

# Modo móvil del call-by-call del agente seguido en JTAPI GW y CUCM

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## Introducción

El Cisco Unified Mobile Agent habilita a un agente que utilice cualquier teléfono del Public Switched Telephone Network (PSTN) y una conexión VPN de banda ancha (para las comunicaciones del escritorio del agente) para funcionar como un agente situado en un centro de

llamadas formal que utilice un Cisco IP Phone que es monitoreado y controlado por el Java Telephony Application Programming Interface del administrador de las Comunicaciones unificadas de Cisco (CUCM) (JTAPI). El Cisco Unified Mobile Agent permite que los administradores de sistema configuren los agentes para utilizar el call-by-call que marca o una conexión clavada. En el modo del call-by-call, el teléfono del agente móvil se marca para cada llamada entrante. Cuando la llamada termina, el teléfono del agente móvil es disconnected antes de que se haga listo para la llamada siguiente. Este documento sigue una llamada entrante a un agente móvil del call-by-call en el JTapi Gateway (JGW) y los registros CUCM. Esto implica dos tramos de llamada, uno del cliente al (LCP) local del puerto CTI y uno del (RCP) del puerto del telecontrol CTI al agente. El objetivo es capturar cómo el JGW consigue CUCM interligar los dos tramos de llamada.

## Prerrequisitos

### Requisitos

No hay requisitos específicos para este documento.

### Componentes Utilizados

La información que contiene este documento se basa en las siguientes versiones de software y hardware.

- Versión corporativa unificada 10.0 del Centro de contacto
- Versión 10.0 CUCM

## Información general

### Detalles de llamada

Los teléfonos del agente y del cliente son Extensiones en un expreso del administrador de comunicaciones (CME) conectado con ISDN PRI con el gateway CUCM-conectado.

```
CME---- ISDN PRI--- SIP Gateway (10.106.61.162)--- CUCM (10.106.81.67)
```

```
LCP : LCP5000F0001, DN 6001  
RCP : RCP5000F0001, DN 6101  
Agent mobile number : 2003  
Caller number: 2001  
PG IP Address: 10.106.81.68  
CVP IP Address:10.106.81.69
```

### Flujo de llamada de alto nivel

1. El llamador 2001 en el CME marca 9001, que señala al gateway (GW) (10.106.61.162). Puntas del dial peer GW al portal de la voz del cliente (CVP).

2. El CVP envía un pedido de ruta al Intelligent Contact Manager (ICM), y el ICM vuelve la escritura de la etiqueta móvil del agente, que es el Número marcado del puerto LCP (DN) 6001.
3. El CVP envía invita a CUCM. Mientras que el puerto LCP suena, el JTapi Gateway (JGW) da instrucciones CUCM para llamar el teléfono 2001 del agente de RCP 6101.
4. Una vez que las respuestas del agente, la pierna del agente son Música-en-control conectado (moh).
5. El JGW da instrucciones CUCM para contestar a la llamada entrante que hacia el lado de babor los timbres en el LCP viran.
6. Una vez que la pierna LCP está conectada, el JGW da instrucciones CUCM para extraer la pierna del agente.
7. El JGW pasa encendido los detalles del /port de la dirección IP del Real-Time Transport Protocol (RTP) de la pierna del cliente a la pierna del agente y vice versa.
8. CUCM interliga las dos piernas y establece la trayectoria RTP entre el agente y el cliente.

Este análisis empieza con el paso 3, cuando las pistas de la llamada en el CUCM LCP viran hacia el lado de babor. Cada snippet JGW es seguido inmediatamente por el snippet del registro CUCM que corresponde identificado por las encabezados JGW y CUCM respectivamente.

## Troubleshooting

Utilice estos niveles de debug para resolver problemas la Mensajería JGW y la señalización del Session Initiation Protocol (SIP) que corresponde en CUCM:

### JTAPI

En el agente Peripheral Gateway (PG), utilice la utilidad Procmon para dar vuelta encima del seguimiento para el proceso JGW:

```
C:\>procmon <cust_inst> <node> jgw<jtapi instance>
>>>trace JT_TPREQUESTS /on
>>>trace JT_JTAPI_EVENT_USED* /on
>>>trace JT_PIM_EVENT /on
>>>trace JT_ROUTE_MESSAGE /on
>>>trace *CONF* /on
```

**Note:** Los comandos trace distinguen entre mayúsculas y minúsculas.

```
Communications Manager:
Enable SIP tracing from serviceability
```

### Análisis detallado del flujo de llamada

**El JGW recibe NewCallEvent para la llamada entrante al puerto LCP**

JGW

17:27:19:762 PG1A-jgw1 Trace: 978: Sep 12 17:27:19.762 IST %JTAPI-PROTOCOL-7-UNK:  
(P8-10.106.81.67) received Event: com.cisco.cti.protocol.**NewCallEvent** {

eventSequence = 207  
lineCallManagerID = 1  
lineID = 14  
lineHandleSpecified = true  
deviceName = LCP5000F0001  
callCallManagerID = 1  
callLegID = **20622152**  
globalCallManagerID = 1  
callID = 7017  
callingParty = 2001  
calledParty = 6001

## CUCM

00584403.005 |17:27:19.520 |AppInfo |SIPtcp - wait\_SdlReadRsp: Incoming SIP TCP  
message from 10.106.81.69 on port 19540 index 9 with 1080 bytes:

[308,NET]

INVITE sip:6001@10.106.81.67;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.106.81.69:5060;branch=z9hG4bK0pklbe3yYKOMmlUkMFKs+A~~90

Max-Forwards: 69

To: <sip:6001@10.106.81.67;transport=tcp>

From: 2001 <sip:2001@10.106.81.69:5060>;tag=ds68ab6ea6

Call-ID: **78B041A239AB11E480032C542D7590C8-141054823683618**@10.106.81.69

CSeq: 1 INVITE

Content-Length: 0

Contact: <sip:2001@10.106.81.69:5060;transport=tcp>

Expires: 60

User-Agent: CVP 10.0 (1) Build-490

Call-Info: <sip:10.106.61.162:5060>;purpose=x-cisco-origIP

Remote-Party-ID: <sip:2001@10.106.61.162>;party=calling;screen=no;privacy=off

Date: Fri, 12 Sep 2014 12:02:16 GMT

Min-SE: 1800

Cisco-Guid: 2024817058-0967512548-2147691604-0762679496

Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER

Allow-Events: telephone-event

X-Cisco-CCBProbe: id:10.106.61.162;loc:https;trunks:1

MIME-Version: 1.0

Cisco-Gucid: 78B041A239AB11E480032C542D7590C8

Supported: timer

Supported: resource-priority

Supported: replaces

Supported: sdp-anat

App-Info: <10.106.81.69:8000:8443>

## El LCP suena y el JGW inicia la llamada al Agente Remoto 2003 del RCP

### JGW

17:27:19:795 PG1A-jgw1 Trace: 1078: Sep 12 17:27:19.795 IST %JTAPI-PROTOCOL-7-UNK:  
(P8-10.106.81.67) [GW-ThreadMakeRemoteAgentCall] sending: com.cisco.cti.protocol.  
**LineCallInitiateRequest** {

```
sequenceNumber      = 124
lineCallManagerID   = 1
lineID               = 10
globalCallManagerID = 1
globalCallID        = 7018
callingAddress       = 6101
destAddress          = 2003
userData             = null
mediaDeviceName     =
mediaResourceId      = 0
featurePriority      = 1
}
```

17:27:19:799 PG1A-jgw1 Trace: 1079: Sep 12 17:27:19.799 IST %JTAPI-PROTOCOL-7-UNK:  
(P8-10.106.81.67) received Response: com.cisco.cti.protocol.LineCallInitiateResponse {

sequenceNumber = 124  
result = 0  
lineCallManagerID = 1  
lineID = 10  
callManagerID = 1  
callLegID = 20622153

## CUCM

00584484.001 |17:27:19.532 |AppInfo |SIPtcp - wait\_SdlSPISignal: Outgoing SIP TCP message to 10.106.81.69 on port 19540 index 9

[310,NET]

SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.106.81.69:5060;branch=z9hG4bK0pklbe3yYKOMmlUkMFKs+A~~90

From: 2001 <sip:2001@10.106.81.69:5060>;tag=ds68ab6ea6

To: <sip:6001@10.106.81.67;transport=tcp>;tag=32~9fb3c68a-3291-4bd4-98cd-c82b97aed22a-20622151

Date: Fri, 12 Sep 2014 11:57:19 GMT

Call-ID: 78B041A239AB11E480032C542D7590C8-141054823683618@10.106.81.69

CSeq: 1 INVITE

Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY

Allow-Events: presence

Server: Cisco-CUCM10.0

Supported: X-cisco-srtp-fallback

Supported: Geolocation

P-Asserted-Identity: <sip:6001@10.106.81.67>

Remote-Party-ID: <sip:6001@10.106.81.67>;party=called;screen=yes;privacy=off

Contact: <sip:6001@10.106.81.67:5060;transport=tcp>

Content-Length: 0

00584490.000 |17:27:19.566 |SdlSig-I |CtiLineCallInitiateReq |restart0  
|StationD(1,100,63,4) |CTIDeviceLineMgr(1,200,25,1) |1,200,13,  
2.9296^10.106.81.68^RCP5000F0001 |[R:N-H:0,N:0,L:0,V:0,Z:0,D:0]  
AsyncResponse=148 LH=1|11 GCH=1|7018 CalledPartyInfo=2003 MediaDeviceName = Media  
DevicePid = (0,0,0,0) resource ID=0 FetaurePriority=1

00584582.001 |17:27:19.587 |AppInfo |SIPtcp - wait\_SdlSPISignal: Outgoing SIP TCP message to 10.106.61.162 on port 5060 index 12

[311,NET]

INVITE sip:2003@10.106.61.162:5060 SIP/2.0

Via: SIP/2.0/TCP 10.106.81.67:5060;branch=z9hG4bK654d9a6da3

From: <sip:6101@10.106.81.67>;tag=33~9fb3c68a-3291-4bd4-98cd-c82b97aed22a-20622154

To: <sip:2003@10.106.61.162>

Date: Fri, 12 Sep 2014 11:57:19 GMT

Call-ID: f1283f00-4121df9f-b-43516a0a@10.106.81.67

Supported: timer,resource-priority,replaces

Min-SE: 1800

User-Agent: Cisco-CUCM10.0

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,X-cisco-original-called

Call-Info: <sip:10.106.81.67:5060>;method="NOTIFY;Event=telephone-event;Duration=500"

Call-Info: <urn:x-cisco-remotec:callinfo>;x-cisco-video-traffic-class=VIDEO\_UNSPECIFIED

Cisco-Guid: 4045946624-0000065536-0000000011-1129409034

Session-Expires: 1800

P-Asserted-Identity: <sip:6101@10.106.81.67>

Remote-Party-ID: <sip:6101@10.106.81.67>;party=calling;screen=yes;privacy=off

Contact: <sip:6101@10.106.81.67:5060;transport=tcp>

Max-Forwards: 70

Content-Length: 0

**Las respuestas del agente y CUCM envía los media el canal lógico abierto (MOLC) al puerto RCP**

**JGW**

17:27:25:285 PG1A-jgw1 Trace: 1203: Sep 12 17:27:25.285 IST %JTAPI-PROTOCOL-7-

UNK:(P8-10.106.81.67) received Event: com.cisco.cti.protocol.**DeviceCallOpen**  
**LogicalChannelEvent** {

eventSequence = 216  
deviceCallManagerID = 1  
deviceID = 2  
callCallManagerID = 1  
callLegID = 20622153

## CUCM

00584627.002 |17:27:25.048 |AppInfo |SIPTcp - wait\_SdlReadRsp: Incoming SIP TCP message from 10.106.61.162 on port 5060 index 12 with 1021 bytes:

[314,NET]

SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.106.81.67:5060;branch=z9hG4bK654d9a6da3

From: <sip:6101@10.106.81.67>;tag=33~9fb3c68a-3291-4bd4-98cd-c82b97aed22a-20622154

To: <sip:2003@10.106.61.162>;tag=66DAB40-15DF

Date: Fri, 12 Sep 2014 12:02:19 GMT

Call-ID: f1283f00-4121df9f-b-43516a0a@10.106.81.67

CSeq: 101 INVITE

Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER

Allow-Events: telephone-event

Remote-Party-ID: <sip:2003@10.106.61.162>;party=called;screen=no;privacy=off

Contact: <sip:2003@10.106.61.162:5060;transport=tcp>

Supported: replaces

Supported: sdp-anat

Server: Cisco-SIPGateway/IOS-12.x

Require: timer

Session-Expires: 1800;refresher=uac

Supported: timer

Content-Type: application/sdp

Content-Disposition: session;handling=required

Content-Length: 193



v=0  
o=CiscoSystemsSIP-GW-UserAgent 8244 219 IN IP4 10.106.61.162  
s=SIP Call  
c=IN IP4 10.106.61.162  
t=0 0  
m=audio 29722 RTP/AVP 0  
c=IN IP4 10.106.61.162  
a=rtpmap:0 PCMU/8000  
a=ptime:20

00584677.000 |17:27:25.052 |Sdlsig |**MXAgenaOpenLogicalChannel**  
|call\_delivered4 |StationCdpc(1,100,64,18)  
|StationD(1,100,63,4) |1,100,14,27559.6^10.106.61.162^\*  
|[R:N-H:0,N:4,L:0,V:0,Z:0,D:0] codec=4 CI=**20622153** mediaType=1  
audioRate=20 iLBCMode=1 rfc2833PayloadNum=0 confId=0 streamFlag=F partyId=  
16777257 PT=F PTid=16777216 dyn payloadTypeNum=0 MediaEncrAlgo=0 ConnType=3  
ReqIpAddrType=0 ipAddrType=0 ipv4=**10.106.61.162:29722** dscpForMyParty=0xb8  
(DSCP=0x2e) dscpForOtherEndParty=0xb8 (DSCP=0x2e) v150MER=F T38MER=F

## StartTransmissionEvent para la pierna RCP proporciona los detalles del /port del direccionamiento del telecontrol RTP

### JGW

17:27:25:286 PG1A-jgw1 Trace: 1205: Sep 12 17:27:25.286 IST %JTAPI-PROTOCOL-7-  
UNK:(P8-10.106.81.67) received Event: com.cisco.cti.protocol.**StartTransmission**  
**Event** {

eventSequence = 217  
deviceCallManagerID = 1  
deviceID = 2  
callCallManagerID = 1  
callLegID = 20622153  
ipAddr = -1573033462  
rtpPortNumber = 29722

### CUCM

00584686.000 |17:27:25.052 |Sdlsig |**StationOutputStartMediaTransmission**  
|restart0 |StationD(1,100,63,4)  
|StationCdpc(1,100,64,18) |1,100,14,27559.6^10.106.61.162^\*

```
|[R:N-H:0,N:7,L:0,V:0,Z:0,D:0] ConfId=20622153 remoteIpAddr=.type=0 .addr=
0x{a,6a,3d,a2,0,0,0,0,0,0,0,0,0,0}(10.106.61.162) Port=29722 PacketSize=
20 PayloadType=4 CI=20622153 DiffServ=0xb8 (DSCP=0x2e) Silent=0 MaxFrms=0
G723BitRate=0 PartyId=0x1000029 RFC2833PayloadType=0 mixingMode=0 partyDir=0
```

## El JGW responde con los parámetros abiertos del canal lógico (OLC) ACK

**Note:** Ésta es la dirección IP PG porque la pierna LCP no está conectada todavía.

### JGW

```
17:27:25:299 PG1A-jgw1 Trace: 1241: %JTAPI-JTAPI-7-UNK:(P8-pguser)[ObserverThread
(com.cisco.icm.jgw.jtapi.JTapiObj@14323d5)][RCP5000F0001]Request: setRTPParams(Cisco
RTPParams10.106.81.68/31025)
```

```
17:27:25:299 PG1A-jgw1 Trace: 1242: Sep 12 17:27:25.299 IST %JTAPI-PROTOCOL-7-UNK:
(P8-10.106.81.67) [ObserverThread(com.cisco.icm.jgw.jtapi.JTapiObj@14323d5)] sending:
com.cisco.cti.protocol.DeviceSetRTPForCallRequest {
```

```
17:27:25:300 PG1A-jgw1 Trace:
```

```
sequenceNumber      = 125
callManagerID       = 1
deviceID            = 2
callCallManagerID   = 1
callLegID           = 20622153
ipAddress           = 1146186250
rtpPortNumber       = 31025
```

### CUCM

```
00584713.000 |17:27:25.070 |SdlSig | CtiDeviceSetRTPForCallReq
|active10 |StationCdpc(1,100,64,18)
|StationD(1,100,63,4) |1,200,13,2.9297^10.106.81.68
^RCP5000F0001 |[R:N-H:0,N:0,L:0,V:0,Z:0,D:0] AsyncResponse=149mCtiInterface
(1,200,25,1) DH=1|3 CH=1|20622153 RtpDestination1146186250|31025
```

```
00584718.000 |17:27:25.070 |SdlSig | MXAgenaOpenLogicalChannelAck
|waitForMXCapabilitiesorOfferorAnswer |AgenaInterface(1,100,244,25)
|StationCdpc(1,100,64,18) |1,200,13,2.9297^10.106.81.68^RCP5000F0001
|[R:N-H:0,N:1,L:0,V:0,Z:0,D:0] rc=0 isMultiMedia=F LCN=0 partyId=16777257 port=
31025 ipAddrType=0 ipv4=10.106.81.68
```

```
00584745.001 |17:27:25.080 |AppInfo |SIPTcp - wait_SdlSPISignal: Outgoing SIP
TCP message to 10.106.61.162 on port 5060 index 12
```

```
[315,NET]
```

ACK sip:2003@10.106.61.162:5060;transport=tcp SIP/2.0  
Via: SIP/2.0/TCP 10.106.81.67:5060;branch=z9hG4bK667d8dda73  
From: <sip:6101@10.106.81.67>;tag=33~9fb3c68a-3291-4bd4-98cd-c82b97aed22a-20622154  
To: <sip:2003@10.106.61.162>;tag=66DAB40-15DF  
Date: Fri, 12 Sep 2014 11:57:19 GMT  
Call-ID: f1283f00-4121df9f-b-43516a0a@10.106.81.67  
User-Agent: Cisco-CUCM10.0  
Max-Forwards: 70  
CSeq: 101 ACK  
Allow-Events: presence, kpml  
Content-Type: application/sdp  
Content-Length: 186

v=0  
o=CiscoSystemsCCM-SIP 33 1 IN IP4 10.106.81.67  
s=SIP Call  
c=IN IP4 **10.106.81.68**  
b=TIAS:64000  
b=CT:64  
b=AS:64  
t=0 0  
m=audio **31025** RTP/AVP 0  
a=ptime:20  
a=rtpmap:0 PCMU/8000

## Peticiones JGW de poner la pierna RCP en el control

### JGW

17:27:25:309 PG1A-jgw1 Trace: 1262: Sep 12 17:27:25.309 IST %JTAPI-PROTOCOL-7-  
UNK:(P8-10.106.81.67) [pool-1-thread-22-JTAPIGW-22] sending: com.cisco.cti.  
protocol.**CallHoldRequest** {

sequenceNumber = 126

lineCallManagerID = 1

lineID = 10  
callLegCallManagerID = 1  
callLegID = 20622153

## CUCM

00585451.000 |17:27:38.419 |SdlSig-I |CtiLineCallHoldReq  
|restart0 |StationD(1,100,63,4)  
|CTIDeviceLineMgr(1,200,25,1) |1,200,13,2.9303^10.106.81.68  
^RCP5000F0001 |[R:N-H:0,N:0,L:0,V:0,Z:0,D:0] AsyncResponse=155 CH=1|20622153  
LH=1|11 ContentId=

001 |17:27:38.420 |AppInfo |SIPTcp - wait\_SdlSPISignal: Outgoing SIP TCP message  
to 10.106.61.162 on port 5060 index 12

[340,NET]

INVITE sip:2003@10.106.61.162:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.106.81.67:5060;branch=z9hG4bK712fda313c

From: <sip:6101@10.106.81.67>;tag=33~9fb3c68a-3291-4bd4-98cd-c82b97aed22a-20622154

To: <sip:2003@10.106.61.162>;tag=66DAB40-15DF

Date: Fri, 12 Sep 2014 11:57:38 GMT

Call-ID: f1283f00-4121df9f-b-43516a0a@10.106.81.67

Supported: timer,resource-priority,replaces

User-Agent: Cisco-CUCM10.0

Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE,  
NOTIFY

CSeq: 106 INVITE

Max-Forwards: 70

Expires: 180

Allow-Events: presence

Call-Info: <urn:x-cisco-remotec:callinfo>;x-cisco-video-traffic-class=VIDEO\_  
UNSPECIFIED

Supported: X-cisco-srtp-fallback

Supported: Geolocation

Session-Expires: 1800;refresher=uac

Min-SE: 1800

P-Asserted-Identity: <sip:6101@10.106.81.67>

Remote-Party-ID: <sip:6101@10.106.81.67>;party=calling;screen=yes;privacy=off

Contact: <sip:6101@10.106.81.67:5060;transport=tcp>

Content-Type: application/sdp

Content-Length: 193

v=0

o=CiscoSystemsCCM-SIP 33 6 IN IP4 10.106.81.67

s=SIP Call

c=IN IP4 0.0.0.0

b=TIAS:64000

b=CT:64

b=AS:64

t=0 0

m=audio 16390 RTP/AVP 0

a=ptime:20

a=rtpmap:0 PCMU/8000

a=inactive

## El JGW da instrucciones CUCM para contestar a la pierna LCP

### JGW

17:27:25:312 PG1A-jgw1 Trace: 1270: Sep 12 17:27:25.312 IST %JTAPI-PROTOCOL-7-  
UNK:(P8-10.106.81.67) [GW-ThreadAnswerCall] sending: com.cisco.cti.protocol.

**CallAnswerRequest** {

sequenceNumber = 127

lineCallManagerID = 1

lineID = 14

callLegCallManagerID = 1

callLegID = 20622152

### CUCM

00584785.000 |17:27:25.082 |SdlSig-I |**CtiLineCallAnswerReq**  
|restart0 |StationD(1,100,63,3)  
|CTIDeviceLineMgr(1,200,25,1) |1,200,13,2.9299^10.106.81.68  
^LCP5000F0001 |[R:N-H:0,N:0,L:0,V:0,Z:0,D:0] mAsyncResponse=151 CH=1|20622152

LH=1|15 MediaDeviceName = MediaDevicePid = (0,0,0,0) resource ID=0

00584875.001 |17:27:25.088 |AppInfo |SIPTcp - wait\_SdlSPISignal: Outgoing SIP TCP message to 10.106.81.69 on port 19540 index 9

[317,NET]

SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.106.81.69:5060;branch=z9hG4bK0pklbe3yYKOMmlUkMFKs+A~~90

From: 2001 <sip:2001@10.106.81.69:5060>;tag=ds68ab6ea6

To: <sip:6001@10.106.81.67;transport=tcp>;tag=32~9fb3c68a-3291-4bd4-98cd-c82b97aed22a-20622151

Date: Fri, 12 Sep 2014 11:57:19 GMT

Call-ID: **78B041A239AB11E480032C542D7590C8-141054823683618**@10.106.81.69

CSeq: 1 INVITE

Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY

Allow-Events: presence, kpml

Supported: replaces

Server: Cisco-CUCM10.0

Supported: X-cisco-srtp-fallback

Supported: Geolocation

Session-Expires: 1800;refresher=uas

Require: timer

P-Asserted-Identity: <sip:6001@10.106.81.67>

Remote-Party-ID: <sip:6001@10.106.81.67>;party=called;screen=yes;privacy=off

Contact: <sip:6001@10.106.81.67:5060;transport=tcp>

Content-Type: application/sdp

Content-Length: 183

v=0

o=CiscoSystemsCCM-SIP 32 1 IN IP4 10.106.81.67

s=SIP Call

c=IN IP4 0.0.0.0

b=TIAS:64000

b=AS:64

t=0 0

m=audio 4000 RTP/AVP 0  
a=ptime:20  
a=rtpmap:0 PCMU/8000  
a=sendonly

## Se contesta la pierna LCP y CUCM envía MOLC al LCP

<

### JGW

17:27:25:345 PG1A-jgw1 Trace: 1327: Sep 12 17:27:25.344 IST %JTAPI-PROTOCOL-7-  
UNK:(P8-10.106.81.67) received Event: com.cisco.cti.protocol.**DeviceCallOpen**  
**LogicalChannelEvent** {

eventSequence = 226  
deviceCallManagerID = 1  
deviceID = 4  
callCallManagerID = 1  
callLegID = 20622152

### CUCM

00585043.000 |17:27:25.113 |SdlSig |**MXAgenaOpenLogicalChannel**  
|restart0 |StationD(1,100,63,3)  
|AgenaInterface(1,100,244,26) |1,100,14,27389.6^10.106.81.69^\*  
|[R:N-H:0,N:1,L:1,V:0,Z:0,D:0] codec=4 CI=**20622152** mediaType=1  
audioRate=20 iLBCMode=1 rfc2833PayloadNum=0 confId=0 streamFlag=F partyId=  
16777260 PT=F PTid=16777216 dyn payloadTypeNum=0 MediaEncrAlgo=0 ConnType=3  
ReqIpAddrType=0 ipAddrType=0 ipv4=**10.106.61.162:16390** dscpForMyParty=0xb8  
(DSCP=0x2e) dscpForOtherEndParty=0xb8 (DSCP=0x2e) v150MER=F T38MER=F

## El JGW da instrucciones CUCM a la pierna de Unhold RCP al agente una vez que recibe la petición MOLC

### JGW

17:27:25:358 PG1A-jgw1 Trace: 1367: Sep 12 17:27:25.358 IST %JTAPI-PROTOCOL-7-  
UNK:(P8-10.106.81.67) [pool-1-thread-23-JTAPIGW-23] sending: com.cisco.cti.protocol.  
CallRetrieveRequest {

sequenceNumber = 128  
lineCallManagerID = 1

lineID = 10  
callLegCallManagerID = 1  
callLegID = 20622153

## CUCM

00585056.000 |17:27:25.128 |SdlSig-I |CtiLineCallHoldRetrieveReq  
|restart0 |StationD(1,100,63,4)  
|CTIDeviceLineMgr(1,200,25,1) |1,200,13,2.9300^10.106.81.68^  
RCP5000F0001 |[R:N-H:0,N:0,L:0,V:0,Z:0,D:0] AsyncResponse=152 CH=1|20622153 LH=1|11

00585090.001 |17:27:25.130 |AppInfo |SIPTcp - wait\_SdlSPISignal: Outgoing SIP TCP  
message to 10.106.61.162 on port 5060 index 12

[326,NET]

INVITE sip:2003@10.106.61.162:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.106.81.67:5060;branch=z9hG4bK6b6d73b3b4

From: <sip:6101@10.106.81.67>;tag=33~9fb3c68a-3291-4bd4-98cd-c82b97aed22a-20622154

To: <sip:2003@10.106.61.162>;tag=66DAB40-15DF

Date: Fri, 12 Sep 2014 11:57:25 GMT

Call-ID: f1283f00-4121df9f-b-43516a0a@10.106.81.67

Supported: timer,resource-priority,replaces

User-Agent: Cisco-CUCM10.0

Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE,  
NOTIFY

CSeq: 104 INVITE

Max-Forwards: 70

Expires: 180

Allow-Events: presence

Call-Info: <urn:x-cisco-remotecc:callinfo>;x-cisco-video-traffic-class=VIDEO\_  
UNSPECIFIED

Supported: X-cisco-srtp-fallback

Supported: Geolocation

Session-Expires: 1800;refresher=uac

Min-SE: 1800

P-Asserted-Identity: <sip:6101@10.106.81.67>

Remote-Party-ID: <sip:6101@10.106.81.67>;party=calling;screen=yes;privacy=off



Contact: <sip:6101@10.106.81.67:5060;transport=tcp>

Content-Type: application/sdp

Content-Length: 182

v=0

o=CiscoSystemsCCM-SIP 33 4 IN IP4 10.106.81.67

s=SIP Call

c=IN IP4 0.0.0.0

t=0 0

m=audio 4000 RTP/AVP 0

a=X-cisco-media:umoh

a=ptime:20

a=rtpmap:0 PCMU/8000

a=inactive

## CUCM envía MOLC al RCP en respuesta a Unhold

JGW

```
00585056.000 |17:27:25.128 |SdlSig-I |CtiLineCallHoldRetrieveReq
                |restart0                               |StationD(1,100,63,4)
                |CTIDeviceLineMgr(1,200,25,1)         |1,200,13,2.9300^10.106.81.68^
RCP5000F0001 |[R:N-H:0,N:0,L:0,V:0,Z:0,D:0] AsyncResponse=152 CH=1|20622153 LH=1|11
```

```
00585090.001 |17:27:25.130 |AppInfo |SIPTcp - wait_SdlSPISignal: Outgoing SIP TCP
message to 10.106.61.162 on port 5060 index 12
```

[326,NET]

INVITE sip:2003@10.106.61.162:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.106.81.67:5060;branch=z9hG4bK6b6d73b3b4

From: <sip:6101@10.106.81.67>;tag=33~9fb3c68a-3291-4bd4-98cd-c82b97aed22a-20622154

To: <sip:2003@10.106.61.162>;tag=66DAB40-15DF

Date: Fri, 12 Sep 2014 11:57:25 GMT

Call-ID: f1283f00-4121df9f-b-43516a0a@10.106.81.67

Supported: timer,resource-priority,replaces

User-Agent: Cisco-CUCM10.0

Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE,

NOTIFY

CSeq: 104 INVITE

Max-Forwards: 70

Expires: 180

Allow-Events: presence

Call-Info: <urn:x-cisco-remotecc:callinfo>;x-cisco-video-traffic-class=VIDEO\_UNSPECIFIED

Supported: X-cisco-srtp-fallback

Supported: Geolocation

Session-Expires: 1800;refresher=uac

Min-SE: 1800

P-Asserted-Identity: <sip:6101@10.106.81.67>

Remote-Party-ID: <sip:6101@10.106.81.67>;party=calling;screen=yes;privacy=off

Contact: <sip:6101@10.106.81.67:5060;transport=tcp>

Content-Type: application/sdp

Content-Length: 182

v=0

o=CiscoSystemsCCM-SIP 33 4 IN IP4 10.106.81.67

s=SIP Call

c=IN IP4 0.0.0.0

t=0 0

m=audio 4000 RTP/AVP 0

a=X-cisco-media:umoh

a=ptime:20

a=rtpmap:0 PCMU/8000

a=inactive

**CUCM**

00585195.002 |17:27:25.143 |AppInfo |SIPTcp - wait\_SdlReadRsp: Incoming SIP TCP message from 10.106.61.162 on port 5060 index 12 with 973 bytes:

[332,NET]

SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.106.81.67:5060;branch=z9hG4bK6d5a13fb6a  
 From: <sip:6101@10.106.81.67>;tag=33~9fb3c68a-3291-4bd4-98cd-c82b97aed22a-20622154  
 To: <sip:2003@10.106.61.162>;tag=66DAB40-15DF  
 Date: Fri, 12 Sep 2014 12:02:25 GMT  
 Call-ID: f1283f00-4121df9f-b-43516a0a@10.106.81.67  
 CSeq: 105 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Allow-Events: telephone-event  
 Remote-Party-ID: <sip:2003@10.106.61.162>;party=called;screen=no;privacy=off  
 Contact: <sip:2003@10.106.61.162:5060;transport=tcp>  
 Supported: replaces  
 Supported: sdp-anat  
 Server: Cisco-SIPGateway/IOS-12.x  
 Require: timer  
 Session-Expires: 1800;refresher=uac  
 Supported: timer  
 Content-Type: application/sdp  
 Content-Length: 193  
  
 v=0  
 o=CiscoSystemsSIP-GW-UserAgent 8244 223 IN IP4 10.106.61.162  
 s=SIP Call  
 c=IN IP4 10.106.61.162  
 t=0 0  
 m=audio **29722** RTP/AVP 0  
 c=IN IP4 **10.106.61.162**  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20

000 |17:27:25.144 |SdlSig |**MXAgenaOpenLogicalChannel** |restart0  
                                 |StationD(1,100,63,4)                                |AgenaInterface  
 (1,100,244,25)          |1,100,14,27559.17^10.106.61.162^\*                                |[R:N-H:0,  
 N:2,L:0,V:0,Z:0,D:0] codec=4 CI=20622153 mediaType=1 audioRate=20  
 iLBCMode=1 rfc2833PayloadNum=0 confId=0 streamFlag=F partyId=16777261  
 PT=F PTId=16777216 dyn payloadTypeNum=0 MediaEncrAlgo=0 ConnType=3 ReqIpAddr  
 Type=0 ipAddrType=0 ipv4=**10.106.61.162:29722** dscpForMyParty=0xb8 (DSCP=0x2e)

dscpForOtherEndParty=0xb8 (DSCP=0x2e) v150MER=F T38MER=F

## CUCM envía StartTransmissionEvent con los detalles del /port del direccionamiento RTP para la pierna RCP al agente

### JGW

17:27:25:378 PG1A-jgw1 Trace: 1390: Sep 12 17:27:25.377 IST %JTAPI-PROTOCOL-7-  
UNK:(P8-10.106.81.67) received Event: com.cisco.cti.protocol.**StartTransmissionEvent** {

```
eventSequence          = 229
deviceCallManagerID    = 1
deviceID               = 2
callCallManagerID      = 1
callLegID              = 20622153
ipAddr                 = -1573033462
rtpPortNumber          = 29722
```

### CUCM

```
00585220.000 |17:27:25.144 |SdlSig |StationOutputStartMediaTransmission
|restart0 |StationD(1,100,63,4) |StationCdpc
(1,100,64,18) |1,100,14,27559.17^10.106.61.162^* |[R:N-H:0,N:5,L:0,
V:0,Z:0,D:0] ConfId=20622153 remoteIpAddr=.type=0 .addr=0x{a,6a,3d,a2,0,0,0,0,0,
0,0,0,0,0,0}(10.106.61.162) Port=29722 PacketSize=20 PayloadType=4 CI=20622153
DiffServ=0xb8 (DSCP=0x2e) Silent=0 MaxFrms=0 G723BitRate=0 PartyId=0x100002d RFC
2833PayloadType=0 mixingMode=0 partyDir=0
```

## El JGW da instrucciones CUCM para interligar los media del cliente fijando los parámetros del agente RTP en la manija LCP

### JGW

17:27:25:386 PG1A-jgw1 Trace: 1410: Sep 12 17:27:25.386 IST %JTAPI-PROTOCOL-7-  
UNK:(P8-10.106.81.67) [ObserverThread(com.cisco.icm.jgw.jtapi.JTapiObj@14323d5)]  
sending: com.cisco.cti.protocol.**DeviceSetRTPForCallRequest** {

17:27:25:387 PG1A-jgw1 Trace:

```
sequenceNumber        = 129
callManagerID         = 1
deviceID              = 4
callCallManagerID    = 1
```

callLegID = 20622152  
ipAddress = -1573033462  
rtpPortNumber = 29722

17:27:25:390 PG1A-jgw1 Trace: **MediaMgr::connectLocalMedia**: <LCP5000F0001>#4  
setRTPParams on handle: **20622152**/1 Address: /10.106.61.162 Port: **29722** on CID:  
16784233 with RespTime: 4 milsecs

## CUCM

00585227.000 |17:27:25.157 |SdlSig-I |**CtiDeviceSetRTPForCallReq**  
|restart0 |StationD(1,100,63,3)  
|CTIDeviceLineMgr(1,200,25,1) |1,200,13,2.9301^10.  
106.81.68^LCP5000F0001 |[R:N-H:0,N:0,L:0,V:0,Z:0,D:0] AsyncResponse=  
153mCtiInterface(1,200,25,1) DH=1|5 CH=1|**20622152** RtpDestination  
**2721933834|29722**

00585240.001 |17:27:25.169 |AppInfo |SIPTcp - wait\_SdlSPISignal:  
Outgoing SIP TCP message to 10.106.81.69 on port 5060 index 11

[333,NET]

INVITE sip:2001@10.106.81.69:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.106.81.67:5060;branch=z9hG4bK6e48afa3a0

From: <sip:6001@10.106.81.67;transport=tcp>;tag=32~9fb3c68a-3291-  
4bd4-98cd-c82b97aed22a-20622151

To: 2001 <sip:2001@10.106.81.69:5060>;tag=ds68ab6ea6

Date: Fri, 12 Sep 2014 11:57:25 GMT

Call-ID: 78B041A239AB11E480032C542D7590C8-141054823683618@10.106.81.69

Supported: timer,resource-priority,replaces

Cisco-Guid: 2024817058-0967512548-2147691604-0762679496

User-Agent: Cisco-CUCM10.0

Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER,

SUBSCRIBE, NOTIFY

CSeq: 101 INVITE

Max-Forwards: 70

Expires: 180

Allow-Events: presence, kpml

Supported: X-cisco-srtp-fallback

Supported: Geolocation

Session-Expires: 1800;refresher=uac  
Min-SE: 1800  
P-Asserted-Identity: <sip:6001@10.106.81.67>  
Remote-Party-ID: <sip:6001@10.106.81.67>;party=calling;screen=yes;  
privacy=off  
Contact: <sip:6001@10.106.81.67:5060;transport=tcp>  
Content-Type: application/sdp  
Content-Length: 178  
  
v=0  
o=CiscoSystemsCCM-SIP 32 2 IN IP4 10.106.81.67  
s=SIP Call  
c=IN IP4 10.106.61.162  
b=TIAS:64000  
b=AS:64  
t=0 0  
m=audio 29722 RTP/AVP 0  
a=ptime:20  
a=rtpmap:0 PCMU/8000

**CUCM envía StartTransmissionEvent con los detalles del /port del direccionamiento RTP para la pierna LCP al cliente**

**JGW**

17:27:25:440 PG1A-jgw1 Trace: 1424: Sep 12 17:27:25.440 IST %JTAPI-PROTOCOL-7-  
UNK:(P8-10.106.81.67) received Event: com.cisco.cti.protocol.**StartTransmission  
Event** {

eventSequence = 231<

deviceCallManagerID = 1

17:27:25:440 PG1A-jgw1 Trace:

deviceID = 4

callCallManagerID = 1

callLegID = 20622152

ipAddr = -1573033462

rtpPortNumber = 16390

## CUCM

00585246.002 |17:27:25.204 |AppInfo |SIPTcp - wait\_SdlReadRsp: Incoming SIP TCP message from 10.106.81.69 on port 5060 index 11 with 1094 bytes:

[335,NET]

SIP/2.0 200 Ok

Via: SIP/2.0/TCP 10.106.81.67:5060;branch=z9hG4bK6e48afa3a0

To: 2001 <sip:2001@10.106.81.69:5060>;tag=ds68ab6ea6

From: <sip:6001@10.106.81.67;transport=tcp>;tag=32~9fb3c68a-3291-4bd4-98cd-c82b97aed22a-20622151

Call-ID: 78B041A239AB11E480032C542D7590C8-141054823683618@10.106.81.69

CSeq: 101 INVITE

Content-Length: 193

Cisco-Guid: 2024817058-0967512548-2147691604-0762679496

Contact: <sip:2001@10.106.81.69:5060;transport=tcp>

Date: Fri, 12 Sep 2014 12:02:25 GMT

Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER

Allow-Events: telephone-event

Remote-Party-ID: "--CVP\_10\_0\_1\_0\_0\_0\_490" <sip:2001@10.106.61.162>;party=called;screen=no;privacy=off

Server: Cisco-SIPGateway/IOS-12.x

Require: timer

Session-Expires: 1800;refresher=uac

Supported: replaces

Supported: sdp-anat

Supported: timer

Content-Type: application/sdp

v=0

o=CiscoSystemsSIP-GW-UserAgent 9377 510 IN IP4 10.106.61.162

s=SIP Call

c=IN IP4 10.106.61.162

t=0 0

m=audio 16390 RTP/AVP 0

c=IN IP4 10.106.61.162

a=rtpmap:0 PCMU/8000

a=ptime:20

```
00585273.000 |17:27:25.206 |Sdlsig |StationOutputStartMediaTransmission
|restart0 |StationD(1,100,63,3)
|StationCdpc(1,100,64,17) |1,100,14,27391.5^10.106.81.69^*
|[R:N-H:0,N:6,L:0,V:0,Z:0,D:0] ConfId=20622152 remoteIpAddr=.type=0
.addr=0x{a,6a,3d,a2,0,0,0,0,0,0,0,0,0,0,0,0}(10.106.61.162) Port=16390 Packet
Size=20 PayloadType=4 CI=20622152 DiffServ=0xb8 (DSCP=0x2e) Silent=0 MaxFrms=0
G723BitRate=0 PartyId=0x100002c RFC2833PayloadType=0 mixingMode=0 partyDir=0
```

## El JGW da instrucciones CUCM para interligar los media del agente fijando los parámetros del cliente RTP en la manija RCP

### JGW

```
17:27:25:447 PG1A-jgw1 Trace: 1441: Sep 12 17:27:25.447 IST %JTAPI-PROTOCOL-7-
UNK:(P8-10.106.81.67) [ObserverThread(com.cisco.icm.jgw.jtapi.JTapiObj@14323d5)]
sending: com.cisco.cti.protocol.DeviceSetRTPForCallRequest {
```

```
17:27:25:447 PG1A-jgw1 Trace:
```

```
sequenceNumber      = 130
callManagerID       = 1
deviceID            = 2
callCallManagerID   = 1
callLegID           = 20622153
ipAddress            = -1573033462
rtpPortNumber       = 16390
```

```
17:27:25:449 PG1A-jgw1 Trace: MediaMgr::connectRemoteMedia: <RCP5000F0001>
setRTPParams on handle: 20622153/1 Address: /10.106.61.162 Port: 16390 on CID:
16784233 with RespTime: 2 milsecs
```

### CUCM

```
00585300.000 |17:27:25.217 |Sdlsig |CtiDeviceSetRTPForCallReq
|active10 |StationCdpc(1,100,64,18)
|StationD(1,100,63,4) |1,200,13,2.9302^10.106.81.68^
RCP5000F0001 |[R:N-H:0,N:0,L:0,V:0,Z:0,D:0] AsyncResponse=154mCtiInterface
```



(1,200,25,1) DH=1|3 CH=1|20622153 RtpDestination2721933834|16390

00585328.001 |17:27:25.218 |AppInfo |SIPTcp - wait\_SdlSPISignal: Outgoing SIP TCP message to 10.106.61.162 on port 5060 index 12

[337,NET]

ACK sip:2003@10.106.61.162:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.106.81.67:5060;branch=z9hG4bK705adddfae

From: <sip:6101@10.106.81.67>;tag=33~9fb3c68a-3291-4bd4-98cd-c82b97aed22a-20622154

To: <sip:2003@10.106.61.162>;tag=66DAB40-15DF

Date: Fri, 12 Sep 2014 11:57:25 GMT

Call-ID: f1283f00-4121df9f-b-43516a0a@10.106.81.67

User-Agent: Cisco-CUCM10.0

Max-Forwards: 70

CSeq: 105 ACK

Allow-Events: presence, kpml

Content-Type: application/sdp

Content-Length: 187G

v=0

o=CiscoSystemsCCM-SIP 33 5 IN IP4 10.106.81.67

s=SIP Call

c=IN IP4 10.106.61.162

b=TIAS:64000

b=CT:64

b=AS:64

t=0 0

m=audio 16390 RTP/AVP 0

a=ptime:20

a=rtpmap:0 PCMU/8000

En este momento las dos piernas se interligan con el audio de dos vías.