配置基本通话录音并排除相关故障

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简介

本文档介绍有关 Cisco Unified Communications Manager (CUCM) 中通话录音功能的基础知识。

先决条件

要求

Cisco建议您了解与第三方录制服务器集成的CUCM。

使用的组件

本文档中的信息基于以下软件和硬件版本：

- CUCM
- 思科互联网协议(IP)
- 电话呼叫记录服务器

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

本文档还讨论了预期的媒体流、会话发起协议(SIP)和瘦客户端控制协议(SCCP)设备的预期呼叫流，以及常见类型的呼叫记录设置失败的示例。

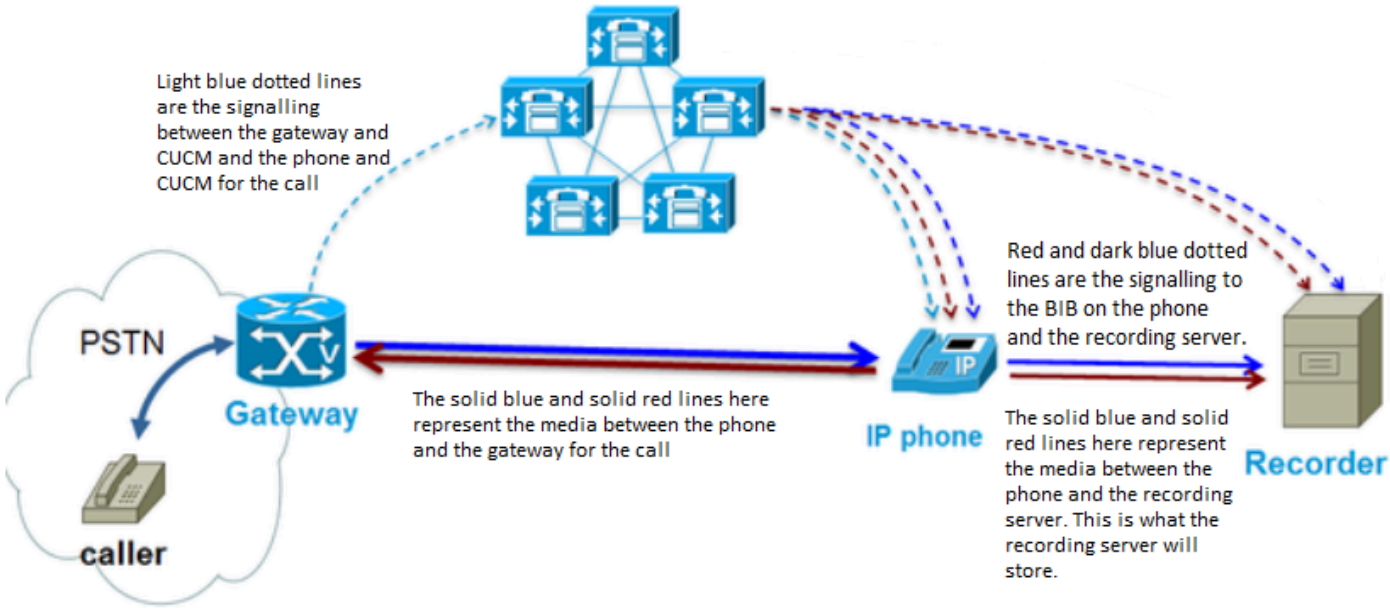
呼叫记录类型

自动

自动呼叫记录的关键要素如下：

- 使用IP电话的内置网桥(BIB)将音频分叉到录制目标。
- 每次IP电话发出呼叫或接听呼叫时都会启动。
- CUCM和录制目标之间仅需要SIP中继。某些录制供应商要求计算机电话集成(CTI)。
- 不允许录制位于托管网络外部的电话（必须有权将RTP直接发送到录制服务器，并且必须是能够分配BIB的Cisco IP电话）。

在此图中，实线表示期望的媒体流，虚线表示期望的信令流：

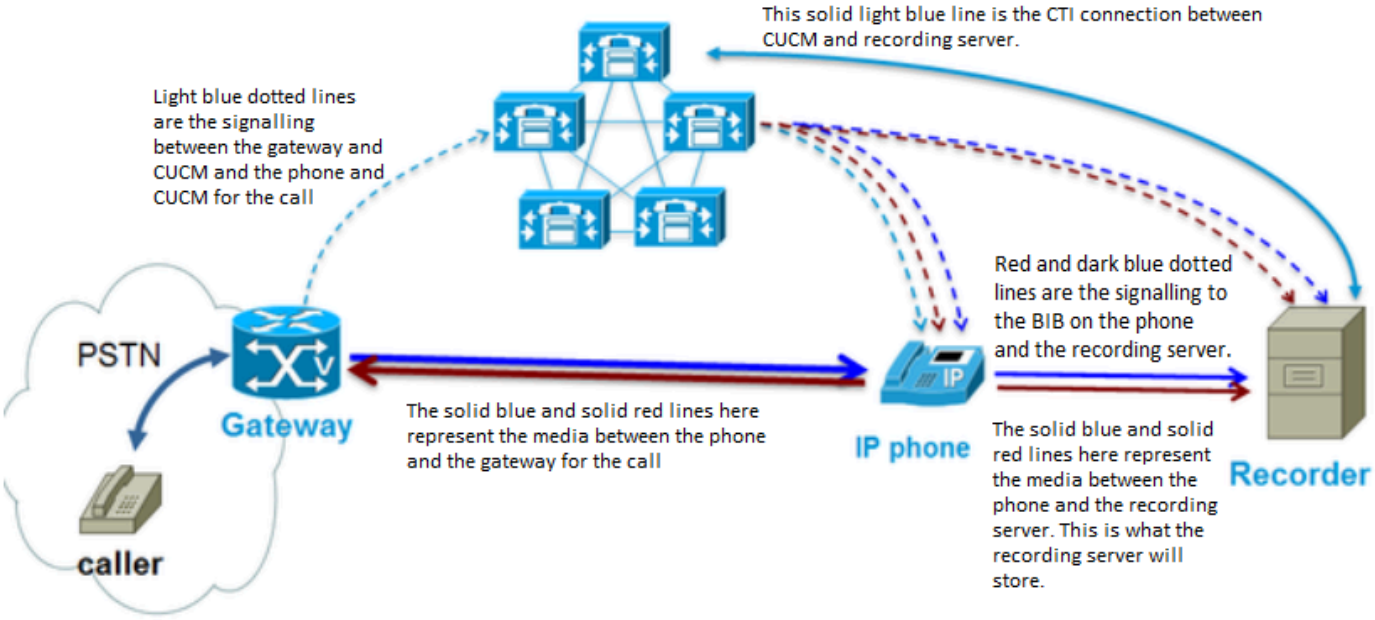


已调用应用程序

应用程序调用的呼叫记录的关键要素如下：

- 使用IP电话的BIB将音频分支到录制目标。
- 当应用程序（记录器）要求必须启动它时启动。
- 需要SIP中继和带录制应用的CTI。
- CTI应用用户必须能够访问需要记录的终端。
- 不允许录制位于托管网络外部的电话（必须有权将RTP直接发送到录制服务器）。

在此处的图表中，实线表示期望的媒体流，虚线表示期望的信令流。CUCM和记录服务器之间的实线表示CUCM和应用之间的CTI连接。

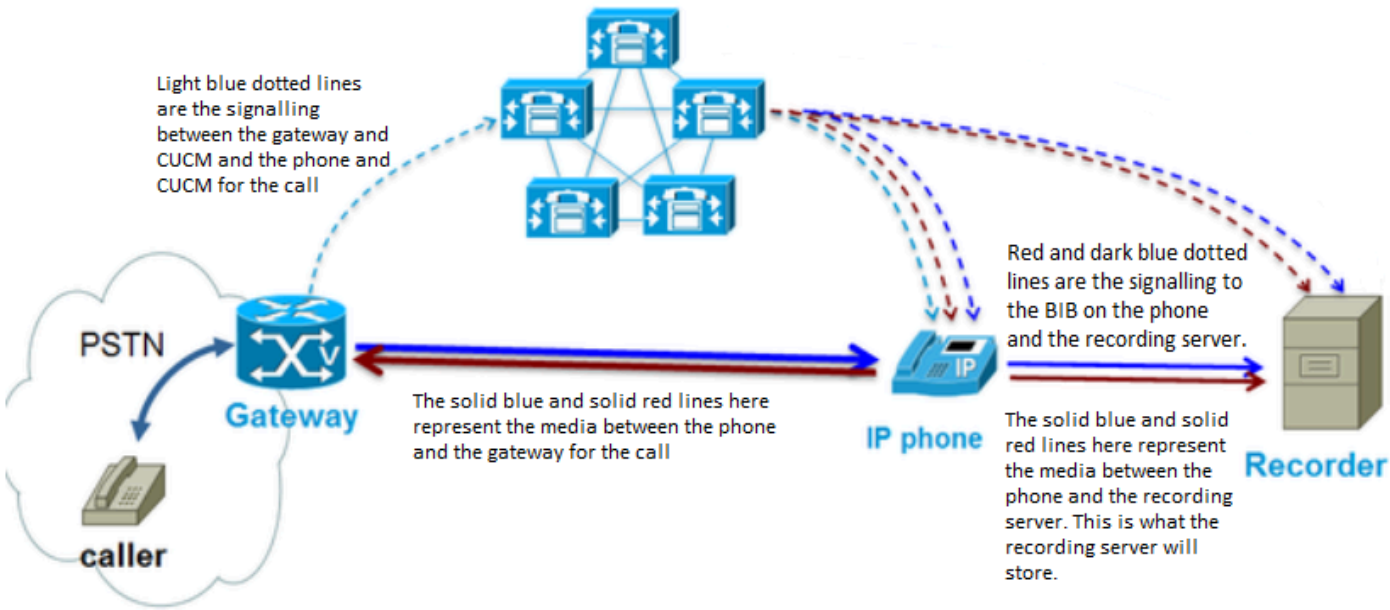


选择性

选择性呼叫记录的关键要素如下：

- 使用IP电话的BIB将音频分支到录制目标。
- 每次IP电话用户在其IP电话(CUCM 9.x+)上或在此映像中类似的应用上选择录制选项时启动
- 通常只需要CUCM和录制目标（取决于录制应用供应商）之间的SIP中继。
- 不允许录制位于托管网络外部的电话（必须有权将RTP直接发送到录制服务器）。

如图所示，媒体和信令路径与自动呼叫记录非常相似：

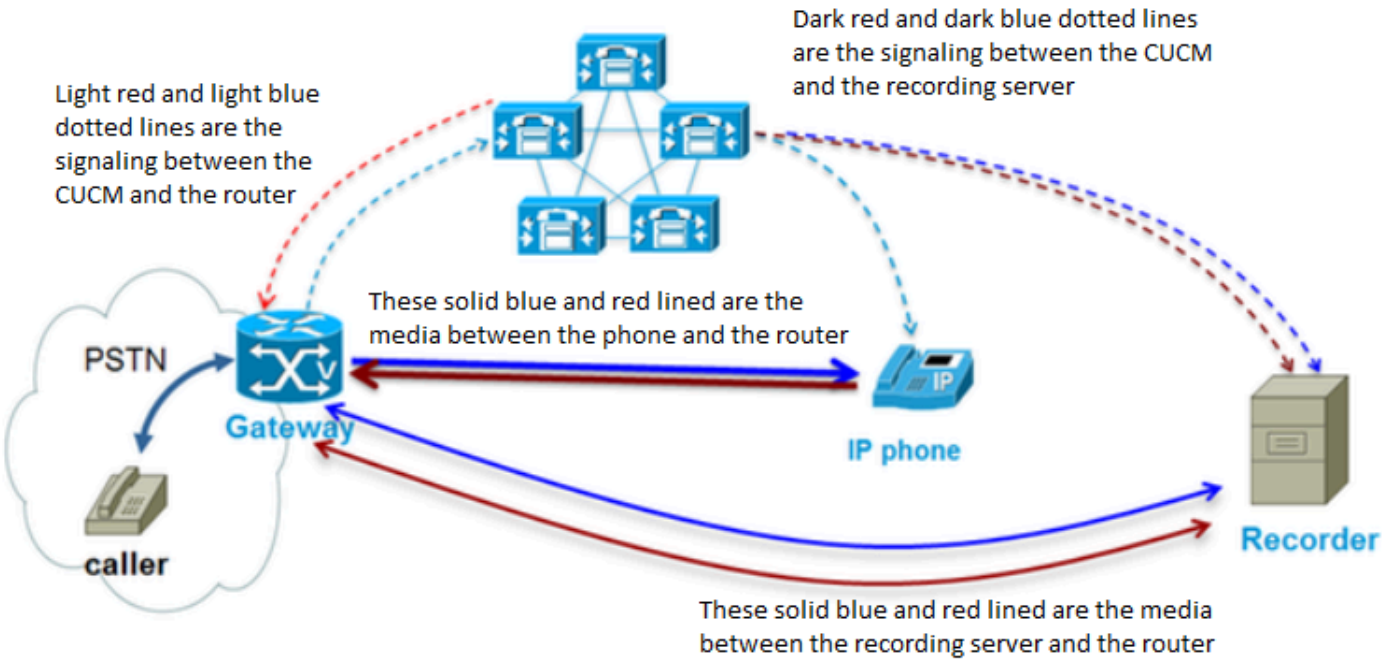


基于网关

基于网关的呼叫记录的关键要素如下：

- 语音网关将媒体转发到录制目标。
- CUCM作为应用向网关注册。
- CUCM使用HTTP来指示网关(GW)将媒体流式传输到记录目标。
- CUCM通过SIP中继与录制目标集成。
- 允许记录通过托管网络（例如，移动用户）或不支持BIB的电话的呼叫。

从图示中您可以看到，媒体流与其他类型的呼叫记录有很大不同：

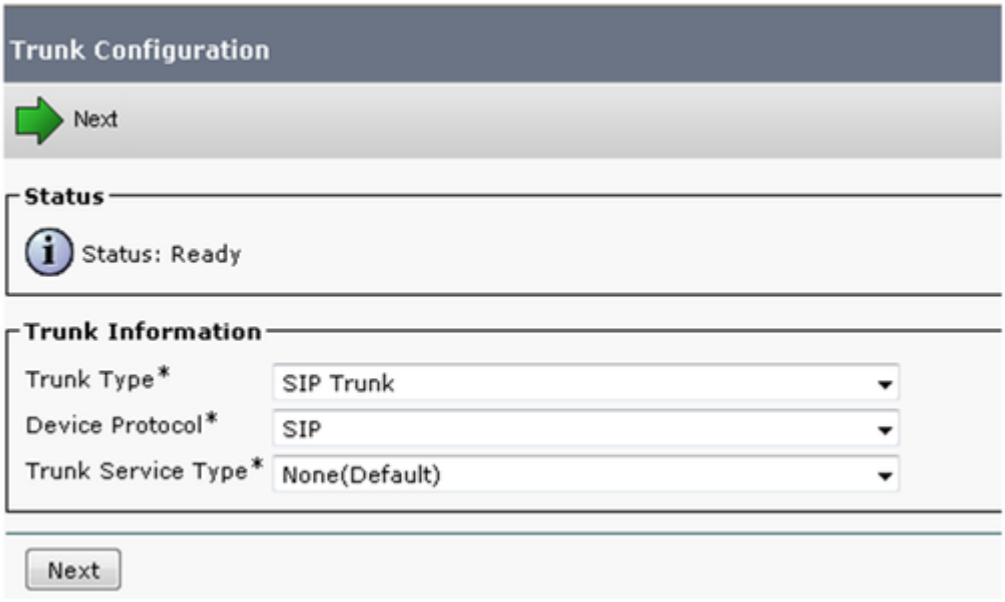


仅SIP集成的自动呼叫记录配置

本节介绍如何设置录制服务器的SIP集成。

创建到录制目标的SIP中继

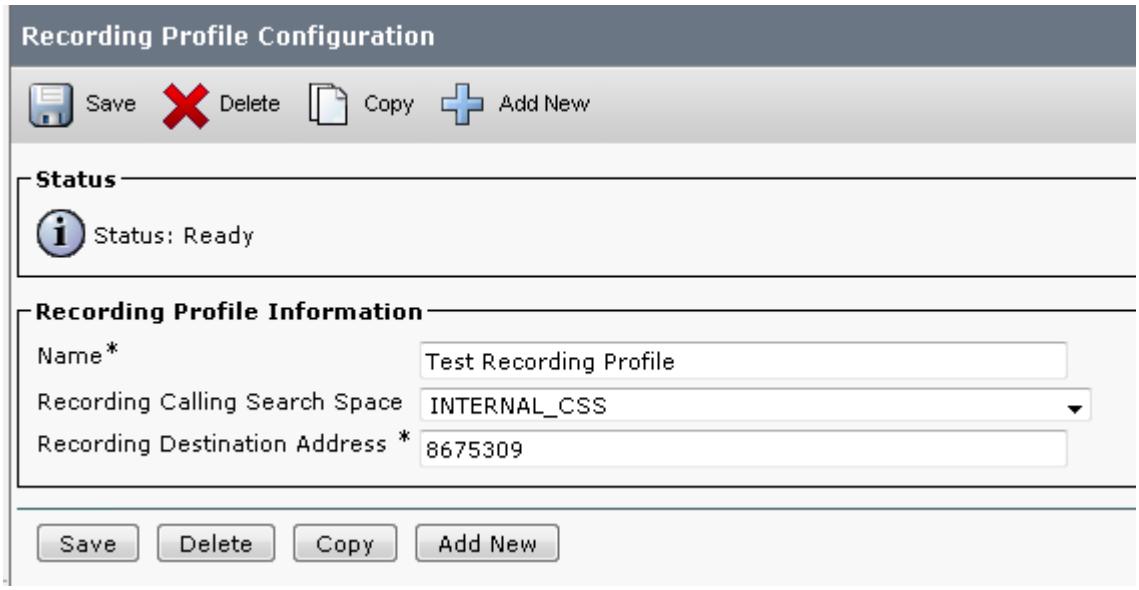
- 导航到Device > Trunk，选择Add New。
- 使用如图所示的设置创建SIP中继。



- 输入适当的Device Name、Device Pool、MRGL、SIP trunk security profile和SIP profile。
- 配置的目的地址是录制应用服务器的地址。

创建录制配置文件

- 导航到Device > Device Settings > Recording Profile。
- 录音目的地址是发送录音呼叫的位置，如图所示。

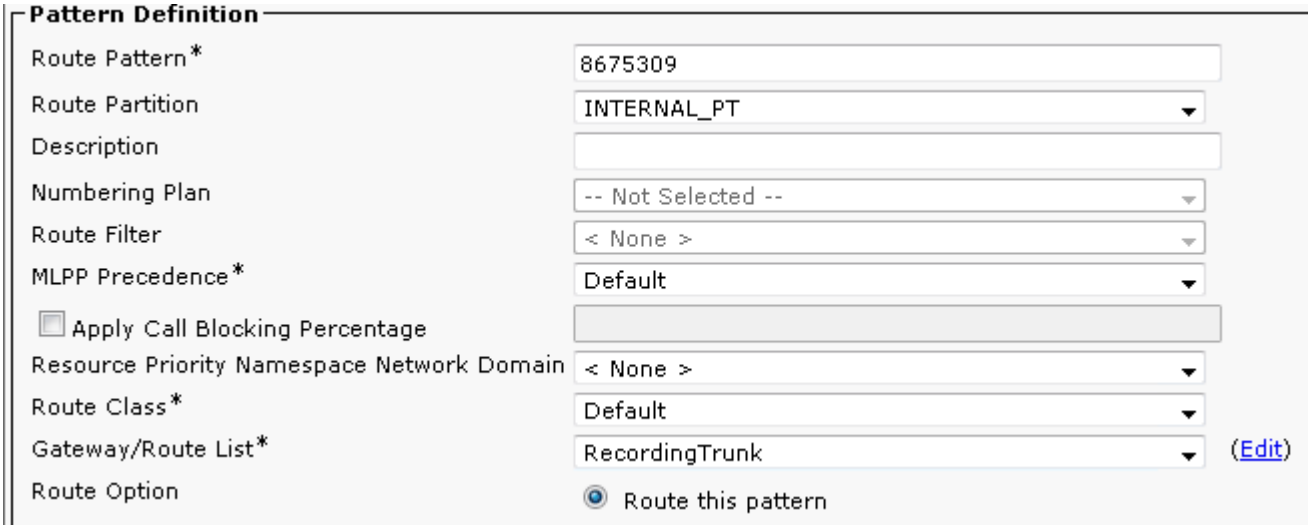


创建路由模式以路由录制呼叫

- 创建与上一步中配置的记录目标地址匹配的路由模式。

- 如果要配置冗余SIP中继，可以指向路由列表，而不是直接指向SIP中继。

注意：分配给此路由模式的分区必须与RecordingCallingSearch空间相关联，如图所示。



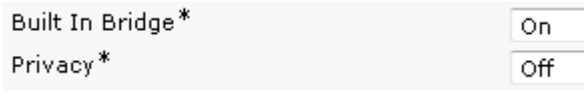
将录音配置文件分配到电话线

- 在具有现有分机的已创建电话上，分配已创建的录制配置文件。
- 也在此位置中分配呼叫记录的类型。
- 示例显示自动录制，如图所示。



在“电话配置”页面上，将BIB设置为“开”，将“隐私”设置为“关”

在设备配置页面上，导航到标题为设备信息的部分。如图所示，将Built In Bridge设置为On，将Privacy设置为Off。



验证

使用本部分可确认配置能否正常运行。

以下是具有给定配置的SCCP和SIP电话的Call Manager跟踪中的预期行为。这些示例适用于在其中一个电话设置为呼叫记录时呼叫同一集群中的另一电话的电话。

> 注意：从CUCM收集的日志包括CTIManger、CallManager、Event Viewer App/Sys，在某些情况下可能需要pcaps。

> 注意：从电话收集的日志是控制台日志和pcap。您可以在从电话获取pcap的同时，从录制服务器获取pcap。

SCCP

```
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Normal CCM Traces for SCCP phone to SCCP phone with SIP Integrated Call Recording
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### Calling phone places call

03796977.001 |20:21:08.055 |AppInfo  |StationInit: (0000109) SoftKeyEvent softKeyEvent=1(Redial) lineIn



### CUCM performs digit analysis against the dialed digits (dd="9110001")

03797017.001 |20:21:08.057 |AppInfo  |Digit Analysis: star_DaReq: daReq.partitionSearchSpace(), filtere
03797017.002 |20:21:08.057 |AppInfo  |Digit Analysis: star_DaReq: Matching Legacy Numeric, digits=91100
03797017.003 |20:21:08.057 |AppInfo  |Digit Analysis: getDaRes data&colon; daRes.ssType=[0] Intercept D
03797017.004 |20:21:08.057 |AppInfo  |Digit Analysis: getDaRes - Remote Destination [] isURI[1]
03797017.005 |20:21:08.057 |AppInfo  |Digit analysis: patternUsage=2
03797017.006 |20:21:08.057 |AppInfo  |Digit analysis: match(pi="2", fqcn="9110006", cn="9110006",plv="5
03797017.007 |20:21:08.057 |AppInfo  |Digit analysis: analysis results
03797017.008 |20:21:08.057 |AppInfo  ||PretransformCallingPartyNumber=9110006
|CallingPartyNumber=9110006
|DialingPartition=
|DialingPattern=9110001
|FullyQualifiedCalledPartyNumber=9110001
|DialingPatternRegularExpression=(9110001)
|DialingWhere=
|PatternType=Enterprise
|PotentialMatches=NoPotentialMatchesExist
|DialingSdlProcessId=(0,0,0)
|PretransformDigitString=9110001
|PretransformTagsList=SUBSCRIBER
|PretransformPositionalMatchList=9110001
|CollectedDigits=9110001
```

CUCM determines call must stay on same node; go to LineControl (PID=LineControl(2,100,174,137))

```
03797019.001 |20:21:08.058 |AppInfo  |Digit analysis: wait_DmPidRes- Partition=[] Pattern=[9110001] Whe
```

CUCM extends call to phone

```
03797036.003 |20:21:08.058 |AppInfo  |StationD:    (0000114) DEBUG whatToDo: line=1 calls=0 limit=4, bu
03797036.004 |20:21:08.058 |AppInfo  |StationD:    (0000114) DEBUG  whatToDo: busy trigger not hit... s
03797036.005 |20:21:08.058 |AppInfo  |preFilterCapCount =[11], preFilterCaps :: (Cap)= (25) (6) (4) (2)
03797036.006 |20:21:08.058 |AppInfo  |preFilterCapCount =[0], preFilterCaps :: (Cap)= Filtering Caps du
03797036.007 |20:21:08.058 |Created  |                                              |
03797036.008 |20:21:08.058 |AppInfo  |StationD:    (0000114) DEBUG- getLineRingSetting: retVal=4.
03797036.009 |20:21:08.058 |AppInfo  |StationD:    (0000114) DEBUG- saveRinger for: ci=38960750, line=1
03797036.010 |20:21:08.058 |AppInfo  |StationD:    (0000114) DEBUG- saveRinger: ci=38960750, line=1, mo
03797036.011 |20:21:08.058 |AppInfo  |StationD:    (0000114) INFO  sendCallAcceptReq: Try to send Stati
03797036.012 |20:21:08.058 |AppInfo  |StationD:    (0000114) playRinger for: ci=38960750.
03797036.013 |20:21:08.058 |AppInfo  |StationD:    (0000114) DEBUG- getLineRingSetting: retVal=4.
03797036.014 |20:21:08.058 |AppInfo  |StationD:    (0000114) DEBUG- getLineRingSetting: retVal=4.
03797036.015 |20:21:08.058 |AppInfo  |StationD:    (0000114) DEBUG- getLineRingSetting: retVal=4.
```

Called (recorded) phone goes off hook

```
03797089.001 |20:21:09.335 |AppInfo  |StationD:    (0000114) restart0_StationOffHook - INFO: CI=3896075
```

CUCM Tells the calling phone to open the logical channel

```
03797153.001 |20:21:09.337 |AppInfo  |StationD:    (0000109) SEP0018195AA209 , star_MediaExchangeAgenaO
```

CUCM Tells the called (recorded party) phone to open the logical channel

```
03797156.001 |20:21:09.337 |AppInfo  |StationD:    (0000114) SEP001795BDD16B , star_MediaExchangeAgenaO
```

CUCM Tells the calling phone to open the receive channel

```
03797164.002 |20:21:09.337 |AppInfo  |StationD:    (0000109) OpenReceiveChannel conferenceID=38960749 pa
```

CUCM Tells the called (recorded party) phone to open the receive channel

```
03797168.002 |20:21:09.337 |AppInfo  |StationD:    (0000114) OpenReceiveChannel conferenceID=38960750 pa
```

CUCM allocates BIB on called (recorded) phone

```
03797210.000 |20:21:09.338 |SdlSig   |MrmAllocateUcbResourceReq              |waiting
```

BiB places first call to recording destination address (cn is calling party which is the BiB cn="b0

```
03797269.001 |20:21:09.340 |AppInfo  |Digit Analysis: star_DaReq: daReq.partitionSearchSpace(), filtere
03797269.002 |20:21:09.340 |AppInfo  |Digit Analysis: star_DaReq: Matching Legacy Numeric, digits=86753
03797269.003 |20:21:09.340 |AppInfo  |Digit Analysis: getDaRes data: daRes.ssType=[0] Intercept DAMR.ss
03797269.004 |20:21:09.340 |AppInfo  |Digit Analysis: getDaRes - Remote Destination [8675309] isURI[0]
03797269.005 |20:21:09.340 |AppInfo  |CMUtility routeCallThroughCTIRD: no matching RemDestDynamic recor
03797269.006 |20:21:09.340 |AppInfo  |DbMobility: getMatchedRemDest starts: cnumber = 8675309
03797269.007 |20:21:09.340 |AppInfo  |DbMobility: getMatchedRemDest: full match case
03797269.008 |20:21:09.340 |AppInfo  |DbMobility SelectByDestination: no matching RemDestDynamic record
03797269.009 |20:21:09.340 |AppInfo  |DbMobility: can't find remdest 8675309 in map
03797269.010 |20:21:09.340 |AppInfo  |Digit analysis: patternUsage=5
03797269.011 |20:21:09.340 |AppInfo  |Digit analysis: match(pi="1", fqcn="", cn="b00223908001",plv="5",
03797269.012 |20:21:09.340 |AppInfo  |Digit analysis: analysis results
03797269.013 |20:21:09.340 |AppInfo  ||PretransformCallingPartyNumber=b00223908001
|CallingPartyNumber=b00223908001
|DialingPartition=
|DialingPattern=8675309
|FullyQualifiedCalledPartyNumber=8675309
|DialingPatternRegularExpression=(8675309)
|DialingWhere=
|PatternType=Enterprise
|PotentialMatches=NoPotentialMatchesExist
|DialingSdlProcessId=(0,0,0)
|PretransformDigitString=8675309
|PretransformTagsList=SUBSCRIBER
|PretransformPositionalMatchList=8675309
|CollectedDigits=8675309
```

CUCM sends INVITE #1 to configured recording server (10.48.32.170)

```
03797320.001 |20:21:09.343 |AppInfo  |//SIP/SIPUdp/wait_SdlSPISignal: Outgoing SIP UDP message to 10.48
[212231,NET]
INVITE sip:8675309@10.48.32.170:5060 SIP/2.0
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK204d520fedb3
From: <sip:9110001@10.48.32.90;x-nearend;x-refci=38960750;x-nearendclusterid=glenscucm10-5;x-nearenddev
To: <sip:8675309@10.48.32.170>
Date: Tue, 30 Sep 2014 00:21:09 GMT
Call-ID: abbb8e00-4291f775-204c-5a20300e@10.48.32.90
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM10.5
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: ;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2881195520-0000065536-0000000011-1512058894
Session-Expires:  1800
P-Asserted-Identity: <sip:9110001@10.48.32.90>
```

```
Remote-Party-ID: <sip:9110001@10.48.32.90>;party=calling;screen=yes;privacy=off
Contact: <sip:9110001@10.48.32.90:5060>;isFocus
Max-Forwards: 70
Content-Length: 0
```

```
### BiB places second call to recording destination address (cn is calling party which is the BiB cn="b
Note that the BiB number stayed the same (b00223908001) and so did the recordingdestination number

03797367.010 |20:21:09.344 |AppInfo  |Digit analysis: patternUsage=5
03797367.011 |20:21:09.344 |AppInfo  |Digit analysis: match(pi="1", fqcn="", cn="b00223908001",plv="5",
03797367.012 |20:21:09.344 |AppInfo  |Digit analysis: analysis results
03797367.013 |20:21:09.344 |AppInfo  ||PretransformCallingPartyNumber=b00223908001
|CallingPartyNumber=b00223908001
|DialingPartition=
|DialingPattern=8675309
|FullyQualifiedCalledPartyNumber=8675309
|DialingPatternRegularExpression=(8675309)
|DialingWhere=
|PatternType=Enterprise
|PotentialMatches=NoPotentialMatchesExist
|DialingSdlProcessId=(0,0,0)
|PretransformDigitString=8675309
|PretransformTagsList=SUBSCRIBER
|PretransformPositionalMatchList=8675309
|CollectedDigits=8675309
```

```
### CUCM receives 200 OK in response to INVITE #1

03797390.001 |20:21:09.345 |AppInfo  |//SIP/SIPUdp/wait_SdlDataInd: Incoming SIP UDP message size 737 f
[212232,NET]
SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK204d520fedb3
From: <sip:9110001@10.48.32.90;x-nearend;x-refci=38960750;x-nearendclusterid=glenscucm10-5;x-nearenddev
To: <sip:8675309@10.48.32.170>;tag=1
Call-ID: abbb8e00-4291f775-204c-5a20300e@10.48.32.90
CSeq: 101 INVITE
Contact: <sip:10.48.32.170:5060;transport=udp>
Content-Type: application/sdp
Content-Length:   135

v=0
o=user1 53655765 2353687637 IN IP4 10.48.32.170
s=-
c=IN IP4 10.48.32.170
t=0 0
m=audio 6000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
```

```
### CUCM sends INVITE #2 to recording server (10.48.32.170)

03797445.001 |20:21:09.348 |AppInfo  |//SIP/SIPUdp/wait_SdlSPISignal: Outgoing SIP UDP message to 10.48
[212233,NET]
INVITE sip:8675309@10.48.32.170:5060 SIP/2.0
```

```
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK204e754eaeae
From: <sip:9110001@10.48.32.90;x-farend;x-refci=3896075O;x-nearendclusterid=glenscucm10-5;x-nearenddevi
To: <sip:8675309@10.48.32.170>
Date: Tue, 30 Sep 2014 00:21:09 GMT
Call-ID: abbb8e00-4291f775-204d-5a20300e@10.48.32.90
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM10.5
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: ;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2881195520-0000065536-0000000012-1512058894
Session-Expires:  1800
P-Asserted-Identity: <sip:9110001@10.48.32.90>
Remote-Party-ID: <sip:9110001@10.48.32.90>;party=calling;screen=yes;privacy=off
Contact: <sip:9110001@10.48.32.90:5060>;isFocus
Max-Forwards: 70
Content-Length: 0
```

CUCM receives 200 OK in response to INVITE #2

```
03797498.001 |20:21:09.350 |AppInfo  |//SIP/SIPUdp/wait_SdlDataInd: Incoming SIP UDP message size 736 f
[212235,NET]
SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK204e754eaeae
From: <sip:9110001@10.48.32.90;x-farend;x-refci=3896075O;x-nearendclusterid=glenscucm10-5;x-nearenddevi
To: <sip:8675309@10.48.32.170>;tag=2
Call-ID: abbb8e00-4291f775-204d-5a20300e@10.48.32.90
CSeq: 101 INVITE
Contact: <sip:10.48.32.170:5060;transport=udp>
Content-Type: application/sdp
Content-Length:   135

v=0
o=user1 53655765 2353687637 IN IP4 10.48.32.170
s=-
c=IN IP4 10.48.32.170
t=0 0
m=audio 6000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
```

CUCM sends outbound ACK in response to 200 OK #1

```
03797500.001 |20:21:09.351 |AppInfo  |//SIP/SIPUdp/wait_SdlSPISignal: Outgoing SIP UDP message to 10.48
[212236,NET]
ACK sip:10.48.32.170:5060;transport=UDP SIP/2.0
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK204f50bef815
From: <sip:9110001@10.48.32.90;x-nearend;x-refci=3896075O;x-nearendclusterid=glenscucm10-5;x-nearenddev
To: <sip:8675309@10.48.32.170>;tag=1
Date: Tue, 30 Sep 2014 00:21:09 GMT
Call-ID: abbb8e00-4291f775-204c-5a20300e@10.48.32.90
User-Agent: Cisco-CUCM10.5
```

```
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 254

v=0
o=CiscoSystemsCCM-SIP 73601 1 IN IP4 10.48.32.90
s=SIP Call
c=IN IP4 10.48.32.33
b=TIAS:64000
b=CT:64
b=AS:64
t=0 0
m=audio 4000 RTP/AVP 0 101
a=ptime:20
a=rtpmap:0 PCMU/8000
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15




### CUCM sends startMediaTransmission to the called (recorded) phone telling the phone to send RTP to r

03797479.001 |20:21:09.350 |AppInfo  |StationD:    (0000114) startMediaTransmission conferenceID=389607




### CUCM sends startMediaTransmission #2 to the called (recorded) phone telling the phone to send RTP t

03797596.001 |20:21:09.354 |AppInfo  |StationD:    (0000114) startMediaTransmission conferenceID=389607




### CUCM sends outbound ACK in response to 200 OK #2

03797615.001 |20:21:09.354 |AppInfo  |//SIP/SIPUdp/wait_SdlSPISignal: Outgoing SIP UDP message to 10.48
[212237,NET]
ACK sip:10.48.32.170:5060;transport=UDP SIP/2.0
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK2050183495f1
From: <sip:9110001@10.48.32.90;x-farend;x-refci=38960750;x-nearendclusterid=glenscucm10-5;x-nearenddevi
To: <sip:8675309@10.48.32.170>;tag=2
Date: Tue, 30 Sep 2014 00:21:09 GMT
Call-ID: abbb8e00-4291f775-204d-5a20300e@10.48.32.90
User-Agent: Cisco-CUCM10.5
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 254

v=0
o=CiscoSystemsCCM-SIP 73602 1 IN IP4 10.48.32.90
s=SIP Call
c=IN IP4 10.48.32.33
b=TIAS:64000
b=CT:64
b=AS:64
```

```
t=0 0
m=audio 4000 RTP/AVP 0 101
a=ptime:20
a=rtpmap:0 PCMU/8000
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15



### Calling phone sends CUCM the ORC ACK

03797634.001 |20:21:09.385 |AppInfo  |StationInit: (0000109) OpenReceiveChannelAck Status=0, IpAddr=IpA



### CUCM sends startMediaTransmission to the called (recorded) phone telling the phone to send RTP to t

03797642.001 |20:21:09.385 |AppInfo  |StationD:    (0000114) startMediaTransmission conferenceID=389607



### Called (recorded) phone sends CUCM the ORC ACK

03797643.001 |20:21:09.454 |AppInfo  |StationInit: (0000114) OpenReceiveChannelAck Status=0, IpAddr=IpA



### CUCM sends startMediaTransmission to the calling phone telling the phone to send RTP to the called

03797655.001 |20:21:09.454 |AppInfo  |StationD:    (0000109) startMediaTransmission conferenceID=
38960749 passThruPartyID=33554450 remoteIpAddress=IpAddr.type:0 ipAddr:0x0e3020210000000000000000000000
```

SIP

```
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Normal CCM Traces for SIP phone to SIP phone with SIP Integrated Call Recording
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##### Calling phone places call


04241111.002 |11:27:41.232 |AppInfo  |SIPTcp - wait_SdlReadRsp: Incoming SIP TCP message from 10.48.38.
[286938,NET]
INVITE sip:1001@10.48.38.5;user=phone SIP/2.0
Via: SIP/2.0/TCP 10.48.38.102:50147;branch=z9hG4bK598c2eb2
From: "SJ User 1" <sip:1000@10.48.38.5>;tag=38ed18552a12296c00ff41e8-5fb7856e
To: <sip:1001@10.48.38.5>
Call-ID: 38ed1855-2a120006-78c34baf-1b81d864@10.48.38.102
Max-Forwards: 70
Session-ID: 1001532000105000a00038ed18552a12;remote=00000000000000000000000000000000
Date: Tue, 27 Aug 2019 15:27:42 GMT
CSeq: 101 INVITE
```

```
User-Agent: Cisco-CP7861/12.1.1
Contact: <sip:ab17ea6e-8072-927d-aad0-d10273906106@10.48.38.102:50147;transport=tcp>;+u.sip!devicename.
Expires: 180
Accept: application/sdp
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE,INFO
Remote-Party-ID: "SJ User 1" <sip:1000@10.48.38.5>;party=calling;id-type=subscriber;privacy=off;screen=
Supported: replaces,join,sdp-anat,norefersub,resource-priority,extended-refer,X-cisco-callinfo,X-cisco-
Allow-Events: kpml,dialog
Recv-Info: conference
Recv-Info: x-cisco-conference
Content-Length: 687
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 15384 0 IN IP4 10.48.38.102
s=SIP Call
b=AS:4064
t=0 0
m=audio 17904 RTP/AVP 114 9 113 115 0 8 116 18 101
c=IN IP4 10.48.38.102
b=TIAS:64000
a=rtpmap:114 opus/48000/2
a=fmtp:114 maxplaybackrate=16000;sprop-maxcapturerate=16000;maxaveragebitrate=64000;stereo=0;sprop-ster
a=rtpmap:9 G722/8000
a=rtpmap:113 AMR-WB/16000
a=fmtp:113 octet-align=0;mode-change-capability=2
a=rtpmap:115 AMR-WB/16000
a=fmtp:115 octet-align=1;mode-change-capability=2
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:116 iLBC/8000
a=fmtp:116 mode=20
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=yes
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

CUCM performs digit analysis against the dialed digits (dd="1000")

```
04241138.007 |11:27:41.238 |AppInfo  |Digit analysis: match(pi="2", fqcn="+14085251000", cn="1000",plv=
04241138.008 |11:27:41.238 |AppInfo  |Digit analysis: analysis results
04241138.009 |11:27:41.238 |AppInfo  ||PretransformCallingPartyNumber=1000
|CallingPartyNumber=1000
|DialingPartition=INTERNAL_PT
|DialingPattern=1001
|FullyQualifiedCalledPartyNumber=+14085251001
|DialingPatternRegularExpression=(1001)
|DialingWhere=
|PatternType=Enterprise
|PotentialMatches=NoPotentialMatchesExist
|DialingSdlProcessId=(0,0,0)
|PretransformDigitString=1001
|PretransformTagsList=SUBSCRIBER
|PretransformPositionalMatchList=1001
|CollectedDigits=1001
```

CUCM determines call must stay on same node and go to LineControl (PID=LineControl(1,100,178,34)

04241140.001 |11:27:41.238 |AppInfo |Digit analysis: wait_DmPidRes- Partition=[a067f454-fb26-2d1f-59da

CUCM sends outbound INVITE to called (recorded) phone

04241178.001 |11:27:41.242 |AppInfo |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286940,NET]
INVITE sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32e829c48246
From: "SJ User 1" <sip:1000@10.48.38.5>;tag=104952~e650e088-60ba-4195-8387-3dcc0127efdc-19301625
To: <sip:1001@10.48.38.5>
Date: Tue, 27 Aug 2019 15:27:41 GMT
Call-ID: 34241a00-d6514bed-327f-526300e@10.48.38.5
Supported: timer,resource-priority,replaces
Min-SE: 1800
User-Agent: Cisco-CUCM11.5
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Expires: 180
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= Unknown; orientation= from; gci= 1-2029; isVoip;
Send-Info: conference, x-cisco-conference
Alert-Info: <file://Bellcore-dr1/>
Session-ID: 1001532000105000a00038ed18552a12;remote=00000000000000000000000000000000
Remote-Party-ID: "SJ User 1" <sip:1000@10.48.38.5;x-cisco-callback-number=1000>;party=calling;screen=ye
Contact: <sip:1000@10.48.38.5:5060;transport=tcp>;+u.sip!devicename.ccm.cisco.com="SEP38ED18552A12"
Max-Forwards: 69
Content-Length: 0

Called (recorded) phone returns 200 OK

04241233.002 |11:27:43.614 |AppInfo |SIPTcp - wait_SdlReadRsp: Incoming SIP TCP message from 10.48.38.
[286947,NET]
SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32e829c48246
From: "SJ User 1" <sip:1000@10.48.38.5>;tag=104952~e650e088-60ba-4195-8387-3dcc0127efdc-19301625
To: <sip:1001@10.48.38.5>;tag=6c416a369525006f33cf6f38-43c38ad2
Call-ID: 34241a00-d6514bed-327f-526300e@10.48.38.5
Session-ID: 4313758700105000a0006c416a369525;remote=1001532000105000a00038ed18552a12
Date: Tue, 27 Aug 2019 15:27:42 GMT
CSeq: 101 INVITE
Server: Cisco-CP7841/12.1.1
Contact: <sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp>;+u.sip!devicename.
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE,INFO
Remote-Party-ID: "SJ User 2" <sip:1001@10.48.38.5>;party=called;id-type=subscriber;privacy=off;screen=y
Supported: replaces,join,sdp-anat,norefersub,resource-priority,extended-refer,X-cisco-callinfo,X-cisco-
Allow-Events: kpml,dialog
Recv-Info: conference
Recv-Info: x-cisco-conference
Content-Length: 685
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0

```
o=Cisco-SIPUA 899 0 IN IP4 10.48.38.107
s=SIP Call
b=AS:4064
t=0 0
m=audio 20394 RTP/AVP 114 9 113 115 0 8 116 18 101
c=IN IP4 10.48.38.107
b=TIAS:64000
a=rtpmap:114 opus/48000/2
a=fmtp:114 maxplaybackrate=16000;sprop-maxcapturerate=16000;maxaveragebitrate=64000;stereo=0;sprop-ster
a=rtpmap:9 G722/8000
a=rtpmap:113 AMR-WB/16000
a=fmtp:113 octet-align=0;mode-change-capability=2
a=rtpmap:115 AMR-WB/16000
a=fmtp:115 octet-align=1;mode-change-capability=2
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:116 iLBC/8000
a=fmtp:116 mode=20
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=yes
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrec



### CUCM sends ACK to called (recorded) phone telling the called phone to send media to the calling pho

01314344.001 |11:18:48.652 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.32.
[106320,NET]
ACK sip:56ce4d7f-d3a2-40fd-a8b3-3f93c8832b9d@10.48.32.17:50841;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.48.32.90:5060;branch=z9hG4bK203c2831c118
From: <sip:9110006@10.48.32.90>;tag=38244~713e2333-4032-45f1-b1f5-e33cf471acec-47601638
To: <sip:9110011@10.48.32.90>;tag=b000b4d9e8cb0bba73e445ee-3cc7e650
Date: Tue, 14 Oct 2014 15:18:44 GMT
Call-ID: 6198e780-43d13ed4-203c-5a20300e@10.48.32.90
User-Agent: Cisco-CUCM10.5
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 243

v=0
o=CiscoSystemsCCM-SIP 38244 1 IN IP4 10.48.32.90
s=SIP Call
c=IN IP4 10.48.32.28
b=TIAS:64000
b=CT:64
b=AS:64
t=0 0
m=audio 17260 RTP/AVP 0 101
a=ptime:20
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15### CUCM allocates BiB on called (recorded) phone

01314383.000 |11:18:48.675 |SdlSig   |MrmAllocateUcbResourceReq              |waiting
```

CUCM forwards the 200 OK to the calling phone

```
04241368.001 |11:27:43.624 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286949,NET]
SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.48.38.102:50147;branch=z9hG4bK598c2eb2
From: "SJ User 1" <sip:1000@10.48.38.5>;tag=38ed18552a12296c00ff41e8-5fb7856e
To: <sip:1001@10.48.38.5>;tag=104951~e650e088-60ba-4195-8387-3dcc0127efdc-19301624
Date: Tue, 27 Aug 2019 15:27:41 GMT
Call-ID: 38ed1855-2a120006-78c34baf-1b81d864@10.48.38.102
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Supported: replaces
Server: Cisco-CUCM11.5
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= to; gci= 1-2029; i
Send-Info: conference, x-cisco-conference
Remote-Party-ID: "SJ User 2" <sip:1001@10.48.38.5>;party=called;screen=yes;privacy=off
Session-ID: 4313758700105000a0006c416a369525;remote=1001532000105000a00038ed18552a12
Remote-Party-ID: "SJ User 2" <sip:1001@10.48.38.5;user=phone>;party=x-cisco-original-called;privacy=off
Contact: <sip:1001@10.48.38.5:5060;transport=tcp>;+u.sip!devicename.ccm.cisco.com="SEP6C416A369525"
Content-Type: application/sdp
Content-Length: 223

v=0
o=CiscoSystemsCCM-SIP 104951 1 IN IP4 10.48.38.5
s=SIP Call
c=IN IP4 10.48.38.107
b=AS:64
t=0 0
m=audio 20394 RTP/AVP 0 101
b=TIAS:64000
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

BiB allocation request on called (recorded) phone

```
04241393.000 |11:27:43.629 |SdlSig   |SIPAllocateBibResourceReq              |restart0
```

BiB allocated on called (recorded) phone

```
04241400.000 |11:27:43.630 |SdlSig   |MrmAllocateSharedResourceRes           |wait
```

DA for first call to activate BiB

```
04241418.006 |11:27:43.631 |AppInfo  |Digit analysis: match(pi="1", fqcn="", cn="",plv="5", pss="", Tod
04241418.007 |11:27:43.631 |AppInfo  |Digit analysis: analysis results
04241418.008 |11:27:43.631 |AppInfo  ||PretransformCallingPartyNumber=
|CallingPartyNumber=
|DialingPartition=
|DialingPattern=b0018615001
|FullyQualifiedCalledPartyNumber=b0018615001
```

|DialingPatternRegularExpression=(b0018615001)
|DialingWhere=
|PatternType=Enterprise
|PotentialMatches=NoPotentialMatchesExist
|DialingSdlProcessId=(1,86,15)
|PretransformDigitString=b0018615001
|PretransformTagsList=SUBSCRIBER
|PretransformPositionalMatchList=b0018615001
|CollectedDigits=b0018615001

CUCM sends INVITE #1 to called (recorded) phone with record-invoker=auto in Call-Info field and
Notice the SDP has a=inactive - even though there is no media established on the Bib yet.

04241449.001 |11:27:43.633 |AppInfo |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286950,NET]
INVITE sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32ea2a115cd6
From: "Call Manager" <sip:10.48.38.5>;tag=104956~e650e088-60ba-4195-8387-3dcc0127efdc-19301628
To: <sip:1001@10.48.38.5>
Date: Tue, 27 Aug 2019 15:27:43 GMT
Call-ID: 3555470O-d6514bef-3280-526300e@10.48.38.5
Supported: timer,resource-priority,replaces
Min-SE: 1800
User-Agent: Cisco-CUCM11.5
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Expires: 180
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; isVoip; record-invoker=auto
Join: 34241a00-d6514bed-327f-526300e@10.48.38.5;from-tag=6c416a369525006f33cf6f38-43c38ad2;to-tag=10495
Session-ID: 00000000000000000000000000000000;remote=00000000000000000000000000000000
Remote-Party-ID: "Call Manager" <sip:10.48.38.5>;party=calling;screen=yes;privacy=off
Contact: <sip:10.48.38.5:5060;transport=tcp>
Max-Forwards: 70
Content-Type: application/sdp
Content-Length: 187

v=0
o=CiscoSystemsCCM-SIP 104956 1 IN IP4 10.48.38.5
s=SIP Call
c=IN IP4 10.48.38.5
t=0 0
m=audio 4000 RTP/AVP 0
a=label:X-relay-nearend
a=rtpmap:0 PCMU/8000
a=inactive
a=mid:1

Calling phone sends CUCM an ACK in response to the 200 OK which was from when the user at the ca

04241455.002 |11:27:43.697 |AppInfo |SIPTcp - wait_SdlReadRsp: Incoming SIP TCP message from 10.48.38.
[286951,NET]
ACK sip:1001@10.48.38.5:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.48.38.102:50147;branch=z9hG4bK688db3c1
From: "SJ User 1" <sip:1000@10.48.38.5>;tag=38ed18552a12296c00ff41e8-5fb7856e
To: <sip:1001@10.48.38.5>;tag=104951~e650e088-60ba-4195-8387-3dcc0127efdc-19301624

```
Call-ID: 38ed1855-2a120006-78c34baf-1b81d864@10.48.38.102
Max-Forwards: 70
Session-ID: 1001532000105000a00038ed18552a12;remote=4313758700105000a0006c416a369525
Date: Tue, 27 Aug 2019 15:27:45 GMT
CSeq: 101 ACK
User-Agent: Cisco-CP7861/12.1.1
Remote-Party-ID: "SJ User 1" <sip:1000@10.48.38.5>;party=calling;id-type=subscriber;privacy=off;screen=
Content-Length: 0
Recv-Info: conference
Recv-Info: x-cisco-conference
```

Called (recorded) phone returns 200 OK in response to the invite with "record-invoker=auto"
Notice the SDP has a=inactive - even though there is no media established on the Bib yet.

```
04241466.002 |11:27:43.901 |AppInfo  |SIPTcp - wait_SdlReadRsp: Incoming SIP TCP message from 10.48.38.
[286953,NET]
SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32ea2a115cd6
From: "Call Manager" <sip:10.48.38.5>;tag=104956~e650e088-60ba-4195-8387-3dcc0127efdc-19301628
To: <sip:1001@10.48.38.5>;tag=6c416a369525007019bf48f9-5901eb85
Call-ID: 35554700-d6514bef-3280-526300e@10.48.38.5
Session-ID: 0848153900105000a0006c416a369525;remote=00000000000000000000000000000000
Date: Tue, 27 Aug 2019 15:27:42 GMT
CSeq: 101 INVITE
Server: Cisco-CP7841/12.1.1
Contact: <sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp>;+u.sip!devicename.
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE,INFO
Remote-Party-ID: "SJ User 2" <sip:1001@10.48.38.5>;party=called;id-type=subscriber;privacy=off;screen=y
Supported: replaces,join,sdp-anat,norefersub,resource-priority,extended-refer,X-cisco-callinfo,X-cisco-
Allow-Events: kpml,dialog
Recv-Info: conference
Recv-Info: x-cisco-conference
Content-Length: 218
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 2684 0 IN IP4 10.48.38.107
s=SIP Call
t=0 0
m=audio 26396 RTP/AVP 0 101
c=IN IP4 10.48.38.107
b=TIAS:64000
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=inactive
```

CUCM responds to called (recorded) phone with ACK

```
04241469.001 |11:27:43.901 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286954,NET]
ACK sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32eb34decb69
From: "Call Manager" <sip:10.48.38.5>;tag=104956~e650e088-60ba-4195-8387-3dcc0127efdc-19301628
To: <sip:1001@10.48.38.5>;tag=6c416a369525007019bf48f9-5901eb85
```

```
Date: Tue, 27 Aug 2019 15:27:43 GMT
Call-ID: 35554700-d6514bef-3280-526300e@10.48.38.5
User-Agent: Cisco-CUCM11.5
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0
```

BiB places first call to recording destination address (cn is calling party which is the BiB cn=

```
04241501.011 |11:27:43.905 |AppInfo  |Digit analysis: match(pi="1", fqcn="", cn="b0018615001",plv="5", |
04241501.012 |11:27:43.905 |AppInfo  |Digit analysis: analysis results
04241501.013 |11:27:43.905 |AppInfo  ||PretransformCallingPartyNumber=b0018615001
|CallingPartyNumber=b0018615001
|DialingPartition=INTERNAL_PT
|DialingPattern=7878
|FullyQualifiedCalledPartyNumber=7878
|DialingPatternRegularExpression=(7878)
|DialingWhere=
|PatternType=Enterprise
|PotentialMatches=NoPotentialMatchesExist
|DialingSdlProcessId=(0,0,0)
|PretransformDigitString=7878
|PretransformTagsList=SUBSCRIBER
|PretransformPositionalMatchList=7878
|CollectedDigits=7878
```

DA for to activate BiB for the other person's side of the call

```
04241545.006 |11:27:43.907 |AppInfo  |Digit analysis: match(pi="1", fqcn="", cn="",plv="5", pss="", Tod
04241545.007 |11:27:43.907 |AppInfo  |Digit analysis: analysis results
04241545.008 |11:27:43.907 |AppInfo  ||PretransformCallingPartyNumber=
|CallingPartyNumber=
|DialingPartition=
|DialingPattern=b0018615001
|FullyQualifiedCalledPartyNumber=b0018615001
|DialingPatternRegularExpression=(b0018615001)
|DialingWhere=
|PatternType=Enterprise
|PotentialMatches=NoPotentialMatchesExist
|DialingSdlProcessId=(1,86,15)
|PretransformDigitString=b0018615001
|PretransformTagsList=SUBSCRIBER
|PretransformPositionalMatchList=b0018615001
|CollectedDigits=b0018615001
```

CUCM sends INVITE #1 to configured recording server (10.48.38.30)

```
04241555.001 |11:27:43.908 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286955,NET]
INVITE sip:7878@10.48.38.30:5060 SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32ecc2c802c
From: "SJ User 2" <sip:1001@10.48.38.5;x-nearend;x-refci=19301625;x-nearendclusterid=StandAloneCluster;
```

```
To: <sip:7878@10.48.38.30>
Date: Tue, 27 Aug 2019 15:27:43 GMT
Call-ID: 35554700-d6514bef-3281-526300e@10.48.38.5
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM11.5
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.48.38.5:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Call-Info: <urn:x-cisco-remotecc:callinfo>;x-cisco-video-traffic-class=DESKTOP
Session-ID: 0848153900105000a0006c416a369525;remote=00000000000000000000000000000000
Cisco-Guid: 0894781184-0000065536-0000000022-0086388750
Session-Expires:  1800
P-Asserted-Identity: "SJ User 2" <sip:1001@10.48.38.5>
Remote-Party-ID: "SJ User 2" <sip:1001@10.48.38.5>;party=calling;screen=yes;privacy=off
Contact: <sip:1001@10.48.38.5:5060;transport=tcp>;isFocus;+u.sip!devicename.ccm.cisco.com="SEP6C416A369
Max-Forwards: 70
Content-Length: 0
```

CUCM sends INVITE #2 to called (recorded) phone with record-invoker=auto in Call-Info field and
Notice the SDP has a=inactive - even though there is no media established on the Bib yet.

```
04241590.001 |11:27:43.910 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286956,NET]
INVITE sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32ed62f39668
From: "Call Manager" <sip:10.48.38.5>;tag=104959~e650e088-60ba-4195-8387-3dcc0127efdc-19301631
To: <sip:1001@10.48.38.5>
Date: Tue, 27 Aug 2019 15:27:43 GMT
Call-ID: 35554700-d6514bef-3282-526300e@10.48.38.5
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM11.5
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Expires: 180
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; isVoip; record-invoker=auto
Join: 34241a00-d6514bed-327f-526300e@10.48.38.5;from-tag=6c416a369525006f33cf6f38-43c38ad2;to-tag=10495
Session-ID: 00000000000000000000000000000000;remote=00000000000000000000000000000000
Remote-Party-ID: "Call Manager" <sip:10.48.38.5>;party=calling;screen=yes;privacy=off
Contact: <sip:10.48.38.5:5060;transport=tcp>
Max-Forwards: 70
Content-Type: application/sdp
Content-Length: 186

v=0
o=CiscoSystemsCCM-SIP 104959 1 IN IP4 10.48.38.5
s=SIP Call
c=IN IP4 10.48.38.5
t=0 0
m=audio 4000 RTP/AVP 0
a=label:X-relay-farend
a=rtpmap:0 PCMU/8000
a=inactive
```

```
a=mid:1
```

Called (recorded) phone returns 200 OK in response to INVITE #2 to invoke BiB
Notice the SDP has a=inactive - even though there is no media established on the Bib yet.

```
04241614.002 |11:27:44.197 |AppInfo  |SIPTcp - wait_SdlReadRsp: Incoming SIP TCP message from 10.48.38.
[286959,NET]
SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32ed62f39668
From: "Call Manager" <sip:10.48.38.5>;tag=104959~e650e088-60ba-4195-8387-3dcc0127efdc-19301631
To: <sip:1001@10.48.38.5>;tag=6c416a369525007145d433c8-062b13d7
Call-ID: 3555470O-d6514bef-3282-526300e@10.48.38.5
Session-ID: 56a8a95e00105000a0006c416a369525;remote=00000000000000000000000000000000
Date: Tue, 27 Aug 2019 15:27:42 GMT
CSeq: 101 INVITE
Server: Cisco-CP7841/12.1.1
Contact: <sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp>;+u.sip!devicename.
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE,INFO
Remote-Party-ID: "SJ User 2" <sip:1001@10.48.38.5>;party=called;id-type=subscriber;privacy=off;screen=y
Supported: replaces,join,sdp-anat,norefersub,resource-priority,extended-refer,X-cisco-callinfo,X-cisco-
Allow-Events: kpml,dialog
Recv-Info: conference
Recv-Info: x-cisco-conference
Content-Length: 219
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 13977 0 IN IP4 10.48.38.107
s=SIP Call
t=0 0
m=audio 17904 RTP/AVP 0 101
c=IN IP4 10.48.38.107
b=TIAS:64000
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=inactive
```

CUCM responds with ACK for 200 OK for INVITE #2 to invoke the BiB

```
04241618.001 |11:27:44.199 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286960,NET]
ACK sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32ee41b380b1
From: "Call Manager" <sip:10.48.38.5>;tag=104959~e650e088-60ba-4195-8387-3dcc0127efdc-19301631
To: <sip:1001@10.48.38.5>;tag=6c416a369525007145d433c8-062b13d7
Date: Tue, 27 Aug 2019 15:27:43 GMT
Call-ID: 3555470O-d6514bef-3282-526300e@10.48.38.5
User-Agent: Cisco-CUCM11.5
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0
```

BiB places second call to recording destination address (cn is calling party which is the BiB cn

```
04241651.011 |11:27:44.201 |AppInfo  |Digit analysis: match(pi="1", fqcn="", cn="b0018615001",plv="5", |
04241651.012 |11:27:44.202 |AppInfo  |Digit analysis: analysis results
04241651.013 |11:27:44.202 |AppInfo  ||PretransformCallingPartyNumber=b0018615001
|CallingPartyNumber=b0018615001
|DialingPartition=INTERNAL_PT
|DialingPattern=7878
|FullyQualifiedCalledPartyNumber=7878
|DialingPatternRegularExpression=(7878)
|DialingWhere=
|PatternType=Enterprise
|PotentialMatches=NoPotentialMatchesExist
|DialingSdlProcessId=(0,0,0)
|PretransformDigitString=7878
|PretransformTagsList=SUBSCRIBER
|PretransformPositionalMatchList=7878
|CollectedDigits=7878
```

CUCM sends INVITE #2 to configured recording server

```
04241698.001 |11:27:44.205 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286961,NET]
INVITE sip:7878@10.48.38.30:5060 SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32ef2867938b
From: "SJ User 2" <sip:1001@10.48.38.5;x-farend;x-refci=19301625;x-nearendclusterid=StandAloneCluster;x
To: <sip:7878@10.48.38.30>
Date: Tue, 27 Aug 2019 15:27:44 GMT
Call-ID: 35eddd80-d6514bf0-3283-526300e@10.48.38.5
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM11.5
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.48.38.5:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Call-Info: <urn:x-cisco-remotecc:callinfo>;x-cisco-video-traffic-class=DESKTOP
Session-ID: 56a8a95e00105000a0006c416a369525;remote=00000000000000000000000000000000
Cisco-Guid: 0904781184-0000065536-0000000023-0086388750
Session-Expires:  1800
P-Asserted-Identity: "SJ User 2" <sip:1001@10.48.38.5>
Remote-Party-ID: "SJ User 2" <sip:1001@10.48.38.5>;party=calling;screen=yes;privacy=off
Contact: <sip:1001@10.48.38.5:5060;transport=tcp>;isFocus;+u.sip!devicename.ccm.cisco.com="SEP6C416A369
Max-Forwards: 70
Content-Length: 0
```

CUCM receives a 200 OK from recording server for INVITE #2

```
04241723.002 |11:27:44.324 |AppInfo  |SIPTcp - wait_SdlReadRsp: Incoming SIP TCP message from 10.48.38.
[286963,NET]
SIP/2.0 200 Ok
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32ef2867938b
```

```
To: <sip:7878@10.48.38.30>;tag=ds1a1d776c
From: "SJ User 2" <sip:1001@10.48.38.5;x-farend;x-refci=19301625;x-nearendclusterid=StandAloneCluster;x
Call-ID: 35eddd80-d6514bf0-3283-526300e@10.48.38.5
CSeq: 101 INVITE
Content-Length: 475
Contact: <sip:7878@10.48.38.30:5060;transport=TCP>
Content-Type: application/sdp
Allow: INVITE, BYE, CANCEL, ACK, NOTIFY, INFO, UPDATE
Supported: X-cisco-srtp-fallback
Server: MediaSense/11.x

v=0
o=CiscoORA 707 1 IN IP4 10.48.38.30
s=SIP Call
c=IN IP4 10.48.38.30
t=0 0
m=audio 56512 RTP/SAVP 102 0 8 9 18
a=rtpmap:102 MP4A-LATM/90000
a=fmtp:102 profile-level-id=24;object=23;bitrate=64000
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:9 G722/8000
a=rtpmap:18 G729/8000
a=recvonly
a=crypto:XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
a=crypto:XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

CUCM receives 200 OK from the recording server in response to INVITE #1

```
04241743.002 |11:27:44.326 |AppInfo  |SIPTcp - wait_SdlReadRsp: Incoming SIP TCP message from 10.48.38.
[286964,NET]
SIP/2.0 200 Ok
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32ecc2c802c
To: <sip:7878@10.48.38.30>;tag=ds2c967644
From: "SJ User 2" <sip:1001@10.48.38.5;x-nearend;x-refci=19301625;x-nearendclusterid=StandAloneCluster;
Call-ID: 3555470-d6514bef-3281-526300e@10.48.38.5
CSeq: 101 INVITE
Content-Length: 475
Contact: <sip:7878@10.48.38.30:5060;transport=TCP>
Content-Type: application/sdp
Allow: INVITE, BYE, CANCEL, ACK, NOTIFY, INFO, UPDATE
Supported: X-cisco-srtp-fallback
Server: MediaSense/11.x

v=0
o=CiscoORA 708 1 IN IP4 10.48.38.30
s=SIP Call
c=IN IP4 10.48.38.30
t=0 0
m=audio 59058 RTP/SAVP 102 0 8 9 18
a=rtpmap:102 MP4A-LATM/90000
a=fmtp:102 profile-level-id=24;object=23;bitrate=64000
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:9 G722/8000
a=rtpmap:18 G729/8000
a=recvonly
a=crypto:XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
a=crypto:XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

CUCM sends re-INVITE #2 to called (recorded) phone (notice there is no SDP - this is so CUCM can
Notice there is no SDP

```
04241825.001 |11:27:44.330 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286965,NET]
INVITE sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32f014677161
From: "Call Manager" <sip:10.48.38.5>;tag=104959~e650e088-60ba-4195-8387-3dcc0127efdc-19301631
To: <sip:1001@10.48.38.5>;tag=6c416a369525007145d433c8-062b13d7
Date: Tue, 27 Aug 2019 15:27:44 GMT
Call-ID: 3555470O-d6514bef-3282-526300e@10.48.38.5
Supported: timer,resource-priority,replaces
User-Agent: Cisco-CUCM11.5
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Expires: 180
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; isVoip; record-invoker=auto
Min-SE:  1800
Session-ID: 00000000000000000000000000000000;remote=56a8a95e00105000a0006c416a369525
Remote-Party-ID: "Call Manager" <sip:10.48.38.5>;party=calling;screen=yes;privacy=off
Contact: <sip:10.48.38.5:5060;transport=tcp>
Content-Length: 0
```

CUCM sends re-INVITE #1 to called (recorded) phone (notice there is no SDP - this is so CUCM can

```
04241866.001 |11:27:44.332 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286966,NET]
INVITE sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32f11da4ce39
From: "Call Manager" <sip:10.48.38.5>;tag=104956~e650e088-60ba-4195-8387-3dcc0127efdc-19301628
To: <sip:1001@10.48.38.5>;tag=6c416a369525007019bf48f9-5901eb85
Date: Tue, 27 Aug 2019 15:27:44 GMT
Call-ID: 3555470O-d6514bef-3280-526300e@10.48.38.5
Supported: timer,resource-priority,replaces
User-Agent: Cisco-CUCM11.5
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Expires: 180
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; isVoip; record-invoker=auto
Min-SE:  1800
Session-ID: 00000000000000000000000000000000;remote=0848153900105000a0006c416a369525
Remote-Party-ID: "Call Manager" <sip:10.48.38.5>;party=calling;screen=yes;privacy=off
Contact: <sip:10.48.38.5:5060;transport=tcp>
Content-Length: 0
```

Called (recorded) phone returns 200 OK for re-INVITE #2

```
04241872.002 |11:27:44.541 |AppInfo  |SIPTcp - wait_SdlReadRsp: Incoming SIP TCP message from 10.48.38.
[286969,NET]
```

```
SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32f014677161
From: "Call Manager" <sip:10.48.38.5>;tag=104959~e650e088-60ba-4195-8387-3dcc0127efdc-19301631
To: <sip:1001@10.48.38.5>;tag=6c416a369525007145d433c8-062b13d7
Call-ID: 3555470O-d6514bef-3282-526300e@10.48.38.5
Session-ID: 56a8a95e00105000a0006c416a369525;remote=00000000000000000000000000000000
Date: Tue, 27 Aug 2019 15:27:43 GMT
CSeq: 102 INVITE
Server: Cisco-CP7841/12.1.1
Contact: <sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp>;+u.sip!devicename.
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE,INFO
Remote-Party-ID: "SJ User 2" <sip:1001@10.48.38.5>;party=called;id-type=subscriber;privacy=off;screen=y
Supported: replaces,join,sdp-anat,norefersub,resource-priority,extended-refer,X-cisco-callinfo,X-cisco-
Allow-Events: kpml,dialog
Recv-Info: conference
Recv-Info: x-cisco-conference
Content-Length: 219
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 13977 1 IN IP4 10.48.38.107
s=SIP Call
t=0 0
m=audio 17904 RTP/AVP 0 101
c=IN IP4 10.48.38.107
b=TIAS:64000
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

Called (recorded) phone returns 200 OK to re-INVITE #1

```
04241885.002 |11:27:44.550 |AppInfo  |SIPTcp - wait_SdlReadRsp: Incoming SIP TCP message from 10.48.38.
[286970,NET]
SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32f11da4ce39
From: "Call Manager" <sip:10.48.38.5>;tag=104956~e650e088-60ba-4195-8387-3dcc0127efdc-19301628
To: <sip:1001@10.48.38.5>;tag=6c416a369525007019bf48f9-5901eb85
Call-ID: 3555470O-d6514bef-328O-526300e@10.48.38.5
Session-ID: 0848153900105000a0006c416a369525;remote=00000000000000000000000000000000
Date: Tue, 27 Aug 2019 15:27:43 GMT
CSeq: 102 INVITE
Server: Cisco-CP7841/12.1.1
Contact: <sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp>;+u.sip!devicename.
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE,INFO
Remote-Party-ID: "SJ User 2" <sip:1001@10.48.38.5>;party=called;id-type=subscriber;privacy=off;screen=y
Supported: replaces,join,sdp-anat,norefersub,resource-priority,extended-refer,X-cisco-callinfo,X-cisco-
Allow-Events: kpml,dialog
Recv-Info: conference
Recv-Info: x-cisco-conference
Content-Length: 218
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 2684 1 IN IP4 10.48.38.107
s=SIP Call
```

```
t=0 0
m=audio 26396 RTP/AVP 0 101
c=IN IP4 10.48.38.107
b=TIAS:64000
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

CUCM sends ACK to called (recorded) phone for re-INVITE #2

```
04241903.001 |11:27:44.552 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286971,NET]
ACK sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32f252b587f6
From: "Call Manager" <sip:10.48.38.5>;tag=104959~e650e088-60ba-4195-8387-3dcc0127efdc-19301631
To: <sip:1001@10.48.38.5>;tag=6c416a369525007145d433c8-062b13d7
Date: Tue, 27 Aug 2019 15:27:44 GMT
Call-ID: 35554700-d6514bef-3282-526300e@10.48.38.5
User-Agent: Cisco-CUCM11.5
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Session-ID: 00000000000000000000000000000000;remote=56a8a95e00105000a0006c416a369525
Content-Type: application/sdp
Content-Length: 192

v=0
o=CiscoSystemsCCM-SIP 104959 3 IN IP4 10.48.38.5
s=SIP Call
c=IN IP4 10.48.38.30
b=TIAS:64000
b=AS:64
t=0 0
m=audio 56512 RTP/AVP 0
b=TIAS:64000
a=rtpmap:0 PCMU/8000
a=recvonly
```

CUCM sends ACK to the recording server in response to 200 OK #2

```
04241917.001 |11:27:44.555 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286972,NET]
ACK sip:7878@10.48.38.30:5060;transport=TCP SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32f373e69393
From: "SJ User 2" <sip:1001@10.48.38.5;x-farend;x-refci=19301625;x-nearendclusterid=StandAloneCluster;x
To: <sip:7878@10.48.38.30>;tag=ds1a1d776c
Date: Tue, 27 Aug 2019 15:27:44 GMT
Call-ID: 35eddd80-d6514bf0-3283-526300e@10.48.38.5
User-Agent: Cisco-CUCM11.5
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Session-ID: 56a8a95e00105000a0006c416a369525;remote=c83405810147c69016c38634ab104961
Content-Type: application/sdp
Content-Length: 235
```

```
v=0
o=CiscoSystemsCCM-SIP 104961 1 IN IP4 10.48.38.5
s=SIP Call
c=IN IP4 10.48.38.107
b=TIAS:64000
b=AS:64
t=0 0
m=audio 17904 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

CUCM sends ACK to called (recorded) phone for re-INVITE #1

```
04241947.001 |11:27:44.559 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286973,NET]
ACK sip:91a43f66-ca58-9cd3-b0e5-588aa61a72bc@10.48.38.107:51902;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32f45d25b711
From: "Call Manager" <sip:10.48.38.5>;tag=104956~e650e088-60ba-4195-8387-3dcc0127efdc-19301628
To: <sip:1001@10.48.38.5>;tag=6c416a369525007019bf48f9-5901eb85
Date: Tue, 27 Aug 2019 15:27:44 GMT
Call-ID: 35554700-d6514bef-3280-526300e@10.48.38.5
User-Agent: Cisco-CUCM11.5
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Session-ID: 00000000000000000000000000000000;remote=0848153900105000a0006c416a369525
Content-Type: application/sdp
Content-Length: 192

v=0
o=CiscoSystemsCCM-SIP 104956 3 IN IP4 10.48.38.5
s=SIP Call
c=IN IP4 10.48.38.30
b=TIAS:64000
b=AS:64
t=0 0
m=audio 59058 RTP/AVP 0
b=TIAS:64000
a=rtpmap:0 PCMU/8000
a=recvonly
```

CUCM sends ACK to the recording server in response to 200 OK #1

```
04241948.001 |11:27:44.559 |AppInfo  |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP message to 10.48.38.
[286974,NET]
ACK sip:7878@10.48.38.30:5060;transport=TCP SIP/2.0
Via: SIP/2.0/TCP 10.48.38.5:5060;branch=z9hG4bK32f573871bbb
From: "SJ User 2" <sip:1001@10.48.38.5;x-nearend;x-refci=19301625;x-nearendclusterid=StandAloneCluster;
To: <sip:7878@10.48.38.30>;tag=ds2c967644
Date: Tue, 27 Aug 2019 15:27:43 GMT
Call-ID: 35554700-d6514bef-3281-526300e@10.48.38.5
User-Agent: Cisco-CUCM11.5
Max-Forwards: 70
```

```
CSeq: 101 ACK
Allow-Events: presence, kpml
Session-ID: 0848153900105000a0006c416a369525;remote=c83405810147c69016c38634ab104958
Content-Type: application/sdp
Content-Length: 235

v=0
o=CiscoSystemsCCM-SIP 104958 1 IN IP4 10.48.38.5
s=SIP Call
c=IN IP4 10.48.38.107
b=TIAS:64000
b=AS:64
t=0 0
m=audio 26396 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

故障排除

本部分提供了可用于对配置进行故障排除的信息。

编解码器协商

这是最常见的呼叫记录失败类型之一 — 录音电话和录音服务器之间的编解码器不匹配：

```
~~~~~~~~~~~~~~~~~~~~~~~~~~
Codec Negotiation Failure
~~~~~~~~~~~~~~~~~~~~~~~~~~

### Calling phone places call

00019629.001 |12:48:34.510 |AppInfo  |StationInit: (0000005) EnblocCall calledParty=9110001.



### CUCM performs digit analysis against the dialed digits (dd="9110001")

00019638.001 |12:48:34.511 |AppInfo  |Digit Analysis: star_DaReq: daReq.partitionSearchSpace(), filtere
00019638.002 |12:48:34.511 |AppInfo  |Digit Analysis: star_DaReq: Matching Legacy Numeric, digits=91100
00019638.003 |12:48:34.522 |AppInfo  |Digit Analysis: getDaRes data: daRes.ssType=[0] Intercept DAMR.ss
00019638.004 |12:48:34.522 |AppInfo  |Digit Analysis: getDaRes - Remote Destination [] isURI[1]
00019638.005 |12:48:34.522 |AppInfo  |Digit analysis: patternUsage=2
00019638.006 |12:48:34.522 |AppInfo  |Digit analysis: match(pi="2", fqcn="9110006", cn="9110006",plv="5
00019638.007 |12:48:34.522 |AppInfo  |Digit analysis: analysis results
00019638.008 |12:48:34.522 |AppInfo  ||PretransformCallingPartyNumber=9110006
|CallingPartyNumber=9110006
```

```
|DialingPartition=
|DialingPattern=9110001
|FullyQualifiedCalledPartyNumber=9110001
|DialingPatternRegularExpression=(9110001)
|DialingWhere=
|PatternType=Enterprise
|PotentialMatches=NoPotentialMatchesExist
|DialingSdlProcessId=(0,0,0)
|PretransformDigitString=9110001
|PretransformTagsList=SUBSCRIBER
|PretransformPositionalMatchList=9110001
|CollectedDigits=9110001



### CUCM determines call must stay on same node and go to LineControl (PID=LineControl(2,100,174,19))

00019640.001 |12:48:34.522 |AppInfo  |Digit analysis: wait_DmPidRes- Partition=[] Pattern=[9110001] Whe



### CUCM extends the call to the called phone

00019657.003 |12:48:34.560 |AppInfo  |StationD:    (0000007) DEBUG whatToDo: line=1 calls=0 limit=4, bu
00019657.004 |12:48:34.560 |AppInfo  |StationD:    (0000007) DEBUG  whatToDo: busy trigger not hit... s
00019657.005 |12:48:34.560 |AppInfo  |preFilterCapCount =[11], preFilterCaps :: (Cap)= (25) (6) (4) (2)
00019657.006 |12:48:34.560 |AppInfo  |preFilterCapCount =[0], preFilterCaps :: (Cap)= Filtering Caps du
00019657.007 |12:48:34.560 |Created  |                                              |
00019657.008 |12:48:34.560 |AppInfo  |StationD:    (0000007) DEBUG- getLineRingSetting: retVal=4.
00019657.009 |12:48:34.560 |AppInfo  |StationD:    (0000007) DEBUG- saveRinger for: ci=49613638, line=1
00019657.010 |12:48:34.560 |AppInfo  |StationD:    (0000007) DEBUG- saveRinger: ci=49613638, line=1, mo
00019657.011 |12:48:34.560 |AppInfo  |StationD:    (0000007) INFO  sendCallAcceptReq: Try to send Stati
00019657.012 |12:48:34.560 |AppInfo  |StationD:    (0000007) playRinger for: ci=49613638.
00019657.013 |12:48:34.560 |AppInfo  |StationD:    (0000007) DEBUG- getLineRingSetting: retVal=4.
00019657.014 |12:48:34.560 |AppInfo  |StationD:    (0000007) DEBUG- getLineRingSetting: retVal=4.
00019657.015 |12:48:34.560 |AppInfo  |StationD:    (0000007) DEBUG- getLineRingSetting: retVal=4.



### The Called (recorded) phone goes off hook

00019709.001 |12:48:36.042 |AppInfo  |StationD:    (0000007) restart0_StationOffHook - INFO: CI=4961363



### CUCM Tells the calling phone to open the logical channel

00019773.001 |12:48:36.061 |AppInfo  |StationD:    (0000005) SEP0018195AA209 , star_MediaExchangeAgenaO



### CUCM Tells the called (recorded) to open the logical channel

00019776.001 |12:48:36.061 |AppInfo  |StationD:    (0000007) SEP001795BDD16B , star_MediaExchangeAgenaO
```

CUCM Tells the calling phone to open the receive channel

00019784.002 |12:48:36.062 |AppInfo |StationD: (0000005) OpenReceiveChannel conferenceID=49613637 pa

Codec locked due to recording on called (recorded) phone

00019785.003 |12:48:36.062 |AppInfo | StationCdpc: star_MediaExchangeAgenaQueryCapability - Device SEP

CUCM Tells the called (recorded) phone to open the receive channel

00019788.002 |12:48:36.062 |AppInfo |StationD: (0000007) OpenReceiveChannel conferenceID=49613638 pa

CUCM allocates the BiB on the called (recorded) phone

00019830.000 |12:48:36.074 |SdlSig |MrmAllocateUcbResourceReq |waiting

BiB places it's first call to recording destination address (cn is calling number which is the BiB

00019889.001 |12:48:36.100 |AppInfo |Digit Analysis: star_DaReq: daReq.partitionSearchSpace(), filtere
00019889.002 |12:48:36.100 |AppInfo |Digit Analysis: star_DaReq: Matching Legacy Numeric, digits=86753
00019889.003 |12:48:36.100 |AppInfo |Digit Analysis: getDaRes data: daRes.ssType=[0] Intercept DAMR.ss
00019889.004 |12:48:36.100 |AppInfo |Digit Analysis: getDaRes - Remote Destination [8675309] isURI[0]
00019889.005 |12:48:36.100 |AppInfo |CMUtility routeCallThroughCTIRD: no matching RemDestDynamic recor
00019889.006 |12:48:36.100 |AppInfo |DbMobility: getMatchedRemDest starts: cnumber = 8675309
00019889.007 |12:48:36.100 |AppInfo |DbMobility: getMatchedRemDest: full match case
00019889.008 |12:48:36.100 |AppInfo |DbMobility SelectByDestination: no matching RemDestDynamic record
00019889.009 |12:48:36.100 |AppInfo |DbMobility: can't find remdest 8675309 in map
00019889.010 |12:48:36.100 |AppInfo |Digit analysis: patternUsage=5
00019889.011 |12:48:36.100 |AppInfo |Digit analysis: match(pi="1", fqcn="", cn="b00223906001",plv="5",
00019889.012 |12:48:36.100 |AppInfo |Digit analysis: analysis results
00019889.013 |12:48:36.100 |AppInfo ||PretransformCallingPartyNumber=b00223906001
|CallingPartyNumber=b00223906001
|DialingPartition=
|DialingPattern=8675309
|FullyQualifiedCalledPartyNumber=8675309
|DialingPatternRegularExpression=(8675309)
|DialingWhere=
|PatternType=Enterprise
|PotentialMatches=NoPotentialMatchesExist
|DialingSdlProcessId=(0,0,0)
|PretransformDigitString=8675309
|PretransformTagsList=SUBSCRIBER
|PretransformPositionalMatchList=8675309
|CollectedDigits=8675309

Calling phone sends CUCM the ORC ACK

00019912.001 |12:48:36.139 |AppInfo |StationInit: (0000005) OpenReceiveChannelAck Status=0, IpAddr=IpA

CUCM sends startMediaTransmission to the called (recorded) phone telling the phone to send RTP to t

00019920.001 |12:48:36.139 |AppInfo |StationD: (0000007) startMediaTransmission conferenceID=496136

Called (recorded) phone sends CUCM the ORC ACK

00019959.001 |12:48:36.145 |AppInfo |StationInit: (0000007) OpenReceiveChannelAck Status=0, IpAddr=IpA

CUCM sends startMediaTransmission to the calling phone telling the phone to send RTP to the called

00019977.001 |12:48:36.146 |AppInfo |StationD: (0000005) startMediaTransmission conferenceID=496136

BiB places second call to recording destination address (cn is calling number which is the BiB cn="
Note that the BiB number stayed the same (b00223906001) and so did the recordingdestination number

00020002.001 |12:48:36.147 |AppInfo |Digit Analysis: star_DaReq: daReq.partitionSearchSpace(), filtere
00020002.002 |12:48:36.147 |AppInfo |Digit Analysis: star_DaReq: Matching Legacy Numeric, digits=86753
00020002.003 |12:48:36.147 |AppInfo |Digit Analysis: getDaRes data: daRes.ssType=[0] Intercept DAMR.ss
00020002.004 |12:48:36.147 |AppInfo |Digit Analysis: getDaRes - Remote Destination [8675309] isURI[0]
00020002.005 |12:48:36.147 |AppInfo |CMUtility routeCallThroughCTIRD: no matching RemDestDynamic recor
00020002.006 |12:48:36.147 |AppInfo |DbMobility: getMatchedRemDest starts: cnumber = 8675309
00020002.007 |12:48:36.147 |AppInfo |DbMobility: getMatchedRemDest: full match case
00020002.008 |12:48:36.147 |AppInfo |DbMobility SelectByDestination: no matching RemDestDynamic record
00020002.009 |12:48:36.147 |AppInfo |DbMobility: can't find remdest 8675309 in map
00020002.010 |12:48:36.147 |AppInfo |Digit analysis: patternUsage=5
00020002.011 |12:48:36.147 |AppInfo |Digit analysis: match(pi="1", fqcn="", cn="b00223906001",plv="5",
00020002.012 |12:48:36.147 |AppInfo |Digit analysis: analysis results
00020002.013 |12:48:36.147 |AppInfo ||PretransformCallingPartyNumber=b00223906001
|CallingPartyNumber=b00223906001
|DialingPartition=
|DialingPattern=8675309
|FullyQualifiedCalledPartyNumber=8675309
|DialingPatternRegularExpression=(8675309)
|DialingWhere=
|PatternType=Enterprise
|PotentialMatches=NoPotentialMatchesExist
|DialingSdlProcessId=(0,0,0)
|PretransformDigitString=8675309
|PretransformTagsList=SUBSCRIBER
|PretransformPositionalMatchList=8675309
|CollectedDigits=8675309
|UnconsumedDigits=
|TagsList=SUBSCRIBER
|PositionalMatchList=8675309

CUCM sends INVITE #1 to configured recording server (10.48.32.170)

```
00020086.001 |12:48:36.156 |AppInfo  |//SIP/SIPUdp/wait_SdlSPISignal: Outgoing SIP UDP message to 10.48
[901,NET]
INVITE sip:8675309@10.48.32.170:5060 SIP/2.0
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK4f2a857d3d
From: <sip:9110001@10.48.32.90;x-nearend;x-refci=49613638;x-nearendclusterid=glenscucm10-5;x-nearenddev
To: <sip:8675309@10.48.32.170>
Date: Tue, 14 Oct 2014 16:48:36 GMT
Call-ID: ef7acf80-43d153e4-50-5a20300e@10.48.32.90
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM10.5
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: ;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 4017803136-0000065536-0000000001-1512058894
Session-Expires:  1800
P-Asserted-Identity: <sip:9110001@10.48.32.90>
Remote-Party-ID: <sip:9110001@10.48.32.90>;party=calling;screen=yes;privacy=off
Contact: <sip:9110001@10.48.32.90:5060>;isFocus
Max-Forwards: 70
Content-Length: 0
```

CUCM sends INVITE #2 to configured recording server (10.48.32.170)

```
00020088.001 |12:48:36.157 |AppInfo  |//SIP/SIPUdp/wait_SdlSPISignal: Outgoing SIP UDP message to 10.48
[902,NET]
INVITE sip:8675309@10.48.32.170:5060 SIP/2.0
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK5014378d0b
From: <sip:9110001@10.48.32.90;x-farend;x-refci=49613638;x-nearendclusterid=glenscucm10-5;x-nearenddevi
To: <sip:8675309@10.48.32.170>
Date: Tue, 14 Oct 2014 16:48:36 GMT
Call-ID: ef7acf80-43d153e4-51-5a20300e@10.48.32.90
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM10.5
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: ;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 4017803136-0000065536-0000000002-1512058894
Session-Expires:  1800
P-Asserted-Identity: <sip:9110001@10.48.32.90>
Remote-Party-ID: <sip:9110001@10.48.32.90>;party=calling;screen=yes;privacy=off
Contact: <sip:9110001@10.48.32.90:5060>;isFocus
Max-Forwards: 70
Content-Length: 0
```

```
### CUCM receives a 200 OK from recording server for INVITE #1

00020089.001 |12:48:36.161 |AppInfo  |//SIP/SIPUdp/wait_SdlDataInd: Incoming SIP UDP message size 731 f
[903,NET]
SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK4f2a857d3d
From: <sip:9110001@10.48.32.90;x-nearend;x-refci=49613638;x-nearendclusterid=glenscucm10-5;x-nearenddev
To: <sip:8675309@10.48.32.170>;tag=1
Call-ID: ef7acf80-43d153e4-50-5a20300e@10.48.32.90
CSeq: 101 INVITE
Contact: <sip:10.48.32.170:5060;transport=udp>
Content-Type: application/sdp
Content-Length:   135

v=0
o=user1 53655765 2353687637 IN IP4 10.48.32.170
s=-
c=IN IP4 10.48.32.170
t=0 0
m=audio 6000 RTP/AVP 0
a=rtpmap:0 PCMU/8000




### CUCM receives a 200 OK from recording server for INVITE #2

00020092.001 |12:48:36.161 |AppInfo  |//SIP/SIPUdp/wait_SdlDataInd: Incoming SIP UDP message size 730 f
[905,NET]
SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK5014378d0b
From: <sip:9110001@10.48.32.90;x-farend;x-refci=49613638;x-nearendclusterid=glenscucm10-5;x-nearenddevi
To: <sip:8675309@10.48.32.170>;tag=2
Call-ID: ef7acf80-43d153e4-51-5a20300e@10.48.32.90
CSeq: 101 INVITE
Contact: <sip:10.48.32.170:5060;transport=udp>
Content-Type: application/sdp
Content-Length:   135

v=0
o=user1 53655765 2353687637 IN IP4 10.48.32.170
s=-
c=IN IP4 10.48.32.170
t=0 0
m=audio 6000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
```

<#root>

```
### Region information for connecting audio for recording call, both appear to support G.711.
Note that the bandwidth capabilities printed is kbps=8 meaning the region relationship between the two

00020160.005 |12:48:36.190 |AppInfo  |DET-RegionsServer::matchCapabilities-- savedOption=3, PREF_NONE,
00020160.006 |12:48:36.190 |AppInfo  |DET-MediaManager-(2)::checkAudioPassThru, param(bPostMTPAllocatio
00020160.007 |12:48:36.190 |AppInfo  |DET-MediaManager-(2)::preCheckCapabilities,
```

region1=Default

,

region2=RecordingTrunk

,

Pty1

capCount=1 (Cap,ptime)=

(4,20)

,

Pty2

capCount=1 (Cap,ptime)=

(4,20)

00020160.008 |12:48:36.190 |AppInfo |DET-RegionsServer::matchCapabilities-- savedOption=0, PREF_NONE,

kbps=8

, capACount=1, capBCount=1

<#root>

CUCM determines 2 transcoders are required and attempts to allocate

00020160.011 |12:48:36.190 |AppInfo |DET-MediaManager-(2)::preCheckCapabilities,

caps mismatch! Xcoder Reqd. kbps(8)

, filtered A[capCount=0 (Cap,ptime)=], B[capCount=0 (Cap,ptime)=] allowMTP=0

numXcoderRequired=2

xcodingSide=0

No transcoder is configured which can cause this call to fail

00020162.003 |12:48:36.190 |AppInfo |MediaResourceManager::sendAllocationResourceErr - ERROR - no tran

<#root>

CUCM sendt the ACK and BYE to the recording server in response to INVITE #1
Note the Q.850 cause code

```
00020210.001 |12:48:36.216 |AppInfo  |//SIP/SIPUdp/wait_SdlSPISignal: Outgoing SIP UDP message to 10.48
[906,NET]
ACK sip:10.48.32.170:5060;transport=UDP SIP/2.0
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK51257b2b47
From: <sip:9110001@10.48.32.90;x-nearend;x-refci=49613638;x-nearendclusterid=glenscucm10-5;x-nearenddev
To: <sip:8675309@10.48.32.170>;tag=1
Date: Tue, 14 Oct 2014 16:48:36 GMT
Call-ID: ef7acf80-43d153e4-50-5a20300e@10.48.32.90
User-Agent: Cisco-CUCM10.5
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0


00020211.001 |12:48:36.216 |AppInfo |//SIP/SIPUdp/wait_SdlSPISignal: Outgoing SIP UDP message to 10.48.
[907,NET]
BYE sip:10.48.32.170:5060;transport=UDP SIP/2.0
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK526f3d2afa
From: <sip:9110001@10.48.32.90;x-nearend;x-refci=49613638;x-nearendclusterid=GlensCUCM10-5;x-nearenddev
To: <sip:8675309@10.48.32.170>;tag=1
Date: Tue, 14 Oct 2014 16:48:36 GMT
Call-ID: ef7acf80-43d153e4-50-5a20300e@10.48.32.90
User-Agent: Cisco-CUCM10.5
Max-Forwards: 70
P-Asserted-Identity: <sip:9110001@10.48.32.90>
CSeq: 102 BYE

Reason: Q.850;cause=47


Content-Length: 0
```

<#root>

```
### CUCM sendt the ACK and BYE to the recording server in response to INVITE #2
Note the Q.850 cuase code in the BYE

00020248.001 |12:48:36.218 |AppInfo  |//SIP/SIPUdp/wait_SdlSPISignal: Outgoing SIP UDP message to 10.48
[908,NET]
ACK sip:10.48.32.170:5060;transport=UDP SIP/2.0
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK531df920a6
From: <sip:9110001@10.48.32.90;x-farend;x-refci=49613638;x-nearendclusterid=glenscucm10-5;x-nearenddevi
To: <sip:8675309@10.48.32.170>;tag=2
Date: Tue, 14 Oct 2014 16:48:36 GMT
Call-ID: ef7acf80-43d153e4-51-5a20300e@10.48.32.90
User-Agent: Cisco-CUCM10.5
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0


00020249.001 |12:48:36.218 |AppInfo  |//SIP/SIPUdp/wait_SdlSPISignal: Outgoing SIP UDP message to 10.48
[909,NET]
BYE sip:10.48.32.170:5060;transport=UDP SIP/2.0
Via: SIP/2.0/UDP 10.48.32.90:5060;branch=z9hG4bK5462aba807
From: <sip:9110001@10.48.32.90;x-farend;x-refci=49613638;x-nearendclusterid=glenscucm10-5;x-nearenddevi
To: <sip:8675309@10.48.32.170>;tag=2
```

```
Date: Tue, 14 Oct 2014 16:48:36 GMT
Call-ID: ef7acf80-43d153e4-51-5a20300e@10.48.32.90
User-Agent: Cisco-CUCM10.5
Max-Forwards: 70
P-Asserted-Identity: <sip:9110001@10.48.32.90>
CSeq: 102 BYE

Reason: Q.850;cause=47

Content-Length: 0
```

包括CSS和PT问题的错误配置

此处的命令允许使用未记录呼叫的电话的已知MAC地址快速查看大多数记录配置。只需用电话的实际MAC地址替换命令MAC_of_Phone的一部分，如图所示。

这将为您提供MAC的DN（所有这些DN，如果存在多个）、电话的MAC仅用于确认、BIB设置、隐私设置、录制类型（参考实验示例中列出的值）、电话使用的录制配置文件、录制呼叫搜索空间(CSS)的名称、该录制配置文件的录制目标，以及基于您搜索的MAC与录制目标关联的分区：

```
run sql select n1.dnorpattern as phone_dn, dev.name as phone_mac, CASE dev.tkstatus_builtinbridge WHEN
```

这将为您显示与记录配置文件中的记录CSS相关联的分区列表，该记录配置文件与所搜索电话的MAC相关联。

```
run sql select css.name as name_of_the_recording_css, rp.name as partitions_in_recording_css, csm.sorto
```

以下是MAC地址为SEPC-AA8743的电话的实验输80084示例：

在此命令中，您可以看到电话上只有一个DN，即2003，我们还看到BIB为On，隐私为Off，记录类型为自动，首选来源为电话，记录配置文件为Test Recording Profile，记录呼叫搜索空间为INTERNAL_CSS，记录呼叫的路由模式为8675309，并且该模式与分区INTERNAL_PT关联。

```
run sql select n1.dnorpattern as phone_dn, dev.name as phone_mac, CASE dev.tkstatus_builtinbridge WHEN
phone_dn phone_mac       is_bib_on  is_privacy_on  recording_type     recording_media_source recording_
======== =============== ========== ============== ================== ====================== ==========
2003     SEPC80084AA8743 BiB is on  Privacy is off Automatic          Phone Preferred        Test Recor
```

使用此命令输出，您可以检查录制CSS的所有分区，以及与所关注电话关联的录制配置文件的所有分区。您可以在此处看到分区INTERNAL_PT是与呼叫搜索空间INTERNAL_CSS关联的分区之一。这意味着电话的BIB不能调用记录路由模式。

```
<#root>

run sql select css.name as name_of_the_recording_css, rp.name as partitions_in_recording_css, csm.sorto

SEPC80084AA8743

'
name_of_the_recording_css partitions_in_recording_css sortorder
========================= ============================ =========
INTERNAL_CSS              E911_PT                      1
INTERNAL_CSS              Phones_PT                    2
INTERNAL_CSS              EMERGENCY_PT                 3

INTERNAL_CSS              INTERNAL_PT


                4
INTERNAL_CSS              INFORMACAST_PT               5
```

相关信息

- 思科协作系统11.x解决方案参考网络设计(SRND)

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