin
Device(config-class)# description It has 3 entries
Device(config-class)# exit
```

!Configuring an E164 pattern map class

```
Device(config)# voice class e164-pattern-map 3000
Device(config-class)# e164 300
```

!Configuring an outbound SIP dial peer.

```
Device(config)# dial-peer voice 181 voip
!Associate a destination pattern map
Device(config-dial-peer)# destination e164-pattern-map 3000
Device(config-dial-peer)# session protocol sipv2
!Associate a server group with the dial peer
Device(config-dial-peer)# session server-group 151
!Associate the dial peer with a keepalive profile group
Device(config-dial-peer)# voice-class sip options-keepalive profile 171
Device(config-dial-peer)# end
```

!Verifying the Keepalive group configurations

```

Device# show voice class sip-options-keepalive 171

Voice class sip-options-keepalive: 171          AdminStat: Up
Description: Target New York
Transport: system          Sip Profiles: 100
Interval(seconds) Up: 60    Down: 30
Retry: 5

  Peer Tag      Server Group  OOD SessID  OOD Stat  IfIndex
  -----      -
  123           181          151         Busy      100
  181           151          106         Busy      106

Server Group: 151          OOD Stat: Busy
OOD SessID  OOD Stat
-----
  1          Busy
  2          Busy
  3          Busy

OOD SessID: 1          OOD Stat: Busy
Target: ipv4:10.1.1.1
Transport: system      Sip Profiles: 100

OOD SessID: 2          OOD Stat: Busy
Target: ipv4:10.1.1.2
Transport: system      Sip Profiles: 100

OOD SessID: 3          OOD Stat: Busy
Target: ipv4:10.5.0.1
Transport: system      Sip Profiles: 100
-----

```

## Additional References

### Related Documents

Related Topic	Document Title
Voice commands	<a href="#">Cisco IOS Voice Command Reference</a>
Cisco IOS Commands	<a href="#">Cisco IOS Command List, All Releases</a>
SIP Configuration Guide	
Configuring SIP profiles	
Configuring server groups	

### Technical Assistance

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	<a href="http://www.cisco.com/support">http://www.cisco.com/support</a>

## Feature Information for SIP Out-of-dialog OPTIONS Ping Group

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to <https://cfng.cisco.com/>. An account on Cisco.com is not required.

**Table 1: Feature Information for SIP Out-of-dialog OPTIONS Ping Group**

Feature Name	Releases	Feature Information
SIP Out-of-dialog OPTIONS Ping Group	Cisco IOS XE Release 3.11S 15.4(1)T	<p>This feature groups the monitoring of SIP dial peers endpoints and servers by consolidating SIP Out-Of-Dialog (OOD) Options of dial peers with the similar SIP OOD Options ping setup.</p> <p>The following commands were introduced or modified: <b>voice class sip-options-keepalive</b>, <b>description</b>, <b>transport</b>, <b>sip-profiles</b>, <b>down-interval</b>, <b>up-interval</b>, <b>voice-class sip options-keepalive profile</b>, <b>retry</b>, <b>show voice class sip-options-keepalive</b>.</p>

