

Mobile Agent Call-by-Call-Modus in JTAPI GW und CUCM nachverfolgt

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Einleitung

Mit Cisco Unified Mobile Agent kann ein Agent, der ein öffentliches Telefonnetz (Public Switched Telephone Network, PSTN) und eine Breitband-VPN-Verbindung (für die Kommunikation mit Agenten) verwendet, wie ein Agent in einem formalen Callcenter arbeiten, der ein Cisco IP-Telefon verwendet, das von Cisco Unified Communications Manager (CUCM) Java Telephony Application Programming Interface (JTAPI) überwacht und gesteuert wird. Mit Cisco Unified Mobile Agent können Systemadministratoren Agenten so konfigurieren, dass sie entweder Call-by-Call-Dialing oder eine engstirnige Verbindung verwenden. Im Call-by-Call-Modus wird das Telefon des Mobile Agent für jeden eingehenden Anruf gewählt. Wenn der Anruf beendet wird, wird das Telefon des Mobile Agent getrennt, bevor es für den nächsten Anruf vorbereitet wird. In diesem Dokument wird ein eingehender Anruf an einen Call-by-Call Mobile Agent im JTAPI

Gateway (JGW)- und CUCM-Protokoll nachverfolgt. Dies umfasst zwei Anrufabschnitte, eine vom Kunden zum lokalen CTI-Port (LCP) und eine vom Remote CTI-Port (RCP) zum Agenten. Ziel ist es, festzustellen, wie der JGW CUCM dazu bringt, die beiden Anrufabschnitte zu überbrücken.

Voraussetzungen

Anforderungen

Es gibt keine spezifischen Anforderungen für dieses Dokument.

Verwendete Komponenten

Die Informationen in diesem Dokument basierend auf folgenden Software- und Hardware-Versionen:

- Unified Contact Center Enterprise Version 10.0
- CUCM-Version 10.0

Überblick

Anruferdetails

Agenten- und Kundentelefone sind Erweiterungen auf einem Communications Manager Express (CME), der über ISDN PRI mit dem mit dem CUCM verbundenen Gateway verbunden ist.

```
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
```

Allgemeiner Anruffluss

1. Anrufer 2001 auf CME wählt 9001, der auf Gateway (GW) zeigt (10.106.61.162). GW wählt Peer-Points zum Customer Voice Portal (CVP).
2. CVP sendet eine Routenanfrage an den Intelligent Contact Manager (ICM), und ICM gibt das Mobile Agent-Label zurück, das heißt die gewählte LCP-Portnummer (DN) 6001.
3. CVP sendet Einladung an CUCM. Während der LCP-Port klingelt, weist das JTAPI-Gateway (JGW) CUCM an, das Agent-Telefon 2001 vom RCP 6101 anzurufen.
4. Sobald der Agent antwortet, wird der Agentenbereich mit Warteschleifenmusik verbunden.
5. JGW weist CUCM an, den eingehenden Anruf anzunehmen, der auf dem LCP-Port klingelt.
6. Sobald der LCP-Abschnitt verbunden ist, weist JGW CUCM an, den Agentenabschnitt abzurufen.
7. JGW übergibt die IP-Adresse/Portdetails des Real-Time Transport Protocol (RTP) vom Kundenbereich an den Agentenbereich und umgekehrt.
8. CUCM überbrückt die beiden Aspekte und stellt den RTP-Pfad zwischen dem Agenten und

dem Kunden her.

Diese Analyse beginnt in Schritt 3, wenn der Anruf auf den CUCM-LCP-Port geleitet wird. Jedem JGW-Ausschnitt folgt unmittelbar der CUCM-Protokollausschnitt, der von den Headern JGW bzw. CUCM identifiziert wird.

Fehlerbehebung

Verwenden Sie diese Debug-Ebenen, um eine Fehlerbehebung für das JGW-Messaging und die SIP-Signalisierung (Session Initiation Protocol) durchzuführen, die dem CUCM entspricht:

JTAPI

Verwenden Sie auf dem Agenten-Peripheral-Gateway (PG) das Procmon-Dienstprogramm, um die Ablaufverfolgung für den JGW-Prozess zu aktivieren:

```
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
```

Anmerkung: Bei den Ablaufverfolgungsbefehlen wird die Groß- und Kleinschreibung beachtet.

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

Detaillierte Analyse des Anrufflusses

JGW empfängt NewCallEvent für den eingehenden Anruf an den LCP-Port.

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>

LCP Rings und JGW initiieren Anruf vom RCP an Remote Agent 2003

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-remotecallinfo>;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

Agent Answers und CUCM sendet Media Open Logical Channel (MOLC) an RCP-Port

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 für RCP LegStellt die Remote-RTP-Adresse/-Port-Details bereit

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,a2,0,0,0,0,0,0,0,0,0,0,0,0}(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

JGW reagiert mit offenen Logical Channel (OLC)-ACK-Parametern.

Anmerkung: Dies ist die PG-IP-Adresse, da der LCP-Abschnitt noch nicht verbunden ist.

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** RtpDestination**1146186250**|**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

JGW fordert, RCP-Leg zurückzulegen

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-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: 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

JGW beauftragt CUCM, die LCP-Leg zu beantworten

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-c82b97
aed22a-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

LCP-Leg wird beantwortet, und CUCM sendet MOLC an 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

JGW weist CUCM an, RCP-Leg an Agent zu entfernen, sobald er die MOLC-Anforderung erhält

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 sendet MOLC an RCP als Antwort auf "Zurückstellen"

JGW

17:27:25:376 PG1A-jgw1 Trace: 1387: Sep 12 17:27:25.376 IST %JTAPI-PROTOCOL-7-
UNK:(P8-10.106.81.67) received Event: com.cisco.cti.protocol.DeviceCallOpen
LogicalChannelEvent {

eventSequence = 228
deviceCallManagerID = 1
deviceID = 2
callCallManagerID = 1
callLegID = 20622153

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

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

JGW weist CUCM an, die Kundenmedien durch Festlegen der Agent-RTP-Parameter auf dem LCP-Handle zu überbrücken.

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 sendet StartTransmissionEvent mit RTP-Adresse/Portdetails für LCP-Anmeldung an den Kunden

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.**StartTransmissionEvent** {

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
```

JGW weist CUCM an, die Agent-Medien durch Festlegen der RTP-Parameter des Kunden im

RCP-Handle zu überbrücken.

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=z9hG4bK705adddf8e
```

```
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

An diesem Punkt sind die beiden Beine mit bidirektionalem Audio überbrückt.