SIP Out-of-Dialog OPTIONS Ping Group

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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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

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 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.

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-Dial OPTIONS Ping Group

**Before You Begin**
Configure SIP profiles and server groups.

**SUMMARY STEPS**

1. `enable`
2. `configure terminal`
3. `voice class sip-options-keepalive keepalive-group-profile-id`
4. `description text`
5. `transport {tcp [tls] | udp | system}`
6. `sip-profiles profile-number`
7. `down-interval down-interval`
8. `up-interval up-interval`
9. `retry retry-interval`
10. `exit`
11. `dial-peer voice dial-peer-id voip`
12. `session protocol sipv2`
13. `voice-class sip options-keepalive profile keepalive-group-profile-id`
14. `session server-group server-group-id`
15. `end`
16. `show voice class sip-options-keepalive keepalive-group-profile-id`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 enable</td>
<td>Enters privileged EXEC mode.</td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Step 2</strong> configure terminal</td>
<td>Enters global configuration mode.</td>
</tr>
<tr>
<td>Example: Device# configure terminal</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> voice class sip-options-keepalive keepalive-group-profile-id</td>
<td>Configures a keepalive profile and enters voice class configuration mode.</td>
</tr>
<tr>
<td>Example: Device(config)# voice class sip-options-keepalive 171</td>
<td>• You can use the <strong>shutdown</strong> command to suspend keepalive activity for all dial peers associated with the keepalive profile.</td>
</tr>
<tr>
<td><strong>Step 4</strong> description text</td>
<td>Configures a textual description for the keepalive heartbeat connection.</td>
</tr>
<tr>
<td>Example: Device(config-class)# description Target Boston</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> transport {tcp</td>
<td>tls</td>
</tr>
<tr>
<td>Example: Device(config-class)# transport tcp</td>
<td>• The default value is system.</td>
</tr>
<tr>
<td><strong>Step 6</strong> sip-profiles profile-number</td>
<td>Specifies the SIP profile that is to be used to send this message.</td>
</tr>
<tr>
<td>Example: Device(config-class)# sip-profiles 100</td>
<td>• To configure a SIP profile, refer to &quot;Configuring SIP Parameter Modification&quot;.</td>
</tr>
<tr>
<td><strong>Step 7</strong> down-interval down-interval</td>
<td>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.</td>
</tr>
<tr>
<td>Example: Device(config-class)# down-interval 35</td>
<td>• The default value is 30.</td>
</tr>
<tr>
<td><strong>Step 8</strong> up-interval up-interval</td>
<td>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.</td>
</tr>
<tr>
<td>Example: Device(config-class)# up-interval 65</td>
<td>• The default value is 60.</td>
</tr>
</tbody>
</table>
## Configuring SIP Out-of-Dialog OPTIONS Ping Group

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 9</strong></td>
<td></td>
</tr>
<tr>
<td>retry retry-interval</td>
<td>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.</td>
</tr>
</tbody>
</table>
| Example: Device(config-class)# retry 30 | - The default value is 5.  
- If a successful response is received for an OODO ping, the retry counter is set to zero. |
| **Step 10**       |         |
| exit              | Exits voice class configuration mode and enters global configuration mode. |
| Example: Device(config-class)# exit | |
| **Step 11**       |         |
| dial-peer voice dial-peer-id voip | Defines a local dial peer and enters dial peer configuration mode. |
| Example: Device(config)# dial-peer voice 123 voip | |
| **Step 12**       |         |
| session protocol sipv2 | Specifies SIP version 2 as the session protocol for calls between local and remote routers using the packet network. |
| Example: Device(config-dial-peer)# session protocol sipv2 | |
| **Step 13**       |         |
| voice-class sip options-keepalive profile keepalive-group-profile-id | 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. |
| Example: Device(config-dial-peer)# voice-class sip options-keepalive profile 171 | |
| **Step 14**       |         |
| session server-group server-group-id | 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. |
| Example: Device(config-dial-peer)# session server-group 151 | |
| **Step 15**       |         |
| end               | Exits dial peer configuration mode and enters privileged EXEC mode. |
| Example: Device(config-dial-peer)# end | |
| **Step 16**       |         |
| show voice class sip-options-keepalive keepalive-group-profile-id | 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)# 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
  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
  ```

#### 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

<table>
<thead>
<tr>
<th>Peer Tag</th>
<th>Server Group</th>
<th>OOD SessID</th>
<th>OOD Stat</th>
<th>IfIndex</th>
</tr>
</thead>
<tbody>
<tr>
<td>123</td>
<td>151</td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>181</td>
<td>151</td>
<td></td>
<td>Busy</td>
<td>106</td>
</tr>
</tbody>
</table>

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

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**Additional References**

**Related Documents**

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<tr>
<th>Related Topic</th>
<th>Document Title</th>
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</thead>
<tbody>
<tr>
<td>Voice commands</td>
<td>Cisco IOS Voice Command Reference</td>
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<tr>
<td>Cisco IOS Commands</td>
<td>Cisco IOS Master Command List, All Releases</td>
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<tr>
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<tr>
<td>Configuring SIP profiles</td>
<td>SIP Parameter Modification.</td>
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</table>
SIP Out-of-Dialog OPTIONS Ping Group

Related Topic | Document Title
--- | ---
Configuring server groups | Configuring Server Groups.

Technical Assistance

| Description | Link |
--- | ---
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. 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. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password. | http://www.cisco.com/support |

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.

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

<table>
<thead>
<tr>
<th>Feature Name</th>
<th>Releases</th>
<th>Feature Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIP Out-of-dialog OPTIONS Ping Group</td>
<td>Cisco IOS XE Release 3.11S</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15.4(1)T</td>
<td>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. The following commands were introduced or modified: voice class sip-options-keepalive, description, transport, sip-profiles, down-interval, up-interval, voice-class sip options-keepalive profile, retry, show voice class sip-options-keepalive.</td>
</tr>
</tbody>
</table>