

在CUBE企业常见使用案例上使用SIP配置文件

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简介

本文档介绍如何使用Cisco.com上提供的[会话初始协议\(SIP\)配置文件测试工具](#)。

先决条件

要求

本文档中的信息基于运行Cisco IOS®和Cisco IOS® XE软件的ISR平台。

使用的组件

Cisco 建议您了解以下主题：

- [通过Cisco IOS导航®](#)
- [SIP消息格式和事务](#)

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

背景信息

SIP配置文件用于处理SIP消息中的报头信息。它们还可用于更改会话描述协议(SDP)，该协议用于协商介质。

常见SIP消息规范化方案

本部分提供了几种常见的SIP消息规范化方案。每个场景都包含在Cisco IOS上需要供您参考的配置以及简介中提到的SIP配置文件测试工具的屏幕截图。

这些场景可作为对SIP消息进行其他所需处理的参考。

将值从转移标头复制到来源标头

```
voice class sip-profiles 1

request INVITE sip-header Diversion copy "< sip:(.*)@.*)" u01

request INVITE sip-header From copy ".*< sip:(.*)@.*)" u02

request INVITE sip-header From modify "(.*)< sip:.*@(.*)" "\1< sip:\u01@\2"

request INVITE sip-header From modify "< sip:@ " "< sip:\u02@"
```

SIP-Profile:

```
voice class sip-profiles 1
request INVITE sip-header Diversion copy "< sip:(.*)@.*)" u01
request INVITE sip-header From copy ".*< sip:(.*)@.*)" u02
request INVITE sip-header From modify "(.*)< sip:.*@(.*)" "\1< sip:\u01@\2"
```

Input Message	Output Message
INVITE sip:18774116706@172.30.238.49:5071 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bK6740831D5B From: < sip:8152456266@17.0.44.11>;tag=DEC125B4-3F9 To: < sip:18774116706@172.30.238.49> Date: Tue, 02 Sep 2014 17:33:26 GMT Call-ID: 14BF665C-31FE11E4- FFFFFFFF8168E118-52ABD3C1@17.0.44.11 Supported: 100rel,timer,resource-priority,replaces,sdp-anat Min-SE: 1800 Diversion: < sip:88882614@17.0.44.11>;privacy=off; reason=unconditional,screen=no Content-Length: 0	INVITE sip:18774116706@172.30.238.49:5071 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bK6740831D5B From: < sip:88882614@17.0.44.11>;tag=DEC125B4-3F9 To: < sip:18774116706@172.30.238.49> Date: Tue, 02 Sep 2014 17:33:26 GMT Call-ID: 14BF665C-31FE11E4- FFFFFFFF8168E118-52ABD3C1@17.0.44.11 Supported: 100rel,timer,resource-priority,replaces,sdp-anat Min-SE: 1800 Diversion: < sip:88882614@17.0.44.11>;privacy=off; reason=unconditional,screen=no Content-Length: 0

将呼入邀请中的号码从号码复制到信头中的REQ-URI参数 (在Cisco IOS 15.4版之前)

在入站邀请消息中复制“收件人”信头中的号码，并修改传出INVITE：

```
voice class sip-copylist 1
sip-header TO
```

```
voice class sip-profiles 2
request INVITE peer-header sip TO copy "sip:(.*)@" u01
request INVITE sip-header SIP-Req-URI modify ".*@(.*)" "INVITE sip:\u01@\1"
```

SIP-Profile:

```
voice class sip-copylist 1
sip-header TO

voice class sip-profiles 2
request INVITE peer-header sip TO copy "sip:(.*)@" u01
request INVITE sip-header SIP-Req-URI modify ".*@(.*)" "INVITE sip:\u01@\1"
```

Input Message	Output Message
<pre>INVITE sip:+18774116700@172.30.238.49:5071 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bK6740831D5B From: <sip:8152456266@17.0.44.11>;tag=DEC125B4-3F9 To: <sip:18774116706@172.30.238.49> Date: Tue, 02 Sep 2014 17:33:26 GMT Call-ID: 14BF665C-31FE11E4- FFFFFFFF8168E118-52ABD3C1@17.0.44.11 Supported: 100rel,timer,resource-priority,replaces,sdp-anat Min-SE: 1800 Diversion: <sip:88882614@17.0.44.11>;privacy=off; reason=unconditional,screen=no Content-Length: 0</pre>	<pre>INVITE sip:18774116706@172.30.238.49:5071 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bK6740831D5B From: <sip:8152456266@17.0.44.11>;tag=DEC125B4-3F9 To: <sip:18774116706@172.30.238.49> Date: Tue, 02 Sep 2014 17:33:26 GMT Call-ID: 14BF665C-31FE11E4- FFFFFFFF8168E118-52ABD3C1@17.0.44.11 Supported: 100rel,timer,resource-priority,replaces,sdp-anat Min-SE: 1800 Diversion: <sip:88882614@17.0.44.11>;privacy=off; reason=unconditional,screen=no Content-Length: 0</pre>

将传入邀请中的号码从号码复制到信头到REQ-URI参数 (带入站SIP配置文件)

```
voice class sip-profiles 1
request INVITE sip-header TO copy "sip:(.*)@" u01
request INVITE sip-header SIP-Req-URI modify ".*@(.*)" "INVITE sip:\u01@\1"
```

```
voice service voip
sip
sip-profiles inbound
sip-profiles 1 inbound
```

SIP-Profile:

```
voice class sip-profiles 1
request INVITE sip-header TO copy "sip:(.*)@" u01
request INVITE sip-header SIP-Req-URI modify ".*@(.*)" "INVITE sip:\u01@\1"

voice service voip
sip
sip-profiles inbound
sip-profiles 1 inbound
```

Input Message	Output Message
<pre>INVITE sip:+18774116700@172.30.238.49:5071 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bK6740831D5B From: <sip:8152456266@17.0.44.11>;tag=DEC125B4-3F9 To: <sip:18774116706@172.30.238.49> Date: Tue, 02 Sep 2014 17:33:26 GMT Call-ID: 14BF665C-31FE11E4- FFFFFFFF8168E118-52ABD3C1@17.0.44.11 Supported: 100rel,timer,resource-priority,replaces,sdp-anat Min-SE: 1800 Diversion: <sip:88882614@17.0.44.11>;privacy=off; reason=unconditional,screen=no Content-Length: 0</pre>	<pre>INVITE sip:18774116706@172.30.238.49:5071 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bK6740831D5B From: <sip:8152456266@17.0.44.11>;tag=DEC125B4-3F9 To: <sip:18774116706@172.30.238.49> Date: Tue, 02 Sep 2014 17:33:26 GMT Call-ID: 14BF665C-31FE11E4- FFFFFFFF8168E118-52ABD3C1@17.0.44.11 Supported: 100rel,timer,resource-priority,replaces,sdp-anat Min-SE: 1800 Diversion: <sip:88882614@17.0.44.11>;privacy=off; reason=unconditional,screen=no Content-Length: 0</pre>

与提供商的单向/无向音频互操作性问题

```
voice class sip-profiles 200
request ANY sdp-header Audio-Attribute modify "a=inactive" "a=sendrecv"
request ANY sdp-header Audio-Connection-Info modify "0.0.0.0" "CUBE's IP"
```

SIP-Profile:

```
voice class sip-profiles 200
request ANY sdp-header Audio-Attribute modify "a=inactive" "a=sendrecv"
request ANY sdp-header Audio-Connection-Info modify "0.0.0.0" "10.10.10.1"
```

Input Message	Output Message
<pre>INVITE sip:18774116706@172.30.238.49:5071 SIP/2.0 Content-Disposition: session;handling=required Content-Length: 261 v=0 o=CiscoSystemsSIP-GW-UserAgent 1796 4793 IN IP4 17.0.44.11 s=SIP Call c=IN IP4 17.0.44.11 t=0 0 m=audio 0 RTP/AVP 0 101 19 c=IN IP4 0.0.0.0 a=rtpmap:0 PCMU/8000 a=inactive a=rtpmap:101 telephone-event/8000 a=fmtp:101 0-16 a=rtpmap:19 CN/8000 a=ptime:20</pre>	<pre>INVITE sip:18774116706@172.30.238.49:5071 SIP/2.0 Content-Disposition: session;handling=required Content-Length: 273 v=0 o=CiscoSystemsSIP-GW-UserAgent 1796 4793 IN IP4 17.0.44.11 s=SIP Call c=IN IP4 17.0.44.11 t=0 0 m=audio 0 RTP/AVP 0 101 19 c=IN IP4 10.10.10.1 a=rtpmap:0 PCMU/8000 a=sendrecv a=rtpmap:101 telephone-event/8000 a=fmtp:101 0-16 a=rtpmap:19 CN/8000 a=ptime:20</pre>

删除UPDATE方法支持以避免互操作性问题

```
voice class sip-profiles 200
request ANY sip-header Allow-Header modify ", UPDATE" ""
```

SIP-Profile:

```
voice class sip-profiles 200
request ANY sip-header Allow-Header modify ", UPDATE" ""
```

Input Message	Output Message
<pre>INVITE sip:18774116706@172.30.238.49:5071 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bK6740831D5B From: <sip:8152456266@17.0.44.11>;tag=DEC125B4-3F9 To: <sip:18774116706@172.30.238.49> Date: Tue, 02 Sep 2014 17:33:26 GMT Call-ID: 14BF665C-31FE11E4- FFFFFFFF8168E118-52ABD3C1@17.0.44.11 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER Content-Length: 0</pre>	<pre>INVITE sip:18774116706@172.30.238.49:5071 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bK6740831D5B From: <sip:8152456266@17.0.44.11>;tag=DEC125B4-3F9 To: <sip:18774116706@172.30.238.49> Date: Tue, 02 Sep 2014 17:33:26 GMT Call-ID: 14BF665C-31FE11E4- FFFFFFFF8168E118-52ABD3C1@17.0.44.11 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER Content-Length: 0</pre>

IP地址到域名的转换

```
voice class sip-profiles 1
request ANY sip-header SIP-Req-URI modify "10.67.138.241:5060" "sipp.cisco.com"
```

SIP-Profile:

```
voice class sip-profiles 1
request ANY sip-header SIP-Req-URI modify "10.67.138.241:5060" "sipp.cisco.com"
```

Input Message	Output Message
<pre>INVITE sip:9819940331@10.67.138.241:5060 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bK6740831D5B From: <sip:8152456266@17.0.44.11>;tag=DEC125B4-3F9 To: <sip:18774116706@172.30.238.49> Date: Tue, 02 Sep 2014 17:33:26 GMT Call-ID: 14BF665C-31FE11E4- FFFFFFFF8168E118-52ABD3C1@17.0.44.11 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER Content-Length: 0</pre>	<pre>INVITE sip:9819940331@sipp.cisco.com SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bK6740831D5B From: <sip:8152456266@17.0.44.11>;tag=DEC125B4-3F9 To: <sip:18774116706@172.30.238.49> Date: Tue, 02 Sep 2014 17:33:26 GMT Call-ID: 14BF665C-31FE11E4- FFFFFFFF8168E118-52ABD3C1@17.0.44.11 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER Content-Length: 0</pre>

在转移报头中添加前缀

```
voice class sip-profiles 1
request ANY sip-header Diversion modify "sip:(.*)@" "sip:704264\1@"
```


SIP-Profile:

```
voice class sip-profiles 1
request ANY sip-header Diversion modify "sip:(.*)@" "sip:704264\1@"
```

Input Message	Output Message
INVITE sip:9819940331@10.67.138.241:5060 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bK6740831D5B From: <sip:8152456266@17.0.44.11>;tag=DEC125B4-3F9 To: <sip:18774116706@172.30.238.49> Date: Tue, 02 Sep 2014 17:33:26 GMT Call-ID: 14BF665C-31FE11E4- FFFFFFFF8168E118-52ABD3C1@17.0.44.11 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER Diversion: <sip:2614@17.0.44.11>;privacy=off; reason=unconditional,screen=no Content-Length: 0	INVITE sip:9819940331@10.67.138.241:5060 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bK6740831D5B From: <sip:8152456266@17.0.44.11>;tag=DEC125B4-3F9 To: <sip:18774116706@172.30.238.49> Date: Tue, 02 Sep 2014 17:33:26 GMT Call-ID: 14BF665C-31FE11E4- FFFFFFFF8168E118-52ABD3C1@17.0.44.11 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER Diversion: <sip:7042642614@17.0.44.11>;privacy=off; reason=unconditional,screen=no Content-Length: 0

设置转移标头中的DID编号

```
voice class sip-profiles 1
request INVITE sip-header Diversion modify "sip:(.*)@" "sip:7042642614@"
```

SIP-Profile:

```
voice class sip-profiles 1
request INVITE sip-header Diversion modify "sip:(.*)@" "sip:7042642614@"
```

Input Message	Output Message
INVITE sip:18774116706@172.30.238.49:5060 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bKD23DB From: <sip:8152456266@17.0.44.11>;tag=28B470-1CC0 To: <sip:18774116706@172.30.238.49> Date: Thu, 10 Sep 2020 06:02:45 GMT Call-ID: 1462FCC6-F26211EA-813AE871- 299EC8ED@17.0.44.11 Supported: timer,resource-priority,replaces,sdp-anat Min-SE: 1800 Diversion: <sip:88882614@17.0.44.11>;privacy=off; reason=unconditional,screen=no Content-Length: 0	INVITE sip:18774116706@172.30.238.49:5060 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bKD23DB From: <sip:8152456266@17.0.44.11>;tag=28B470-1CC0 To: <sip:18774116706@172.30.238.49> Date: Thu, 10 Sep 2020 06:02:45 GMT Call-ID: 1462FCC6-F26211EA-813AE871- 299EC8ED@17.0.44.11 Supported: timer,resource-priority,replaces,sdp-anat Min-SE: 1800 Diversion: <sip:7042642614@17.0.44.11>;privacy=off;reason= unconditional,screen=no Content-Length: 0

删除转移标头

```
voice class sip-profiles 1
request INVITE sip-header Diversion remove
```

SIP-Profile:

```
voice class sip-profiles 1
request INVITE sip-header Diversion remove
```

Input Message	Output Message
<pre>INVITE sip:18774116706@172.30.238.49:5060 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bKD23DB From: <sip:8152456266@17.0.44.11>;tag=28B470-1CC0 To: <sip:18774116706@172.30.238.49> Date: Thu, 10 Sep 2020 06:02:45 GMT Call-ID: 1462FCC6-F26211EA-813AE871-299EC8ED@17.0.44.11 Supported: timer,resource-priority,replaces,sdp-anat Min-SE: 1800 Diversion: <sip:88882614@17.0.44.11>;privacy=off; reason-unconditional,screen=no Content-Length: 0</pre>	<pre>INVITE sip:18774116706@172.30.238.49:5060 SIP/2.0 Via: SIP/2.0/UDP 17.0.44.11:5060;branch=z9hG4bKD23DB From: <sip:8152456266@17.0.44.11>;tag=28B470-1CC0 To: <sip:18774116706@172.30.238.49> Date: Thu, 10 Sep 2020 06:02:45 GMT Call-ID: 1462FCC6-F26211EA-813AE871-299EC8ED@17.0.44.11 Supported: timer,resource-priority,replaces,sdp-anat Min-SE: 1800 Content-Length: 0</pre>

复制本地网关中呼叫方ID的位置号码 (美国、加拿大和波多黎各的Webex呼叫部署)

Caller ID

Choose which information will be displayed when this User makes an outgoing call.

Caller ID Phone Number

- Direct Line: 9194381001, Ext 1001
- Location Number: +19194380841
- Assigned number from user's location

Caller ID First Name

User01



Caller ID Last Name

User01



```
voice service voip
sip
sip-profile inbound
```

```
voice class sip-profiles 201
rule 1 request INVITE sip-header From copy "< sip:(.*)@" u01
rule 2 request INVITE sip-header P-Asserted-Identity modify "< sip:.*@(.)>" "< sip:\u01@1>"
```

```
voice class tenant 200
sip-profiles 201 inbound
```


SIP-Profile:

```
voice class sip-profiles 201
rule 1 request INVITE sip-header From copy "<sip:(*)@" u01
rule 2 request INVITE sip-header P-Asserted-Identity modify "<sip:.*@(.*)*>" "<sip:\u01@\1>"
```

Input Message	Output Message
<pre>INVITE sip:+19199614190@1.1.1.1:5061;transport=tls;dtg=rtplgw9687_lgu SIP/2.0 Via:SIP/2.0/TLS 139.177.65.12:8934;branch=z9hG4bKBroadworksSSE.-1.1.1.1V57722-0-100-973405068-1626801459363- From:"User01 User01"<sip:+19194380841@139.177.65.12;user=phone>;tag=973405068-1626801459363- To:<sip:+19199614190@90444895.cisco-bcld.com;user=phone> Call-ID:SSE1717393632007211706552365@139.177.65.12 CSeq:100 INVITE Contact:<sip:139.177.65.12:8934;transport=tls> P-Asserted-Identity:"User01 User01"<sip:+19194381001@10.21.0.214;user=phone></pre>	<pre>INVITE sip:+19199614190@pstn.com:5080 SIP/2.0 Via: SIP/2.0/UDP 1.1.1.1:5060;branch=z9hG4bK13CA141F20 From: "User01 User01" <sip:+19194380841@pstn.com>;tag=CB0B7295-DB7 To: <sip:+19199614190@pstn.com> Date: Tue, 20 Jul 2021 17:59:26 GMT Call-ID: E50FFB7-E8BB11EB-B57BD6D5-6AE138B@1.1.1.1 Contact: <sip:+19194380841@1.1.1.1:5060> Allow-Events: telephone-event Max-Forwards: 68 P-Asserted-Identity: "User01 User01" <sip:+19194380841@1.1.1.1></pre>

可能的问题

以下是可能会遇到的一些问题。

- 在Cisco IOS 15.4版之后，还引入了SIP配置文件功能来修改入站SIP消息。
- Cisco IOS版本15.3和更早版本仅支持出站方向的SIP配置文件。

相关信息

[Cisco IOS和IOS-XE呼叫路由的深入说明](#)

[了解呼入和呼出拨号对端如何在IOS平台上被匹配](#)

关于此翻译

思科采用人工翻译与机器翻译相结合的方式将此文档翻译成不同语言，希望全球的用户都能通过各自的语言得到支持性的内容。

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