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## **Cisco Unified Communications Manager SIP Trunk Messaging Guide (Standard)**

This document applies to Cisco Unified Communications Manager Release 6.0(1).

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## Preface

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This document describes the implementation of the Session Initiation Protocol (SIP) for trunk side devices in Cisco Unified Communications Manager.

The preface covers these topics:

- [Audience](#)
- [Organization](#)
- [Conventions](#)
- [Obtaining Documentation, Obtaining Support, and Security Guidelines](#)

## Audience

This document provides information for developers, vendors, and customers who are developing applications or products that integrate with Cisco Unified Communications Manager using SIP messaging.

## Organization

This document consists of the following two chapters.

| Chapter                                                   | Description                                                                                          |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <a href="#">Chapter 1, "SIP Standard Trunk Interface"</a> | Provides an overview of SIP trunk messages and standards compliance.                                 |
| <a href="#">Chapter 2, "SIP Trunk Call Flows"</a>         | Comprises a listing of all SIP trunk messages, including sequence charts and examples of call flows. |

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# Conventions

This document uses the following conventions:

| Convention                            | Description                                                                                                                                                        |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>boldface</b> font                  | Commands and keywords are in <b>boldface</b> .                                                                                                                     |
| <i>italic</i> font                    | Arguments for which you supply values are in <i>italics</i> .                                                                                                      |
| [ ]                                   | Elements in square brackets are optional.                                                                                                                          |
| { x   y   z }                         | Alternative keywords are grouped in braces and separated by vertical bars.                                                                                         |
| [ x   y   z ]                         | Optional alternative keywords are grouped in brackets and separated by vertical bars.                                                                              |
| string                                | A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.                                        |
| screen font                           | Terminal sessions and information the system displays are in <code>screen</code> font.                                                                             |
| <b>boldface</b><br><b>screen</b> font | Information you must enter is in <b>boldface screen</b> font.                                                                                                      |
| <i>italic screen</i><br>font          | Arguments for which you supply values are in <i>italic screen</i> font.                                                                                            |
| →                                     | This pointer highlights an important line of text in an example.                                                                                                   |
| ^                                     | The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key. |
| < >                                   | Nonprinting characters, such as passwords are in angle brackets.                                                                                                   |

Notes use the following conventions:



### Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.



### Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.



### Tip

Means *the following information might help you solve a problem*.



### Timesaver

Means *the described action saves time*. You can save time by performing the action described in the paragraph.

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# Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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# CHAPTER 1

## SIP Standard Trunk Interface

This document describes the standard external interface for Cisco Unified Communications Manager SIP trunk device. It highlights the SIP primitives that are supported across the SIP trunk and also describes basic call flow scenarios that can be used as a guide for technical support.

This chapter includes the following sections:

- [New and Changed Information](#)
- [Backward Compatibility](#)
- [Interface Compliance Summary](#)
- [SIP Message Fields](#)
- [SIP Trunk Supported Features](#)
- [Troubleshooting](#)

## New and Changed Information

This section contains a table that is intended to provide information at a high level by noting what changes were made in each release. The changes, which are marked, note whether the element has been Added (A), Modified (M) or Deleted (D) in this version of the interface. Also, the table identifies any change that affects backward compatibility with an asterisk (\*).

**Table 1-1**      **Interface Changes At-A-Glance**

| Features | Unified CM 5.x | Unified CM 6.0(1) | Comments                                                                                                                                                                                                                                                                                                                                                                                      |
|----------|----------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PUBLISH  |                | A                 | <p>In 5.x, Cisco Unified Communications Manager uses the SUBSCRIBE/NOTIFY framework to provide presence information over a SIP trunk. DN provides the basis for presence information.</p> <p>Release 6.0(1) introduces the PUBLISH feature as the mechanism for Unified CM to provide presence information over a SIP trunk. Line appearance provides the basis for presence information.</p> |

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# Backward Compatibility

The features that are introduced in this release do not impose any backward compatibility implications on previous versions of the SIP trunk.

## Interface Compliance Summary

Cisco Unified Communications Manager SIP compliance on the SIP trunk depends on the portable SIP stack itself, which is based on the [RFC3261](#) standard.

The current stack supports the following items in [RFC3261](#):

- Can process UPDATE method.
- Support for generating branch and sent-by parameters in Via header used to identify transactions.
- Implementation of loose-routing based on lr parameter in Record-Route header.
- A UAS that receives a second INVITE before it sends the final response to a first INVITE with a lower Cseq sequence number on the same dialog must return a 500 (Server Internal Error) response to the second INVITE and must include a Retry-After header field with a random value of between 0 and 10 seconds.
- If the non-2xx final response to a mid-call INVITE is a 481 (Call/Transaction Does Not Exist), or a 408 (Request Timeout), or no response at all is received for the re-INVITE (that is, a timeout is returned by the INVITE client transaction), the UAC will terminate the dialog.
- If the UAC receives a reliable provisional response with an answer, it may generate an additional offer in the PRACK. If the UAS receives a PRACK with an offer, it must place the answer in the 2xx to the PRACK.
- If a reliable provisional response is retransmitted for 32 seconds without reception of a corresponding PRACK, the UAS should reject the original request with a 5xx response.

This document identifies the SIP trunk compliance for SIP messages and headers, as described in [Table 1-2](#) through [Table 1-8](#).

**Table 1-2 Compliance to SIP Requests**

| SIP Message | Unified CM Supported | Comments                                                                                                                            |
|-------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| INVITE      | Yes                  | The system also supports re-INVITE.                                                                                                 |
| ACK         | Yes                  |                                                                                                                                     |
| OPTIONS     | No                   | Cisco Unified Communications Manager SIP trunk does not support the OPTIONS method.                                                 |
| INFO        | Yes                  | INFO method gets used for video support.                                                                                            |
| BYE         | Yes                  |                                                                                                                                     |
| CANCEL      | Yes                  |                                                                                                                                     |
| SUBSCRIBE   | Yes                  | Supported events: kpml, presence                                                                                                    |
| NOTIFY      | Yes                  | Supported events: kpml, presence<br>In addition, Cisco Unified Communications Manager supports unsolicited NOTIFY for DTMF and MWI. |

**Cisco Confidential****Table 1-2 Compliance to SIP Requests (continued)**

| <b>SIP Message</b> | <b>Unified CM Supported</b> | <b>Comments</b>                                                                                               |
|--------------------|-----------------------------|---------------------------------------------------------------------------------------------------------------|
| REFER              | Yes                         | Cisco Unified Communications Manager SIP trunk supports inbound REFER only, both in dialog and out of dialog. |
| REGISTER           | No                          | The system sends 405 Method Not Allowed for Cisco Unified Communications Manager SIP trunk.                   |
| PRACK              | Yes                         | An option exists to enable or disable via Cisco Unified Communications Manager Service Parameter.             |
| UPDATE             | Yes                         | Cisco Unified Communications Manager supports receiving and generating UPDATE.                                |
| PUBLISH            | Yes                         | Cisco Unified Communications Manager supports only generating PUBLISH.                                        |

**Table 1-3 Compliance to SIP Responses**

| <b>SIP Message</b>     | <b>Unified CM Supported</b> | <b>Comment</b>                                                                                                                                                                                                      |
|------------------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1xx Response           | Yes                         |                                                                                                                                                                                                                     |
| 100 Trying             | Yes                         |                                                                                                                                                                                                                     |
| 180 Ringing            | Yes                         | The system supports early media.                                                                                                                                                                                    |
| 181 Call Forward       | No                          | Stack drops this message.                                                                                                                                                                                           |
| 182 Queued             | No                          | Stack drops this message.                                                                                                                                                                                           |
| 183 Progress           | Yes                         | The system supports early media.                                                                                                                                                                                    |
| 2xx Response           | Yes                         |                                                                                                                                                                                                                     |
| 200 OK                 | Yes                         |                                                                                                                                                                                                                     |
| 202 OK                 | Yes                         | For REFER                                                                                                                                                                                                           |
| 3xx Response           | Yes                         |                                                                                                                                                                                                                     |
| 300-302, 305, 380, 385 | Yes                         | The system does not generate these messages, but contacts the new address in Contact header upon receiving.                                                                                                         |
| 4xx Response           | Yes                         | Upon receiving, the system initiates a graceful call disconnect.                                                                                                                                                    |
| 401                    | Yes                         | Cisco Unified Communications Manager SIP trunk sends out 401 (Unauthorized) if authentication and authorization is enabled. Cisco Unified Communications Manager SIP trunk also responds to inbound 401 challenges. |
| 403                    | Yes                         | Cisco Unified Communications Manager SIP trunk sends a 403 (Forbidden) message if a SIP method is on the Access Control List.                                                                                       |
| 407                    | Yes                         | Cisco Unified Communications Manager SIP trunk responds to inbound 407 (Proxy Authentication Required) message challenges.                                                                                          |

**Cisco Confidential****Table 1-3 Compliance to SIP Responses (continued)**

| SIP Message  | Unified CM Supported | Comment                                                                                                                         |
|--------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 412          | Yes                  | Cisco Unified Communications Manager SIP trunk processes 412 response for PUBLISH.                                              |
| 5xx Response | Yes                  | Upon receiving, the system sends a new request if additional address is present. Otherwise, it initiates a graceful disconnect. |
| 6xx Response | Yes                  | The system does not generate this response; upon receiving, the system initiates a graceful disconnect.                         |

**Table 1-4 SIP Header Fields**

| SIP Header       | Unified CM Supported | Comments                                                                                                                                                                                                                                                                                                                                  |
|------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accept           | No                   |                                                                                                                                                                                                                                                                                                                                           |
| Accept-Encoding  | No                   |                                                                                                                                                                                                                                                                                                                                           |
| Accept-Language  | No                   |                                                                                                                                                                                                                                                                                                                                           |
| Allow            | Yes                  |                                                                                                                                                                                                                                                                                                                                           |
| Authorization    | Yes                  |                                                                                                                                                                                                                                                                                                                                           |
| Allow-Events     | Yes                  | kpml, presence                                                                                                                                                                                                                                                                                                                            |
| CC-Diversion     | Yes                  | The system does not generate.                                                                                                                                                                                                                                                                                                             |
| CC-Redirect      | Yes                  | The system does not generate.                                                                                                                                                                                                                                                                                                             |
| Call-ID          | Yes                  |                                                                                                                                                                                                                                                                                                                                           |
| Contact          | Yes                  |                                                                                                                                                                                                                                                                                                                                           |
| Content-Encoding | No                   |                                                                                                                                                                                                                                                                                                                                           |
| Content-Length   | Yes                  |                                                                                                                                                                                                                                                                                                                                           |
| Content-Type     | Yes                  | Supported as: “sdp”, “kpml-request+xml”, “media_control+xml”, and “text/plain.”<br>The system does not support “multipart.”                                                                                                                                                                                                               |
| CSeq             | Yes                  |                                                                                                                                                                                                                                                                                                                                           |
| Date             | Yes                  |                                                                                                                                                                                                                                                                                                                                           |
| Diversion        | Yes                  | The system uses this header for RDNIS information. If it is present, it is always the Original Called Party information. The receiving side of this header always assumes that it is the Original Called Party information if present. In case of chained-forwarding to a VM, the system leaves the message to the Original Called Party. |
| Encryption       | No                   |                                                                                                                                                                                                                                                                                                                                           |
| Expires          | Yes                  |                                                                                                                                                                                                                                                                                                                                           |
| Event            | Yes                  |                                                                                                                                                                                                                                                                                                                                           |
| From             | Yes                  |                                                                                                                                                                                                                                                                                                                                           |

**Cisco Confidential****Table 1-4 SIP Header Fields (continued)**

| <b>SIP Header</b>   | <b>Unified CM Supported</b> | <b>Comments</b>                                                                                                                     |
|---------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Hide                | No                          |                                                                                                                                     |
| Max-Forwards        | Yes                         | Cisco Unified Communications Manager sets to 70 for outgoing INVITE and does not increment/decrement it.                            |
| Organization        | No                          |                                                                                                                                     |
| Priority            | No                          |                                                                                                                                     |
| Proxy-Authenticate  | Yes                         | Cisco Unified Communications Manager SIP trunk supports receiving this header in 407 responses.                                     |
| Proxy-Authorization | Yes                         | Cisco Unified Communications Manager SIP trunk supports sending new request with this header after receiving 407 responses.         |
| Proxy-Require       | No                          |                                                                                                                                     |
| Record-Route        | Yes                         |                                                                                                                                     |
| Remote-Party-ID     | Yes                         | The system uses this header for ID services including Connected Name & ID. This is a nonstandard header from a draft specification. |
| Require             | Yes                         |                                                                                                                                     |
| Response-Key        | No                          |                                                                                                                                     |
| Retry-After         | Yes                         | The system sends it but ignores receiving it.                                                                                       |
| Route               | Yes                         |                                                                                                                                     |
| RSeq                | Yes                         |                                                                                                                                     |
| Server              | Yes                         |                                                                                                                                     |
| SIP-If-Match        | Yes                         | For PUBLISH                                                                                                                         |
| SIP-Etag            | Yes                         | For PUBLISH                                                                                                                         |
| Subject             | No                          |                                                                                                                                     |
| Supported           | Yes                         |                                                                                                                                     |
| Subscription-State  | Yes                         |                                                                                                                                     |
| Timestamp           | Yes                         |                                                                                                                                     |
| To                  | Yes                         |                                                                                                                                     |
| Unsupported         | Yes                         |                                                                                                                                     |
| User-Agent          | Yes                         |                                                                                                                                     |
| Via                 | Yes                         |                                                                                                                                     |
| Warning             | Yes                         |                                                                                                                                     |
| WWW-Authenticate    | Yes                         |                                                                                                                                     |
| Call-Info           | Yes                         |                                                                                                                                     |
| Replaces            | Yes                         | For INVITE and REFER                                                                                                                |

**Cisco Confidential****Table 1-5 Supported Audio Media Types**

| Type          | Encoding Name   | Payload Type         | Comments                                               |
|---------------|-----------------|----------------------|--------------------------------------------------------|
| G.711 u-law   | PCMU            | 0                    |                                                        |
| GSM Full-rate | GSM             | 3                    |                                                        |
| G.723.1       | G723            | 4                    |                                                        |
| G.711 A-law   | PCMA            | 8                    |                                                        |
| G.722         | G722            | 9                    |                                                        |
| G.728         | G728            | 15                   |                                                        |
| G.729         | G729            | 18                   | The system supports all combinations of annex A and B. |
| AAC           | mpeg4-generic   | Dynamically Assigned | The acceptable range is 96-127                         |
| ILBC          | iLBC            | Dynamically Assigned | The acceptable range is 96-127                         |
| RFC2833 DTMF  | Telephony-event | Dynamically Assigned | The acceptable range is 96-127.                        |

**Table 1-6 Supported Video Media Types**

| Types   | Encoding Name | Payload Type                |
|---------|---------------|-----------------------------|
| H.261   | H261          | 31                          |
| H.263   | H263          | 34                          |
| H.263+  | H263-1998     | Acceptable range is 96-127. |
| H.263++ | H263-2000     | Acceptable range is 96-127. |
| H.264   | H264          | Acceptable range is 96-127. |

**Table 1-7 Supported Application Media Type**

| Types      | Encoding Name | Payload Type               |
|------------|---------------|----------------------------|
| H.224 FECC | H224          | Acceptable range is 96-127 |

**Table 1-8 Supported T38fax Payload Type**

| Types  | Encoding Name | Payload Type |
|--------|---------------|--------------|
| T38fax | Not applied   | Not applied  |

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# SIP Message Fields

The SIP trunk supports SIP request and SIP response messages. The request messages include INVITE, ACK, OPTIONS, BYE, CANCEL, PRACK, SUBSCRIBE, and UPDATE methods. The response message consists of a status-line with various status codes (1xx, 2xx, 3xx, 4xx, 5xx and 6xx). The SIP trunk supports all mandatory fields from the SIP standard. See [Table 1-9](#) through [Table 1-23](#).

## Request Messages

### INVITE

**Table 1-9 INVITE Message Fields**

| Field        | Example                                                 | Notes                                                                                                                                                                                                                                            |
|--------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Request-Line | INVITE<br>sip:cdpn@destIP:destPort;user=phone SIP/2.0   | destIP=resolved IP address of configured DestAddr under SIPTrunk; it also could be FQDN SRV instead of destIP.<br><br>destPort=configured destPort or resolved port from DNS SRV.<br><br>cgpn for outgoing INVITE, and cdpn for incoming INVITE. |
| From         | From: "callerName" <sip:cgpn@CCM_IP_addr>               | callerName=caller display, that is, IP phone<br>Cgpn=calling party number<br>CCM_IP_addr=Unified CM IP address                                                                                                                                   |
| To           | To: "calledName"<br><sip:cdpn@destIP;user=phone>        | The system includes calledName if available.<br><br>destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP                                                                                |
| Via          | Via:SIP/2.0 IP addr:Port;Branch=number                  | IP addr=Unified CM IP<br>Port=Unified CM Port<br>Branch=Unique number                                                                                                                                                                            |
| Call-ID      | Call-ID: number@CCM_IP_addr                             | Cisco Unified Communications Manager generates the number internally.                                                                                                                                                                            |
| Contact      | Contact:<br><sip:cgpn@CCM_IP_addr:localPort;user=phone> | localPort=configured "Incoming port" of the indicated SIPTrunk                                                                                                                                                                                   |
| Cseq         | Cseq:number method                                      | Number=a traditional sequence number that increments for each new request within a dialog<br><br>Method=method name                                                                                                                              |

**Cisco Confidential****Table 1-9 INVITE Message Fields (continued)**

| Field           | Example                                                                                                                                                                                                                                    | Notes                                                                                                                                                                                                                                             |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Max-Forwards    | Max-Forwards:number                                                                                                                                                                                                                        | Number=Max-Forwards limits the number of hops that a request can make to reach its destination. It is an integer that decrements by one at each hop by SIP proxy. Cisco Unified Communications Manager sets it to 6 for outgoing INVITE messages. |
| Remote-Party-Id | Remote-Party-ID:"Alice Smith"<br><sip:9728135111@161.44.147.67;user=phone>;<br>party=calling;screen=no;privacy=off                                                                                                                         | Cisco Unified Communications Manager uses this SIP extension for a more detailed description of Caller Identify and Privacy, and to convey the Connected Name and ID in a re-INVITE message.                                                      |
| Diversion       | Diversion:<br><sip:23222@172.18.193.123>;reason=no-answer                                                                                                                                                                                  | Cisco Unified Communications Manager uses Diversion header to carry RDNIS. In this case, 23222 will get carried as the Original Called Party ID.                                                                                                  |
| SDP             | v=0<br>o=CiscoSystemsCCM-SIP 2000 1000 IN IP4<br>10.89.79.203<br>s=SIP Call<br>c=IN IP4 10.89.79.203<br>t=0 0<br>m=audio 32314 RTP/AVP 0 101<br>a=rtpmap:0 PCMU/8000<br>a=ptime:20<br>a=rtpmap:101 telephone-event/8000<br>a=fmtp:101 0-15 | Cisco Unified Communications Manager always includes telephone-event for RFC2833 DTMF. You can configure this dynamic payload type under Cisco Unified Communications Manager Service Parameter with default value as 101.                        |

**ACK****Table 1-10 ACK Message Fields**

| Field        | Example                                         | Notes                                                                                                                                                                      |
|--------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Request-Line | ACK sip:cdpn@destIP:destPort;SIP/2.0            | destIP=resolved IP address of configured DestAddr under SIPTrunk; it also could be FQDN SRV instead of destIP; destPort=configured destPort or resolved port from DNS SRV. |
| From         | From: "callerName" <sip:cgp@CCM_IP_addr>        | callerName=caller display, that is, IP phone<br>Cgp=calling party number<br>CCM_IP_addr=Unified CM IP address                                                              |
| To           | To:<br>"calledName"<sip:cdpn@destIP;user=phone> | calledName gets included if available.<br>destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP.                   |
| Via          | Via:SIP/2.0 IP addr:Port;Branch=number          | IP addr=Unified CM IP<br>Port=Unified CM Port<br>Branch=Unique number                                                                                                      |
| Call-ID      | Call-ID: number@CCM IP addr                     | Cisco Unified Communications Manager generates this number internally.                                                                                                     |



**Cisco Confidential****Table 1-10 ACK Message Fields (continued)**

| Field        | Example             | Notes                                                                                                                                                       |
|--------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CSeq         | Cseq: number PRACK  | Number=a traditional sequence number that increments for each new request within a dialog<br>Method=Method Name                                             |
| Max-Forwards | Max-Forwards:number | Number=Max-Forwards limits the number of hops that a request can make to reach its destination. It comprises an integer that decrements by one at each hop. |

**OPTIONS**

Cisco Unified Communications Manager does not generate this message.

**Table 1-11 OPTIONS Message Fields**

| Field        | Example                                     | Notes                                                                                                                                                                         |
|--------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Request-Line | OPTIONS sip:cdpn@destIP:destPort;SIP/2.0    | destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP.<br>destPort=configured destPort or resolved port from DNS SRV. |
| From         | From:"callerName" <sip:cgn@CCM_IP_addr>     | callerName=caller display, that is, IP phone<br>Cgn=calling party number<br>CCM_IP_addr=Unified CM IP address                                                                 |
| To           | To:"calledName"<sip:cdpn@destIP;user=phone> | calledName gets included if available<br>destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP;                       |
| Via          | Via:SIP/2.0 IP addr:Port;Branch=number      | IP addr=Unified CM IP<br>Port=Unified CM Port<br>Branch=Unique number                                                                                                         |
| Call-ID      | Call-ID: number@CCM IP addr                 | Cisco Unified Communications Manager generates the number internally.                                                                                                         |
| CSeq         | Cseq: number PRACK                          | Number=a traditional sequence number that increments for each new request within a dialog<br>Method=Method Name                                                               |
| Max-Forwards | Max-Forwards:number                         | Number=Max-Forwards limits the number of hops that a request can make to reach its destination. It comprises an integer that decrements by one at each hop                    |

**Cisco Confidential****BYE****Table 1-12** *BYE Message Fields*

| Field        | Example                                          | Notes                                                                                                                                                                             |
|--------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Request-Line | BYE sip:cdpn@destIP:destPort;SIP/2.0             | destIP=resolved IP address of configured DestAddr under SIPTrunk, it could also be FQDN SRV instead of destIP;<br><br>destPort=configured destPort or resolved port from DNS SRV; |
| From         | From: "callerName"<br><sip:cgpn@CCM_IP_addr>     | callerName=caller display, that is, IP phone<br>Cgpn=calling party number<br>CCM_IP_addr=Unified CM IP address                                                                    |
| To           | To: "calledName"<br><sip:cdpn@destIP;user=phone> | calledName gets included if available.<br><br>destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP.                      |
| Via          | Via:SIP/2.0 IP addr:Port;Branch=number           | IP addr=Unified CM IP<br><br>Port=Unified CM Port<br><br>Branch=Unique number                                                                                                     |
| Call-ID      | Call-ID: number@CCM IP addr                      | Unified CM generates the number internally.                                                                                                                                       |
| CSeq         | Cseq: number PRACK                               | Number=a traditional sequence number that increments for each new request within a dialog<br><br>Method=Method Name                                                               |
| Max-Forwards | Max-Forwards:number                              | Number=Max-Forwards limits the number of hops that a request can make to reach its destination. It comprises an integer that increments by one at each hop.                       |

**CANCEL****Table 1-13** *CANCEL Message Fields*

| Field        | Example                                   | Notes                                                                                                                                                                             |
|--------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Request-Line | CANCEL sip:cdpn@destIP:destPort;SIP/2.0   | destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP.<br><br>destPort=configured destPort or resolved port from DNS SRV. |
| From         | From: "callerName" <sip:cgpn@CCM_IP_addr> | callerName=caller display, that is, IP phone<br>Cgpn=calling party number<br>CCM_IP_addr=Unified CM IP address                                                                    |

**Cisco Confidential****Table 1-13 CANCEL Message Fields (continued)**

| Field        | Example                                         | Notes                                                                                                                                                      |
|--------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To           | To:<br>"calledName"<sip:cdpn@destIP;user=phone> | calledName gets included if available<br>destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP.    |
| Via          | Via:SIP/2.0 IP addr:Port;Branch=number          | IP addr=Unified CM IP<br>Port=Unified CM Port<br>Branch=Unique number                                                                                      |
| Call-ID      | Call-ID: number@CCM IP addr                     | Cisco Unified Communications Manager generates the number internally.                                                                                      |
| CSeq         | Cseq: number PRACK                              | Number=a traditional sequence number that increments for each new request within a dialog<br>Method=Method Name                                            |
| Max-Forwards | Max-Forwards:number                             | Number=Max-Forwards limits the number of hops that a request can make to reach its destination. It comprises an integer that decrements by one at each hop |

**PRACK****Table 1-14 PRACK Message Fields**

| Field        | Example                                         | Notes                                                                                                                                                                         |
|--------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Request-Line | PRACK sip:cdpn@destIP:destPort;SIP/2.0          | destIP=resolved IP address of configured DestAddr under SIPTrunk, it could also be FQDN SRV instead of destIP;<br>destPort=configured destPort or resolved port from DNS SRV; |
| From         | From: "callerName" <sip:cgp@CCM_IP_addr>        | callerName=caller display, that is, IP phone<br>Cgpn=calling party number<br>CCM_IP_addr=Unified CM IP address                                                                |
| To           | To:<br>"calledName"<sip:cdpn@destIP;user=phone> | calledName gets included if available<br>destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP.                       |
| Via          | Via:SIP/2.0 IP addr:Port;Branch=number          | IP addr=Unified CM IP<br>Port=Unified CM Port<br>Branch=Unique number                                                                                                         |
| Call-ID      | Call-ID: number@CCM IP addr                     | Cisco Unified Communications Manager generates the number internally.                                                                                                         |

**Cisco Confidential****Table 1-14 PRACK Message Fields (continued)**

| Field | Example              | Notes                                                                                                                                                                                                      |
|-------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CSeq  | Cseq: number PRACK   | Number=a traditional sequence number that increments for each new request within a dialog.<br>Method=Method Name                                                                                           |
| Rack  | Rack:number1 number2 | Number1=value from the RSeq header in the provisional response that is being acknowledged<br>Number2=The next number, and the method, are copied from the CSeq in the response that is being acknowledged. |

**SUBSCRIBE****Table 1-15 SUBSCRIBE Message Fields**

| Field        | Example                                                           | Notes                                                                                                                                                                                  |
|--------------|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Request-Line | SUBSCRIBE<br>sip:subscriber@destIP:destPort;user=phone<br>SIP/2.0 | destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP.<br>destPort=configured destPort or resolved port from DNS SRV.          |
| From         | From: "callerName" <sip:cgpn@CCM_IP_addr>                         | callerName=caller display, that is, IP phone<br>Cgpn=calling party number<br>CCM_IP_addr=Unified CM IP address                                                                         |
| To           | To:<br>"calledName"<sip:cdpn@destIP;user=phone>                   | calledName gets included if available<br>destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP.                                |
| Via          | Via:SIP/2.0 IP addr:Port;Branch=number                            | IP addr=Unified CM IP<br>Port=Unified CM Port<br>Branch=Unique number                                                                                                                  |
| Call-ID      | Call-ID: number@CCM IP addr                                       | Cisco Unified Communications Manager generates the number internally.                                                                                                                  |
| Contact      | Contact:<br><sip:cgpn@CCM_IP_addr:localPort;user=phone>           | localPort=configured "Incoming port" of the indicated SIPTrunk                                                                                                                         |
| Cseq         | Cseq:number SUBSCRIBE                                             | Number=a traditional sequence number that increments for each new request within a dialog                                                                                              |
| Max-Forwards | Max-Forwards:number                                               | Number=Max-Forwards serves to limit the number of hops that a request can make on the way to its destination. It comprises an integer that decrements by one at each hop by SIP proxy. |

**Cisco Confidential****Table 1-15 SUBSCRIBE Message Fields (continued)**

|               |                                                             |                                                                                                                   |
|---------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Event:        | Kpml, presence, refer.                                      | The Event Type for which the Subscribe applies. Unified CM supports the kpml, presence, and refer event packages. |
| Content-Type: | application/kpml-request+xml or message/sipfrag;version=2.0 | Unified CM SIP trunk supports message/sipfrag;version=2.0, application/kpml-request+xml and application/pdf+xml   |

**UPDATE****Table 1-16 UPDATE Message Fields**

| Field        | Example                                                | Notes                                                                                                                                                                         |
|--------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Request-Line | UPDATE sip:cdpn@destIP:destPort;user=phone SIP/2.0     | destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP.<br>destPort=configured destPort or resolved port from DNS SRV. |
| From         | From: "callerName"<br><sip:cgp@CCM_IP_addr>            | callerName=caller display, that is, IP phone<br>Cgpn=calling party number<br>CCM_IP_addr=Unified CM IP address                                                                |
| To           | To: "calledName"<br><sip:cdpn@destIP;user=phone>       | calledName gets included if available<br>destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP.                       |
| Via          | Via:SIP/2.0 IP addr:Port;Branch=number                 | IP addr=Unified CM IP<br>Port=Unified CM Port<br>Branch=Unique number                                                                                                         |
| Call-ID      | Call-ID: number@CCM IP addr                            | Cisco Unified Communications Manager generates the number internally.                                                                                                         |
| Contact      | Contact:<br><sip:cgp@CCM_IP_addr:localPort;user=phone> | localPort=configured "Incoming port" of the indicated SIPTrunk                                                                                                                |
| Cseq         | Cseq:number method                                     | Number=a traditional sequence number that increments for each new request within a dialog<br>Method=method Name                                                               |
| Max-Forwards | Max-Forwards:number                                    | Number=Max-Forwards serves to limit the number of hops that a request can make on the way to its destination. It comprises an integer that decrements by one at each hop      |

**Cisco Confidential****Table 1-16** *UPDATE Message Fields (continued)*

| Field           | Example                                                                                                             | Notes                                                                                                                                                                  |
|-----------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remote-Party-Id | Remote-Party-ID: "Alice Smith"<br><sip:9728135111@161.44.147.67;user=phone>;<br>party=calling;screen=no;privacy=off | Unified CM uses this SIP extension for more detailed description of Caller Identify and Privacy. It also conveys Connected Name & ID in a re-Invite message.           |
| SDP             | m=audio 30844 RTP/AVP 0 101<br>a=rtpmap:0 pcmu/8000<br>a=rtpmap:101 telephone-event/8000<br>a=fmtp:101 0-11         | Unified CM always includes telephone-event for RFC2833 DTMF. You can configure this dynamic payload type under Cisco Unified Communications Manager Service Parameter. |

**PUBLISH****Table 1-17** *PUBLISH Message Fields*

| Field        | Example                                  | Notes                                                                                                                                                                                                                                                 |
|--------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Request-Line | PUBLISH sip:user@destIP:destPort SIP/2.0 | user=end user name that is associated with a line appearance<br><br>destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP.<br><br>destPort=configured destPort or resolved port from DNS SRV. |
| From         | From: <sip:user@CCM_IP_addr>             | user=end user name that is associated with a line appearance<br><br>CCM_IP_addr=Unified CM IP address                                                                                                                                                 |
| To           | To: <sip:user@destIP>                    | user=end user name that is associated with a line appearance<br><br>destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP.                                                                    |
| Via          | Via:SIP/2.0 IP addr:Port;Branch=number   | IP addr=Unified CM IP<br><br>Port=Unified CM Port<br><br>Branch=Unique number                                                                                                                                                                         |
| Call-ID      | Call-ID: number@CCM IP addr              | Cisco Unified Communications Manager generates the number internally.                                                                                                                                                                                 |
| Cseq         | Cseq:number method                       | Number=a traditional sequence number that increments for each new request within a dialog<br><br>Method=PUBLISH                                                                                                                                       |
| Max-Forwards | Max-Forwards:number                      | Number=Max-Forwards serves to limit the number of hops that a request can make on the way to its destination. It comprises an integer that decrements by one at each hop by SIP proxy.                                                                |
| Event        | presence                                 | Unified CM supports presence event for PUBLISH.                                                                                                                                                                                                       |

**Cisco Confidential****Table 1-17 PUBLISH Message Fields (continued)**

| Field         | Example              | Notes                                                                     |
|---------------|----------------------|---------------------------------------------------------------------------|
| Expires       | Expires: number      | number=suggested expiration time for PUBLISH in seconds. Default is 3600. |
| Content-Type: | application/pidf+xml |                                                                           |

## Response Messages

### 18x

**Table 1-18 18X Message Fields**

| Field           | Example                                                                                                          | Notes                                                                                                                                               |
|-----------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Remote-Party-Id | Remote-Party-ID: "Bob Jones"<br><sip:9728135111@161.44.147.67;user=phone>;<br>party=called;screen=no;privacy=off | Cisco Unified Communications Manager uses this SIP extension to convey Connected Name and ID information.                                           |
| SDP             | m=audio 30844 RTP/AVP 0 101<br>a=rtpmap:0 pcmu/8000<br>a=rtpmap:101 telephone-event/8000<br>a=fmtp:101 0-11      | If a call resulted in early media setup (that is, a SIP to MGCP PRI call), Cisco Unified Communications Manager includes SDP answer in 183 message. |

### 2xx

**Table 1-19 2XX Message Fields**

| Field           | Example                                                                                                          | Notes                                                                                                     |
|-----------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Remote-Party-Id | Remote-Party-ID: "Bob Jones"<br><sip:9728135111@161.44.147.67;user=phone>;<br>party=called;screen=no;privacy=off | Cisco Unified Communications Manager uses this SIP extension to convey Connected Name and ID information. |

### 3xx

3xx responses give information about the new user location or about alternative services that might be able to satisfy the call.

**Table 1-20 3XX Message Fields**

| Field       | Example                                 | Notes                                                                                                    |
|-------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------|
| Status Code | SIP/2.0 302 Moved Temporarily           | The requesting client SHOULD retry the request at the new address(es) given by the Contact header field. |
| From        | From: <sip: @10.89.79.203>;tag=16777234 | 10.89.79.203 is Unified CM IP address.<br>16777234 is the Call Id.                                       |

**Cisco Confidential****Table 1-20 3XX Message Fields (continued)**

| Field   | Example                                                                            | Notes                                                                      |
|---------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| To      | To:<br><sip:30000@10.89.73.75>;tag=0002fd06e9300108228d58c1-614f99be               | 3000 is the Calling Party Number                                           |
| Via     | Via: SIP/2.0/TCP<br>10.89.79.203:5060;received=10.89.79.203;branch=z9hG4bKfe8d27ec | 10.89.79.203=Unified CM IP<br>5060=Unified CM Port<br>Branch=Unique number |
| Contact | Contact: <sip:30000@10.8.69.115:5060>                                              | localPort=configured “Incoming port” of the indicated SIPTrunk             |

**4xx**

4xx responses represent definite failure responses from a particular server.

**Table 1-21 4XX Message Fields**

| Field       | Example                                                                            | Notes                                                                      |
|-------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Status Code | SIP/2.0 487 Request Cancelled                                                      | A BYE or CANCEL request terminated the request.                            |
| From        | From: <sip: @10.89.79.203>;tag=16777234                                            | 10.89.79.203 is the Unified CM IP address.<br>16777234 is the Call Id.     |
| To          | To:<br><sip:30000@10.89.73.75>;tag=0002fd06e9300108228d58c1-614f99be               | 3000 is the Calling Party Number.                                          |
| Via         | Via: SIP/2.0/TCP<br>10.89.79.203:5060;received=10.89.79.203;branch=z9hG4bKfe8d27ec | 10.89.79.203=Unified CM IP<br>5060=Unified CM Port<br>Branch=Unique number |
| Contact     | Contact: <sip:30000@10.8.69.115:5060>                                              | localPort=configured “Incoming port” of the indicated SIPTrunk             |

**5xx**

The server encountered an unexpected condition that prevented it from fulfilling the request.

**Table 1-22 5XX Message Fields**

| Field       | Example                                                                  | Notes                                                                             |
|-------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Status Code | SIP/2.0 501 Not Implemented                                              | This is the appropriate response when a UAS does not recognize the request method |
| From        | From:<br><sip: @10.89.79.203>;tag=16777234                               | 10.89.79.203 is Unified CM IP address<br>16777234 is the Call Id                  |
| To          | To:<br><sip:30000@10.89.73.75>;<br>tag=0002fd06e9300108228d58c1-614f99be | 3000 is the Calling Party Number                                                  |



**Cisco Confidential****Table 1-22 5XX Message Fields (continued)**

| Field   | Example                                                                                    | Notes                                                                      |
|---------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Via     | Via:<br>SIP/2.0/TCP 10.89.79.203:5060;<br>received=10.89.79.203;<br>branch=z9hG4bKfe8d27ec | 10.89.79.203=Unified CM IP<br>5060=Unified CM Port<br>Branch=Unique number |
| Contact | Contact:<br><sip:30000@10.8.69.115:5060>                                                   | localPort=configured “Incoming port” of the indicated SIPTrunk             |

**6xx**

6xx indicates that the callee end system was contacted successfully but the callee is busy and does not want to take the call at this time.

**Table 1-23 6XX Message Fields**

| Field       | Example                                                                            | Notes                                                                                                                     |
|-------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Status Code | SIP/2.0 600 Busy Everywhere                                                        | The callee end system was contacted successfully, but the callee is busy and does not want to take the call at this time. |
| From        | From: <sip: @10.89.79.203>;tag=16777234                                            | 10.89.79.203 is Unified CM IP address<br>16777234 is the Call ID.                                                         |
| To          | To:<br><sip:30000@10.89.73.75>;tag=0002fd06e9300108228d58c1-614f99be               | 3000 is the Calling Party Number                                                                                          |
| Via         | Via: SIP/2.0/TCP<br>10.89.79.203:5060;received=10.89.79.203;branch=z9hG4bKfe8d27ec | 10.89.79.203=Unified CM IP<br>5060=Unified CM Port<br>Branch=Unique number                                                |
| Contact     | Contact: <sip:30000@10.8.69.115:5060>                                              | localPort=configured “Incoming port” of the indicated SIPTrunk                                                            |

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## Message Timers

The following timers are service parameters that are configurable in Cisco Unified Communications Manager Administration. The Unified CM maintains the following configuration data for the SIP timers.

**Table 1-24 Message Timers**

| Timer      | Value(Default/range) | Definition                                                                            |
|------------|----------------------|---------------------------------------------------------------------------------------|
| trying     | 500 ms/100-1000 ms   | The time to wait for a 100 response to an INVITE request                              |
| connect    | 500 ms / 100-1000 ms | The time to wait for a 200 response to an ACK request                                 |
| disconnect | 500 ms / 100-1000 ms | The time to wait for a 200 response to a BYE request                                  |
| expires    | 3 min/ 1-5 min       | Limits the time duration for which an INVITE is valid                                 |
| rel1xx     | 500 ms / 100-1000 ms | The time that Unified CM should wait before retransmitting the reliable 1xx responses |
| prack      | 500 ms / 100-1000 ms | The time that Unified CM should wait before retransmitting the PRACK request          |
| notify     | 500 ms / 100-1000 ms | The time that Unified CM should wait before retransmitting the Notify message         |
| publish    | 500 ms / 100-1000 ms | The time that Unified CM should wait before retransmitting the Publish message        |

## Message Retry Counts

All the following retry counts are service parameters that are configurable in Cisco Unified Communications Manager Administration. The Unified CM maintains the following configuration data for the SIP retries. In case of TCP transportation type, the timers will still pop as usual; however, in the event of timeout, Stack does not retransmit; it will instead rely on TCP itself to do the retry.

**Table 1-25 Message Retry Counts**

| Counter              | Default Value | Suggested Range | Definition                              |
|----------------------|---------------|-----------------|-----------------------------------------|
| Invite retry count   | 5             | 1 – 10          | Number of INVITE retries                |
| Response retry count | 6             | 1 – 10          | Number of RESPONSE retries              |
| Bye retry count      | 10            | 1 – 10          | Number of BYE retries                   |
| Cancel retry count   | 10            | 1 – 10          | Number of Cancel retries                |
| PRACK retry count    | 6             | 1 – 10          | Number of PRACK retries                 |
| Rel1xx retry count   | 10            | 1 – 10          | Number of Reliable 1xx response retries |
| Notify retry count   | 6             | 1 - 10          | Number of NOTIFY retries                |
| Publish retry count  | 6             | 1 - 10          | Number of Publish retries               |

## SIP Status Code to Q.850 Cause Code Mapping

Table 1-26 lists the SIP Status Codes and maps them to the Q.850 Release Cause Codes.

**Cisco Confidential****Table 1-26 SIP Status Code to Q.850 Cause Code Mapping**

| <b>SIP Status Code</b>                                                                                        | <b>Q.850 Cause Code</b>              | <b>Q.850 Release Cause Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Scenarios when generated by Unified CM (due to internal errors)</b>             |
|---------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| 404 Not Found<br>485 Ambiguous<br>604 Does not exist anywhere                                                 | 1<br>Unallocated (unassigned) number | Indicates that the destination that the calling user requested cannot be reached because the number is unassigned                                                                                                                                                                                                                                                                                                                                             | The number is not in the routing table, or it has no path across the ISDN network. |
| 486 Busy here<br>491 Request pending<br>493 Undecipherable<br>600 Busy everywhere                             | 17<br>User busy                      | Indicates that the called party cannot accept another call because the user busy condition has been encountered. Either the called user or the network can generate this cause value. In the case of a user-determined user busy, be aware that the user equipment is compatible with the call.                                                                                                                                                               | User is already using the telephone.                                               |
| 480 Temporarily unavailable                                                                                   | 18<br>No user responding             | Used when the called party does not respond to a call establishment message with either an alerting or connect indication within the time allotted. The number that is being dialed has an active D-channel, but the far end chooses not to answer.                                                                                                                                                                                                           | The user does not answer the telephone.                                            |
| 401 Unauthorized<br>402 Payment Required<br>403 Forbidden<br>407 Proxy Authentication Required<br>600 Decline | 21<br>Call rejected                  | Indicates that the equipment sending this cause code does not want to accept this call, although it could accept the call because the equipment sending the cause is neither busy nor incompatible.<br><br>The network might also generate this code to indicate that the call was cleared because of a supplementary service constraint. The diagnostic field might contain additional information about the supplementary service and reason for rejection. | A subscriber has a service constraint that does not accept this call.              |
| 410 Gone                                                                                                      | 22<br>Number changed                 | Returned to a calling party when the called number that is indicated by the calling party is no longer assigned. This diagnostic field might optionally contain the new called party number.                                                                                                                                                                                                                                                                  | A subscriber changed their number.                                                 |
| 482 Loop detected<br>483 Too many hops                                                                        | 25<br>Exchange routing error         | Indicates that the destination that the user indicated cannot be reached because an intermediate exchange released the call due to reaching a limit in executing the hop counter procedure.                                                                                                                                                                                                                                                                   | The network is overloaded.                                                         |

**Cisco Confidential****Table 1-26 SIP Status Code to Q.850 Cause Code Mapping (continued)**

| <b>SIP Status Code</b>                                                                                 | <b>Q.850 Cause Code</b>                              | <b>Q.850 Release Cause Description</b>                                                                                                  | <b>Scenarios when generated by Unified CM (due to internal errors)</b>                                  |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 484 Address incomplete                                                                                 | 28<br>Invalid number format                          | Indicates that the called party cannot be reached because the called party number is not in a valid format or is not complete.          | The caller calls out by using a network type number (enterprise) rather instead of Unknown or National. |
| 487 Request terminated<br>488 Not acceptable here<br>606 Not acceptable                                | 31<br>Normal unspecified                             | Reports a normal event only when no other cause in the normal class applies.                                                            | Normal operation                                                                                        |
| 502 Bad gateway                                                                                        | 38<br>Network out of order                           | Indicates that the network is not functioning correctly and that the condition is likely to last for an extended time .                 | Network failure                                                                                         |
| 400 Bad Request<br>481 Call leg does not exist<br>500 Server internal error<br>503 Service Unavailable | 41<br>Temporary failure                              | Indicates that the network is not functioning correctly and that the condition is likely to be resolved quickly.                        | Network failure                                                                                         |
| 405 Method not allowed                                                                                 | 63<br>Service or option not available, unspecified   | Reports a service or option as a not available event only when no other cause in the service or option not available class applies.     | Service not available                                                                                   |
| 406 Not acceptable<br>415 Unsupported media type<br>501 Not implemented                                | 79<br>Service or option not implemented, unspecified | Reports a service or option as a not implemented event only when no other cause in the service or option not implemented class applies. | Service not implemented                                                                                 |

**Cisco Confidential****Table 1-26 SIP Status Code to Q.850 Cause Code Mapping (continued)**

| <b>SIP Status Code</b>                                                                                                                                                                                                                          | <b>Q.850 Cause Code</b>            | <b>Q.850 Release Cause Description</b>                                                                                                                                        | <b>Scenarios when generated by Unified CM (due to internal errors)</b>                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 408 Request timeout<br>504 Server timeout                                                                                                                                                                                                       | 102<br>Recovery on timer expiry    | Indicates that the expiration of a timer in association with error handling procedures initiated the procedure.                                                               | <ul style="list-style-type: none"> <li>•No H.323 call proceeding</li> <li>•No H.323 alerting or connect message received from the terminating gateway</li> <li>•Invite expires timer reached maximum number of retries that are allowed.</li> </ul> |
| 411 Length required<br>413 Request entity too long<br>414 Request URI too long<br>416 Unsupported URI scheme<br>420 Bad extension<br>421 Extension required<br>423 Interval too brief<br>505 SIP version not supported<br>513 Message too large | 127<br>Internal error, unspecified | CC_CAUSE_INTERWORKING<br>Indicates that interworking occurred with a network that does not provide causes for actions that it takes. The precise cause cannot be ascertained. | Failed to send message to Public Switched Telephone Network (PSTN)                                                                                                                                                                                  |

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## SIP Trunk Supported Features

This section provides details with respect to overall flow and handling of basic SIP trunk features. This includes, but is not limited to, the following features:

- Identification Services
- Basic Call
- Simple Hold/Resume
- Transfer
- Click To Dial
- Conference
- Call Forwarding
- Message Waiting Indication
- Endpoint 302 Redirect
- Park and Retrieve
- Video
- T38 Fax
- Presence (Busy Lamp Field)
- Out-of-band DTMF using KPML
- SIP Over TLS Connection
- Call Preservation
- Outbound PUBLISH

## Identification Services

This section describes the SIP Identification Services in Cisco Unified Communications Manager. This includes Line Identification Services and Name Identification Services. Line Identification Services include Calling Line and Connected Line Presentation/Restriction. Name Identification Services include Calling Name and Connected Name Presentation/Restriction.

Cisco Unified Communications Manager provides flexible configuration options to provide these services on a call-by-call basis or statically preconfigured for each SIP trunk. This section does not describe those configuration options; it only provides the details on how Cisco Unified Communications Manager conveys these ID services in SIP by using the Remote-Party-ID header. [Table 1-27](#) captures the support levels for the various parameters:

**Cisco Confidential****Table 1-27 Support Levels for Various Parameters**

| Parameter | Values                     | Notes                                                                                                                                                                                                                                       |
|-----------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| party     | calling<br>called          | Ignored if received by Cisco Unified Communications Manager.<br><br>Set to called for outgoing INVITE or UPDATE from Cisco Unified Communications Manager. Set to calling for outgoing responses from Cisco Unified Communications Manager. |
| id-type   | subscriber<br>user<br>term | Ignored if received by Cisco Unified Communications Manager.<br><br>Set to subscriber for outgoing requests and responses.                                                                                                                  |
| privacy   | full<br>name<br>uri<br>off | Supported if received by Cisco Unified Communications Manager.<br><br>Cisco Unified Communications Manager also supports sending all values in either INVITE or UPDATE requests and responses for the same.                                 |
| screen    | no<br>yes                  | Ignored if received by Cisco Unified Communications Manager.<br><br>Cisco Unified Communications Manager always sends yes when generating an Remote-Party-ID header.                                                                        |

The following sections cover the following topics:

- [Calling Line and Name Identification Presentation, page 1-23](#)
- [Calling Line and Name Identification Restriction, page 1-23](#)
- [Connected Line and Name Identification Presentation, page 1-24](#)
- [Connected Line and Name Identification Restriction, page 1-24](#)

Cisco Unified Communications Manager uses SIP “From” and “Remote-Party-ID” headers to provide ID services as described in the following sections.

## Calling Line and Name Identification Presentation

You can configure Number and Name restriction independently on the SIP trunk. Customers can choose to restrict only number and allow name to be presented or vice versa. The default SIP trunk configuration setting specifies “not selected” or “per call setting.”

## Calling Line and Name Identification Restriction

1. **Name** - When name is restricted, the display field (calling Name) in “From” header is set to a configurable string (i.e. “Anonymous”). The display field in the “Remote-Party-ID” header still includes the actual name but the privacy field is set to **“name”**. For example:

```
From: "Anonymous" <sip:9728135001@localhost>
Remote-Party-ID: "Bob Jones"<9728135001@localhost; user=phone>;
party=calling;screen=yes;privacy=name
```

2. **Number** - When number is restricted, the calling Line is left out in the “From” header; however, it is still included in the “Remote-Party-ID” header with **privacy=uri**. For example

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```
From: "Bob Jones" <sip: 9728135001@localhost>
Remote-Party-ID: "Bob Jones"<9728135001@localhost; user=phone>;
party=calling;screen=yes;privacy=uri
```

3. **Both Name and Number** – When both name and number are restricted, the same principle applies with **privacy=full**.

```
From: "Anonymous" <sip: 9728135001@localhost>
Remote-Party-ID: "Bob Jones"<9728135001@localhost; user=phone>;
party=calling;screen=yes;privacy=full
```

4. **None**- When both name and number are allowed, the following example applies:

```
From: "Bob Jones" <sip: 9728135001@localhost>
Remote-Party-ID: "Bob Jones"<9728135001@localhost; user=phone>;
party=calling;screen=yes;privacy=off
```

**Connected Line and Name Identification Presentation**

The Connected Number (Line) and Name Identification supplementary service provides the calling user with the called (connected) user number and/or name.

Cisco Unified Communications Manager uses the “Remote-Party-ID” headers in **18x, 200 and re-INVITE or UPDATE** messages to convey connected information. The “party” field of the “Remote-Party-ID” header is set to “called” (instead of “calling” for calling ID services).

**Connected Line and Name Identification Restriction**

Similar to Calling ID services, customers have option to restrict connected number and name independently.

1. **Name** - When name is restricted, the connected name still gets included with **privacy=name**. For example

```
Remote-Party-ID: "Bob Jones"<9728135001@localhost; user=phone>;
party=called;screen=yes;privacy=name
```

2. **Number Restrict only** - When number is restricted, the connected number still gets included with **privacy=uri**. For example

```
Remote-Party-ID: "Bob Jones"<9728135001@localhost; user=phone>;
party=called;screen=yes;privacy=uri
```

3. **Both Name and Number Restrict** - When both name and number are restricted, both get included with **privacy=full**. For example

```
Remote-Party-ID: "Bob Jones"<9728135001@localhost; user=phone>;
party=called;screen=yes;privacy=full
```

4. **None** – Both name and number are allowed.

For example, if Cisco Unified Communications Manager receives an INVITE that is destined to extension 9728135001, Cisco Unified Communications Manager includes the called party name in 18x and 200 messages as follows:

```
Remote-Party-ID: "Bob Jones"<9728135001@localhost; user=phone>;
party=called;screen=yes;privacy=off
```



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# Outbound PUBLISH

Release 6.0(1) introduces the PUBLISH method as the preferred mechanism for Cisco Unified Communications Manager to send IP phone presence information over a SIP trunk. The main reason for using the PUBLISH method is the performance improvement over the SUBSCRIBE/NOTIFY mechanism used in previous releases.

- Cisco Unified Communications Manager sends presence information for the phones that it manages over a SIP trunk.
- Release 5.x uses the SUBSCRIBE/NOTIFY framework for the presence communication over a SIP trunk; Release 6.0(1) uses the SIP PUBLISH method for presence communication.
- Presence status in Release 5.x (SUB/NOT) applies on a per-directory-number basis. Presence status in Release 6.0(1) (PUBLISH) applies on a per-line-appearance basis.
- Line appearance maps to one directory number on a specific phone device. Thus, if two phones share the same directory number 1000, two line appearances exist: (phone1, 1000) and (phone2, 1000)
- The PUBLISH message has user association.
- The PUBLISH mechanism works with multiple partitions.
- Only two status possibilities exist for Busy/Idle in PUBLISH: “Busy” or “Idle.” (Release 5.x also supports “Available.”)
- DND Status gets published if it is turned on.
- Mobility support improves because the mobile number is in the PUBLISH message.
- Performance improvement: by using the SUBSCRIBE/NOTIFY framework, a refresh requires four messages with the PIDF body. Using the PUBLISH mechanism, a refresh requires two messages without the PIDF body.
- Release 6.0(1) includes a set of BAT tools to facilitate the upgrade from Release 5.x.

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# Troubleshooting

Table 1-28 highlights some of the common problems that might be encountered when you are configuring a SIP trunk.

**Table 1-28**      **Troubleshooting SIP Trunk Configuration**

| Symptom                                                                                                                                              | Possible Cause                                                                                      | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cannot receive or make calls through a SIP trunk.                                                                                                    | The SIP trunks are not initialized because the Unified CM process is not part of a Unified CM Group | <p>Associate the Unified CM to a Unified CM Group.</p> <ol style="list-style-type: none"> <li>1. Go to the Unified CM GUI and, under the “System” pull-down menu, choose “Cisco Unified Communications Manager Group.”</li> <li>2. Click “find” and choose a group name (such as Default).</li> <li>3. Make sure the Cisco Unified Communications Manager is under the “Selected Cisco Unified Communications Managers” section.</li> </ol> <p>The following example SDL logs illustrate how a SIP trunk fails initialization because the Unified CM node is not a member of a Unified CM Group:</p> <pre> SIPD(1,100,76,1) SIPInit(1,100,73,1)  NumOfCurrentInstances: 1 000000561 2005/07/20 12:54:17.598  001 SdlSig Start start  SIPD(1,100,76,1) SIPD(1,100,76,1) (1,100,76,1).1-(*:*)  [R:HP - HP: 0, NP: 0, LP: 0, VLP: 0, LZP: 0 DBP: 0] 000000562  2005/07/20 12:54:17.598  001 SdlSig DbSIPtspReq initializing  Db(1,100,160,1) SIPD(1,100,76,1) (1,100,76,1).1-(*:*) [NP-PQ: 0]  000000563 2005/07/20 12:54:17.620 001 SdlSig DbSIPtspRes tsp_discovery SIPD(1,100,76,1) Db(1,100,160,1) (1,100,76,1).1-(*:*)  [R:NP - HP: 0, NP: 0, LP: 0, VLP: 0, LZP: 0 DBP: 0]  000000564 2005/07/20 12:54:17.621 001 SdlSig  DbSimpleDeviceServerReq initializing Db(1,100,160,1)  SIPD(1,100,76,1) (1,100,76,1).1-(*:*) [NP - PQ: 0]  000000565 2005/07/20 12:54:17.636 001 SdlSig  DbSimpleDeviceServerRes device_server_discovery  SIPD(1,100,76,1) Db(1,100,160,1) (1,100,76,1).1-(*:*)  [R:NP - HP: 0, NP: 0, LP: 0, VLP: 0, LZP: 0 DBP: 0]  000000566  2005/07/20 12:54:17.636 001 Stopping     SIPD(1,100,76,1) SIPD(1,100,76,1)  NumOfCurrentInstances: 1  000000567  2005/07/20 12:54:17.637 001 Stopped     SIPD(1,100,76,1) SIPD(1,100,76,1)  NumOfCurrentInstances: 0  000000568  2005/07/20 12:54:17.637  001  SdlSig DeviceStop</pre> |
| The UAS may reject all outbound calls associated with a SIP trunk with a 4xx response, or signaling may go through, but no audio path gets detected. | Unusual third-party SIP UA might not support delayed media INVITE.                                  | <p>The SIP trunk default configuration results in sending INVITE (without SDP). This definition prevents the use of an MTP resource. Cisco recommends that you leave the “MTP Required” checkbox on the SIP trunk configuration page unchecked; however, if third-party devices do not support delayed media INVITE requests, you can check this box.</p> <p>You must reset the SIP trunk for the change to take effect.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

**Cisco Confidential****Table 1-28 Troubleshooting SIP Trunk Configuration (continued)**

| Symptom                                                                                      | Possible Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DTMF digits do not get sent to the remote SIP device such as a Unity Voice Messaging server. | <p>This could represent an interoperability issue.</p> <p>The SIP trunk supports RFC2833 and Out-of-Band methods when sending DTMF tones across the network.</p> <ul style="list-style-type: none"> <li>- Most SIP devices support RFC2833.</li> <li>- The supported OOB methods are KPML and Unsolicited Notify. KPML is not widely used in the marketplace at this time. Currently, the only known products supporting KPML are the Cisco TNP phones, Unified CM, and Cisco IOS Gateway (12.4 and later). Unsolicited Notify is a Cisco proprietary method that is used only on Cisco IOS Gateways (12.2 and later?). Unity does not support either one at this time but might support KPML in the future. If you are connecting Unity to Unified CM via SCCP, OOB is assumed.</li> </ul> | <p>Check whether an MTP resource is allocated for the call:</p> <ul style="list-style-type: none"> <li>• If both parties have at least one common DTMF method, an MTP is <i>not</i> required.</li> <li>• If one party only supports the Out-of-Band method, but the other party only supports RFC2833, an MTP is required.</li> </ul> <p>For RFC2833 DTMF events, verify that the media stream (via Sniffer) contains packets with the DTMF Payload Type value. For OOB, incoming or outgoing NOTIFY messages get captured in the Unified CM trace file.</p> <p>the following example shows Subscribing for DTMF-KPML:</p> <pre> SUBSCRIBE sip:172.18.199.61:5060 SIP/2.0 Via: SIP/2.0/UDP 172.18.199.62:5060;branch=z9hG4bK1BD From: &lt;sip:3601@172.18.199.62&gt;;tag=169AEB4-93D To: "sccp_3000" &lt;sip:3000@172.18.199.61&gt;;tag=520767e3-a20b-488e-9ca2-3b1506ab9e94-24577005 Call-ID: 47b5f280-2de1b302-3fc-3dc712ac@172.18.199.61 CSeq: 101 SUBSCRIBE Max-Forwards: 70 Date: Wed, 20 Jul 2005 20:24:36 GMT User-Agent: Cisco-SIPGateway/IOS-12.x Event: kpml Expires: 7200 Contact: &lt;sip:3601@172.18.199.62:5060&gt; Content-Type: application/kpml-request+xml Content-Length: 327 &lt;?xml version="1.0" encoding="UTF-8"?&gt;&lt;kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-request kpml-request.xsd" version="1.0"&gt;&lt;pattern persist="persist"&gt;&lt;regex tag="dtmf"&gt;[x*#ABCD]&lt;/regex&gt;&lt;/pattern&gt;&lt;/kpml-request&gt;  SIP/2.0 200 OK Via: SIP/2.0/UDP 172.18.199.62:5060;branch=z9hG4bK1BD From: &lt;sip:3601@172.18.199.62&gt;;tag=169AEB4-93D To: "sccp_3000" &lt;sip:3000@172.18.199.61&gt;;tag=520767e3-a20b-488e-9ca2-3b1506ab9e94-24577005 Call-ID: 47b5f280-2de1b302-3fc-3dc712ac@172.18.199.61 CSeq: 101 SUBSCRIBE Content-Length: 0 Contact: &lt;sip:172.18.199.61:5060&gt; Expires: 3600 </pre> |

**Cisco Confidential****Table 1-28 Troubleshooting SIP Trunk Configuration (continued)**

| Symptom                                                             | Possible Cause | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DTMF digits do not get sent to the remote SIP device<br>(continued) |                | <p>The following example shows an outbound KPML NOTIFY message:</p> <pre>NOTIFY sip:3010@172.18.199.92:5060 SIP/2.0 Via: SIP/2.0/UDP 172.18.199.61:5060;branch=z9hG4bK48b28f9b From: &lt;sip:3010@172.18.199.61&gt;;tag=520767e3-a20b-488e-9ca2-3b1506ab9e94-26499709 To: &lt;sip:3501@172.18.199.92&gt;;tag=1A60AE98-324 Call-ID: 4724DD80-FC6211D9-8190EC13-60F39CA2@172.18.199.92 CSeq: 103 NOTIFY Max-Forwards: 70 Date: Mon, 25 Jul 2005 16:45:29 GMT User-Agent: Cisco-CCM5.0 Event: kpml Subscription-State: active;expires=3600 Contact: &lt;sip:172.18.199.61:5060&gt; Content-Type: application/kpml-response+xml Content-Length: 177 &lt;?xml version="1.0" encoding="UTF-8" standalone="no" ?&gt; &lt;kpml-response code="200" digits="1" forced_flush="false" suppressed="false" tag="dtmf" text="Success" version="1.0"/&gt;</pre>                                                                                                                                                                                                                                                                      |
|                                                                     |                | <p>The following example shows negotiating Unsolicited NOTIFY request:</p> <pre>INVITE sip:3501@172.18.199.92:5060 SIP/2.0 Call-Info: &lt;sip:172.18.199.61:5060&gt;;method="NOTIFY;Event=telephone-event;Duration=500" Response: SIP/2.0 200 OK Call-Info: &lt;sip:172.18.199.92:5060&gt;;method="NOTIFY;Event=telephone-event;Duration=500"</pre> <p>The following example shows an outbound Unsolicited NOTIFY message:</p> <pre>07/26/2005 14:15:18.658 CCM Outgoing UDP SIP message to 172.18.199.92:[57475]: NOTIFY sip:172.18.199.92:57475 SIP/2.0 Via: SIP/2.0/UDP 172.18.199.61:5060;branch=z9hG4bK66516ae9 From: "sccp_3010" &lt;sip:3010@172.18.199.61&gt;;tag=520767e3-a20b-488e-9ca2-3b1506ab9e94-26499723 To: &lt;sip:3501@172.18.199.92&gt;;tag=1FD98A34-1DC0 Call-ID: 314ae380-2e617dac-325-3dc712ac@172.18.199.61 CSeq: 102 NOTIFY Max-Forwards: 70 Date: Tue, 26 Jul 2005 18:15:18 GMT User-Agent: Cisco-CCM5.0 Event: telephone-event;rate=1000 Subscription-State: active;expires=-1281397684 Contact: &lt;sip:172.18.199.61:5060&gt; Content-Type: audio/telephone-event Content-Length: 4</pre> |

**Cisco Confidential****Table 1-28 Troubleshooting SIP Trunk Configuration (continued)**

| Symptom                                                              | Possible Cause                                                                                                                                                                                                                                                                                                                     | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UAS responds to an INVITE request with a 401 (Unauthorized) message. | Authentication or Authorization is failing                                                                                                                                                                                                                                                                                         | <p>If authentication or authorization are not needed, make sure the appropriate check boxes on the SIP Trunk Security Profile window are unchecked.</p> <p>or</p> <p>Configure the application user on Unified CM with proper authorization.</p> <p>Configure the UAC to match credentials on Unified CM.</p> <pre> INVITE sip:5000@172.18.193.222 SIP/2.0 Via: SIP/2.0/UDP 172.18.194.208:5060;branch=z9hG4bK5ba60c17 From: "4900" &lt;sip:4900@172.18.193.222&gt;;tag=000f24c6a16f000d171bb590-611445d9 To: &lt;sip:5000@172.18.193.222&gt; Call-ID: 000f24c6-a16f000c-245cb98c-57a622e0@172.18.194.208 .....  SIP/2.0 401 Unauthorized From: "4900" &lt;sip:4900@172.18.193.222&gt;;tag=000f24c6a16f000d171bb590-611445d9 To: &lt;sip:5000@172.18.193.222&gt;;tag=466540560 Call-ID: 000f24c6-a16f000c-245cb98c-57a622e0@172.18.194.208 CSeq: 101 INVITE WWW-Authenticate: DIGEST realm="siptrunk41", nonce="YoK5FiEuXpeIlp52EnUWFLIU1m24t5gV", algorithm=MD5 Content-Length: 0 ..... </pre> |
| UAS responds to a SIP request with a 403 (Forbidden) message.        | <p>In the System-&gt;Security Profile-&gt;SIP Security Profile window, and per the default settings, the following features require authorization:</p> <ul style="list-style-type: none"> <li>- Presence Subscription</li> <li>- OOD REFER</li> <li>- Unsolicited NOTIFY</li> <li>- INVITE and REFER w/ Replaces header</li> </ul> | <p>If authentication or authorization are not needed, make sure the appropriate check boxes on the SIP Trunk Security Profile window are unchecked.</p> <p>or</p> <p>Configure the application user on Unified CM with proper authorization.</p> <p>Configure the UAC to match credentials on Unified CM.</p> <pre> INVITE sip:5000@172.18.193.222:5060 SIP/2.0 Via: SIP/2.0/UDP 172.18.195.83:5060 From: sipp &lt;sip:sipp@172.18.195.83:5060&gt;;tag=1 To: sut &lt;sip:5000@172.18.193.222:5060&gt; Call-ID: 1-21473@172.18.195.83 Cseq: 1 INVITE Replaces: 425928@bobster.example.org;to-tag=7743;from-tag=6472 .....  SIP/2.0 403 Forbidden Via: SIP/2.0/UDP 172.18.195.83:5060 From: sipp &lt;sip:sipp@172.18.195.83:5060&gt;;tag=1 To: sut &lt;sip:5000@172.18.193.222:5060&gt;;tag=673966968 Date: Tue, 5 Jul 2005 18:25:02 GMT Call-ID: 1-21473@172.18.195.83 CSeq: 1 INVITE Content-Length: 0 </pre>                                                                                   |

**Cisco Confidential****Table 1-28 Troubleshooting SIP Trunk Configuration (continued)**

| Symptom                                                                                                                             | Possible Cause                                                                                                               | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UAS responds to a SIP request with a 404 Not Found message.                                                                         | Digit analysis failed to find the device or a route for the called number.                                                   | This could happen for many reasons. If the phone with the dialed number is not registered, or if the host in the request does not match the Unified CM host or IP address and there is no SIP route pattern to route this number or DN, Digit Analysis will fail.                                                                                                                                                                                                                                               |
| Potential problems with forking exist.<br><br>Downstream SIP endpoints do not receive ACK to responses.                             | Not actually a problem. The SIP trunk does not support downstream forking for delayed media INVITE (w/o SDP).                | If downstream forking support is required, the SIP trunk must use an MTP. Make sure the "MTP Required" check box is checked on the SIP trunk configuration window.                                                                                                                                                                                                                                                                                                                                              |
| TLS connection for SIP trunk fails with "HandleSSLError - TLS protocol error..." in SDI log (ccmtrace).                             | TLS SIP trunk peer X509 certificate has not been imported into the local Unified CM trust store or is the incorrect version. | Ensure that the peer X509 certificate is version 3 and has been properly imported into the local Unified CM trust store.                                                                                                                                                                                                                                                                                                                                                                                        |
| TLS connection for SIP trunk fails with a 'ConnectionFailure' alarm on the TLS SIP trunk.                                           | X509 Certificate validation failed for the TLS SIP trunk peer.                                                               | Possible problems include X509 Subject Name mismatch or cipher string mismatch. Check the SDL log for more detailed logs under 'validTLSConnection' log.<br><br>Reason code 1 – Got X509 certificate for neither Authenticate or Encrypted trunk. (Should not happen.)<br><br>Reason code 2 – X509 Subject Common Name (CN=) mismatch with the trunk security profile settings.<br><br>Reason code 3 – TLS cipher string mismatch. (The trunk security profile 'Device Security Mode' settings determine this.) |
| TLS connection from CSPS to Unified CM via SIP fails with '416 Unsupported URI Scheme' or fails following a '301 Redirect' message. | Unified CM does not support SIPS URI handling, and CSPS will not complete a TLS connection without SIPS URI support.         | Do not use SIP TLS connections between CSPS and Unified CM.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| No Diversion header exists in the outgoing INVITE message when the call is forwarded                                                | The SIP trunk configuration option "Redirecting Diversion Header Delivery - outbound" does not get checked.                  | Make sure that the "Redirecting Diversion Header Delivery - outbound" is checked.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Although an end user is associated with primary extension and phone, no PUBLISH comes out.                                          | The preceding configuration applies for SUB/NOT based presence. It does not get used for PUBLISH.                            | Associate the user to the line appearance in the phone number configuration window.                                                                                                                                                                                                                                                                                                                                                                                                                             |

**Cisco Confidential****Table 1-28**      ***Troubleshooting SIP Trunk Configuration (continued)***

| <b>Symptom</b>                                                                    | <b>Possible Cause</b>                                                                                                    | <b>Recommended Action</b>                                                                                               |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Although an end user is associated to a line appearance, no PUBLISH comes out.    | PUBLISH will not get sent for the line appearance if its associated user does not have a Cisco Unified Presence license. | Assign a Cisco Unified Presence license to that user.                                                                   |
| REFER (method=BYE) does not terminate the call in a multinode Unified CM cluster. | Refer Manager cannot find the dialog to terminate.                                                                       | Make sure REFER(method=BYE) comes into the same node as the node that receives REFER(method=INVITE), for the same call. |

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## CHAPTER 2

# SIP Trunk Call Flows

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This chapter describes the new and modified SIP trunk call flows for Cisco Unified Communications Manager Release 6.0(1). It shows the interfaces and interactions between Cisco Unified Communications Manager and SIP networks for basic calls and supplementary services. The new features and enhancements that are introduced in this release do not impose any backward compatibility implications on previous versions of the SIP trunk.



### Note

Release 5.0(1) and later no longer requires preallocation of an MTP resource on the SIP trunk, which was a requirement of Release 4.1(3). As a result of not allocating an MTP, outbound INVITE messages do not contain SDP information. Only when an MTP is allocated does the SIP trunk send SDP in the INVITE. This is a key difference between Release 4.1(3) and later releases. The default behavior for Cisco Unified Communications Manager is to remove the MTP across the SIP trunk.



### Tip

A few SIP devices are not SIP compliant, and therefore, they do not support delayed media (INVITE without SDP). To interoperate with these types of devices, the SIP trunk that is associated with these devices must have MTP enabled.

## List of Scenarios:

### 1. BasicCall

- 1.1 Basic Incoming Call
- 1.2 Basic Outgoing Call
- 1.3 Basic Early Media Call via an Inter Cluster SIP Trunk
- 1.4 Basic Call to a SCCP Device via an Inter Cluster SIP Trunk
- 1.5 Basic Call to a SIP Device via an Inter Cluster SIP Trunk
- 1.6 Basic Call to a SCCP Device via an Inter Cluster SIP Trunk using an FQDN as the destination address in the SIP Trunk configuration
- 1.7 Basic Call to a SCCP Device via an Inter Cluster SIP Trunk using an SRV record as the destination address in the SIP Trunk configuration
- 1.8 Basic Hold-resume Call via a SIP Trunk to a SIP Proxy
- 1.9 Basic Hold-resume Call via an Inter Cluster SIP Trunk
- 1.10 Basic Conference Call via an Inter Cluster SIP Trunk

### 2. DTMF

- 2.1 Call between Cisco Unified CM SCCP phone and SIP Gateway using OOB Notify
- 2.2 Call between Cisco Unified CM SCCP phone and SIP Gateway using KPML
- 2.3 Call between Cisco Unified CM SCCP phone and SIP Gateway using RFC2833

### 3. Presence

- 3.1 Outgoing Presence Subscription
- 3.2 Incoming Presence Subscription
- 3.3 Incoming Presence Forbidden for Authorization Failure

### 4. Transfer

- 4.1 Basic Attended Transfer Call via an Inter Cluster SIP Trunk
- 4.2 Basic Early Transfer Call via an Inter Cluster SIP Trunk
- 4.3 Attended Transfer using the Cisco Unified CM SIP Trunk
- 4.4 Early Attended Transfer to SIP Proxy via Cisco Unified CM SIP Trunk

### 5. Update

- 5.1 Early Transfer Call to SIP Gateway No PRACK via Cisco Unified CM SIP Trunk
- 5.2 Early Transfer Call to SIP Gateway with PRACK via Cisco Unified CM SIP Trunk

### 6. TLS

- 6.1 TLS Rejection with X509 Subject Name Mismatch

### 7. T38

- 7.1 SIP Trunk Passes through T38 Fax Call between SIP Gateways

### 8. SipsUri

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- 8.1 Incoming SIPS URI Request Redirected by Cisco Unified CM
- 8.2 Incoming SIPS URI Request Rejected by Cisco Unified CM
- 9. Info
  - 9.1 SIP Video Call Using INFO Method
- 10. MWI
  - 10.1 MWI Status via Unsolicited NOTIFY
- 11. Prack
  - 11.1 Outbound Early Media Call with PRACK
  - 11.2 Outbound Delayed Media Call with PRACK
- 12. CallPreservation
  - 12.1 Session Timers Negotiation & Refresh for the Sip Trunk Call on "Cisco Unified CM".
  - 12.2 Periodic Refresh after Session Timer Negotiation Failure
  - 12.3 Sip Trunk Call Preservation when "Cisco Unified CM" is the "Refresher"
  - 12.4 SIP Trunk Call Preservation when "Cisco Unified CM" is "Non-Refresher"
- 13. 3xx
  - 13.1 Incoming 3xx Redirection
- 14. Authentication Authorization
  - 14.1 Unified CM Gets Authenticated as UAC
  - 14.2 Unified CM Authenticates Incoming Request
- 15. ACL
  - 15.1 Access Control List, Deny Presence Subscription
  - 15.2 Access Control List, Deny Out of Dialog REFER
  - 15.3 Access Control List, Deny Unsolicited NOTIFY
  - 15.4 Access Control List, Deny INVITE with Replaces Header
  - 15.5 Access Control List, Deny REFER with Replaces Header
- 16. RSVP
  - 16.1 Outgoing RSVP Call through SIP Trunk
- 17. Publish
  - 17.1 Basic PUBLISH Operations
  - 17.2 PUBLISH with Shared Line, A Holds and B Resumes
  - 17.3 PUBLISH with Shared Line, A Holds and B Selects
  - 17.4 PUBLISH Support for Mobility
  - 17.5 PUBLISH Support for DND

## 1. BasicCall

### 1.1 Basic Incoming Call

Title: Basic Incoming Call

Description:

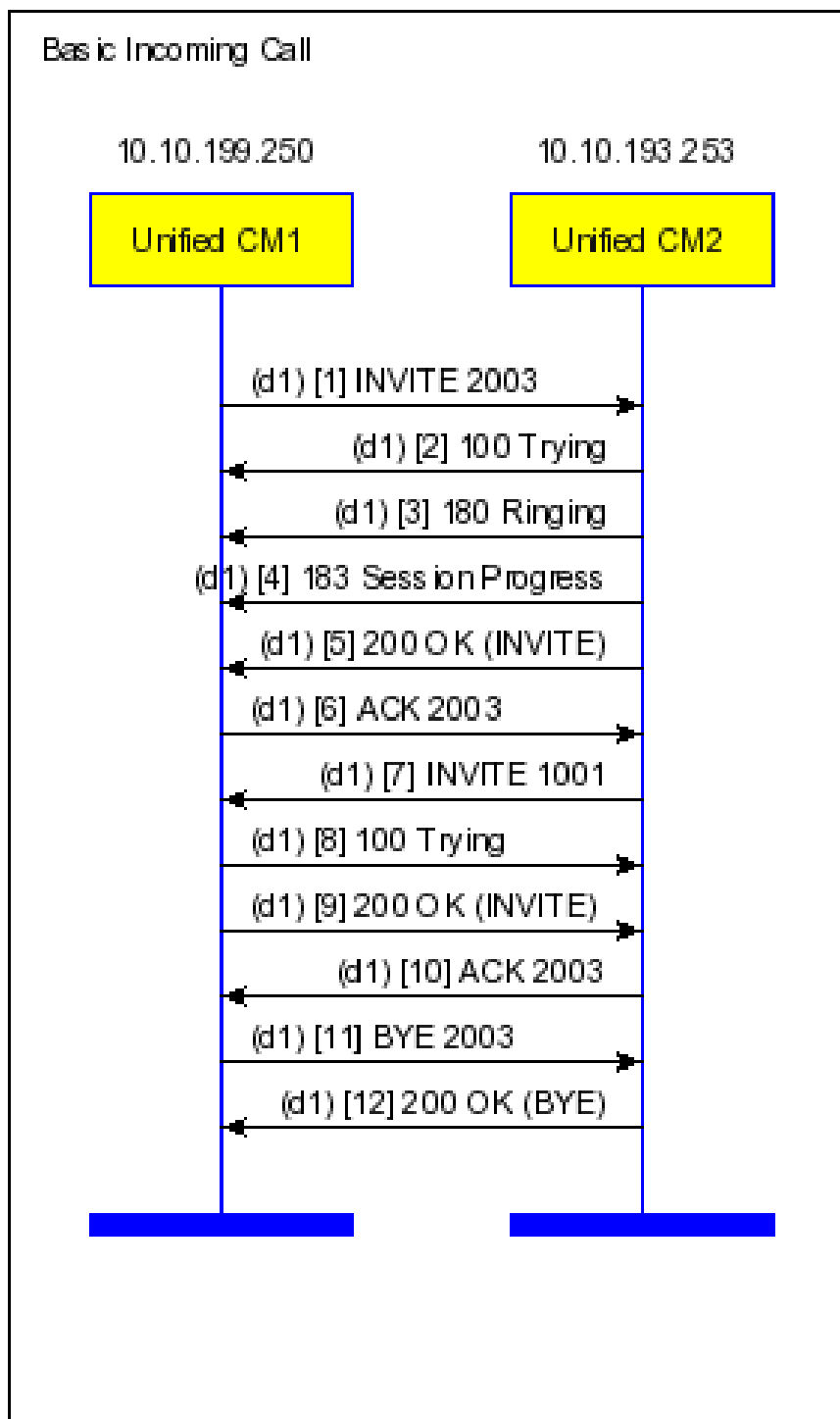
The following basic call flow illustrates the SIP messaging when the SIP trunk is acting as a UAS.

CM2 received an INVITE via the SIP Trunk

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[1] INVITE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc64d6aaef  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821  
 To: <sip:2003@10.10.193.253>  
 Date: Fri, 29 Jun 2007 19:57:25 GMT  
 Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc64d6aaef  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821  
 To: <sip:2003@10.10.193.253>  
 Date: Fri, 29 Jun 2007 19:57:25 GMT  
 Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc64d6aaef  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821  
 To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806  
 Date: Fri, 29 Jun 2007 19:57:25 GMT  
 Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc64d6aaef  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821  
 To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806  
 Date: Fri, 29 Jun 2007 19:57:25 GMT  
 Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[5] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc64d6aaef  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821

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```
To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
Date: Fri, 29 Jun 2007 19:57:25 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 301
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 4000 RTP/AVP 0 8 18 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[6] ACK sip:2003@10.10.193.253:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc77d29d99f
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
Date: Fri, 29 Jun 2007 19:57:25 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 228
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 23342 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[7] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK16d4fd758b8
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
Date: Fri, 29 Jun 2007 19:57:27 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 1800
Cisco-Guid: 4087416320-1750164517-8496-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
```

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```
c=IN IP4 10.10.199.238
t=0 0
m=audio 30886 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 100 Trying**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK16d4fd758b8
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
Date: Fri, 29 Jun 2007 19:57:27 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK16d4fd758b8
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
Date: Fri, 29 Jun 2007 19:57:27 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 23342 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[10] ACK sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK16e10051ea8
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
Date: Fri, 29 Jun 2007 19:57:27 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[11] BYE sip:2003@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc8543c93f9
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
Date: Fri, 29 Jun 2007 19:57:27 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[12] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc8543c93f9
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
Date: Fri, 29 Jun 2007 19:57:33 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
CSeq: 102 BYE
```



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Content-Length: 0

## 1.2 Basic Outgoing Call

Title: Basic Outgoing Call

Description:

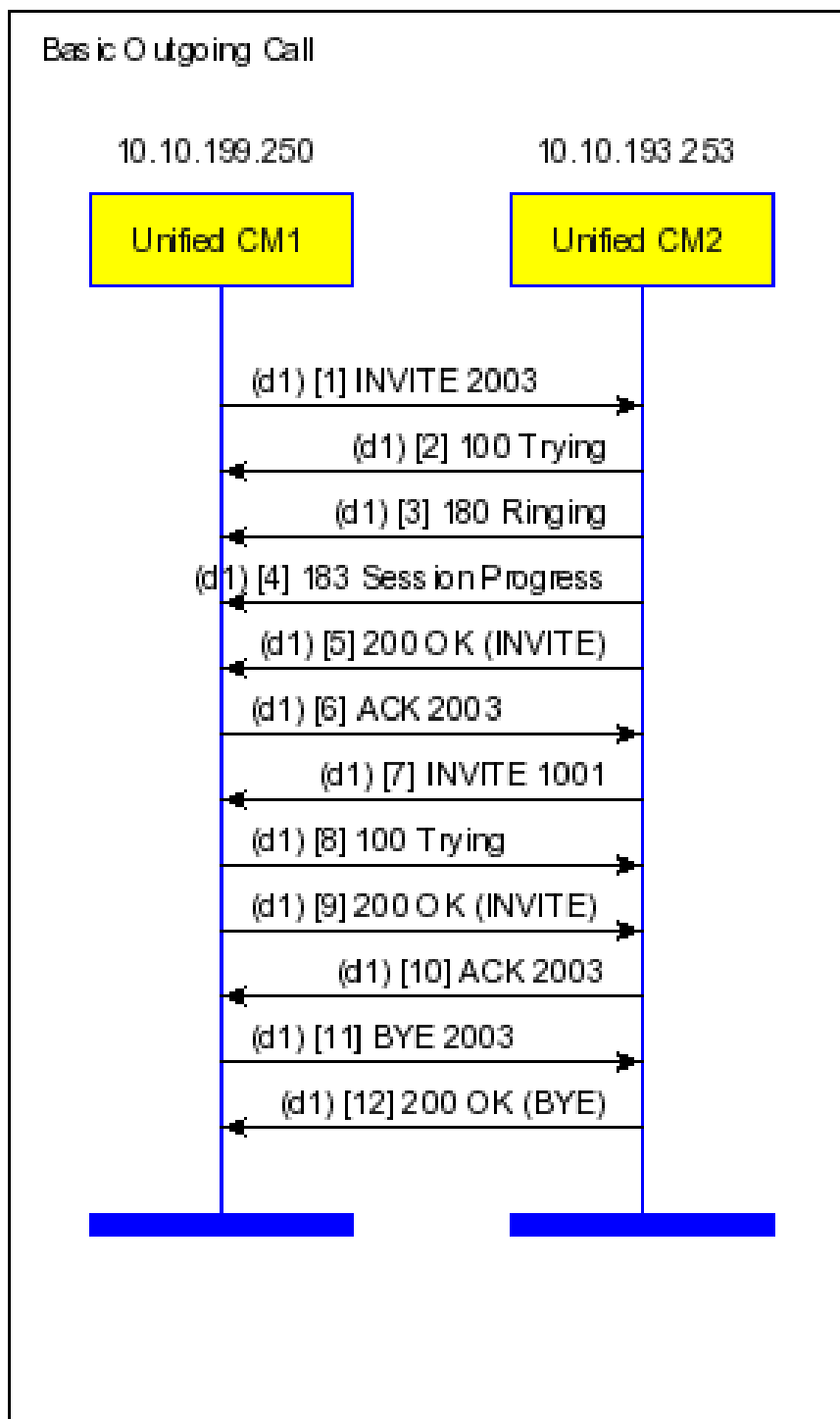
The following basic call flow illustrates the SIP messaging when the SIP trunk is acting as a UAC.

Cisco Unified CM1 sent out the initial INVITE.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253

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[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[1] INVITE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc64d6aaef  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821  
 To: <sip:2003@10.10.193.253>  
 Date: Fri, 29 Jun 2007 19:57:25 GMT  
 Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc64d6aaef  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821  
 To: <sip:2003@10.10.193.253>  
 Date: Fri, 29 Jun 2007 19:57:25 GMT  
 Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc64d6aaef  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821  
 To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806  
 Date: Fri, 29 Jun 2007 19:57:25 GMT  
 Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc64d6aaef  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821  
 To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806  
 Date: Fri, 29 Jun 2007 19:57:25 GMT  
 Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[5] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc64d6aaef  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821

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```
To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
Date: Fri, 29 Jun 2007 19:57:25 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 301
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 4000 RTP/AVP 0 8 18 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] ACK sip:2003@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc77d29d99f
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
Date: Fri, 29 Jun 2007 19:57:25 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 228
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 23342 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK16d4fd758b8
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
Date: Fri, 29 Jun 2007 19:57:27 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 1800
Cisco-Guid: 4087416320-1750164517-8496-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
```

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```
c=IN IP4 10.10.199.238
t=0 0
m=audio 30886 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 100 Trying**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK16d4fd758b8
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
Date: Fri, 29 Jun 2007 19:57:27 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK16d4fd758b8
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
Date: Fri, 29 Jun 2007 19:57:27 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 23342 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[10] ACK sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK16e10051ea8
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
Date: Fri, 29 Jun 2007 19:57:27 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[11] BYE sip:2003@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc8543c93f9
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
Date: Fri, 29 Jun 2007 19:57:27 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[12] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc8543c93f9
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470821
To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103806
Date: Fri, 29 Jun 2007 19:57:33 GMT
Call-ID: f3a10600-68516425-365-fac712ac@10.10.199.250
CSeq: 102 BYE
```

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Content-Length: 0

### 1.3 Basic Early Media Call via an Inter Cluster SIP Trunk

Title: Basic Early Media Call via an Inter Cluster SIP Trunk

Description:

The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk.

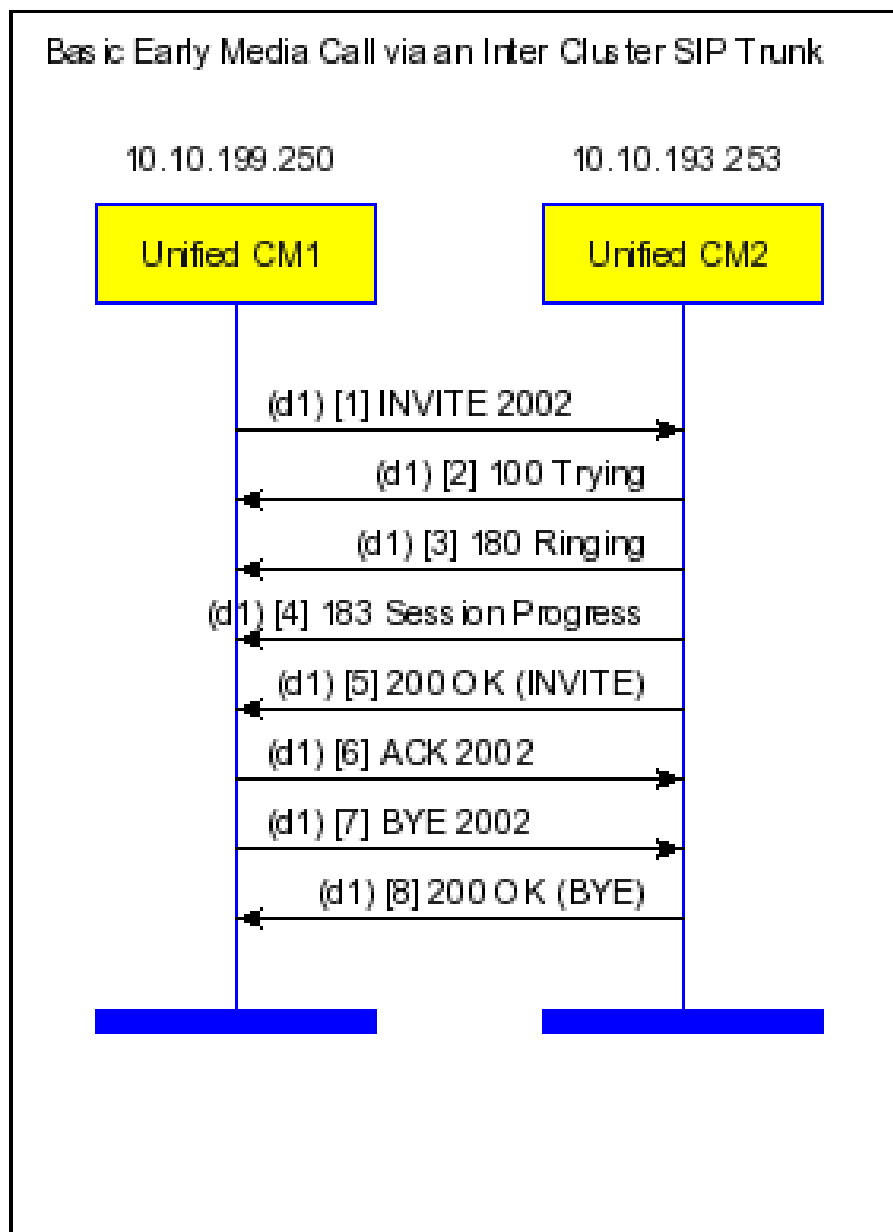
Cisco Unified CM (Unified CM1) sent out the initial INVITE with SDP.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253



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[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[1] INVITE sip:2002@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb45f816506  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470810  
 To: <sip:2002@10.10.193.253>  
 Date: Fri, 29 Jun 2007 19:39:09 GMT  
 Call-ID: 665cb200-68515fdd-356-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.250  
 t=0 0  
 m=audio 24808 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb45f816506  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470810  
 To: <sip:2002@10.10.193.253>  
 Date: Fri, 29 Jun 2007 19:39:09 GMT  
 Call-ID: 665cb200-68515fdd-356-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb45f816506  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470810  
 To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103797  
 Date: Fri, 29 Jun 2007 19:39:09 GMT  
 Call-ID: 665cb200-68515fdd-356-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2002@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb45f816506  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470810  
 To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103797  
 Date: Fri, 29 Jun 2007 19:39:09 GMT  
 Call-ID: 665cb200-68515fdd-356-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2002@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 215

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.34  
 t=0 0  
 m=audio 22464 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20

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```
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb45f816506
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470810
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103797
Date: Fri, 29 Jun 2007 19:39:09 GMT
Call-ID: 665cb200-68515fdd-356-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2002@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 215
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.34
t=0 0
m=audio 22464 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] ACK sip:2002@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb53a97a62a
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470810
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103797
Date: Fri, 29 Jun 2007 19:39:09 GMT
Call-ID: 665cb200-68515fdd-356-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] BYE sip:2002@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb67758b550
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470810
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103797
Date: Fri, 29 Jun 2007 19:39:09 GMT
Call-ID: 665cb200-68515fdd-356-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb67758b550
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470810
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103797
Date: Fri, 29 Jun 2007 19:39:16 GMT
Call-ID: 665cb200-68515fdd-356-fac712ac@10.10.199.250
CSeq: 102 BYE
Content-Length: 0
```

## 1.4 Basic Call to a SCCP Device via an Inter Cluster SIP Trunk

Title: Basic Call to a SCCP Device via an Inter Cluster SIP Trunk

Description:

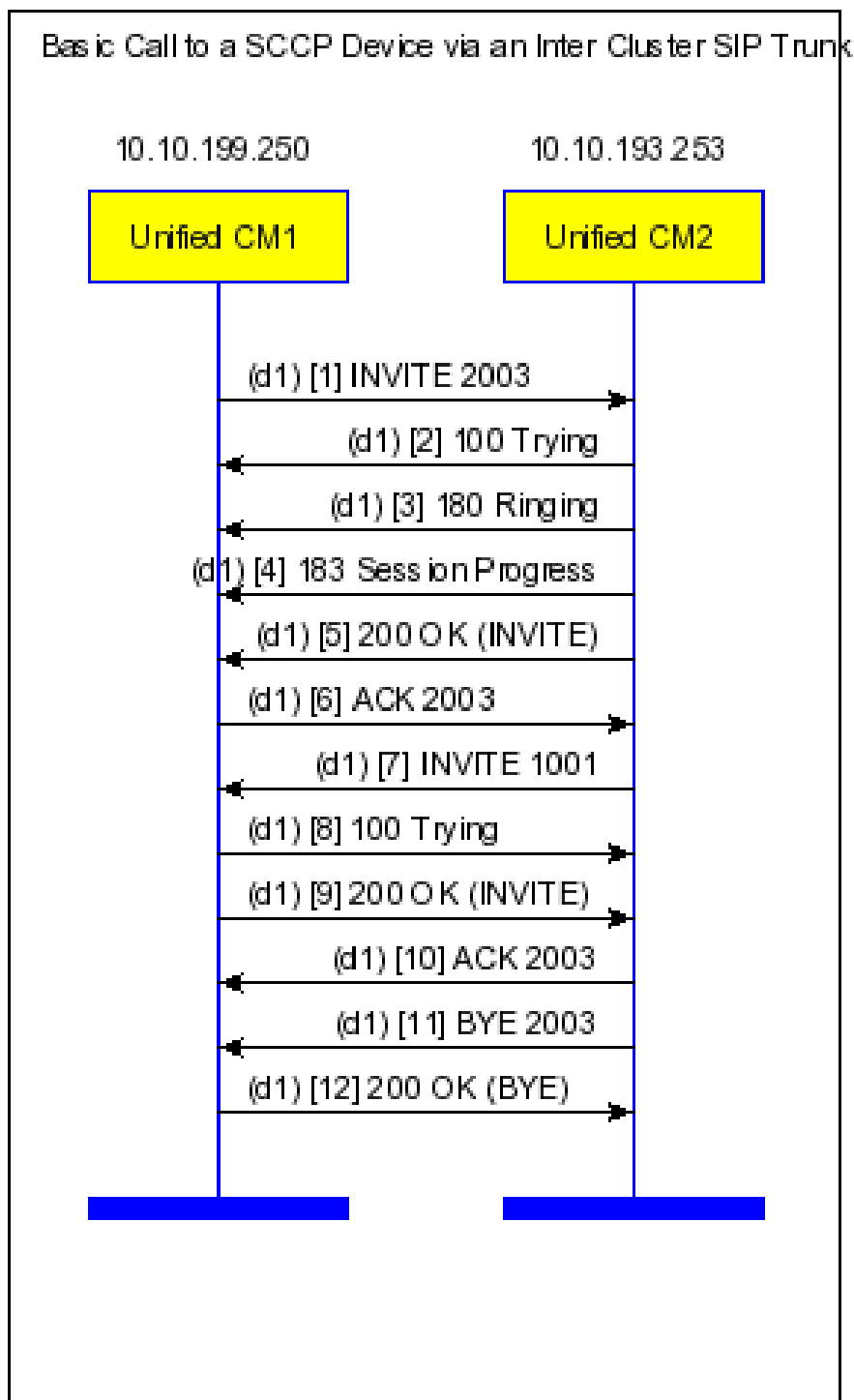
The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk.

Cisco Unified CM (Unified CM1) sent out the initial INVITE.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:2003@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5a6d9956bd  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470662  
 To: <sip:2003@10.10.193.253>  
 Date: Fri, 29 Jun 2007 18:31:11 GMT  
 Call-ID: e7af4700-68514fef-321-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5a6d9956bd  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470662  
 To: <sip:2003@10.10.193.253>  
 Date: Fri, 29 Jun 2007 18:31:11 GMT  
 Call-ID: e7af4700-68514fef-321-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 180 Ringing**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5a6d9956bd  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470662  
 To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103760  
 Date: Fri, 29 Jun 2007 18:31:11 GMT  
 Call-ID: e7af4700-68514fef-321-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5a6d9956bd  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470662  
 To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103760  
 Date: Fri, 29 Jun 2007 18:31:11 GMT  
 Call-ID: e7af4700-68514fef-321-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5a6d9956bd

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```

From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470662
To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103760
Date: Fri, 29 Jun 2007 18:31:11 GMT
Call-ID: e7af4700-68514fef-321-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 301

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 4000 RTP/AVP 0 8 18 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] ACK sip:2003@10.10.193.253:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5b66c42cf7
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470662
To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103760
Date: Fri, 29 Jun 2007 18:31:11 GMT
Call-ID: e7af4700-68514fef-321-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 30296 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKba52cad1ed
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103760
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470662
Date: Fri, 29 Jun 2007 18:31:13 GMT
Call-ID: e7af4700-68514fef-321-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 1800
Cisco-Guid: 3887023872-1750159343-8410-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 216

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253

```

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```
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 21388 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 100 Trying**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKba52cad1ed
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103760
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470662
Date: Fri, 29 Jun 2007 18:31:13 GMT
Call-ID: e7af4700-68514fef-321-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKba52cad1ed
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103760
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470662
Date: Fri, 29 Jun 2007 18:31:13 GMT
Call-ID: e7af4700-68514fef-321-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 30296 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[10] ACK sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKbbdd286d0
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103760
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470662
Date: Fri, 29 Jun 2007 18:31:13 GMT
Call-ID: e7af4700-68514fef-321-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[11] BYE sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKbcd227d6f
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103760
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470662
Date: Fri, 29 Jun 2007 18:31:13 GMT
Call-ID: e7af4700-68514fef-321-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[12] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKbcd227d6f
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103760
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470662
Date: Fri, 29 Jun 2007 18:31:15 GMT
Call-ID: e7af4700-68514fef-321-fac712ac@10.10.199.250
```



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CSeq: 102 BYE  
Content-Length: 0

## 1.5 Basic Call to a SIP Device via an Inter Cluster SIP Trunk

Title: Basic Call to a SIP Device via an Inter Cluster SIP Trunk

Description:

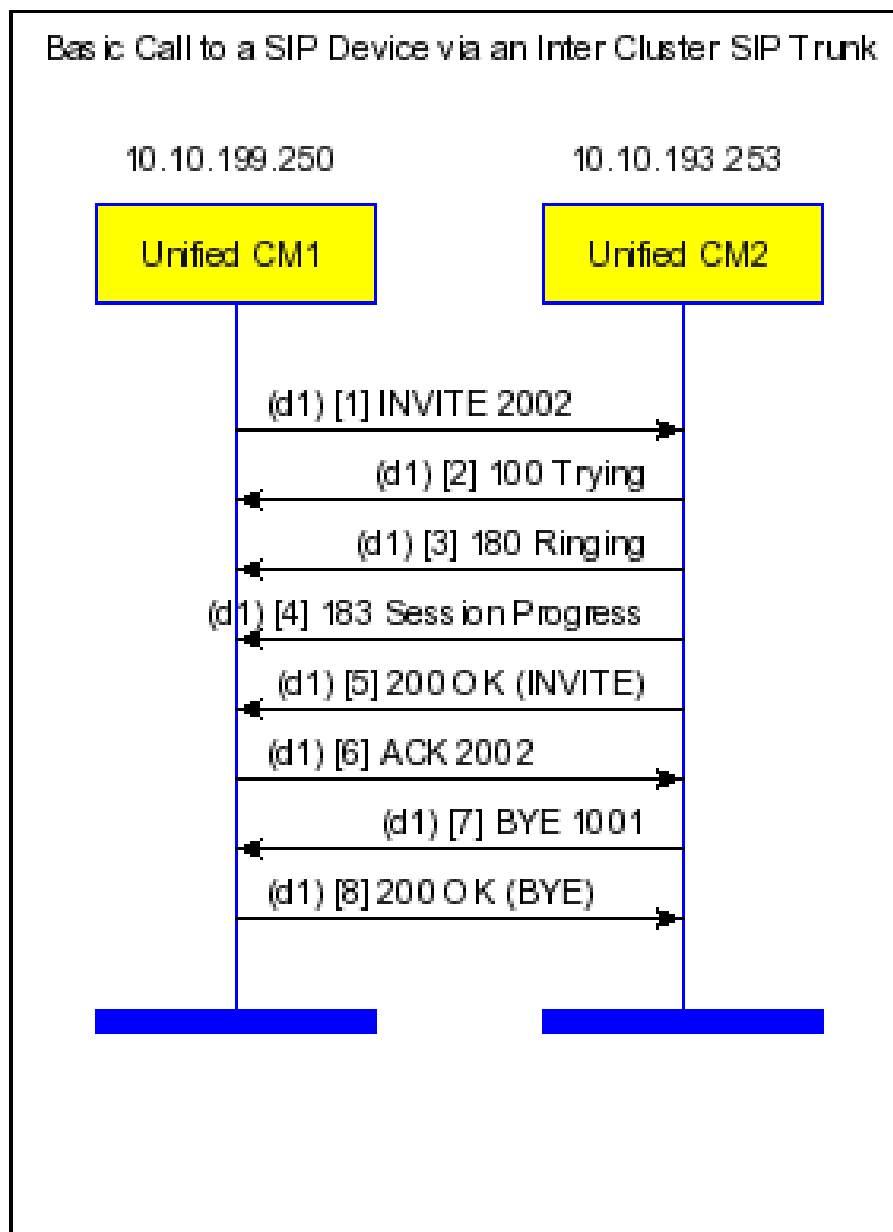
The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk.

Cisco Unified CM (Unified CM1) sent out the initial INVITE.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:2002@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5c5a58cf88  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470667  
 To: <sip:2002@10.10.193.253>  
 Date: Fri, 29 Jun 2007 18:38:10 GMT  
 Call-ID: e16d9a80-68515192-326-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5c5a58cf88  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470667  
 To: <sip:2002@10.10.193.253>  
 Date: Fri, 29 Jun 2007 18:38:10 GMT  
 Call-ID: e16d9a80-68515192-326-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 180 Ringing**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5c5a58cf88  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470667  
 To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103762  
 Date: Fri, 29 Jun 2007 18:38:10 GMT  
 Call-ID: e16d9a80-68515192-326-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2002@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5c5a58cf88  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470667  
 To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103762  
 Date: Fri, 29 Jun 2007 18:38:10 GMT  
 Call-ID: e16d9a80-68515192-326-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2002@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 310

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.34  
 t=0 0  
 m=audio 29532 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=fmtp:18 annexb=no  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5c5a58cf88

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```

From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470667
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103762
Date: Fri, 29 Jun 2007 18:38:10 GMT
Call-ID: e16d9a80-68515192-326-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2002@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 310

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.34
t=0 0
m=audio 29532 RTP/AVP 0 8 18 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] ACK sip:2002@10.10.193.253:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5d298b3f6d
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470667
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103762
Date: Fri, 29 Jun 2007 18:38:10 GMT
Call-ID: e16d9a80-68515192-326-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 23098 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] BYE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKbf6206ab4e
From: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103762
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470667
Date: Fri, 29 Jun 2007 18:38:12 GMT
Call-ID: e16d9a80-68515192-326-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 101 BYE
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKbf6206ab4e
From: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103762
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470667
Date: Fri, 29 Jun 2007 18:38:15 GMT
Call-ID: e16d9a80-68515192-326-fac712ac@10.10.199.250
CSeq: 101 BYE
Content-Length: 0

```

## 1.6 Basic Call to a SCCP Device via an Inter Cluster SIP Trunk using an FQDN as the destination address in the SIP Trunk configuration

Title: Basic Call to a SCCP Device via an Inter Cluster SIP Trunk using an FQDN as the destination address in the SIP Trunk configuration

### Description:

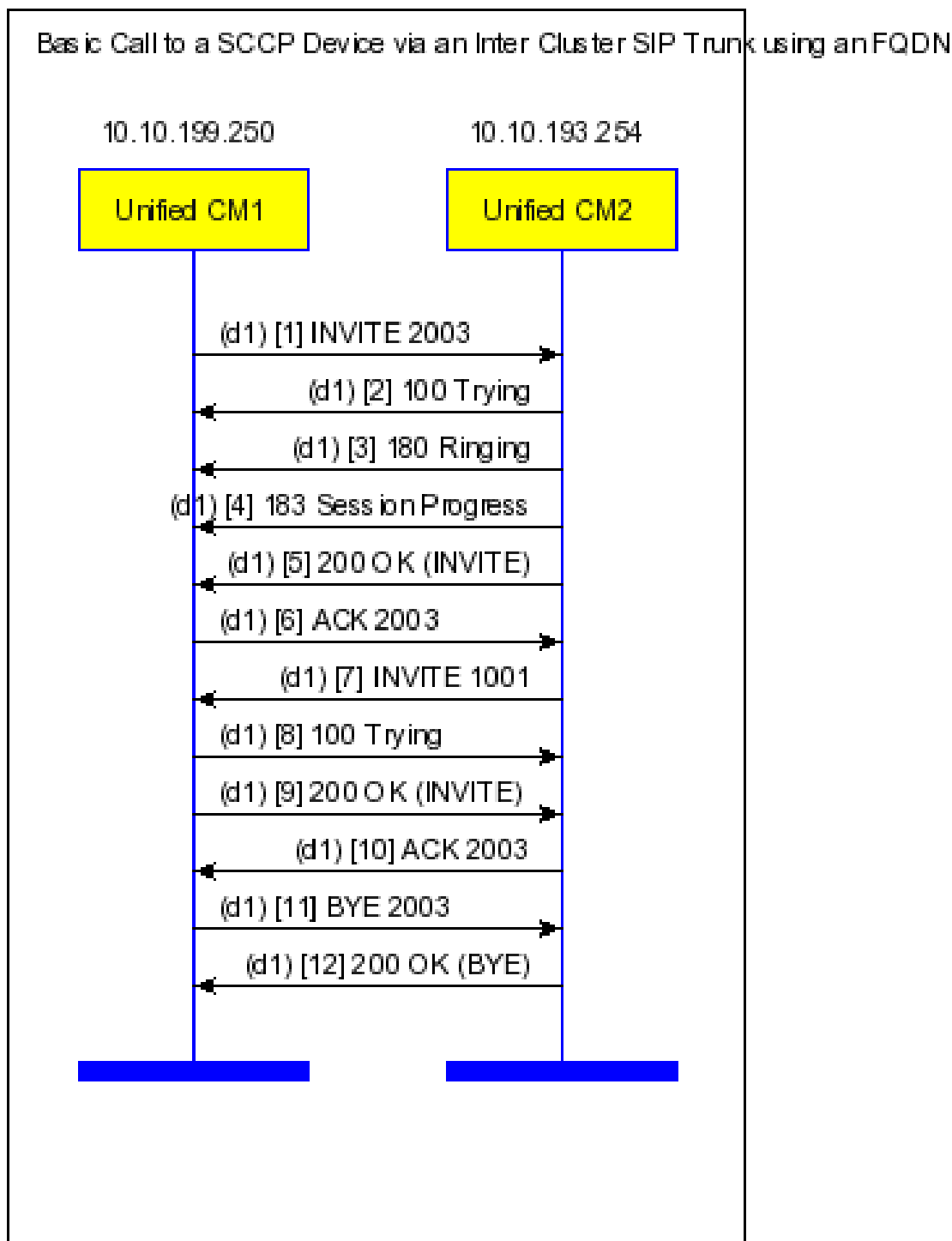
The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk, where Unified CM2's address is in the form of an fdqn.

Cisco Unified CM (Unified CM1) sent out the initial INVITE.

### Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.254

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:2003@siptrunk18.cisco.com:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK276182106  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-26449634  
 To: <sip:2003@siptrunk18.cisco.com>  
 Date: Mon, 23 Jul 2007 17:36:19 GMT  
 Call-ID: 3769f100-6a41e713-6-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK276182106  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-26449634  
 To: <sip:2003@siptrunk18.cisco.com>  
 Date: Mon, 23 Jul 2007 17:36:19 GMT  
 Call-ID: 3769f100-6a41e713-6-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 180 Ringing**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK276182106  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-26449634  
 To: <sip:2003@siptrunk18.cisco.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26448853  
 Date: Mon, 23 Jul 2007 17:36:19 GMT  
 Call-ID: 3769f100-6a41e713-6-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2003@10.10.193.254>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.254:5060;transport=tcp>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK276182106  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-26449634  
 To: <sip:2003@siptrunk18.cisco.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26448853  
 Date: Mon, 23 Jul 2007 17:36:19 GMT  
 Call-ID: 3769f100-6a41e713-6-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.254>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.254:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.254  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK276182106  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-26449634  
 To: <sip:2003@siptrunk18.cisco.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26448853



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Date: Mon, 23 Jul 2007 17:36:19 GMT  
 Call-ID: 3769f100-6a41e713-6-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.254>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.254:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.254  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]  
**[6] ACK sip:2003@10.10.193.254:5060;transport=tcp SIP/2.0**  
 Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK37e11deee  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-26449634  
 To: <sip:2003@siptrunk18.cisco.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26448853  
 Date: Mon, 23 Jul 2007 17:36:19 GMT  
 Call-ID: 3769f100-6a41e713-6-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence  
 Content-Type: application/sdp  
 Content-Length: 228

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 27502 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=recvonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]  
**[7] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0**  
 Via: SIP/2.0/TCP 10.10.193.254:5060;branch=z9hG4bK06b2043b9  
 Remote-Party-ID: <sip:2003@10.10.193.254>;party=calling;screen=yes;privacy=off  
 From: <sip:2003@siptrunk18.cisco.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26448853  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-26449634  
 Date: Mon, 23 Jul 2007 17:36:21 GMT  
 Call-ID: 3769f100-6a41e713-6-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 120  
 Cisco-Guid: 929689856-1782703891-1-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2003@10.10.193.254:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 1800;refresher=uac  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.254  
 s=SIP Call  
 c=IN IP4 10.10.199.238

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```
t=0 0
m=audio 20666 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[8] SIP/2.0 100 Trying**

```
Via: SIP/2.0/TCP 10.10.193.254:5060;branch=z9hG4bK06b2043b9
From: <sip:2003@siptrunk18.cisco.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26448853
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-26449634
Date: Mon, 23 Jul 2007 17:36:21 GMT
Call-ID: 3769f100-6a41e713-6-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[9] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.193.254:5060;branch=z9hG4bK06b2043b9
From: <sip:2003@siptrunk18.cisco.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26448853
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-26449634
Date: Mon, 23 Jul 2007 17:36:21 GMT
Call-ID: 3769f100-6a41e713-6-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 27502 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[10] ACK sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.254:5060;branch=z9hG4bK170f8bd60
From: <sip:2003@siptrunk18.cisco.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26448853
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-26449634
Date: Mon, 23 Jul 2007 17:36:21 GMT
Call-ID: 3769f100-6a41e713-6-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[11] BYE sip:2003@10.10.193.254:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK43ecb1cb7
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-26449634
To: <sip:2003@siptrunk18.cisco.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26448853
Date: Mon, 23 Jul 2007 17:36:21 GMT
Call-ID: 3769f100-6a41e713-6-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[12] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK43ecb1cb7
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-26449634
To: <sip:2003@siptrunk18.cisco.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26448853
Date: Mon, 23 Jul 2007 17:36:23 GMT
Call-ID: 3769f100-6a41e713-6-fac712ac@10.10.199.250
CSeq: 102 BYE
Content-Length: 0
```

## 1.7 Basic Call to a SCCP Device via an Inter Cluster SIP Trunk using an SRV record as the destination address in the SIP Trunk configuration

Title: Basic Call to a SCCP Device via an Inter Cluster SIP Trunk using an SRV record as the destination address in the SIP Trunk configuration

### Description:

The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk, where Unified CM2's address is in the form of an SRV record that gets resolved to an fqdn pointing to CM2.

Cisco Unified CM (Unified CM1) sent out the initial INVITE.

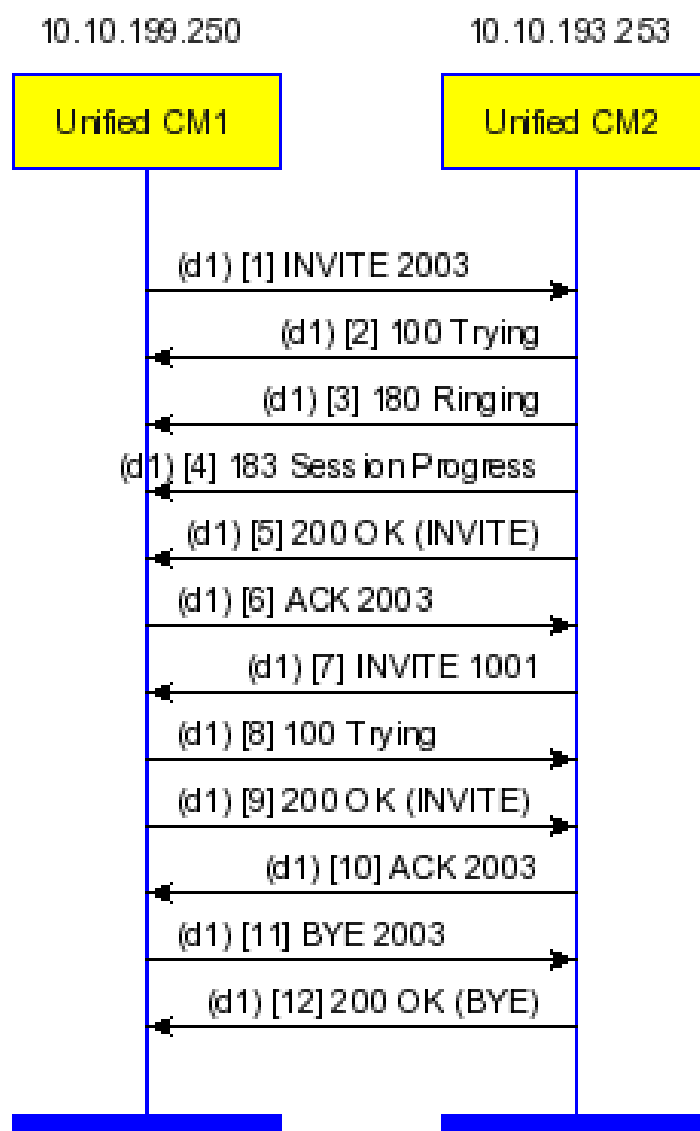
### Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253

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Basic Call to a SCCP Device via an Inter Cluster SIP Trunk using an SRV



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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:2003@siptrunk17.sip.com:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f5e2d3ecd  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868  
 To: <sip:2003@siptrunk17.sip.com>  
 Date: Mon, 23 Jul 2007 17:19:15 GMT  
 Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 102 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f5e2d3ecd  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868  
 To: <sip:2003@siptrunk17.sip.com>  
 Date: Mon, 23 Jul 2007 17:19:15 GMT  
 Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 180 Ringing**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f5e2d3ecd  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868  
 To: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603  
 Date: Mon, 23 Jul 2007 17:19:15 GMT  
 Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f5e2d3ecd  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868  
 To: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603  
 Date: Mon, 23 Jul 2007 17:19:15 GMT  
 Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f5e2d3ecd  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868  
 To: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603

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Date: Mon, 23 Jul 2007 17:19:15 GMT  
 Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]  
**[6] ACK sip:2003@10.10.193.253:5060;transport=tcp SIP/2.0**  
 Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK306805814b  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868  
 To: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603  
 Date: Mon, 23 Jul 2007 17:19:15 GMT  
 Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence  
 Content-Type: application/sdp  
 Content-Length: 228

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 23412 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=recvonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]  
**[7] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0**  
 Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK03ff46e6b  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868  
 Date: Mon, 23 Jul 2007 17:19:17 GMT  
 Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 120  
 Cisco-Guid: 3574591744-1782702867-2-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 1800;refresher=uac  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238

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```
t=0 0
m=audio 16578 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 100 Trying**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK03ff46e6b
From: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
Date: Mon, 23 Jul 2007 17:19:17 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK03ff46e6b
From: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
Date: Mon, 23 Jul 2007 17:19:17 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 23412 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[10] ACK sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK13cb0facc
From: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
Date: Mon, 23 Jul 2007 17:19:17 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[11] BYE sip:2003@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK31507f6bd1
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
To: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
Date: Mon, 23 Jul 2007 17:19:17 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 103 BYE
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[12] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK31507f6bd1
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
To: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
Date: Mon, 23 Jul 2007 17:19:22 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
CSeq: 103 BYE
Content-Length: 0
```

## 1.8 Basic Hold-resume Call via a SIP Trunk to a SIP Proxy

Title: Basic Hold-resume Call via a SIP Trunk to a SIP Proxy

Description:

The following call flow illustrates the SIP messaging that takes place between a Cisco Unified CMs and a Cisco Unified SIP Proxy via a SIP trunk.

Cisco Unified CM initiated the "hold" and then resumed the call.

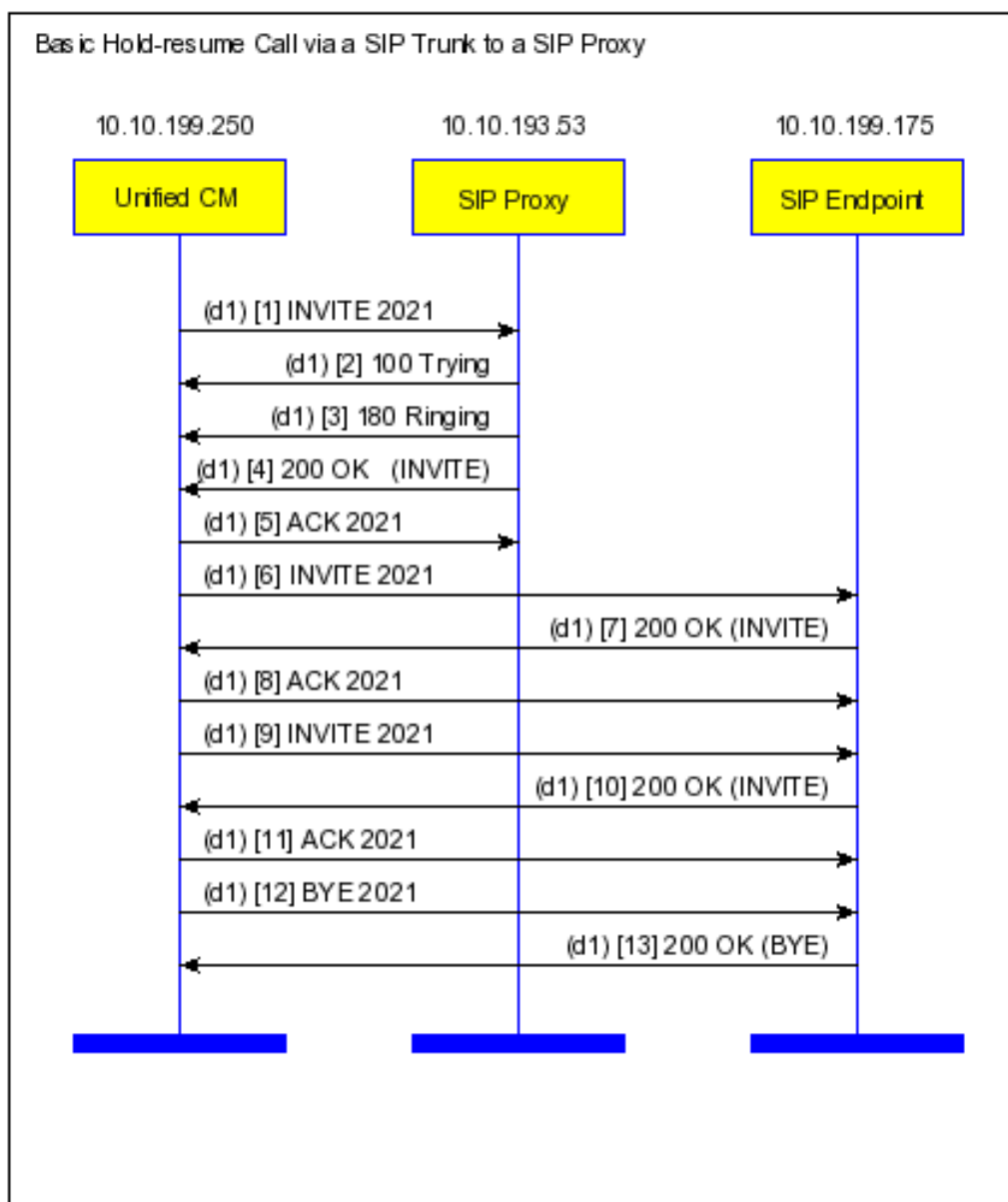
Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = SIP Proxy, IP = 10.10.193.53

Node = SIP Endpoint, IP = 10.10.199.175



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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:2021@10.10.193.53:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK345cc782cc  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616  
 To: <sip:2021@10.10.193.53>  
 Date: Thu, 28 Jun 2007 22:46:45 GMT  
 Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/UDP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK345cc782cc  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616  
 To: <sip:2021@10.10.193.53>  
 Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250  
 Date: Thu, 28 Jun 2007 22:46:46 GMT  
 CSeq: 101 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 180 Ringing**

Via: SIP/2.0/UDP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK345cc782cc  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e85b0f3c657465-1f03d16f  
 Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250  
 Date: Thu, 28 Jun 2007 22:46:46 GMT  
 CSeq: 101 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK345cc782cc  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e85b0f3c657465-1f03d16f  
 Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250  
 Date: Thu, 28 Jun 2007 22:46:54 GMT  
 CSeq: 101 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Supported: replaces  
 Content-Length: 258  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=optional

```
v=0
o=Cisco-SIPUA 2967 0 IN IP4 10.10.199.175
s=SIP Call
t=0 0
m=audio 19428 RTP/AVP 0 8 18 101
c=IN IP4 10.10.199.175
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] ACK sip:2021@10.10.199.175:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK355002186a  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616

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```
To: <sip:2021@10.10.193.53>;tag=000f24aa92e85b0f3c657465-1f03d16f
Date: Thu, 28 Jun 2007 22:46:45 GMT
Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 18334 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] INVITE sip:2021@10.10.199.175:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK366c9ef973
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616
To: <sip:2021@10.10.193.53>;tag=000f24aa92e85b0f3c657465-1f03d16f
Date: Thu, 28 Jun 2007 22:47:06 GMT
Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5060>
Expires: 180
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 221
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 18334 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] SIP/2.0 200 OK**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK366c9ef973
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616
To: <sip:2021@10.10.193.53>;tag=000f24aa92e85b0f3c657465-1f03d16f
Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250
Date: Thu, 28 Jun 2007 22:47:06 GMT
CSeq: 102 INVITE
Server: Cisco-CP7960G/7.5
Contact: <sip:2021@10.10.199.175:5060>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Supported: replaces
Content-Length: 208
Content-Type: application/sdp
Content-Disposition: session;handling=optional
```

```
v=0
o=Cisco-SIPUA 2967 1 IN IP4 10.10.199.175
s=SIP Call
t=0 0
m=audio 19428 RTP/AVP 0 101
c=IN IP4 10.10.199.175
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=inactive
```

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[8] ACK sip:2021@10.10.199.175:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK373ba5fc6f  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e85b0f3c657465-1f03d16f  
 Date: Thu, 28 Jun 2007 22:47:06 GMT  
 Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence, kpml  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[9] INVITE sip:2021@10.10.199.175:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK3839b5361a  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e85b0f3c657465-1f03d16f  
 Date: Thu, 28 Jun 2007 22:47:12 GMT  
 Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 103 INVITE  
 Max-Forwards: 70  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[10] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK3839b5361a  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e85b0f3c657465-1f03d16f  
 Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250  
 Date: Thu, 28 Jun 2007 22:47:12 GMT  
 CSeq: 103 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Supported: replaces  
 Content-Length: 258  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=optional

v=0  
 o=Cisco-SIPUA 2967 1 IN IP4 10.10.199.175  
 s=SIP Call  
 t=0 0  
 m=audio 19428 RTP/AVP 0 8 18 101  
 c=IN IP4 10.10.199.175  
 a=rtpmap:0 PCMU/8000  
 a=rtpmap:8 PCMA/8000  
 a=rtpmap:18 G729/8000  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15  
 a=sendrecv

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[11] ACK sip:2021@10.10.199.175:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK39174bf84b  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e85b0f3c657465-1f03d16f  
 Date: Thu, 28 Jun 2007 22:47:12 GMT  
 Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 103 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 20164 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000

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```
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[12] BYE sip:2021@10.10.199.175:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK3a2d89f8e1
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616
To: <sip:2021@10.10.193.53>;tag=000f24aa92e85b0f3c657465-1f03d16f
Date: Thu, 28 Jun 2007 22:47:12 GMT
Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 104 BYE
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[13] SIP/2.0 200 OK**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK3a2d89f8e1
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470616
To: <sip:2021@10.10.193.53>;tag=000f24aa92e85b0f3c657465-1f03d16f
Call-ID: 710c3e00-68413a55-9f-fac712ac@10.10.199.250
Date: Thu, 28 Jun 2007 22:47:14 GMT
CSeq: 104 BYE
Server: Cisco-CP7960G/7.5
Content-Length: 0
```

## 1.9 Basic Hold-resume Call via an Inter Cluster SIP Trunk

Title: Basic Hold-resume Call via an Inter Cluster SIP Trunk

Description:

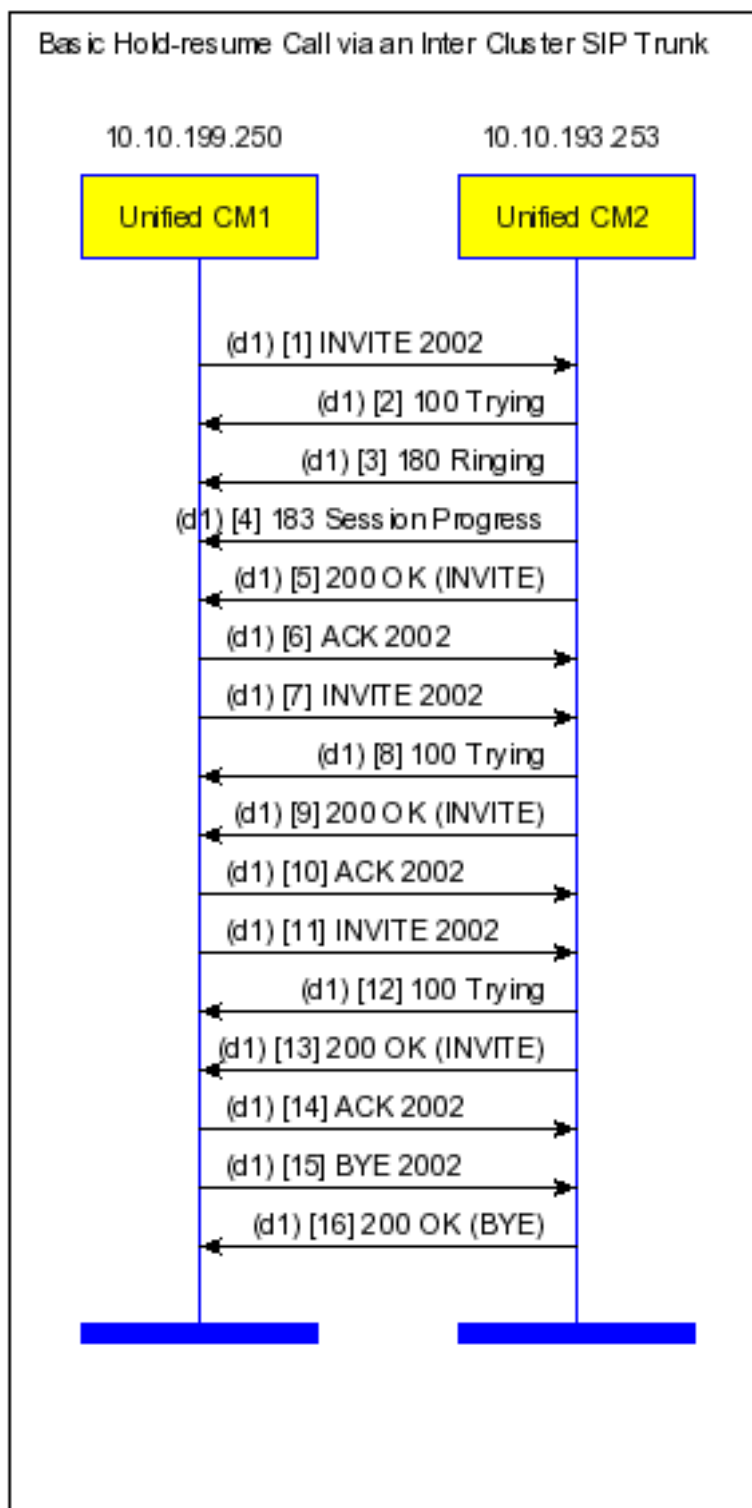
The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk.

Cisco Unified CM (Unified CM1) initiated the "hold" and then resumed the call.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:2002@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6a7a0a71eb  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682  
 To: <sip:2002@10.10.193.253>  
 Date: Fri, 29 Jun 2007 18:49:03 GMT  
 Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6a7a0a71eb  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682  
 To: <sip:2002@10.10.193.253>  
 Date: Fri, 29 Jun 2007 18:49:03 GMT  
 Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 180 Ringing**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6a7a0a71eb  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682  
 To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770  
 Date: Fri, 29 Jun 2007 18:49:03 GMT  
 Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2002@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6a7a0a71eb  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682  
 To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770  
 Date: Fri, 29 Jun 2007 18:49:03 GMT  
 Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2002@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 310

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.34
t=0 0
m=audio 28736 RTP/AVP 0 8 18 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6a7a0a71eb



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```

From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770
Date: Fri, 29 Jun 2007 18:49:03 GMT
Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2002@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 310

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.34
t=0 0
m=audio 28736 RTP/AVP 0 8 18 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] ACK sip:2002@10.10.193.253:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6b4bed8032
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770
Date: Fri, 29 Jun 2007 18:49:03 GMT
Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 22798 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] INVITE sip:2002@10.10.193.253:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6c3e9a7195
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770
Date: Fri, 29 Jun 2007 18:49:17 GMT
Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uas
Content-Type: application/sdp
Content-Length: 221

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0

```

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```
t=0 0
m=audio 22798 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 100 Trying**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6c3e9a7195
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770
Date: Fri, 29 Jun 2007 18:49:17 GMT
Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6c3e9a7195
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770
Date: Fri, 29 Jun 2007 18:49:17 GMT
Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2002@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 227
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.34
t=0 0
m=audio 28736 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[10] ACK sip:2002@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6d324ad036
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770
Date: Fri, 29 Jun 2007 18:49:17 GMT
Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[11] INVITE sip:2002@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6e3a432564
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682
To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770
Date: Fri, 29 Jun 2007 18:49:18 GMT
Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uas
Content-Length: 0
```

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[12] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6e3a432564  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682  
 To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770  
 Date: Fri, 29 Jun 2007 18:49:18 GMT  
 Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250  
 CSeq: 103 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[13] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6e3a432564  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682  
 To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770  
 Date: Fri, 29 Jun 2007 18:49:18 GMT  
 Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250  
 CSeq: 103 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2002@10.10.193.253:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 310

v=0  
 o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.34  
 t=0 0  
 m=audio 28736 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=fmtp:18 annexb=no  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[14] ACK sip:2002@10.10.193.253:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6f45cf23ad  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682  
 To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770  
 Date: Fri, 29 Jun 2007 18:49:18 GMT  
 Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 103 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 24142 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[15] BYE sip:2002@10.10.193.253:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK705e034cf4  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682  
 To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770  
 Date: Fri, 29 Jun 2007 18:49:18 GMT  
 Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 104 BYE

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Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[16] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK705e034cf4

From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470682

To: <sip:2002@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103770

Date: Fri, 29 Jun 2007 18:49:20 GMT

Call-ID: 66a57f00-6851541f-32f-fac712ac@10.10.199.250

CSeq: 104 BYE

Content-Length: 0

## 1.10 Basic Conference Call via an Inter Cluster SIP Trunk

Title: Basic Conference Call via an Inter Cluster SIP Trunk

Description:

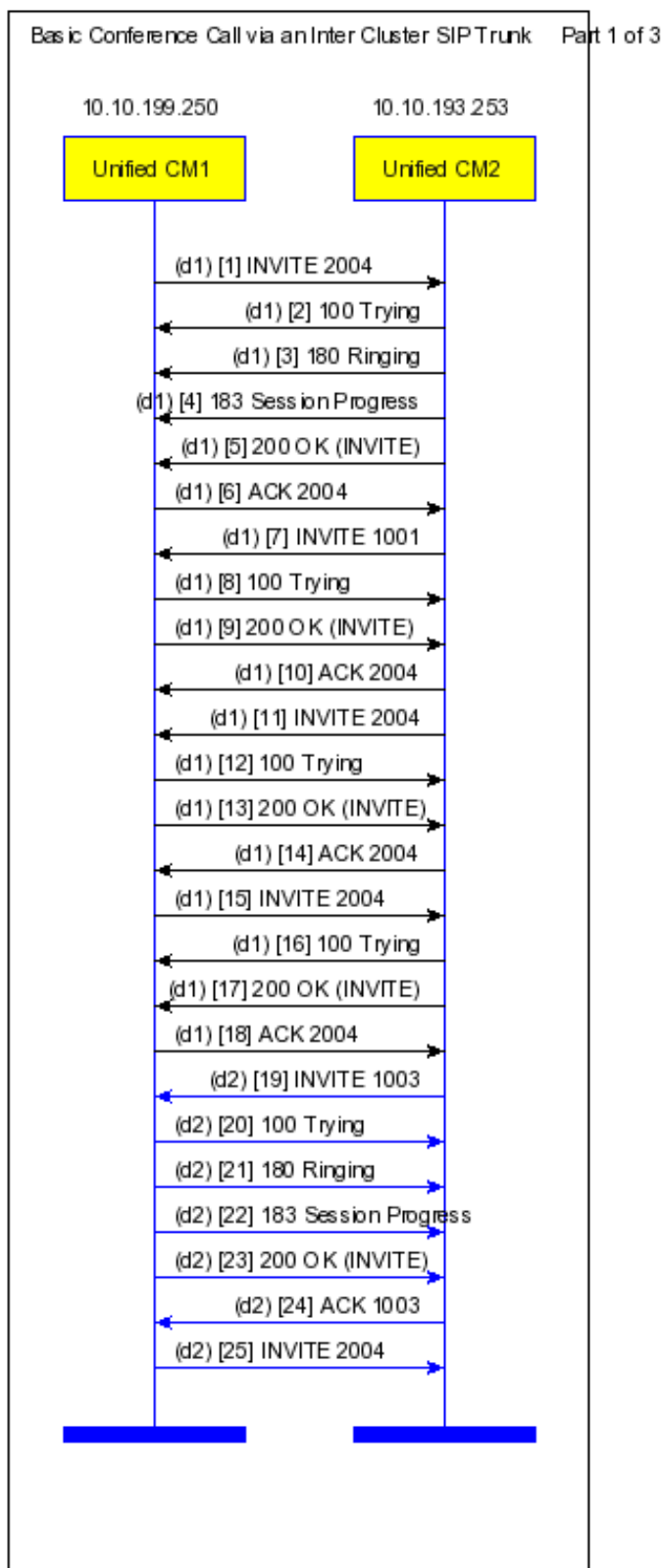
The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk.

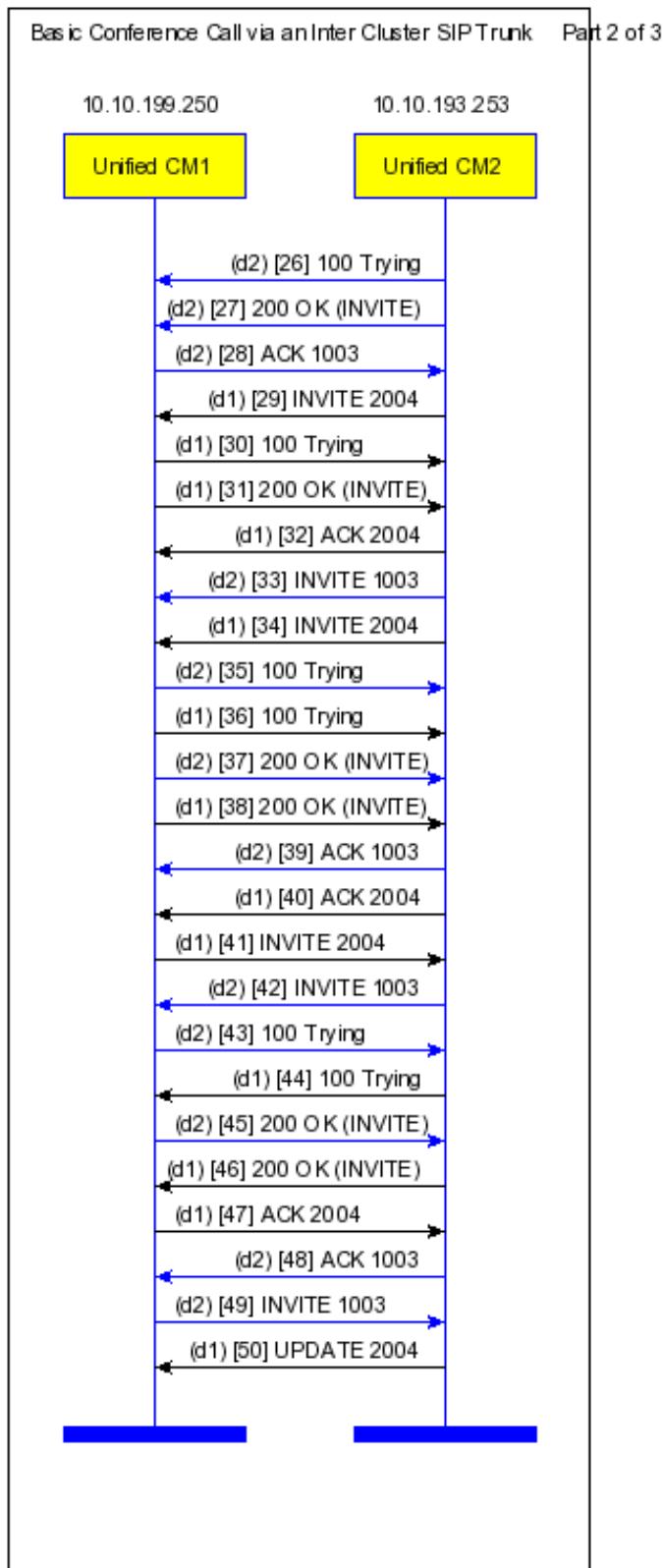
Cisco Unified IP Phone 1001 (registered with CM1) calls Cisco Unified IP Phone 2004 (registered with CM2). Then Cisco Unified IP Phone 2004 conferences with Cisco Unified IP phone 1003 (registered with CM1)

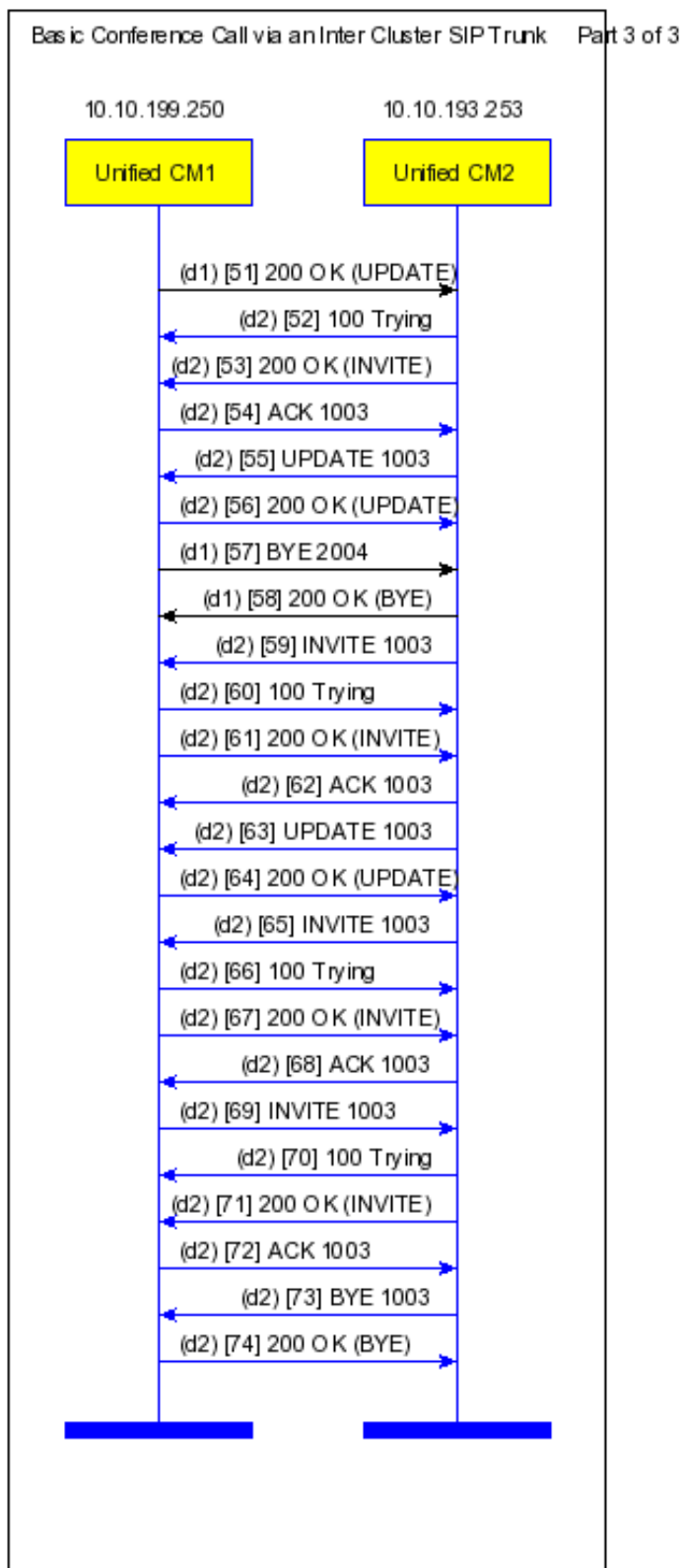
Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253

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[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[1] INVITE sip:2004@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKde6b77fc8a  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 To: <sip:2004@10.10.193.253>  
 Date: Fri, 29 Jun 2007 20:23:30 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKde6b77fc8a  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 To: <sip:2004@10.10.193.253>  
 Date: Fri, 29 Jun 2007 20:23:30 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKde6b77fc8a  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 Date: Fri, 29 Jun 2007 20:23:30 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKde6b77fc8a  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 Date: Fri, 29 Jun 2007 20:23:30 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 346

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.55  
 t=0 0  
 m=audio 29120 RTP/AVP 9 0 8 18 101  
 a=rtpmap:9 G722/8000  
 a=ptime:20  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=fmtp:18 annexb=no  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[5] SIP/2.0 200 OK

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```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKde6b77fc8a
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
Date: Fri, 29 Jun 2007 20:23:30 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 346
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.55
t=0 0
m=audio 29120 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] ACK sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdf42689e40
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
Date: Fri, 29 Jun 2007 20:23:30 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 32526 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKlab2405567e
Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
Date: Fri, 29 Jun 2007 20:23:37 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 1800
Cisco-Guid: 2557547136-1750166082-8532-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 352
```

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```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 29120 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 100 Trying**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1ab2405567e
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
Date: Fri, 29 Jun 2007 20:23:37 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1ab2405567e
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
Date: Fri, 29 Jun 2007 20:23:37 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 228

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 32526 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[10] ACK sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1ac70c5b209
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
Date: Fri, 29 Jun 2007 20:23:37 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[11] INVITE sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1ad39a5d94
Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
Date: Fri, 29 Jun 2007 20:23:37 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250

```

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Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 Cisco-Guid: 2557547136-1750166082-8532-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 102 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 1800;refresher=uac  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[12] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKlad39a5d94  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 Date: Fri, 29 Jun 2007 20:23:37 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[13] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKlad39a5d94  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 Date: Fri, 29 Jun 2007 20:23:37 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[14] ACK sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKlae3baac59b  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 Date: Fri, 29 Jun 2007 20:23:37 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 227

v=0  
 o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.193.253  
 t=0 0  
 m=audio 4000 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=inactive

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```
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[15] INVITE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe053474c44
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
Date: Fri, 29 Jun 2007 20:23:37 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2004@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uas
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 16526 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
aptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[16] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe053474c44
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
Date: Fri, 29 Jun 2007 20:23:37 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[17] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe053474c44
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
Date: Fri, 29 Jun 2007 20:23:37 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 227
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.193.253
t=0 0
m=audio 4000 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
aptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[18] ACK sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe1360be209
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
```

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To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 Date: Fri, 29 Jun 2007 20:23:37 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[19] INVITE sip:1003@10.10.199.250:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1b31c9da519  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>  
 Date: Fri, 29 Jun 2007 20:23:41 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.193.253:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 69  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[20] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1b31c9da519  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>  
 Date: Fri, 29 Jun 2007 20:23:41 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[21] SIP/2.0 180 Ringing**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1b31c9da519  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:41 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1003@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:1003@10.10.199.250:5060;transport=tcp>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[22] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1b31c9da519  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:41 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1003@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:1003@10.10.199.250:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 300

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.66  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000

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```
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[23] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1b31c9da519
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831
To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837
Date: Fri, 29 Jun 2007 20:23:41 GMT
Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1003@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 300
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 4000 RTP/AVP 0 8 18 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[24] ACK sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1b43b733708
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831
To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837
Date: Fri, 29 Jun 2007 20:23:41 GMT
Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 227
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.55
t=0 0
m=audio 25396 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[25] INVITE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe23c7db6f0
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831
Date: Fri, 29 Jun 2007 20:23:44 GMT
Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 2667547136-1750166093-889-4207350444
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
```



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Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800;refresher=uac  
 Content-Type: application/sdp  
 Content-Length: 215

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.66  
 t=0 0  
 m=audio 31928 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[26] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe23c7db6f0  
 From: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 Date: Fri, 29 Jun 2007 20:23:44 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 101 INVITE  
 Allow-Events: presence, kpml  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[27] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe23c7db6f0  
 From: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 Date: Fri, 29 Jun 2007 20:23:44 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:1003@10.10.193.253:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 215

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.55  
 t=0 0  
 m=audio 25396 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[28] ACK sip:1003@10.10.193.253:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe351e7375c  
 From: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 Date: Fri, 29 Jun 2007 20:23:44 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[29] INVITE sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1b82129e9c5  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 Cisco-Guid: 2557547136-1750166082-8532-4257288876



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```
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 220
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 4000 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[30] SIP/2.0 100 Trying**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1b82129e9c5
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[31] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1b82129e9c5
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 228
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 16526 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[32] ACK sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1b929552712
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[33] INVITE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1bc395a72c5
Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off
```

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```

From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831
To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253
Supported: 100rel,timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:1003@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uas
Content-Type: application/sdp
Content-Length: 221

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 25396 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[34] INVITE sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1bd3b62e1e1
Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 1800
Cisco-Guid: 2557547136-1750166082-8532-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uac
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[35] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1bc395a72c5
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831
To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[36] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1bd3b62e1e1
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow-Events: presence
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[37] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1bc395a72c5
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831
To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253
CSeq: 102 INVITE

```

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```

Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1003@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 227

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 31928 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[38] SIP/2.0 200 OK**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1bd3b62e1e1
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 301

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 4000 RTP/AVP 0 8 18 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[39] ACK sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1be2ad8800e
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831
To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, kpml
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[40] ACK sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1bf869e6b6
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

```

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```
v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.193.253
t=0 0
m=audio 24618 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvnonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[41] INVITE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe426565f7e
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:2004@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uas
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 17442 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[42] INVITE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1c2285c5d12
Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831
To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253
Supported: 100rel,timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:1003@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uas
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[43] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1c2285c5d12
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831
To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837
Date: Fri, 29 Jun 2007 20:23:46 GMT
Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253
CSeq: 103 INVITE
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[44] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe426565f7e
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836
```

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To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 CSeq: 103 INVITE  
 Allow-Events: presence, kpml  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[45] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1c2285c5d12  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 103 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1003@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:1003@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 300

v=0  
 o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.66  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[46] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe426565f7e  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 CSeq: 103 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.193.253  
 t=0 0  
 m=audio 24618 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[47] ACK sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe54f766f4e  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 103 ACK  
 Allow-Events: presence

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Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)**[48] ACK sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1c327cb30a2  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 Max-Forwards: 70  
 CSeq: 103 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 228

v=0  
 o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.193.253  
 t=0 0  
 m=audio 24624 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=recvonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)**[49] INVITE sip:1003@10.10.193.253:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe64905b5f8  
 Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 Supported: timer,replaces  
 Min-SE: 1800  
 Cisco-Guid: 2667547136-1750166093-889-4207350444  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 102 INVITE  
 Max-Forwards: 70  
 Contact: <sip:1003@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800;refresher=uac  
 Content-Type: application/sdp  
 Content-Length: 215

v=0  
 o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.66  
 t=0 0  
 m=audio 32168 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)**[50] UPDATE sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1c424327ffd  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 105 UPDATE  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Remote-Party-ID: "Conference" <sip:b00106101002@10.10.193.253>;party=calling;screen=yes;privacy=uri  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)**[51] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1c424327ffd  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 Date: Fri, 29 Jun 2007 20:23:46 GMT

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Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 CSeq: 105 UPDATE  
 Allow-Events: presence  
 Contact: <sip:b00106101002@10.10.199.250:5060;transport=tcp>  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[52] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe64905b5f8  
 From: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 102 INVITE  
 Allow-Events: presence, kpml  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[53] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe64905b5f8  
 From: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:1003@10.10.193.253:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.193.253  
 t=0 0  
 m=audio 24624 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[54] ACK sip:1003@10.10.193.253:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe7bcde7a5  
 From: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[55] UPDATE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1c74f6b594e  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 104 UPDATE  
 Contact: <sip:1003@10.10.193.253:5060;transport=tcp>  
 Remote-Party-ID: "Conference" <sip:b00106101002@10.10.193.253>;party=calling;screen=yes;privacy=uri  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[56] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1c74f6b594e  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:46 GMT



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Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 104 UPDATE  
 Allow-Events: presence  
 Contact: <sip:1003@10.10.199.250:5060;transport=tcp>  
 Session-Expires: 1800;refresher=uas  
 Require: timer  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[57] BYE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0**  
 Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe89c8d699  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 Date: Fri, 29 Jun 2007 20:23:46 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 104 BYE  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[58] SIP/2.0 200 OK**  
 Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe89c8d699  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470836  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103827  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 98711280-68516a42-378-fac712ac@10.10.199.250  
 CSeq: 104 BYE  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[59] INVITE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0**  
 Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1cc26959b85  
 Remote-Party-ID: "Conference" <sip:b00106101002@10.10.193.253>;party=calling;screen=yes;privacy=uri  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 105 INVITE  
 Max-Forwards: 70  
 Contact: <sip:1003@10.10.193.253:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 1800;refresher=uas  
 Content-Type: application/sdp  
 Content-Length: 221

v=0  
 o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 0.0.0.0  
 t=0 0  
 m=audio 24624 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=inactive  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[60] SIP/2.0 100 Trying**  
 Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1cc26959b85  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 105 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[61] SIP/2.0 200 OK**  
 Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1cc26959b85  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:51 GMT



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Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 105 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1003@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:1003@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 227

v=0  
 o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.66  
 t=0 0  
 m=audio 32168 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=inactive  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[62] ACK sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1cd780fae95  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 Max-Forwards: 70  
 CSeq: 105 ACK  
 Allow-Events: presence, kpml  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[63] UPDATE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1ce76df456f  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 106 UPDATE  
 Contact: <sip:1003@10.10.193.253:5060;transport=tcp>  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[64] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1ce76df456f  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 106 UPDATE  
 Allow-Events: presence  
 Contact: <sip:1003@10.10.199.250:5060;transport=tcp>  
 Session-Expires: 1800;refresher=uas  
 Require: timer  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[65] INVITE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1d251eac936  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 107 INVITE  
 Max-Forwards: 70  
 Contact: <sip:1003@10.10.193.253:5060;transport=tcp>  
 Expires: 180

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Allow-Events: presence, kpml  
 Session-Expires: 1800;refresher=uas  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[66] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1d251eac936  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 107 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[67] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1d251eac936  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 107 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1003@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:1003@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 300

v=0  
 o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.66  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[68] ACK sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1d33e4f40bf  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 Max-Forwards: 70  
 CSeq: 107 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 228

v=0  
 o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.193.253  
 t=0 0  
 m=audio 24628 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=recvonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[69] INVITE sip:1003@10.10.193.253:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe93fb5c60a  
 Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831

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Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 Supported: timer,replaces  
 Min-SE: 1800  
 Cisco-Guid: 2667547136-1750166093-889-4207350444  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 103 INVITE  
 Max-Forwards: 70  
 Contact: <sip:1003@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800;refresher=uac  
 Content-Type: application/sdp  
 Content-Length: 215

v=0  
 o=CiscoSystemsCCM-SIP 2000 8 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.66  
 t=0 0  
 m=audio 32676 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[70] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe93fb5c60a  
 From: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 103 INVITE  
 Allow-Events: presence, kpml  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[71] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe93fb5c60a  
 From: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 CSeq: 103 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:1003@10.10.193.253:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 8 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.193.253  
 t=0 0  
 m=audio 24628 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[72] ACK sip:1003@10.10.193.253:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKea28edef7  
 From: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831  
 Date: Fri, 29 Jun 2007 20:23:51 GMT  
 Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253  
 Max-Forwards: 70  
 CSeq: 103 ACK  
 Allow-Events: presence  
 Content-Length: 0

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[diagram] Call-ID: [prev] [next]

[73] BYE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1d55c7ce749

From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831

To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837

Date: Fri, 29 Jun 2007 20:23:51 GMT

Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253

User-Agent: Cisco-CCM6.0

Max-Forwards: 70

CSeq: 108 BYE

Content-Length: 0

[diagram] Call-ID: [prev] [next]

[74] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1d55c7ce749

From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103831

To: <sip:1003@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470837

Date: Fri, 29 Jun 2007 20:23:53 GMT

Call-ID: 9eff8a00-68516a4d-215a-fdc112ac@10.10.193.253

CSeq: 108 BYE

Content-Length: 0

## 2. DTMF

### 2.1 Call between Cisco Unified CM SCCP phone and SIP Gateway using OOB Notify

Title: Call between Cisco Unified CM SCCP phone and SIP Gateway using OOB Notify

Description:

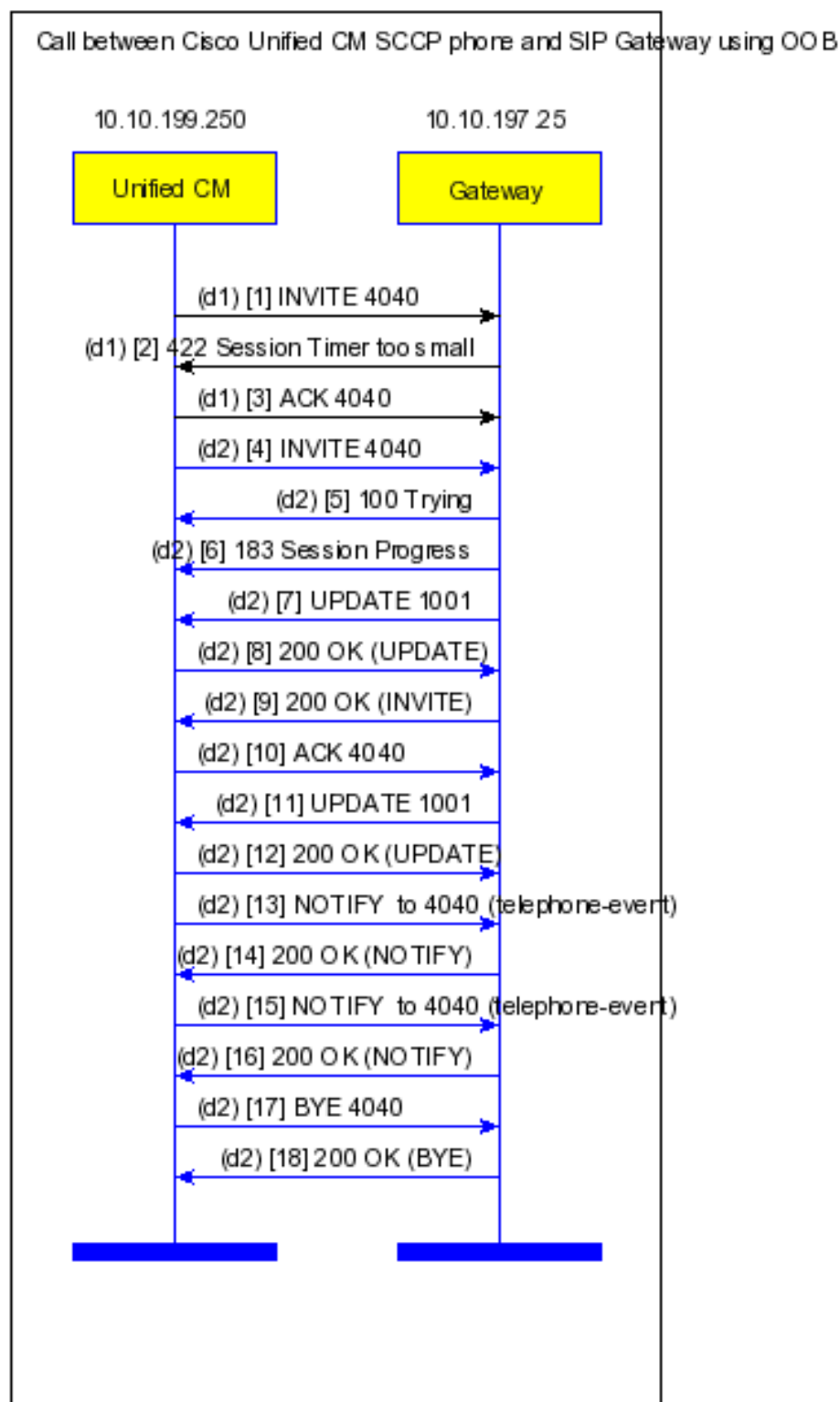
The following call flow illustrates the SIP messaging that takes place between a SCCP phone hosted by a Cisco Unified CM and a SIP Gateway via a SIP trunk. The SIP trunk DTMF Signaling Method is configured for NoPreference and the SIP GW dtmf-relay for the associated dial peer is configured for sip-notify.

Use of OOB Notify messages to pass DTMF digits is negotiated using the Call-Info header

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = Gateway, IP = 10.10.197.25

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[1] INVITE sip:4040@10.10.197.25:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK421b66247b  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
 To: <sip:4040@10.10.197.25>  
 Date: Thu, 12 Jul 2007 20:50:36 GMT  
 Call-ID: 88fbbb80-6961941c-8a-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 60  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 90  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 422 Session Timer too small

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK421b66247b  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
 To: <sip:4040@10.10.197.25>;tag=DE9FA404-E12  
 Date: Thu, 12 Jul 2007 20:50:36 GMT  
 Call-ID: 88fbbb80-6961941c-8a-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow-Events: telephone-event  
 Min-SE: 1800  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[3] ACK sip:4040@10.10.197.25:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK421b66247b  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
 To: <sip:4040@10.10.197.25>;tag=DE9FA404-E12  
 Date: Thu, 12 Jul 2007 20:50:36 GMT  
 Call-ID: 88fbbb80-6961941c-8a-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence, kpml  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[4] INVITE sip:4040@10.10.197.25:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK43370424d0  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
 To: <sip:4040@10.10.197.25>  
 Date: Thu, 12 Jul 2007 20:50:36 GMT  
 Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Min-SE: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[5] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK43370424d0  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
 To: <sip:4040@10.10.197.25>  
 Date: Thu, 12 Jul 2007 20:50:36 GMT  
 Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow-Events: telephone-event  
 Content-Length: 0

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] SIP/2.0 183 Session Progress**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK43370424d0  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
 To: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0  
 Date: Thu, 12 Jul 2007 20:50:36 GMT  
 Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Allow-Events: telephone-event  
 Contact: <sip:4040@10.10.197.25:5060>  
 Call-Info: <sip:10.10.197.25:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 218

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 8578 1222 IN IP4 10.10.197.25  
 s=SIP Call  
 c=IN IP4 10.10.197.25  
 t=0 0  
 m=audio 16390 RTP/AVP 0 19  
 c=IN IP4 10.10.197.25  
 a=rtpmap:0 PCMU/8000  
 a=rtpmap:19 CN/8000  
 a=ptime:20

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] UPDATE sip:1001@10.10.199.250:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.197.25:5060;branch=z9hG4bK8854F  
 From: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
 Date: Thu, 12 Jul 2007 20:50:36 GMT  
 Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250  
 User-Agent: Cisco-SIPGateway/IOS-12.x  
 Max-Forwards: 70  
 Timestamp: 1184273436  
 CSeq: 101 UPDATE  
 Contact: <sip:4040@10.10.197.25:5060>  
 Remote-Party-ID: <sip:4040@10.10.197.25>;party=calling;screen=yes;privacy=off  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.197.25:5060;branch=z9hG4bK8854F  
 From: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
 Date: Thu, 12 Jul 2007 20:50:36 GMT  
 Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250  
 Timestamp: 1184273436  
 CSeq: 101 UPDATE  
 Allow-Events: presence, kpml  
 Contact: <sip:4040@10.10.199.250:5060>  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK43370424d0  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
 To: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0  
 Date: Thu, 12 Jul 2007 20:50:36 GMT  
 Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Allow-Events: telephone-event  
 Contact: <sip:4040@10.10.197.25:5060>  
 Supported: replaces  
 Call-Info: <sip:10.10.197.25:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 218

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 8578 1222 IN IP4 10.10.197.25



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```
s=SIP Call
c=IN IP4 10.10.197.25
t=0 0
m=audio 16390 RTP/AVP 0 19
c=IN IP4 10.10.197.25
a=rtpmap:0 PCMU/8000
a=rtpmap:19 CN/8000
a=ptime:20
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[10] ACK sip:4040@10.10.197.25:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK44128fff9e
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539
To: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0
Date: Thu, 12 Jul 2007 20:50:36 GMT
Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY";Event=telephone-event;Duration=500"
Content-Type: application/sdp
Content-Length: 160
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 29178 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[11] UPDATE sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.197.25:5060;branch=z9hG4bK8925CC
From: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539
Date: Thu, 12 Jul 2007 20:50:45 GMT
Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 70
Timestamp: 1184273445
CSeq: 102 UPDATE
Contact: <sip:4040@10.10.197.25:5060>
Remote-Party-ID: <sip:4040@10.10.197.25>;party=calling;screen=no;privacy=off
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[12] SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.10.197.25:5060;branch=z9hG4bK8925CC
From: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539
Date: Thu, 12 Jul 2007 20:50:45 GMT
Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250
Timestamp: 1184273445
CSeq: 102 UPDATE
Allow-Events: presence, kpml
Contact: <sip:4040@10.10.199.250:5060>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[13] NOTIFY sip:10.10.197.25:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4559ec6c28
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539
To: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0
Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Thu, 12 Jul 2007 20:50:57 GMT
User-Agent: Cisco-CCM6.0
Event: telephone-event
Subscription-State: active
Contact: <sip:10.10.199.250:5060>
Content-Type: audio/telephone-event
Content-Length: 4
```

{binary content not shown}

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[diagram] Call-ID: [prev] [next]

[14] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4559ec6c28  
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
To: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0  
Date: Thu, 12 Jul 2007 20:50:57 GMT  
Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250  
CSeq: 102 NOTIFY  
Content-Length: 0

[diagram] Call-ID: [prev] [next]

[15] NOTIFY sip:10.10.197.25:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK464417dee0  
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
To: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0  
Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250  
CSeq: 103 NOTIFY  
Max-Forwards: 70  
Date: Thu, 12 Jul 2007 20:50:57 GMT  
User-Agent: Cisco-CCM6.0  
Event: telephone-event  
Subscription-State: active  
Contact: <sip:10.10.199.250:5060>  
Content-Type: audio/telephone-event  
Content-Length: 4

{binary content not shown}

[diagram] Call-ID: [prev] [next]

[16] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK464417dee0  
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
To: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0  
Date: Thu, 12 Jul 2007 20:50:57 GMT  
Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250  
CSeq: 103 NOTIFY  
Content-Length: 0

[diagram] Call-ID: [prev] [next]

[17] BYE sip:4040@10.10.197.25:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK476e145d74  
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
To: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0  
Date: Thu, 12 Jul 2007 20:50:45 GMT  
Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250  
User-Agent: Cisco-CCM6.0  
Max-Forwards: 70  
CSeq: 104 BYE  
Content-Length: 0

[diagram] Call-ID: [prev] [next]

[18] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK476e145d74  
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644539  
To: <sip:4040@10.10.197.25>;tag=DE9FA424-1EA0  
Date: Thu, 12 Jul 2007 20:51:06 GMT  
Call-ID: 88fbbb80-6961941c-8b-fac712ac@10.10.199.250  
Server: Cisco-SIPGateway/IOS-12.x  
CSeq: 104 BYE  
Reason: Q.850;cause=0  
Content-Length: 0

## 2.2 Call between Cisco Unified CM SCCP phone and SIP Gateway using KPML

Title: Call between Cisco Unified CM SCCP phone and SIP Gateway using KPML

### Description:

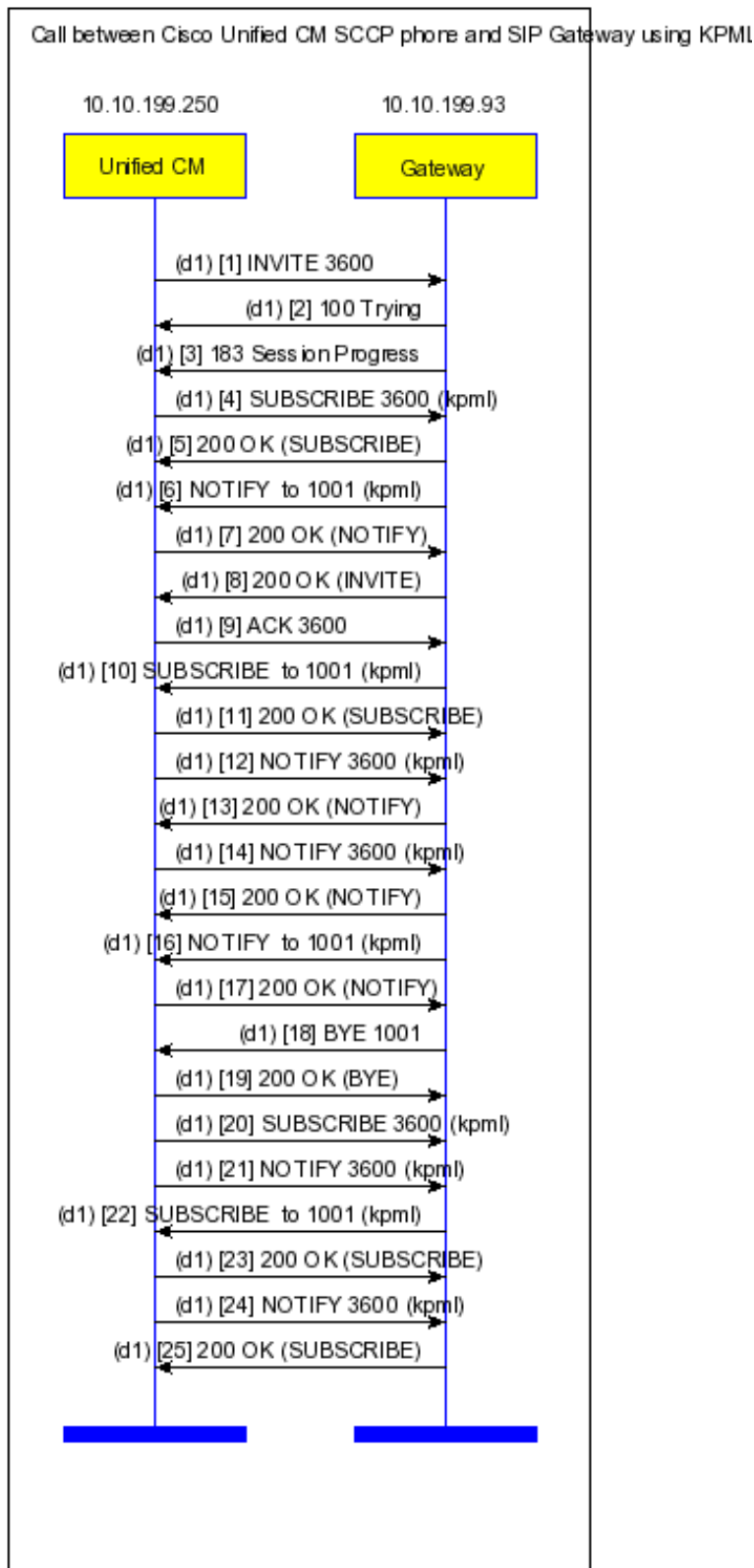
The following call flow illustrates the SIP messaging that takes place between a SCCP phone hosted by a Cisco Unified CM and a SIP Gateway via a SIP trunk. The SIP trunk DTMF Signaling Method is configured for NoPreference and the SIP GW dtmf-relay for the associated dial peer is configured for sip-kpml.

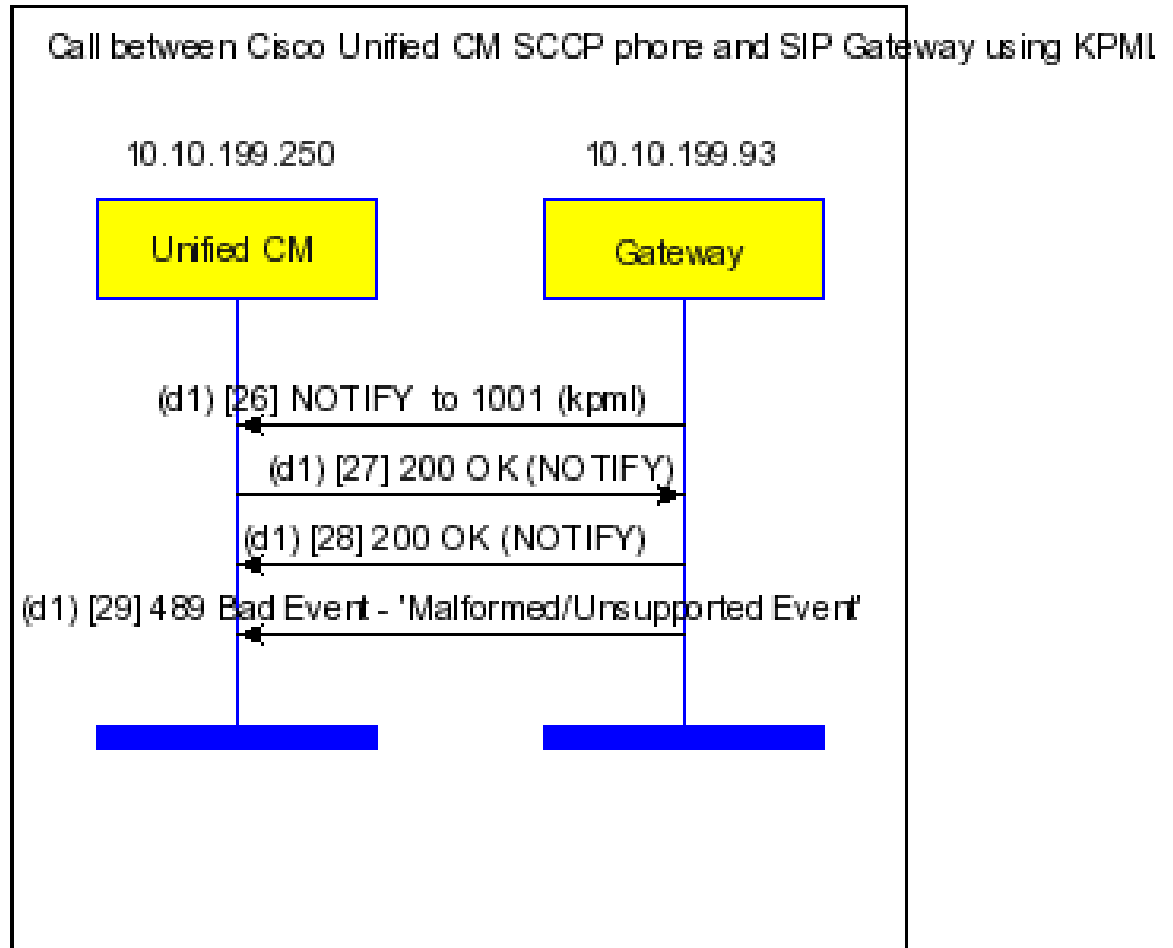
Traces to note are the bi-directional subscriptions for DTMF notification between the Cisco Unified CM and the Gateway and the NOTIFY methods exchanged when the digit 1 is pressed from the called and calling party phones. Note that once the call is released the Cisco Unified CM and the SIP GW will terminate both local and remote KPML subscriptions. Therefore, it is normal to see the Cisco Unified CM either send or receive a 489 Bad Event. This signifies that the subscription has already been removed.

### Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = Gateway, IP = 10.10.199.93

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[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[1] INVITE sip:3600@10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK527729d37f  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>  
 Date: Mon, 02 Jul 2007 21:01:44 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.250  
 t=0 0  
 m=audio 24844 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK527729d37f  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 Date: Mon, 02 Jul 2007 21:01:44 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow-Events: kpml, telephone-event  
 Content-Length: 0

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK527729d37f  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 Date: Mon, 02 Jul 2007 21:01:44 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Allow-Events: kpml, telephone-event  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 194

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 2698 6847 IN IP4 10.10.199.93  
 s=SIP Call  
 c=IN IP4 10.10.199.93  
 t=0 0  
 m=audio 17564 RTP/AVP 0  
 c=IN IP4 10.10.199.93  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[4] SUBSCRIBE sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK533eb66dba  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 102 SUBSCRIBE  
 Date: Mon, 02 Jul 2007 21:01:44 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: kpml

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Expires: 7200  
 Contact: <sip:10.10.199.250:5060;transport=tcp>  
 Accept: application/kpml-response+xml  
 Max-Forwards: 70  
 Content-Type: application/kpml-request+xml  
 Content-Length: 370

```
<?xml version="1.0" encoding="UTF-8" ?>
<kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-request kpml-request.xsd" version="1.0">
```

```
  <pattern interdigittimer="7260000" persist="persist">
    <regex tag="dtmf">[x*#ABCD]</regex>
  </pattern>
```

```
</kpml-request>
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK533eb66dba  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 Date: Mon, 02 Jul 2007 21:01:44 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 102 SUBSCRIBE  
 Content-Length: 0  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Expires: 7200

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] NOTIFY sip:10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK1C19C4  
 From: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 101 NOTIFY  
 Max-Forwards: 70  
 Date: Mon, 02 Jul 2007 21:01:44 GMT  
 User-Agent: Cisco-SIPGateway/IOS-12.x  
 Event: kpml  
 Subscription-State: active  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK1C19C4  
 From: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 Date: Mon, 02 Jul 2007 21:01:44 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 101 NOTIFY  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK527729d37f  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 Date: Mon, 02 Jul 2007 21:01:44 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Allow-Events: kpml, telephone-event  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 194

```
v=0
o=CiscoSystemsSIP-GW-UserAgent 2698 6847 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 17564 RTP/AVP 0
c=IN IP4 10.10.199.93
a=rtptime:0 PCMU/8000
```

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a=ptime:20

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[9] ACK sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK547936b3d2

From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820

To: <sip:3600@10.10.199.93>;tag=383E488C-35A

Date: Mon, 02 Jul 2007 21:01:44 GMT

Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250

Max-Forwards: 70

CSeq: 101 ACK

Allow-Events: presence, kpml

Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[10] SUBSCRIBE sip:10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK1DD00

From: <sip:3600@10.10.199.93>;tag=383E488C-35A

To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820

Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250

CSeq: 102 SUBSCRIBE

Max-Forwards: 70

Date: Mon, 02 Jul 2007 21:01:47 GMT

User-Agent: Cisco-SIPGateway/IOS-12.x

Event: kpml

Expires: 7200

Contact: <sip:3600@10.10.199.93:5060;transport=tcp>

Content-Type: application/kpml-request+xml

Content-Length: 327

```
<?xml version="1.0" encoding="UTF-8"?><kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-
request kpml-request.xsd" version="1.0"><pattern persist="persist"><regex
tag="dtmf">[x*#ABCD]</regex></pattern></kpml-request>
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[11] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK1DD00

From: <sip:3600@10.10.199.93>;tag=383E488C-35A

To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820

Date: Mon, 02 Jul 2007 21:01:47 GMT

Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250

CSeq: 102 SUBSCRIBE

Content-Length: 0

Contact: <sip:10.10.199.250:5060;transport=tcp>

Expires: 7200

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[12] NOTIFY sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK553625c6f1

From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820

To: <sip:3600@10.10.199.93>;tag=383E488C-35A

Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250

CSeq: 103 NOTIFY

Max-Forwards: 70

Date: Mon, 02 Jul 2007 21:01:47 GMT

User-Agent: Cisco-CCM6.0

Event: kpml

Subscription-State: active;expires=7200

Contact: <sip:10.10.199.250:5060;transport=tcp>

Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[13] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK553625c6f1

From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820

To: <sip:3600@10.10.199.93>;tag=383E488C-35A

Date: Mon, 02 Jul 2007 21:01:47 GMT

Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250

CSeq: 103 NOTIFY

Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[14] NOTIFY sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK56315ec2bd

From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820

To: <sip:3600@10.10.199.93>;tag=383E488C-35A

Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250

CSeq: 104 NOTIFY

Max-Forwards: 70



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Date: Mon, 02 Jul 2007 21:01:53 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: kpml  
 Subscription-State: active;expires=7194  
 Contact: <sip:10.10.199.250:5060;transport=tcp>  
 Content-Type: application/kpml-response+xml  
 Content-Length: 336

```
<?xml version="1.0" encoding="UTF-8" ?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-response kpml-response.xsd" code="200" digits="2"
forced_flush="false" suppressed="false" tag="dtmf" text="Success" version="1.0"/>
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[15] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK56315ec2bd  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 Date: Mon, 02 Jul 2007 21:01:53 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 104 NOTIFY  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[16] NOTIFY sip:10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK1E4ED  
 From: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 103 NOTIFY  
 Max-Forwards: 70  
 Date: Mon, 02 Jul 2007 21:02:01 GMT  
 User-Agent: Cisco-SIPGateway/IOS-12.x  
 Event: kpml  
 Subscription-State: active  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Content-Type: application/kpml-response+xml  
 Content-Length: 113

```
<?xml version="1.0" encoding="UTF-8"?><kpml-response version="1.0" code="200" text="OK" digits="2"
tag="dtmf"/>
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[17] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK1E4ED  
 From: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 Date: Mon, 02 Jul 2007 21:02:01 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 103 NOTIFY  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[18] BYE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK1F167C  
 From: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 Date: Mon, 02 Jul 2007 21:01:47 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 User-Agent: Cisco-SIPGateway/IOS-12.x  
 Max-Forwards: 70  
 Timestamp: 1183410131  
 CSeq: 104 BYE  
 Reason: Q.850;cause=16  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[19] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK1F167C  
 From: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 Date: Mon, 02 Jul 2007 21:02:11 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 Timestamp: 1183410131  
 CSeq: 104 BYE  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[20] SUBSCRIBE sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5798da147

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From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 105 SUBSCRIBE  
 Date: Mon, 02 Jul 2007 21:02:11 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: kpml  
 Expires: 0  
 Contact: <sip:10.10.199.250:5060;transport=tcp>  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[21] NOTIFY sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0  
 Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5851a51439  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 106 NOTIFY  
 Max-Forwards: 70  
 Date: Mon, 02 Jul 2007 21:02:11 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: kpml  
 Subscription-State: terminated  
 Contact: <sip:10.10.199.250:5060;transport=tcp>  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[22] SUBSCRIBE sip:10.10.199.250:5060;transport=tcp SIP/2.0  
 Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK20230F  
 From: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 105 SUBSCRIBE  
 Max-Forwards: 70  
 Date: Mon, 02 Jul 2007 21:02:11 GMT  
 User-Agent: Cisco-SIPGateway/IOS-12.x  
 Event: kpml  
 Expires: 0  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[23] SIP/2.0 200 OK  
 Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK20230F  
 From: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 Date: Mon, 02 Jul 2007 21:02:11 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 105 SUBSCRIBE  
 Content-Length: 0  
 Contact: <sip:10.10.199.250:5060;transport=tcp>  
 Expires: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[24] NOTIFY sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0  
 Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5970ef9f56  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 107 NOTIFY  
 Max-Forwards: 70  
 Date: Mon, 02 Jul 2007 21:02:11 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: kpml  
 Subscription-State: terminated;reason=timeout  
 Contact: <sip:10.10.199.250:5060;transport=tcp>  
 Content-Type: application/kpml-response+xml  
 Content-Length: 348

```
<?xml version="1.0" encoding="UTF-8" ?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-response kpml-response.xsd" code="487" digits=""
forced_flush="false" suppressed="false" tag="dtmf" text="Subscription Expired" version="1.0"/>
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[25] SIP/2.0 200 OK  
 Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5798da147  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>;tag=383E488C-35A

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Date: Mon, 02 Jul 2007 21:02:11 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 105 SUBSCRIBE  
 Content-Length: 0  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Expires: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[26] NOTIFY sip:10.10.199.250:5060;transport=tcp SIP/2.0**  
 Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK211AB3  
 From: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 106 NOTIFY  
 Max-Forwards: 70  
 Date: Mon, 02 Jul 2007 21:02:11 GMT  
 User-Agent: Cisco-SIPGateway/IOS-12.x  
 Event: kpml  
 Subscription-State: terminated  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Content-Type: application/kpml-response+xml  
 Content-Length: 109

```
<?xml version="1.0" encoding="UTF-8"?><kpml-response version="1.0" code="487" text="Subscription Expired"/>
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[27] SIP/2.0 200 OK**  
 Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK211AB3  
 From: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 Date: Mon, 02 Jul 2007 21:02:11 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 106 NOTIFY  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[28] SIP/2.0 200 OK**  
 Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5851a51439  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 Date: Mon, 02 Jul 2007 21:02:11 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 106 NOTIFY  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[29] SIP/2.0 489 Bad Event - 'Malformed/Unsupported Event'**  
 Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5970ef9f56  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226820  
 To: <sip:3600@10.10.199.93>;tag=383E488C-35A  
 Date: Mon, 02 Jul 2007 21:02:11 GMT  
 Call-ID: 6f02f180-689167b8-8bd-fac712ac@10.10.199.250  
 CSeq: 107 NOTIFY  
 Allow-Events: telephone-event  
 Content-Length: 0

## 2.3 Call between Cisco Unified CM SCCP phone and SIP Gateway using RFC2833

Title: Call between Cisco Unified CM SCCP phone and SIP Gateway using RFC2833

### Description:

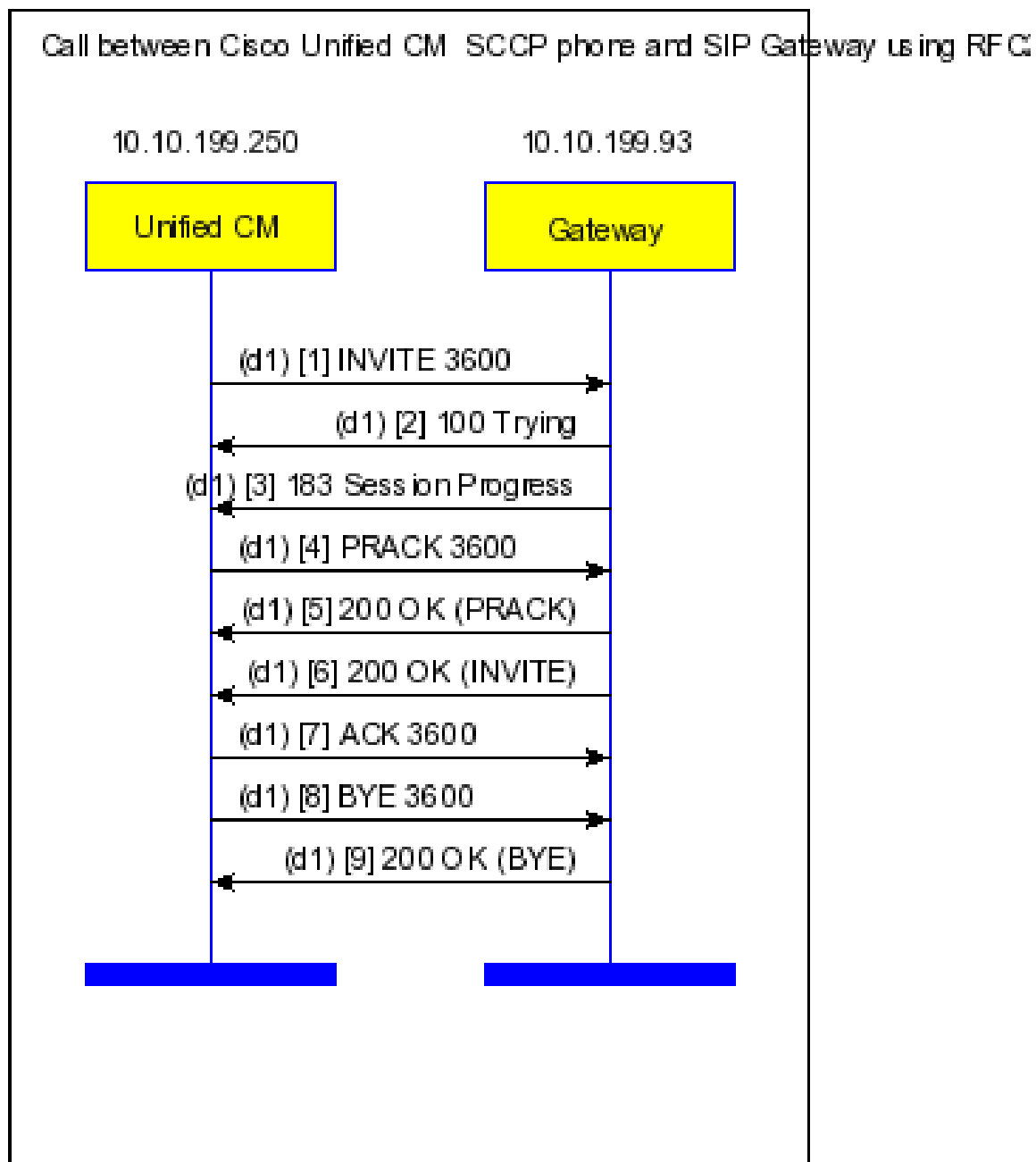
The following call flow illustrates the SIP messaging that takes place between a SCCP phone hosted by a Cisco Unified CM and a SIP Gateway via a SIP trunk. The SIP trunk DTMF Signaling Method is configured for NoPreference and the SIP GW dtmf-relay for the associated dial peer is configured for rtp-nte.

Because both SCCP phone and SIP Gateway support RFC2833 style DTMF signaling no out-of-band DTMF signaling takes place. The DTMF will be strictly negotiated in SDP and signaled via media. In this example DTMF tones are sent in the media stream using a Payload Type of 101 (as shown in the SDP).

### Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = Gateway, IP = 10.10.199.93

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[1] INVITE sip:3600@10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2c23a4bada  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-32510138  
 To: <sip:3600@10.10.199.93>  
 Date: Tue, 26 Jun 2007 20:09:53 GMT  
 Call-ID: 323b8400-68117291-c31-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2c23a4bada  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-32510138  
 To: <sip:3600@10.10.199.93>;tag=1928C6BC-10F4  
 Date: Tue, 26 Jun 2007 20:09:53 GMT  
 Call-ID: 323b8400-68117291-c31-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow-Events: telephone-event  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2c23a4bada  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-32510138  
 To: <sip:3600@10.10.199.93>;tag=1928C6BC-10F4  
 Date: Tue, 26 Jun 2007 20:09:53 GMT  
 Call-ID: 323b8400-68117291-c31-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Require: 100rel  
 RSeq: 5736  
 Allow-Events: telephone-event  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 333

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 4974 4841 IN IP4 10.10.199.93  
 s=SIP Call  
 c=IN IP4 10.10.199.93  
 t=0 0  
 m=audio 18650 RTP/AVP 0 8 18 101 19  
 c=IN IP4 10.10.199.93  
 a=rtpmap:0 PCMU/8000  
 a=rtpmap:8 PCMA/8000  
 a=rtpmap:18 G729/8000  
 a=fmtp:18 annexb=no  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-16  
 a=rtpmap:19 CN/8000

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[4] PRACK sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2d2e37232d  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-32510138  
 To: <sip:3600@10.10.199.93>;tag=1928C6BC-10F4  
 Date: Tue, 26 Jun 2007 20:09:53 GMT  
 Call-ID: 323b8400-68117291-c31-fac712ac@10.10.199.250  
 CSeq: 102 PRACK  
 Rack: 5736 101 INVITE  
 Max-Forwards: 70  
 Content-Type: application/sdp  
 Content-Length: 216

v=0

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```

o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 30698 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

```

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2d2e37232d
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-32510138
To: <sip:3600@10.10.199.93>;tag=1928C6BC-10F4
Date: Tue, 26 Jun 2007 20:09:53 GMT
Call-ID: 323b8400-68117291-c31-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 PRACK
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] SIP/2.0 200 OK**

```

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2c23a4bada
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-32510138
To: <sip:3600@10.10.199.93>;tag=1928C6BC-10F4
Date: Tue, 26 Jun 2007 20:09:53 GMT
Call-ID: 323b8400-68117291-c31-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:3600@10.10.199.93:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 333

```

```

v=0
o=CiscoSystemsSIP-GW-UserAgent 4974 4841 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 18650 RTP/AVP 0 8 18 101 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=rtpmap:19 CN/8000

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] ACK sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2e30cc6954
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-32510138
To: <sip:3600@10.10.199.93>;tag=1928C6BC-10F4
Date: Tue, 26 Jun 2007 20:09:53 GMT
Call-ID: 323b8400-68117291-c31-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 30698 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] BYE sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

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```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f17b96ee8
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-32510138
To: <sip:3600@10.10.199.93>;tag=1928C6BC-10F4
Date: Tue, 26 Jun 2007 20:09:53 GMT
Call-ID: 323b8400-68117291-c31-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 103 BYE
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f17b96ee8
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-32510138
To: <sip:3600@10.10.199.93>;tag=1928C6BC-10F4
Date: Tue, 26 Jun 2007 20:10:02 GMT
Call-ID: 323b8400-68117291-c31-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 103 BYE
Reason: Q.850;cause=16
Content-Length: 0
```



## 3. Presence

### 3.1 Outgoing Presence Subscription

Title: Outgoing Presence Subscription

Description:

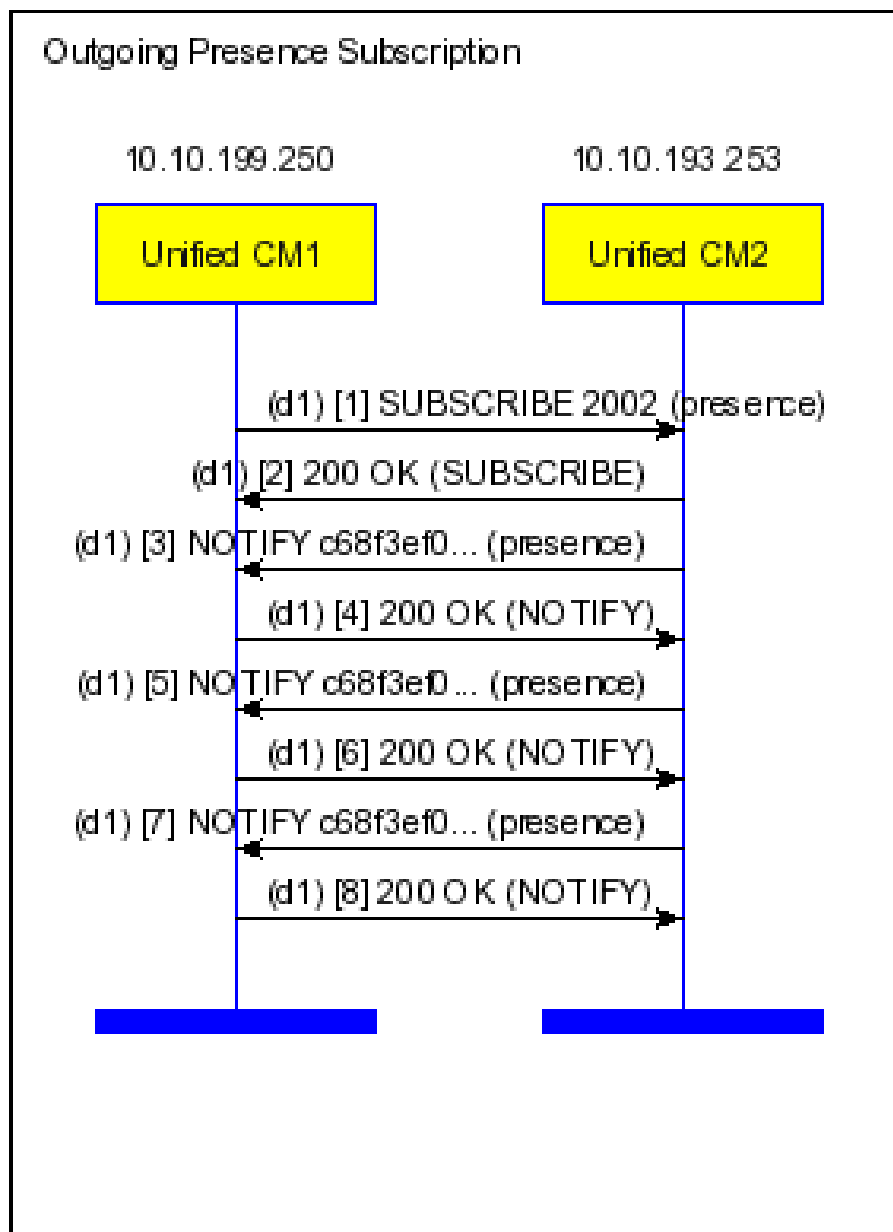
The scenario showing the outgoing BLF subscription for Presence from SCCP phone (1001) on "Cisco Unified CM1" through SIP Trunk to "Cisco Unified CM2" for remote party(DN 2002).

- 1) The "Cisco Unified CM2" sends the 200 OK for Subscribe, then it sends a NOTIFY with Subscription-State: active;expires=3600 and PIDF XML with status 'open'.
- 2) When the remote party(DN 2002) is offhook then "Cisco Unified CM2" sends a NOTIFY with PIDF XML containing status <e:activities>on-the-phone</e:activities>.
- 3) When the remote party(DN 2002) is onhook, the "Cisco Unified CM2" sends a NOTIFY with PIDF XML containing status 'open'.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[1] SUBSCRIBE sip:2002@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1843e49ac7  
 From: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946  
 To: <sip:2002@10.10.193.253>  
 Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250  
 CSeq: 101 SUBSCRIBE  
 Date: Tue, 26 Jun 2007 19:36:58 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: presence  
 Expires: 43200  
 Contact: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250:5060;transport=tcp>  
 Accept: application/pidf+xml  
 Max-Forwards: 69  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[2] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1843e49ac7  
 From: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946  
 To: <sip:2002@10.10.193.253>;tag=400073533  
 Date: Tue, 26 Jun 2007 19:36:58 GMT  
 Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250  
 CSeq: 101 SUBSCRIBE  
 Content-Length: 0  
 Contact: <sip:2002@10.10.193.253:5060;transport=tcp>  
 Expires: 43200

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[3] NOTIFY sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK9a55770de7  
 From: <sip:2002@10.10.193.253>;tag=400073533  
 To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946  
 Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250  
 CSeq: 101 NOTIFY  
 Max-Forwards: 70  
 Date: Tue, 26 Jun 2007 19:36:58 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: presence  
 Subscription-State: active;expires=43200  
 Contact: <sip:2002@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/pidf+xml  
 Content-Length: 739

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:2002@10.10.193.253"
  xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model"
  xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd" xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <dm:person>
    <status>
      <basic>open</basic>
    </status>
    <e:activities>
      </e:activities>
    </dm:person>
    <tuple id="cmp-2002-6225">
      <status>
        <basic>open</basic>
      </status>
      <sc:servcaps>
        <sc:audio>true</sc:audio>
      </sc:servcaps>
      <contact priority="0.8">sip:2002@10.10.193.253:5060</contact>
      <timestamp>2007-06-26T19:36:58Z</timestamp>
    </tuple>
  </presence>
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[4] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK9a55770de7  
 From: <sip:2002@10.10.193.253>;tag=400073533  
 To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946  
 Date: Tue, 26 Jun 2007 19:36:58 GMT  
 Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250  
 CSeq: 101 NOTIFY  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[5] NOTIFY sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK9b493cc824

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```

From: <sip:2002@10.10.193.253>;tag=400073533
To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946
Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Tue, 26 Jun 2007 19:37:28 GMT
User-Agent: Cisco-CCM6.0
Event: presence
Subscription-State: active;expires=43170
Contact: <sip:2002@10.10.193.253:5060;transport=tcp>
Content-Type: application/pidf+xml
Content-Length: 832

```

```

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:2002@10.10.193.253"
  xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model"
  xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd" xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <dm:person>
    <status>
      <basic>open</basic>
    </status>
    <e:activities>
      <e:on-the-phone/>
    </e:activities>
  </dm:person>
  <tuple id="cmp-2002-6225">
    <status>
      <basic>open</basic>
      <e:activities>
        <e:on-the-phone/>
      </e:activities>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:2002@10.10.193.253:5060</contact>
    <timestamp>2007-06-26T19:37:28Z</timestamp>
  </tuple>
</presence>

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] SIP/2.0 200 OK**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK9b493cc824
From: <sip:2002@10.10.193.253>;tag=400073533
To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946
Date: Tue, 26 Jun 2007 19:37:28 GMT
Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250
CSeq: 102 NOTIFY
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] NOTIFY sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK9c1df410f8
From: <sip:2002@10.10.193.253>;tag=400073533
To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946
Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Tue, 26 Jun 2007 19:37:37 GMT
User-Agent: Cisco-CCM6.0
Event: presence
Subscription-State: active;expires=43161
Contact: <sip:2002@10.10.193.253:5060;transport=tcp>
Content-Type: application/pidf+xml
Content-Length: 739

```

```

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:2002@10.10.193.253"
  xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model"
  xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd" xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <dm:person>
    <status>
      <basic>open</basic>
    </status>
    <e:activities>
      <e:on-the-phone/>
    </e:activities>
  </dm:person>
  <tuple id="cmp-2002-6225">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:2002@10.10.193.253:5060</contact>
    <timestamp>2007-06-26T19:37:37Z</timestamp>
  </tuple>
</presence>

```

```
</status>
<sc:servcaps>
  <sc:audio>true</sc:audio>
</sc:servcaps>
<contact priority="0.8">sip:2002@10.10.193.253:5060</contact>
<timestamp>2007-06-26T19:37:37Z</timestamp>
</tuple>
</presence>
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK9c1df410f8
From: <sip:2002@10.10.193.253>;tag=400073533
To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946
Date: Tue, 26 Jun 2007 19:37:37 GMT
Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Content-Length: 0
```

## 3.2 Incoming Presence Subscription

Title: Incoming Presence Subscription

Description:

The scenario for incoming 'presence' subscription on Cisco Unified CM's SIP trunk for the SIP phone's (DN:2002) BLF status.

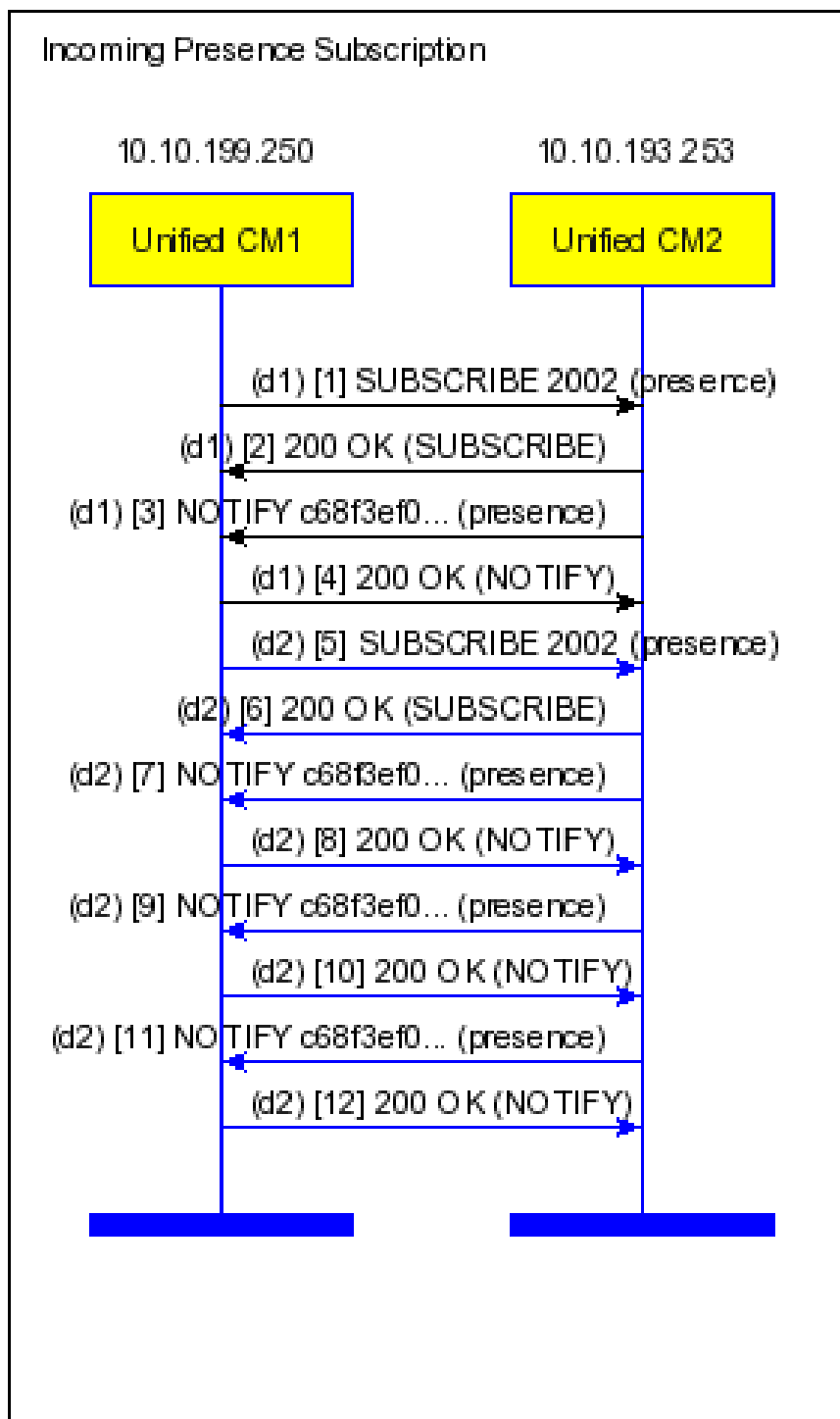
The SUBSCRIBE request with header 'Event: presence' is received by the sip trunk.

- 1) The request is forwarded to the Notifier/SubscriptionManager modules for processing.
- 2) The Notifier/SM authorizes the request & sends the 200 OK (for Subscribe).
- 3) On getting the notification with info about the subscriber, Notifier sends the Notify request on sip trunk, carrying the BLF status in PIDF XML.
- 4) The remote (Cisco Unified CM2) responds by sending 200 OK for Notify.
- 5) When the SCCP 2002 is offhook another NOTIFY with "on-the-phone" in the PIDF is sent on the sip trunk .
- 6) When SCCP 2002 is onhook again, another NOTIFY to update the status is sent.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] SUBSCRIBE sip:2002@10.10.193.253:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17717395fb  
 From: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1393123160  
 To: <sip:2002@10.10.193.253>;tag=1304445459  
 Call-ID: d241df00-681167df-c12-fac712ac@10.10.199.250  
 CSeq: 102 SUBSCRIBE  
 Date: Tue, 26 Jun 2007 19:36:45 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: presence  
 Expires: 0  
 Contact: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250:5060;transport=tcp>  
 Max-Forwards: 69  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17717395fb  
 From: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1393123160  
 To: <sip:2002@10.10.193.253>;tag=1304445459  
 Date: Tue, 26 Jun 2007 19:36:45 GMT  
 Call-ID: d241df00-681167df-c12-fac712ac@10.10.199.250  
 CSeq: 102 SUBSCRIBE  
 Content-Length: 0  
 Contact: <sip:2002@10.10.193.253:5060;transport=tcp>  
 Expires: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] NOTIFY sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK994bba61cd  
 From: <sip:2002@10.10.193.253>;tag=1304445459  
 To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1393123160  
 Call-ID: d241df00-681167df-c12-fac712ac@10.10.199.250  
 CSeq: 104 NOTIFY  
 Max-Forwards: 70  
 Date: Tue, 26 Jun 2007 19:36:45 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: presence  
 Subscription-State: terminated;reason=timeout  
 Contact: <sip:2002@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK994bba61cd  
 From: <sip:2002@10.10.193.253>;tag=1304445459  
 To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1393123160  
 Date: Tue, 26 Jun 2007 19:36:45 GMT  
 Call-ID: d241df00-681167df-c12-fac712ac@10.10.199.250  
 CSeq: 104 NOTIFY  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SUBSCRIBE sip:2002@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1843e49ac7  
 From: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946  
 To: <sip:2002@10.10.193.253>  
 Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250  
 CSeq: 101 SUBSCRIBE  
 Date: Tue, 26 Jun 2007 19:36:58 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: presence  
 Expires: 43200  
 Contact: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250:5060;transport=tcp>  
 Accept: application/pidf+xml  
 Max-Forwards: 69  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1843e49ac7  
 From: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946  
 To: <sip:2002@10.10.193.253>;tag=400073533  
 Date: Tue, 26 Jun 2007 19:36:58 GMT  
 Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250  
 CSeq: 101 SUBSCRIBE  
 Content-Length: 0  
 Contact: <sip:2002@10.10.193.253:5060;transport=tcp>  
 Expires: 43200



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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[7] NOTIFY sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK9a55770de7

From: <sip:2002@10.10.193.253>;tag=400073533

To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946

Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250

CSeq: 101 NOTIFY

Max-Forwards: 70

Date: Tue, 26 Jun 2007 19:36:58 GMT

User-Agent: Cisco-CCM6.0

Event: presence

Subscription-State: active;expires=43200

Contact: <sip:2002@10.10.193.253:5060;transport=tcp>

Content-Type: application/pidf+xml

Content-Length: 739

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:2002@10.10.193.253"
  xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model"
  xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd" xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <dm:person>
    <status>
      <basic>open</basic>
    </status>
    <e:activities>
      </e:activities>
    </dm:person>
    <tuple id="cmp-2002-6225">
      <status>
        <basic>open</basic>
      </status>
      <sc:servcaps>
        <sc:audio>true</sc:audio>
      </sc:servcaps>
      <contact priority="0.8">sip:2002@10.10.193.253:5060</contact>
      <timestamp>2007-06-26T19:36:58Z</timestamp>
    </tuple>
  </presence>
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[8] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK9a55770de7

From: <sip:2002@10.10.193.253>;tag=400073533

To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946

Date: Tue, 26 Jun 2007 19:36:58 GMT

Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250

CSeq: 101 NOTIFY

Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[9] NOTIFY sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK9b493cc824

From: <sip:2002@10.10.193.253>;tag=400073533

To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946

Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250

CSeq: 102 NOTIFY

Max-Forwards: 70

Date: Tue, 26 Jun 2007 19:37:28 GMT

User-Agent: Cisco-CCM6.0

Event: presence

Subscription-State: active;expires=43170

Contact: <sip:2002@10.10.193.253:5060;transport=tcp>

Content-Type: application/pidf+xml

Content-Length: 832

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:2002@10.10.193.253"
  xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model"
  xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd" xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <dm:person>
    <status>
      <basic>open</basic>
    </status>
    <e:activities>
      <e:on-the-phone/>
    </e:activities>
    </dm:person>
    <tuple id="cmp-2002-6225">
      <status>
        <basic>open</basic>
```

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```

    <e:activities>
      <e:on-the-phone/>
    </e:activities>
  </status>
</sc:servcaps>
  <sc:audio>true</sc:audio>
</sc:servcaps>
<contact priority="0.8">sip:2002@10.10.193.253:5060</contact>
<timestamp>2007-06-26T19:37:28Z</timestamp>
</tuple>
</presence>

```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[10] SIP/2.0 200 OK

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK9b493cc824
From: <sip:2002@10.10.193.253>;tag=400073533
To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946
Date: Tue, 26 Jun 2007 19:37:28 GMT
Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250
CSeq: 102 NOTIFY
Content-Length: 0

```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[11] NOTIFY sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250:5060;transport=tcp SIP/2.0

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK9c1df410f8
From: <sip:2002@10.10.193.253>;tag=400073533
To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946
Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Tue, 26 Jun 2007 19:37:37 GMT
User-Agent: Cisco-CCM6.0
Event: presence
Subscription-State: active;expires=43161
Contact: <sip:2002@10.10.193.253:5060;transport=tcp>
Content-Type: application/pidf+xml
Content-Length: 739

```

```

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:2002@10.10.193.253"
  xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model"
  xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd" xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <dm:person>
    <status>
      <basic>open</basic>
    </status>
    <e:activities>
      </e:activities>
    </dm:person>
  <tuple id="cmp-2002-6225">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:2002@10.10.193.253:5060</contact>
    <timestamp>2007-06-26T19:37:37Z</timestamp>
  </tuple>
</presence>

```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[12] SIP/2.0 200 OK

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK9c1df410f8
From: <sip:2002@10.10.193.253>;tag=400073533
To: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=1890830946
Date: Tue, 26 Jun 2007 19:37:37 GMT
Call-ID: 990a6e80-68116ada-c1a-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Content-Length: 0

```

### 3.3 Incoming Presence Forbidden for Authorization Failure

Title: Incoming Presence Forbidden for Authorization Failure

Description:

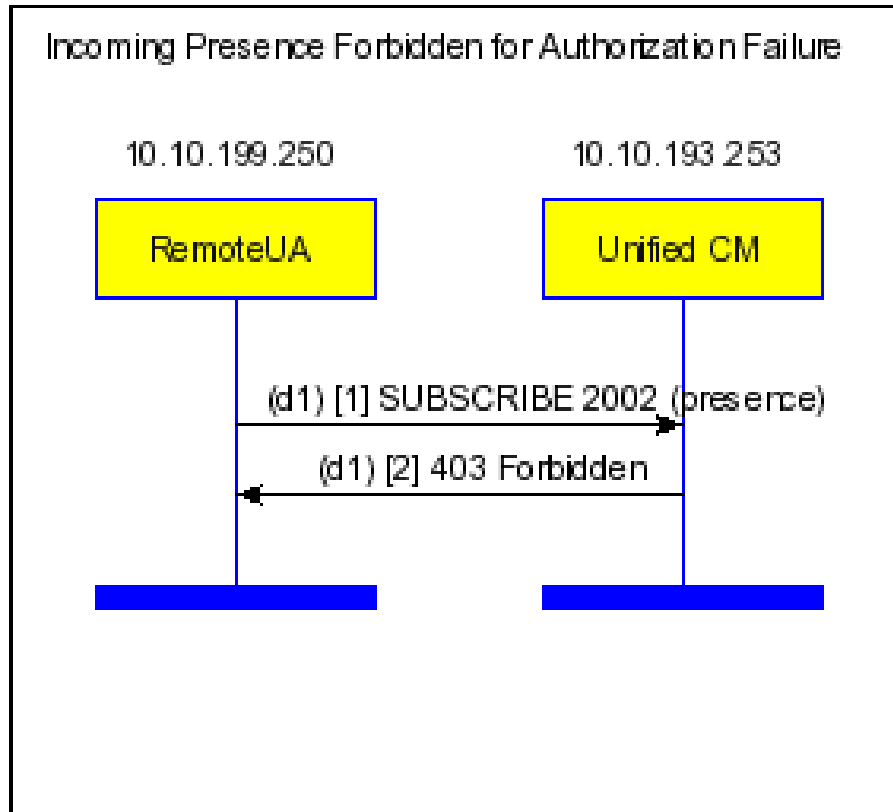
The presence authorization failure for the scenario when incoming 'presence' subscription is received on Cisco Unified CM's SIP trunk for the SCCP phone's (DN:2002) BLF status.

The SUBSCRIBE request with header 'Event: presence' is received by the sip trunk. The request is forwarded to the Notifier/SubscriptionManager modules in Cisco Unified CM for processing. The Notifier/SM fails the authorization due to presence group mismatch & sends the "403 Forbidden" to remote for Subscribe.

Configuration:

Node = Unified CM, IP = 10.10.193.253

Node = RemoteUA, IP = 10.10.199.250

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] SUBSCRIBE sip:2002@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc2418ef850

From: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=64503849

To: <sip:2002@10.10.193.253>

Call-ID: 9fa9200-6851629d-35f-fac712ac@10.10.199.250

CSeq: 101 SUBSCRIBE

Date: Fri, 29 Jun 2007 19:50:53 GMT

User-Agent: Cisco-CCM6.0

Event: presence

Expires: 43200

Contact: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250:5060;transport=tcp>

Accept: application/pidf+xml

Max-Forwards: 69

Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 403 Forbidden**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc2418ef850

From: <sip:c68f3ef0-5fde-ddb7-080d-213aed02bd07@10.10.199.250>;tag=64503849

To: <sip:2002@10.10.193.253>;tag=747809418

Date: Fri, 29 Jun 2007 19:50:53 GMT

Call-ID: 9fa9200-6851629d-35f-fac712ac@10.10.199.250

CSeq: 101 SUBSCRIBE

Content-Length: 0

## 4. Transfer

### 4.1 Basic Attended Transfer Call via an Inter Cluster SIP Trunk

Title: Basic Attended Transfer Call via an Inter Cluster SIP Trunk

Description:

The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk.

Cisco Unified IP Phone 1001 (registered with CM1) calls Cisco Unified IP Phone 2004 (registered with CM2) and Cisco Unified IP Phone 2004 made an attended transfer to Cisco Unified IP Phone 2002 (registered with CM2 as well)

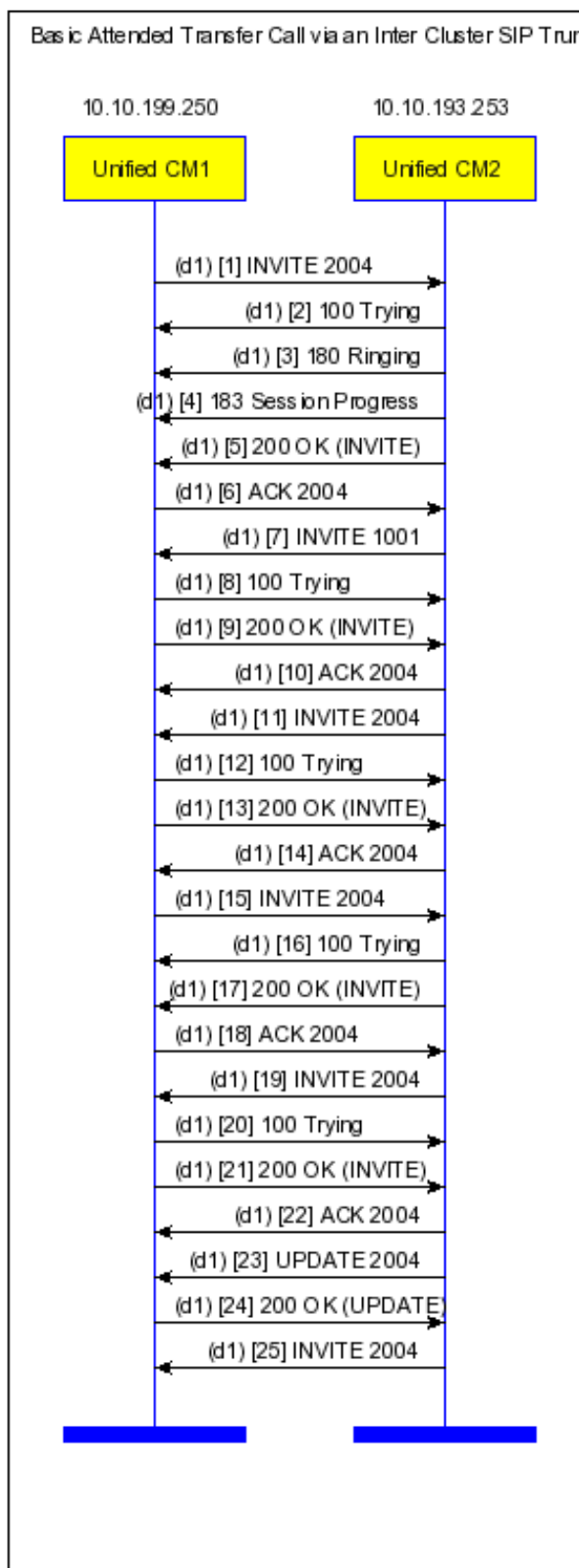
Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253

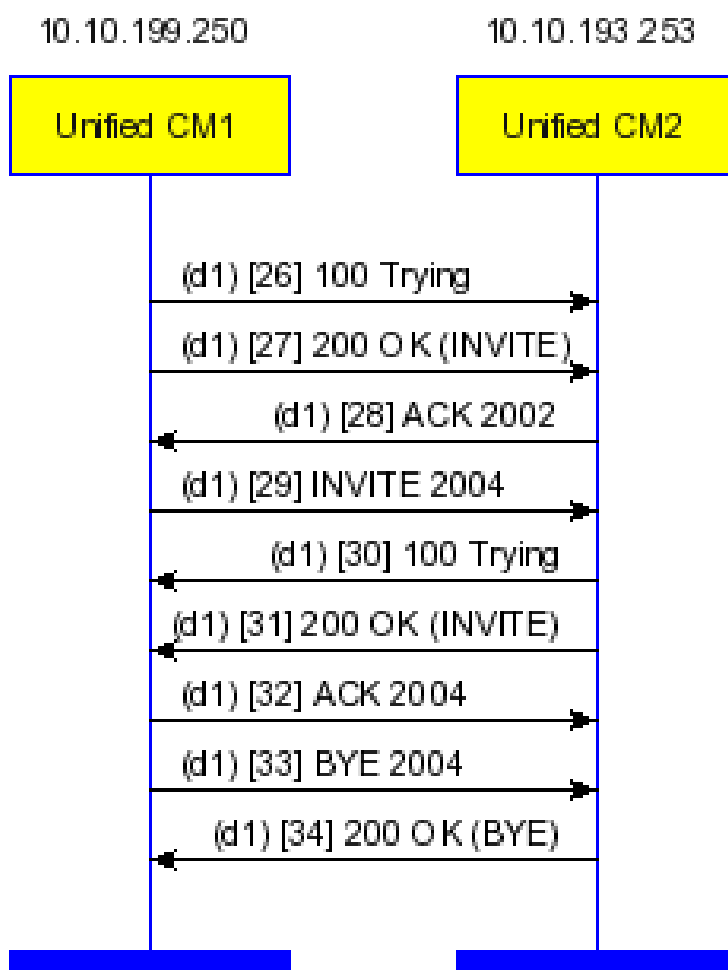
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Basic Attended Transfer Call via an Inter Cluster SIP Trunk Part 1 of 2



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## Basic Attended Transfer Call via an Inter-Cluster SIP Trunk Part 2 of 2





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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:2004@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10317a519d8  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
 To: <sip:2004@10.10.193.253>  
 Date: Fri, 29 Jun 2007 21:46:19 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10317a519d8  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
 To: <sip:2004@10.10.193.253>  
 Date: Fri, 29 Jun 2007 21:46:19 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 180 Ringing**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10317a519d8  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
 Date: Fri, 29 Jun 2007 21:46:19 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10317a519d8  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
 Date: Fri, 29 Jun 2007 21:46:19 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 346

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.55  
 t=0 0  
 m=audio 31536 RTP/AVP 9 0 8 18 101  
 a=rtpmap:9 G722/8000  
 a=ptime:20  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=fmtp:18 annexb=no  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

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```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10317a519d8
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
Date: Fri, 29 Jun 2007 21:46:19 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 346
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.55
t=0 0
m=audio 31536 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] ACK sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10433a39e1b
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
Date: Fri, 29 Jun 2007 21:46:19 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 21440 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1db20df7163
Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
Date: Fri, 29 Jun 2007 21:46:26 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 1800
Cisco-Guid: 707939584-1750171051-8632-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 352
```

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```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 31536 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 100 Trying**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1db20df7163
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
Date: Fri, 29 Jun 2007 21:46:26 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1db20df7163
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
Date: Fri, 29 Jun 2007 21:46:26 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 228

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 21440 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[10] ACK sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1dc8da8223
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
Date: Fri, 29 Jun 2007 21:46:26 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[11] INVITE sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1dd4b3cd1ec
Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
Date: Fri, 29 Jun 2007 21:46:26 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250

```

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Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 Cisco-Guid: 707939584-1750171051-8632-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 102 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 1800;refresher=uac  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[12] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1dd4b3cd1ec  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
 Date: Fri, 29 Jun 2007 21:46:26 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[13] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1dd4b3cd1ec  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
 Date: Fri, 29 Jun 2007 21:46:26 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[14] ACK sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1de2aa410d1  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
 Date: Fri, 29 Jun 2007 21:46:26 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 227

v=0  
 o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.193.253  
 t=0 0  
 m=audio 4000 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=inactive

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```
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[15] INVITE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1052c2617d3
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
Date: Fri, 29 Jun 2007 21:46:26 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2004@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uas
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 21974 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
aptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[16] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1052c2617d3
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
Date: Fri, 29 Jun 2007 21:46:26 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[17] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1052c2617d3
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
Date: Fri, 29 Jun 2007 21:46:26 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 227
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.193.253
t=0 0
m=audio 4000 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
aptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[18] ACK sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10651fba323
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
```

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To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
 Date: Fri, 29 Jun 2007 21:46:26 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[19] INVITE sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**  
 Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1e61a79e9d7  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
 Date: Fri, 29 Jun 2007 21:46:35 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 Cisco-Guid: 707939584-1750171051-8632-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 103 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 1800;refresher=uac  
 Content-Type: application/sdp  
 Content-Length: 220

v=0  
 o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 0.0.0.0  
 t=0 0  
 m=audio 4000 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=inactive  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[20] SIP/2.0 100 Trying**  
 Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1e61a79e9d7  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
 Date: Fri, 29 Jun 2007 21:46:35 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 CSeq: 103 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[21] SIP/2.0 200 OK**  
 Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1e61a79e9d7  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
 Date: Fri, 29 Jun 2007 21:46:35 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 CSeq: 103 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 228

v=0  
 o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 21974 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=inactive

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a=rtpmap:101 telephone-event/8000  
a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[22] ACK sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1e72e6e49a5  
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
Date: Fri, 29 Jun 2007 21:46:35 GMT  
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
Max-Forwards: 70  
CSeq: 103 ACK  
Allow-Events: presence, kpml  
Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[23] UPDATE sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1ed33e80e06  
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
Date: Fri, 29 Jun 2007 21:46:35 GMT  
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
User-Agent: Cisco-CCM6.0  
Max-Forwards: 70  
CSeq: 104 UPDATE  
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
Remote-Party-ID: <sip:2002@10.10.193.253>;party=calling;screen=yes;privacy=off  
Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[24] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1ed33e80e06  
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
Date: Fri, 29 Jun 2007 21:46:36 GMT  
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
CSeq: 104 UPDATE  
Allow-Events: presence  
Contact: <sip:2002@10.10.199.250:5060;transport=tcp>  
Session-Expires: 1800;refresher=uac  
Require: timer  
Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[25] INVITE sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1f111f673e7  
Remote-Party-ID: <sip:2002@10.10.193.253>;party=calling;screen=yes;privacy=off  
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
Date: Fri, 29 Jun 2007 21:46:36 GMT  
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
Supported: 100rel,timer,replaces  
Min-SE: 1800  
Cisco-Guid: 707939584-1750171051-8632-4257288876  
User-Agent: Cisco-CCM6.0  
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
CSeq: 105 INVITE  
Max-Forwards: 70  
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
Expires: 180  
Allow-Events: presence, kpml  
Session-Expires: 1800;refresher=uac  
Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[26] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1f111f673e7  
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
Date: Fri, 29 Jun 2007 21:46:36 GMT  
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
CSeq: 105 INVITE  
Allow-Events: presence  
Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[27] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1f111f673e7  
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874



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Date: Fri, 29 Jun 2007 21:46:36 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 CSeq: 105 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:2002@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[28] ACK sip:2002@10.10.199.250:5060;transport=tcp SIP/2.0  
 Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1f276e8c7d3  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
 Date: Fri, 29 Jun 2007 21:46:36 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 105 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 228

v=0  
 o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.193.253  
 t=0 0  
 m=audio 24634 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=recvonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[29] INVITE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0  
 Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1075d5d2876  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841  
 Date: Fri, 29 Jun 2007 21:46:36 GMT  
 Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 103 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2002@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800;refresher=uas  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0



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```
m=audio 22916 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[30] SIP/2.0 100 Trying**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1075d5d2876
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
Date: Fri, 29 Jun 2007 21:46:36 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[31] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1075d5d2876
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
Date: Fri, 29 Jun 2007 21:46:36 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.193.253
t=0 0
m=audio 24634 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[32] ACK sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1086afbaafb
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
Date: Fri, 29 Jun 2007 21:46:36 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[33] BYE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK109669c04fd
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
Date: Fri, 29 Jun 2007 21:46:36 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 104 BYE
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[34] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK109669c04fd
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470874
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103841
Date: Fri, 29 Jun 2007 21:46:46 GMT
Call-ID: 2a324d00-68517dab-3ab-fac712ac@10.10.199.250
CSeq: 104 BYE
Content-Length: 0
```

## 4.2 Basic Early Transfer Call via an Inter Cluster SIP Trunk

Title: Basic Early Transfer Call via an Inter Cluster SIP Trunk

Description:

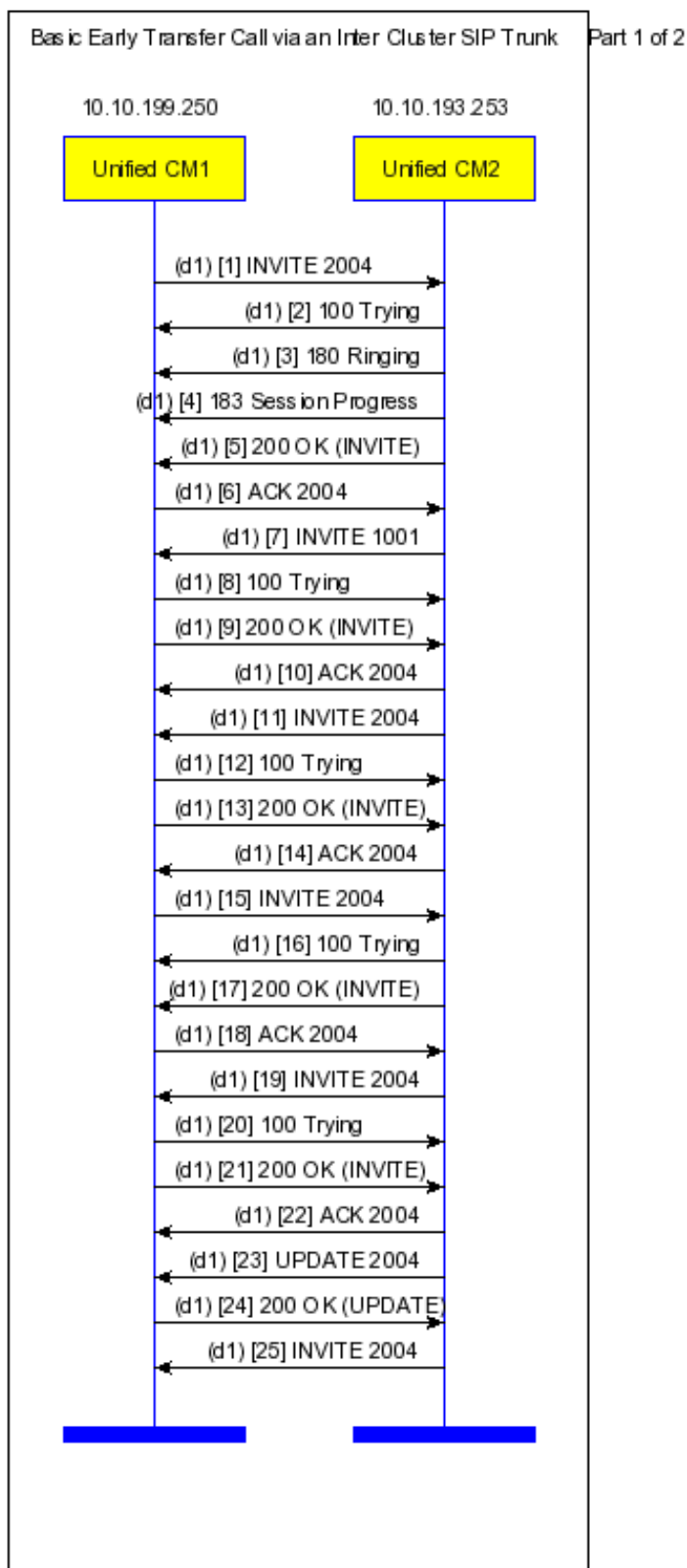
The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk.

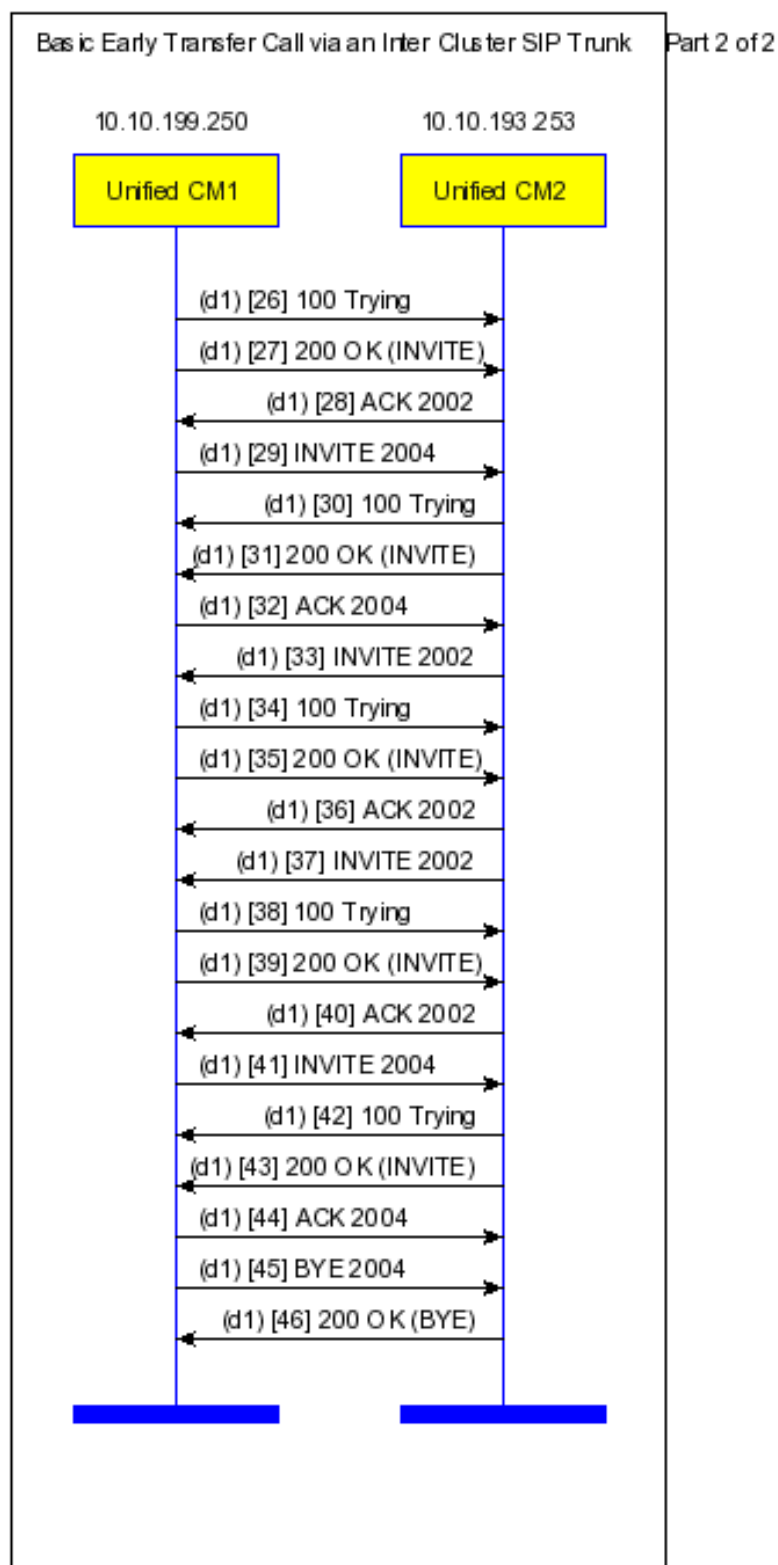
Cisco Unified IP Phone 1001 (registered with CM1) calls Cisco Unified IP Phone 2004 (registered with CM2) and Cisco Unified IP Phone 2004 made an attended transfer to Cisco Unified IP Phone 2002 (registered with CM2 as well)

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:2004@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10a638324e3  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 To: <sip:2004@10.10.193.253>  
 Date: Fri, 29 Jun 2007 21:47:13 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10a638324e3  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 To: <sip:2004@10.10.193.253>  
 Date: Fri, 29 Jun 2007 21:47:13 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 180 Ringing**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10a638324e3  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 Date: Fri, 29 Jun 2007 21:47:13 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10a638324e3  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 Date: Fri, 29 Jun 2007 21:47:13 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 346

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.55  
 t=0 0  
 m=audio 30834 RTP/AVP 9 0 8 18 101  
 a=rtpmap:9 G722/8000  
 a=ptime:20  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=fmtp:18 annexb=no  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

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```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10a638324e3
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
Date: Fri, 29 Jun 2007 21:47:13 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 346
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.55
t=0 0
m=audio 30834 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] ACK sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10b225034da
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
Date: Fri, 29 Jun 2007 21:47:13 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 26788 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1fa40644dle
Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
Date: Fri, 29 Jun 2007 21:47:16 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 1800
Cisco-Guid: 1247939584-1750171105-8638-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 352
```

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```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 30834 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 100 Trying**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1fa40644d1e
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
Date: Fri, 29 Jun 2007 21:47:16 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1fa40644d1e
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
Date: Fri, 29 Jun 2007 21:47:16 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 228

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 26788 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[10] ACK sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1fb322d07ec
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
Date: Fri, 29 Jun 2007 21:47:16 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[11] INVITE sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1fc16c2b76c
Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
Date: Fri, 29 Jun 2007 21:47:16 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250

```

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Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 Cisco-Guid: 1247939584-1750171105-8638-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 102 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 1800;refresher=uac  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[12] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1fc16c2b76c  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 Date: Fri, 29 Jun 2007 21:47:16 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[13] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1fc16c2b76c  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 Date: Fri, 29 Jun 2007 21:47:16 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[14] ACK sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1fd10111d11  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 Date: Fri, 29 Jun 2007 21:47:16 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 227

v=0  
 o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.193.253  
 t=0 0  
 m=audio 4000 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=inactive



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```
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[15] INVITE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10c7109b702
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
Date: Fri, 29 Jun 2007 21:47:16 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2004@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uas
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 26948 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
aptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[16] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10c7109b702
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
Date: Fri, 29 Jun 2007 21:47:16 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[17] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10c7109b702
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
Date: Fri, 29 Jun 2007 21:47:16 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 227
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.193.253
t=0 0
m=audio 4000 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
aptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[18] ACK sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10d452e251c
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
```

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To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 Date: Fri, 29 Jun 2007 21:47:16 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[19] INVITE sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0**  
 Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK202724bf3f1  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 Date: Fri, 29 Jun 2007 21:47:21 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 Cisco-Guid: 1247939584-1750171105-8638-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 103 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 1800;refresher=uac  
 Content-Type: application/sdp  
 Content-Length: 220

v=0  
 o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 0.0.0.0  
 t=0 0  
 m=audio 4000 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=inactive  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[20] SIP/2.0 100 Trying**  
 Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK202724bf3f1  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 Date: Fri, 29 Jun 2007 21:47:21 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 CSeq: 103 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[21] SIP/2.0 200 OK**  
 Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK202724bf3f1  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 Date: Fri, 29 Jun 2007 21:47:21 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 CSeq: 103 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 228

v=0  
 o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 26948 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=inactive

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a=rtpmap:101 telephone-event/8000  
a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[22] ACK sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0  
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK203188fd17  
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
Date: Fri, 29 Jun 2007 21:47:21 GMT  
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
Max-Forwards: 70  
CSeq: 103 ACK  
Allow-Events: presence, kpml  
Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[23] UPDATE sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0  
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK2054b6d28c6  
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
Date: Fri, 29 Jun 2007 21:47:21 GMT  
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
User-Agent: Cisco-CCM6.0  
Max-Forwards: 70  
CSeq: 104 UPDATE  
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
Remote-Party-ID: <sip:2002@10.10.193.253>;party=calling;screen=yes;privacy=off  
Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[24] SIP/2.0 200 OK  
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK2054b6d28c6  
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
Date: Fri, 29 Jun 2007 21:47:21 GMT  
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
CSeq: 104 UPDATE  
Allow-Events: presence  
Contact: <sip:2002@10.10.199.250:5060;transport=tcp>  
Session-Expires: 1800;refresher=uac  
Require: timer  
Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[25] INVITE sip:2004@10.10.199.250:5060;transport=tcp SIP/2.0  
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK20849fea15  
Remote-Party-ID: <sip:2002@10.10.193.253>;party=calling;screen=yes;privacy=off  
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
Date: Fri, 29 Jun 2007 21:47:21 GMT  
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
Supported: 100rel,timer,replaces  
Min-SE: 1800  
Cisco-Guid: 1247939584-1750171105-8638-4257288876  
User-Agent: Cisco-CCM6.0  
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
CSeq: 105 INVITE  
Max-Forwards: 70  
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
Expires: 180  
Allow-Events: presence, kpml  
Session-Expires: 1800;refresher=uac  
Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[26] SIP/2.0 100 Trying  
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK20849fea15  
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
Date: Fri, 29 Jun 2007 21:47:21 GMT  
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
CSeq: 105 INVITE  
Allow-Events: presence  
Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[27] SIP/2.0 200 OK  
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK20849fea15  
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876

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Date: Fri, 29 Jun 2007 21:47:21 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 CSeq: 105 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:2002@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[28] ACK sip:2002@10.10.199.250:5060;transport=tcp SIP/2.0  
 Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK2093565ce70  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 Date: Fri, 29 Jun 2007 21:47:21 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 105 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 227

v=0  
 o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.193.253  
 t=0 0  
 m=audio 4000 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=inactive  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[29] INVITE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0  
 Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10e3402b8bf  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 Date: Fri, 29 Jun 2007 21:47:21 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 103 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2002@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800;refresher=uas  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0

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```
m=audio 27428 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[30] SIP/2.0 100 Trying**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10e3402b8bf
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
Date: Fri, 29 Jun 2007 21:47:21 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[31] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10e3402b8bf
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
Date: Fri, 29 Jun 2007 21:47:21 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 227
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.193.253
t=0 0
m=audio 4000 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[32] ACK sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10ffa76ebc
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
Date: Fri, 29 Jun 2007 21:47:21 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[33] INVITE sip:2002@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK20b7d991f2c
Remote-Party-ID: <sip:2002@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
Date: Fri, 29 Jun 2007 21:47:24 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 1800
Cisco-Guid: 1247939584-1750171105-8638-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 106 INVITE
Max-Forwards: 70
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 220
```

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```
v=0
o=CiscoSystemsCCM-SIP 2000 8 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 4000 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[34] SIP/2.0 100 Trying**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK20b7d991f2c
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
Date: Fri, 29 Jun 2007 21:47:24 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
CSeq: 106 INVITE
Allow-Events: presence
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[35] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK20b7d991f2c
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
Date: Fri, 29 Jun 2007 21:47:24 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
CSeq: 106 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2002@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 228
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 8 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 27428 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[36] ACK sip:2002@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK20c83caed0
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
Date: Fri, 29 Jun 2007 21:47:24 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 106 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[37] INVITE sip:2002@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK20d76005470
Remote-Party-ID: <sip:2002@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
Date: Fri, 29 Jun 2007 21:47:24 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 1800
Cisco-Guid: 1247939584-1750171105-8638-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 107 INVITE
```

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Max-Forwards: 70  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 1800;refresher=uac  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[38] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK20d76005470  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 Date: Fri, 29 Jun 2007 21:47:24 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 CSeq: 107 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[39] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK20d76005470  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 Date: Fri, 29 Jun 2007 21:47:24 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 CSeq: 107 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:2002@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 9 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[40] ACK sip:2002@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK20f376b2120  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876  
 Date: Fri, 29 Jun 2007 21:47:24 GMT  
 Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 107 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 228

v=0  
 o=CiscoSystemsCCM-SIP 2000 9 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.193.253  
 t=0 0  
 m=audio 24644 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=recvnly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[41] INVITE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1101bc4c2df



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```

Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
Date: Fri, 29 Jun 2007 21:47:24 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uas
Content-Type: application/sdp
Content-Length: 217

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 10 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 27734 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[42] SIP/2.0 100 Trying**

```

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1101bc4c2df
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
Date: Fri, 29 Jun 2007 21:47:24 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow-Events: presence, kpml
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[43] SIP/2.0 200 OK**

```

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1101bc4c2df
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
Date: Fri, 29 Jun 2007 21:47:24 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2002@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 217

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 10 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.193.253
t=0 0
m=audio 24644 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[44] ACK sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1111b1453c7
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847
Date: Fri, 29 Jun 2007 21:47:24 GMT
Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence
Content-Length: 0

```



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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[45] BYE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK112381f1978

From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876

To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847

Date: Fri, 29 Jun 2007 21:47:24 GMT

Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250

User-Agent: Cisco-CCM6.0

Max-Forwards: 70

CSeq: 105 BYE

Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[46] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK112381f1978

From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470876

To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103847

Date: Fri, 29 Jun 2007 21:47:28 GMT

Call-ID: 4a620c00-68517de1-3ac-fac712ac@10.10.199.250

CSeq: 105 BYE

Content-Length: 0

### 4.3 Attended Transfer using the Cisco Unified CM SIP Trunk

Title: Attended Transfer using the Cisco Unified CM SIP Trunk

Description:

The following call flow illustrates the SIP messaging that takes place between Cisco Unified IP SCCP phones, and a SIP Proxy via a SIP trunk.

Cisco Unified IP SCCP phone 1001 calls Cisco Unified IP SCCP phone 1003;

Cisco Unified IP SCCP phone 1003 Answers the call.

Cisco Unified IP SCCP phone 1001 press transfer key and dials 2108 a SIP Proxy phone.

SIP Proxy phone 2108 answers the call. Cisco Unified IP SCCP phone 1003 is on Moh.

Cisco Unified IP SCCP phone 1001 press transfer key again.

Cisco Unified IP SCCP phone 1003 and SIP phone 2108 are connected and talking.

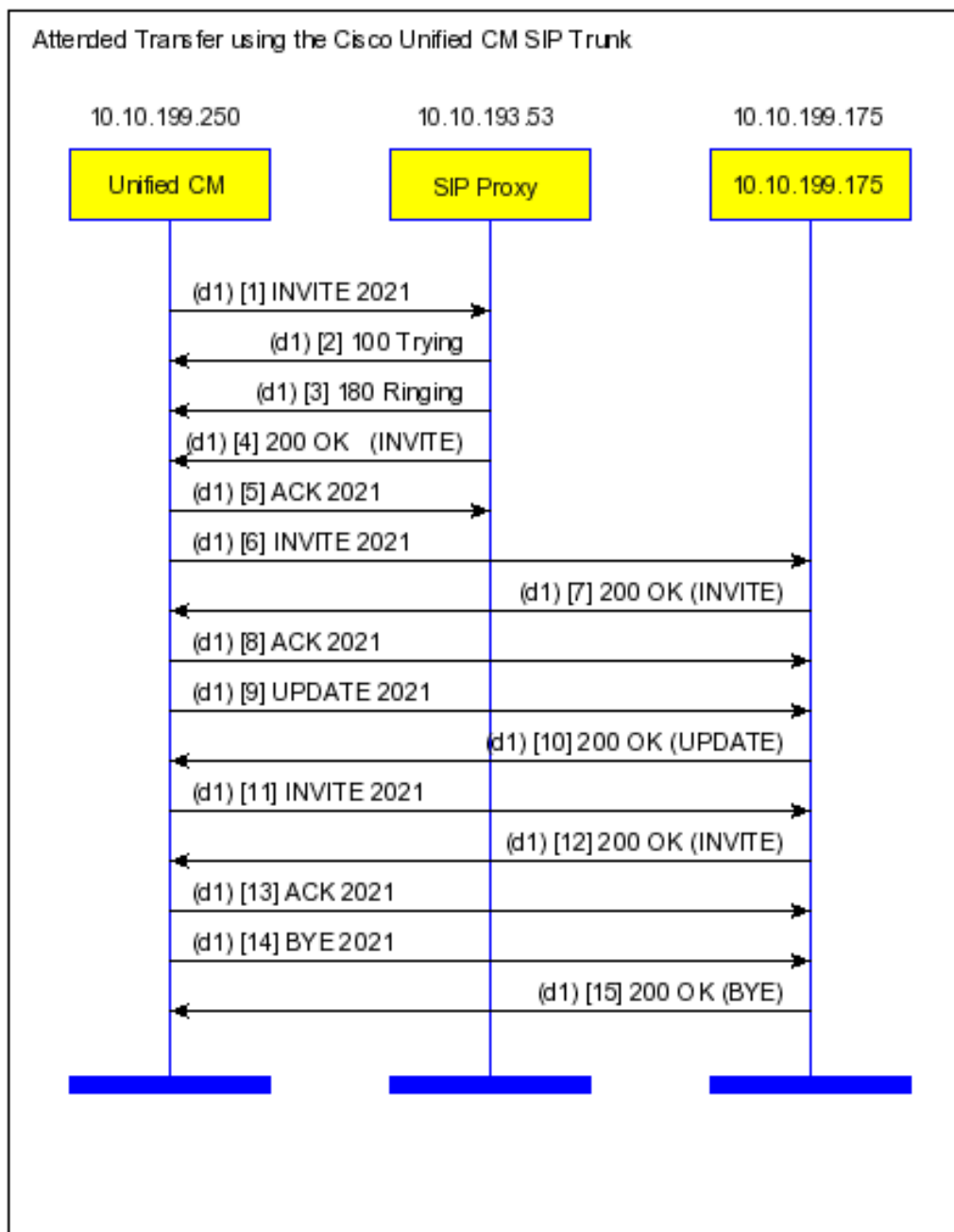
Cisco Unified IP SCCP phone 1003 ends the call.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = SIP Proxy, IP = 10.10.193.53

Node = SIP Endpoint, IP = 10.10.199.75

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[1] INVITE sip:2021@10.10.193.53:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8278f14b14  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850  
 To: <sip:2021@10.10.193.53>  
 Date: Mon, 02 Jul 2007 22:58:51 GMT  
 Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/UDP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK8278f14b14  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850  
 To: <sip:2021@10.10.193.53>  
 Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250  
 Date: Mon, 02 Jul 2007 22:58:52 GMT  
 CSeq: 101 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[3] SIP/2.0 180 Ringing**

Via: SIP/2.0/UDP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK8278f14b14  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd  
 Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250  
 Date: Mon, 02 Jul 2007 22:58:52 GMT  
 CSeq: 101 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[4] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK8278f14b14  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd  
 Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250  
 Date: Mon, 02 Jul 2007 22:59:00 GMT  
 CSeq: 101 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Supported: replaces  
 Content-Length: 259  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=optional

```
v=0
o=Cisco-SIPUA 19901 0 IN IP4 10.10.199.175
s=SIP Call
t=0 0
m=audio 19894 RTP/AVP 0 8 18 101
c=IN IP4 10.10.199.175
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[5] ACK sip:2021@10.10.199.175:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK83ba20fef  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850

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To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd  
 Date: Mon, 02 Jul 2007 22:58:51 GMT  
 Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 16846 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] INVITE sip:2021@10.10.199.175:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK846515f451  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd  
 Date: Mon, 02 Jul 2007 22:59:10 GMT  
 Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 102 INVITE  
 Max-Forwards: 70  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 221

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 0.0.0.0  
 t=0 0  
 m=audio 16846 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=inactive  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK846515f451  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd  
 Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250  
 Date: Mon, 02 Jul 2007 22:59:10 GMT  
 CSeq: 102 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Supported: replaces  
 Content-Length: 209  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=optional

v=0  
 o=Cisco-SIPUA 19901 1 IN IP4 10.10.199.175  
 s=SIP Call  
 t=0 0  
 m=audio 19894 RTP/AVP 0 101  
 c=IN IP4 10.10.199.175  
 a=rtpmap:0 PCMU/8000  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15  
 a=inactive

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[8] ACK sip:2021@10.10.199.175:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK855abf0457  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd  
 Date: Mon, 02 Jul 2007 22:59:10 GMT  
 Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence, kpml  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[9] UPDATE sip:2021@10.10.199.175:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8675c452ac  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd  
 Date: Mon, 02 Jul 2007 22:59:10 GMT  
 Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 103 UPDATE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[10] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8675c452ac  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd  
 Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250  
 Date: Mon, 02 Jul 2007 22:59:11 GMT  
 CSeq: 103 UPDATE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Content-Length: 259  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=optional

v=0  
 o=Cisco-SIPUA 19901 1 IN IP4 10.10.199.175  
 s=SIP Call  
 t=0 0  
 m=audio 19894 RTP/AVP 0 8 18 101  
 c=IN IP4 10.10.199.175  
 a=rtpmap:0 PCMU/8000  
 a=rtpmap:8 PCMA/8000  
 a=rtpmap:18 G729/8000  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15  
 a=sendrecv

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[11] INVITE sip:2021@10.10.199.175:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK872111b539  
 Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd  
 Date: Mon, 02 Jul 2007 22:59:10 GMT  
 Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 104 INVITE  
 Max-Forwards: 70  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[12] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK872111b539  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd  
 Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250  
 Date: Mon, 02 Jul 2007 22:59:11 GMT

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```
CSeq: 104 INVITE
Server: Cisco-CP7960G/7.5
Contact: <sip:2021@10.10.199.175:5060>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Supported: replaces
Content-Length: 259
Content-Type: application/sdp
Content-Disposition: session;handling=optional
```

```
v=0
o=Cisco-SIPUA 19901 1 IN IP4 10.10.199.175
s=SIP Call
t=0 0
m=audio 19894 RTP/AVP 0 8 18 101
c=IN IP4 10.10.199.175
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[13] ACK sip:2021@10.10.199.175:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8823ddfb07
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850
To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd
Date: Mon, 02 Jul 2007 22:59:10 GMT
Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 215
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 16448 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[14] BYE sip:2021@10.10.199.175:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK898a6390f
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850
To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd
Date: Mon, 02 Jul 2007 22:59:10 GMT
Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 105 BYE
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[15] SIP/2.0 200 OK**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK898a6390f
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226850
To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a436b94f0a1-2db5b9cd
Call-ID: cb6e0d00-6891832b-902-fac712ac@10.10.199.250
Date: Mon, 02 Jul 2007 22:59:18 GMT
CSeq: 105 BYE
Server: Cisco-CP7960G/7.5
Content-Length: 0
```

## 4.4 Early Attended Transfer to SIP Proxy via Cisco Unified CM SIP Trunk

Title: Early Attended Transfer to SIP Proxy via Cisco Unified CM SIP Trunk

### Description:

The following call flow illustrates the SIP messaging that takes place between Cisco Unified IP SCCP phones hosted by a Cisco Unified CM and a SIP Proxy via a Cisco Unified CM SIP trunk.

Cisco Unified IP SCCP phone 1001 calls Cisco Unified IP SCCP phone 1003;

Cisco Unified IP SCCP phone 1003 Answers the call.

Cisco Unified IP SCCP phone 1001 presses the transfer key and dials 2108 a SIP Proxy phone.

SIP Proxy phone 2108 is Ringing. Cisco Unified IP SCCP phone 1003 is on Moh.

Cisco Unified IP SCCP phone 1001 press transfer key again.

Cisco Unified IP SCCP phone 1003 hears and SIP phone 2108 Ringing.

SIP Proxy phone 2108 Answers the call.

Cisco Unified IP SCCP phone 1003 and SIP Proxy phone 2108 are talking.

Cisco Unified IP SCCP phone 1003 ends the call.

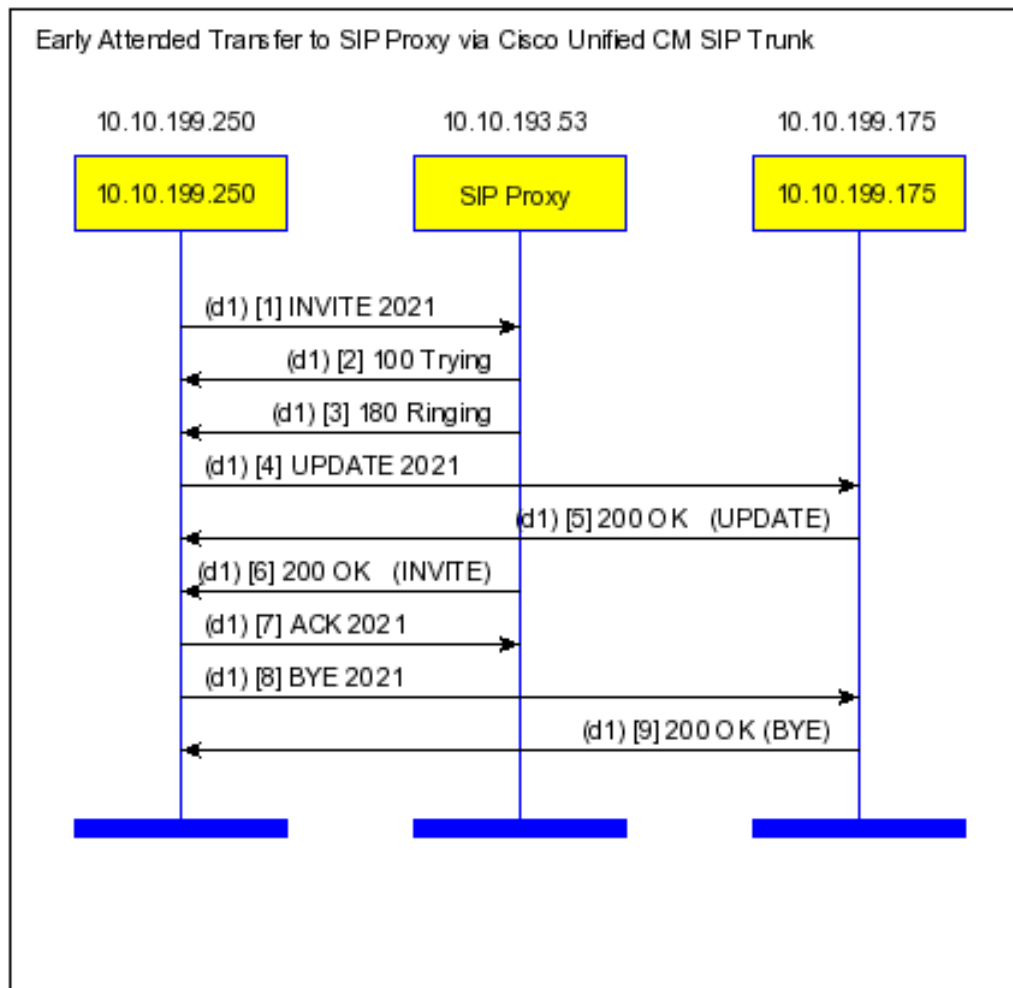
### Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = SIP Proxy, IP = 10.10.193.53

Node = SIP Endpoint, IP = 10.10.199.75



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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[1] INVITE sip:2021@10.10.193.53:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8a4e652678  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226855  
 To: <sip:2021@10.10.193.53>  
 Date: Mon, 02 Jul 2007 22:59:58 GMT  
 Call-ID: f35d7080-6891836e-904-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/UDP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK8a4e652678  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226855  
 To: <sip:2021@10.10.193.53>  
 Call-ID: f35d7080-6891836e-904-fac712ac@10.10.199.250  
 Date: Mon, 02 Jul 2007 22:59:58 GMT  
 CSeq: 101 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[3] SIP/2.0 180 Ringing**

Via: SIP/2.0/UDP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK8a4e652678  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226855  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a4716398c2d-55f6efac  
 Call-ID: f35d7080-6891836e-904-fac712ac@10.10.199.250  
 Date: Mon, 02 Jul 2007 22:59:58 GMT  
 CSeq: 101 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[4] UPDATE sip:2021@10.10.199.175:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8b19b36eed  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226855  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a4716398c2d-55f6efac  
 Date: Mon, 02 Jul 2007 22:59:58 GMT  
 Call-ID: f35d7080-6891836e-904-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 102 UPDATE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[5] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK8b19b36eed  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226855  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a4716398c2d-55f6efac  
 Call-ID: f35d7080-6891836e-904-fac712ac@10.10.199.250  
 Date: Mon, 02 Jul 2007 23:00:00 GMT  
 CSeq: 102 UPDATE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[6] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK8a4e652678  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226855  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a4716398c2d-55f6efac  
 Call-ID: f35d7080-6891836e-904-fac712ac@10.10.199.250

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```
Date: Mon, 02 Jul 2007 23:00:09 GMT
CSeq: 101 INVITE
Server: Cisco-CP7960G/7.5
Contact: <sip:2021@10.10.199.175:5060>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Supported: replaces
Content-Length: 258
Content-Type: application/sdp
Content-Disposition: session;handling=optional
```

```
v=0
o=Cisco-SIPUA 7675 0 IN IP4 10.10.199.175
s=SIP Call
t=0 0
m=audio 19898 RTP/AVP 0 8 18 101
c=IN IP4 10.10.199.175
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] ACK sip:2021@10.10.199.175:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8c54b9094c
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226855
To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a4716398c2d-55f6efac
Date: Mon, 02 Jul 2007 22:59:58 GMT
Call-ID: f35d7080-6891836e-904-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 215
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 22310 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] BYE sip:2021@10.10.199.175:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8d60613338
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226855
To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a4716398c2d-55f6efac
Date: Mon, 02 Jul 2007 22:59:58 GMT
Call-ID: f35d7080-6891836e-904-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 103 BYE
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8d60613338
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226855
To: <sip:2021@10.10.193.53>;tag=000f24aa92e82a4716398c2d-55f6efac
Call-ID: f35d7080-6891836e-904-fac712ac@10.10.199.250
Date: Mon, 02 Jul 2007 23:00:21 GMT
CSeq: 103 BYE
Server: Cisco-CP7960G/7.5
Content-Length: 0
```

## 5. Update

### 5.1 Early Transfer Call to SIP Gateway No PRACK via Cisco Unified CM SIP Trunk

Title: Early Transfer Call to SIP Gateway No PRACK via Cisco Unified CM SIP Trunk

Description:

The following call flow illustrates the SIP messaging that takes place between Cisco Unified CM IP SCCP phones hosted by a Cisco Unified CM, and a SIP GW via a Cisco Unified CM SIP trunk.

Cisco Unified IP SCCP 1001 calls Cisco Unified IP SCCP 1003. The Cisco Unified IP SCCP 1003 Answers the call.

Cisco Unified IP SCCP 1001 presses the transfer key and calls 3600 a SIP GW phone via a Cisco Unified CM SIP Trunk.

GW 3600 phone is ringing, and Cisco Unified IP SCCP 1001 presses the transfer key again.

GW 3600 phone answers the call.

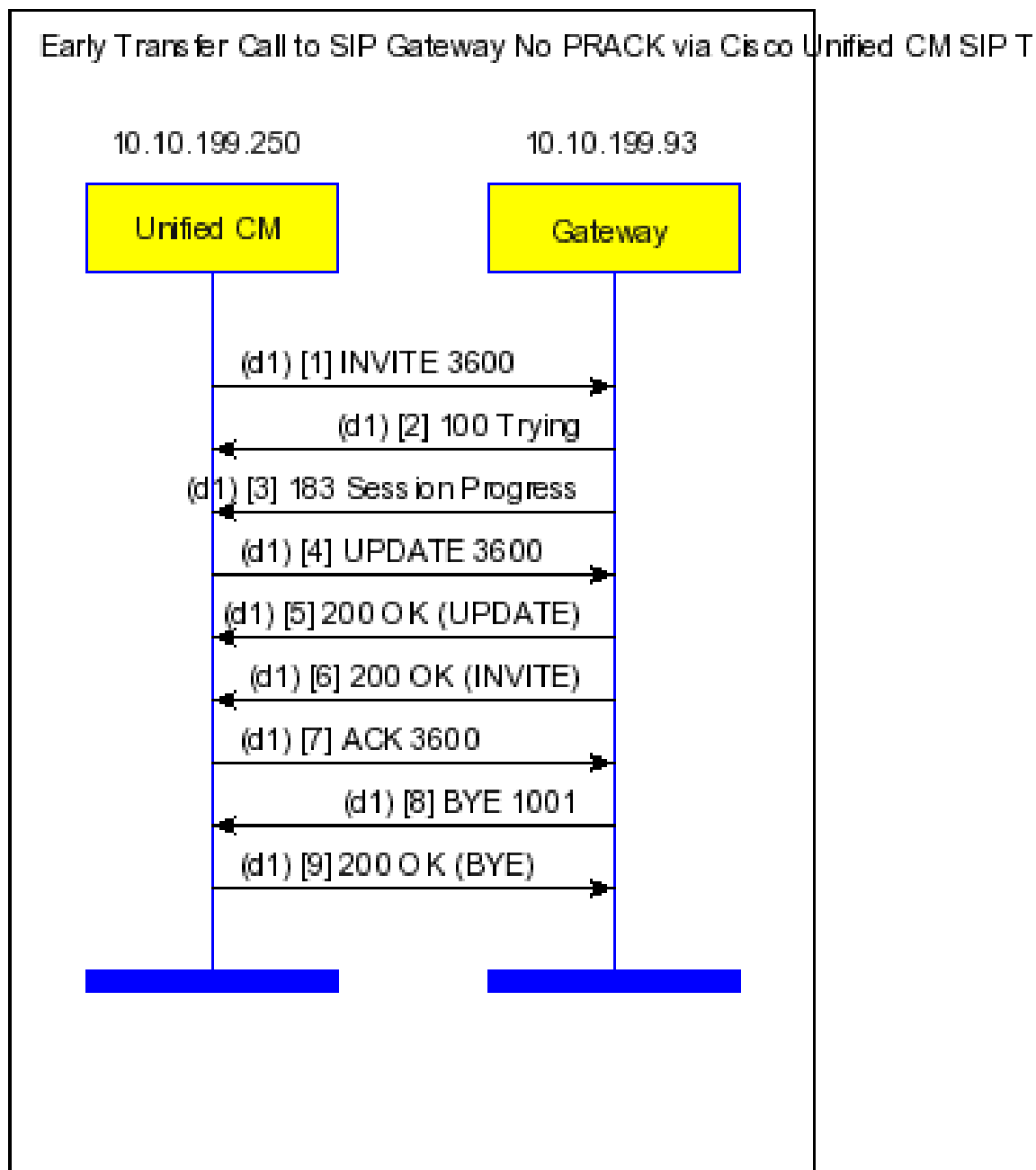
GW 3600 phone and Cisco Unified IP SCCP 1003 talking.

GW 3600 phone ends the call.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = Gateway, IP = 10.10.199.93

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:3600@10.10.199.93:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKf8709d1a26  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470865  
 To: <sip:3600@10.10.199.93>  
 Date: Fri, 29 Jun 2007 20:52:47 GMT  
 Call-ID: afblfff00-6851711f-38c-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKf8709d1a26  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470865  
 To: <sip:3600@10.10.199.93>;tag=28C310E0-D04  
 Date: Fri, 29 Jun 2007 20:52:47 GMT  
 Call-ID: afblfff00-6851711f-38c-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow-Events: telephone-event  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKf8709d1a26  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470865  
 To: <sip:3600@10.10.199.93>;tag=28C310E0-D04  
 Date: Fri, 29 Jun 2007 20:52:47 GMT  
 Call-ID: afblfff00-6851711f-38c-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Allow-Events: telephone-event  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 277

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 3607 4044 IN IP4 10.10.199.93  
 s=SIP Call  
 c=IN IP4 10.10.199.93  
 t=0 0  
 m=audio 17926 RTP/AVP 0 8 18 19  
 c=IN IP4 10.10.199.93  
 a=rtpmap:0 PCMU/8000  
 a=rtpmap:8 PCMA/8000  
 a=rtpmap:18 G729/8000  
 a=fmtp:18 annexb=no  
 a=rtpmap:19 CN/8000

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] UPDATE sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKf9141d82e9  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470865  
 To: <sip:3600@10.10.199.93>;tag=28C310E0-D04  
 Date: Fri, 29 Jun 2007 20:52:47 GMT  
 Call-ID: afblfff00-6851711f-38c-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 102 UPDATE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKf9141d82e9  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470865

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To: <sip:3600@10.10.199.93>;tag=28C310E0-D04  
 Date: Fri, 29 Jun 2007 20:52:49 GMT  
 Call-ID: afblfff00-6851711f-38c-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 102 UPDATE  
 Allow-Events: telephone-event  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKf8709d1a26  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470865  
 To: <sip:3600@10.10.199.93>;tag=28C310E0-D04  
 Date: Fri, 29 Jun 2007 20:52:49 GMT  
 Call-ID: afblfff00-6851711f-38c-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Allow-Events: telephone-event  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 277

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 3607 4044 IN IP4 10.10.199.93  
 s=SIP Call  
 c=IN IP4 10.10.199.93  
 t=0 0  
 m=audio 17926 RTP/AVP 0 8 18 19  
 c=IN IP4 10.10.199.93  
 a=rtpmap:0 PCMU/8000  
 a=rtpmap:8 PCMA/8000  
 a=rtpmap:18 G729/8000  
 a=fmtp:18 annexb=no  
 a=rtpmap:19 CN/8000

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] ACK sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKfa48370b86  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470865  
 To: <sip:3600@10.10.199.93>;tag=28C310E0-D04  
 Date: Fri, 29 Jun 2007 20:52:47 GMT  
 Call-ID: afblfff00-6851711f-38c-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 159

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.66  
 t=0 0  
 m=audio 26858 RTP/AVP 0  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] BYE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK14B3  
 From: <sip:3600@10.10.199.93>;tag=28C310E0-D04  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470865  
 Date: Fri, 29 Jun 2007 20:52:55 GMT  
 Call-ID: afblfff00-6851711f-38c-fac712ac@10.10.199.250  
 User-Agent: Cisco-SIPGateway/IOS-12.x  
 Max-Forwards: 70  
 Timestamp: 1183150377  
 CSeq: 101 BYE  
 Reason: Q.850;cause=16  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK14B3  
 From: <sip:3600@10.10.199.93>;tag=28C310E0-D04

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To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470865  
Date: Fri, 29 Jun 2007 20:52:57 GMT  
Call-ID: afb1ff00-6851711f-38c-fac712ac@10.10.199.250  
Timestamp: 1183150377  
CSeq: 101 BYE  
Content-Length: 0



## 5.2 Early Transfer Call to SIP Gateway with PRACK via Cisco Unified CM SIP Trunk

Title: Early Transfer Call to SIP Gateway with PRACK via Cisco Unified CM SIP Trunk

### Description:

The following call flow illustrates the SIP messaging that takes place between Cisco Unified CM IP SCCP phones hosted by a Cisco Unified CM, and a SIP GW via a Cisco Unified CM SIP trunk.

Cisco Unified IP SCCP 1001 calls Cisco Unified IP SCCP 1003. The

Cisco Unified IP SCCP 1003 Answers the call.

Cisco Unified IP SCCP 1003 presses the transfer key and calls 3600 a SIP GW phone via a Cisco Unified CM SIP Trunk.

GW 3600 phone is ringing, and Cisco Unified IP SCCP 1001 presses the transfer key again.

GW 3600 phone answers the call.

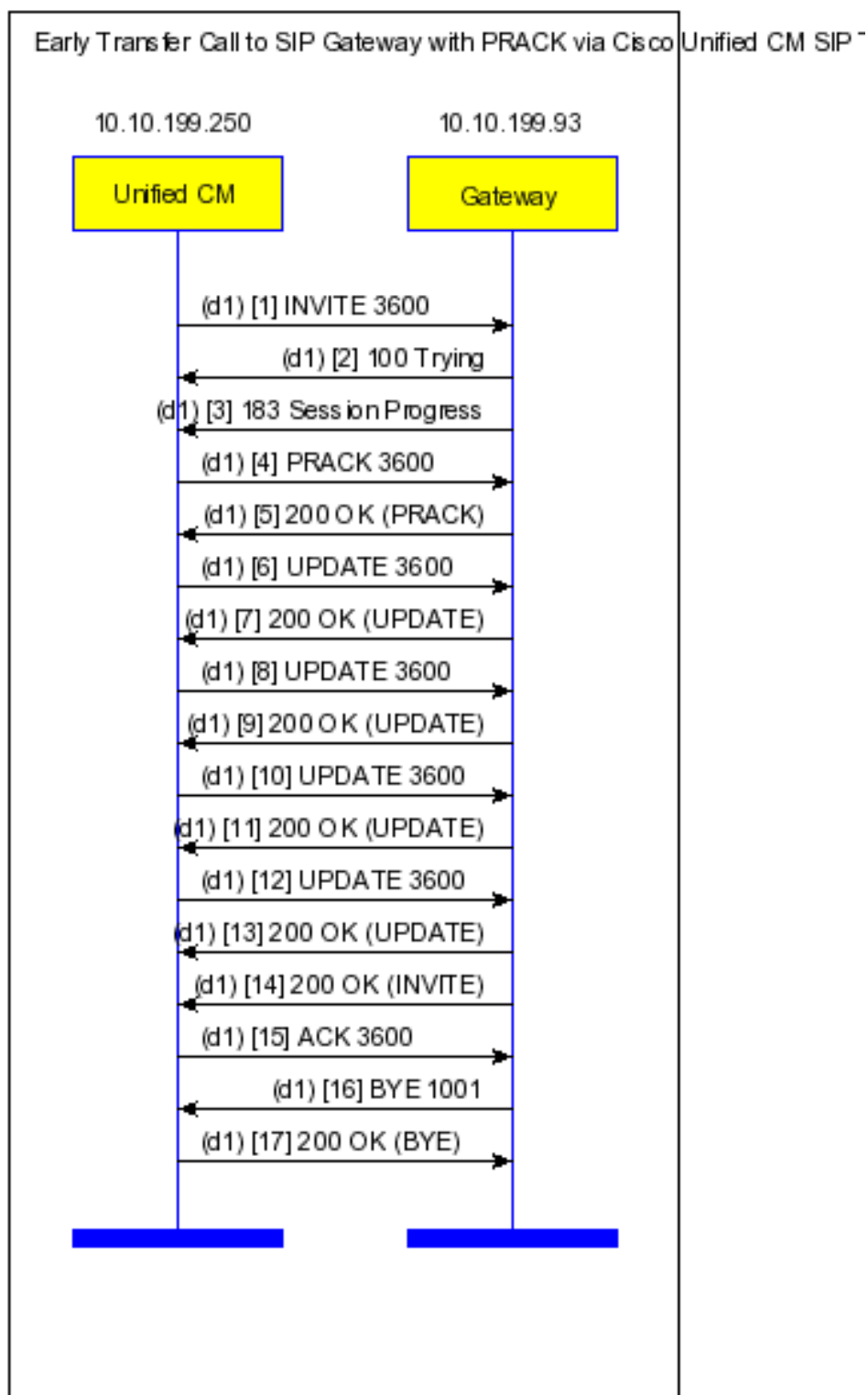
GW 3600 phone and Cisco Unified IP SCCP 1003 talking.

GW 3600 phone ends the call

### Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = Gateway, IP = 10.10.199.93

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[1] INVITE sip:3600@10.10.199.93:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKfb48d2e202  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870  
 To: <sip:3600@10.10.199.93>  
 Date: Fri, 29 Jun 2007 20:56:54 GMT  
 Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKfb48d2e202  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870  
 To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C  
 Date: Fri, 29 Jun 2007 20:56:54 GMT  
 Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow-Events: telephone-event  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[3] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKfb48d2e202  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870  
 To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C  
 Date: Fri, 29 Jun 2007 20:56:54 GMT  
 Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Require: 100rel  
 RSeq: 246  
 Allow-Events: telephone-event  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 277

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 7645 8051 IN IP4 10.10.199.93  
 s=SIP Call  
 c=IN IP4 10.10.199.93  
 t=0 0  
 m=audio 17334 RTP/AVP 0 8 18 19  
 c=IN IP4 10.10.199.93  
 a=rtpmap:0 PCMU/8000  
 a=rtpmap:8 PCMA/8000  
 a=rtpmap:18 G729/8000  
 a=fmtp:18 annexb=no  
 a=rtpmap:19 CN/8000

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

**[4] PRACK sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKfc6439f250  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870  
 To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C  
 Date: Fri, 29 Jun 2007 20:56:54 GMT  
 Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250  
 CSeq: 102 PRACK  
 RACK: 246 101 INVITE  
 Max-Forwards: 70  
 Content-Type: application/sdp  
 Content-Length: 160

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250  
 s=SIP Call

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```
c=IN IP4 10.10.199.251
t=0 0
m=audio 19688 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKfc6439f250
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870
To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C
Date: Fri, 29 Jun 2007 20:56:54 GMT
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 PRACK
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] UPDATE sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKfd6276da96
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870
To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C
Date: Fri, 29 Jun 2007 20:56:54 GMT
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 103 UPDATE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 165
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 19688 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKfd6276da96
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870
To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C
Date: Fri, 29 Jun 2007 20:56:56 GMT
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 103 UPDATE
Allow-Events: telephone-event
Contact: <sip:3600@10.10.199.93:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 206
```

```
v=0
o=CiscoSystemsSIP-GW-UserAgent 7645 8051 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 17334 RTP/AVP 0
c=IN IP4 10.10.199.93
a=inactive
a=rtpmap:0 PCMU/8000
a=ptime:20
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] UPDATE sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKfe4d695cad
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870
To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C
Date: Fri, 29 Jun 2007 20:56:54 GMT
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 104 UPDATE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
```

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Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKfe4d695cad  
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870  
To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C  
Date: Fri, 29 Jun 2007 20:56:56 GMT  
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250  
Server: Cisco-SIPGateway/IOS-12.x  
CSeq: 104 UPDATE  
Allow-Events: telephone-event  
Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[10] UPDATE sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKff23213039  
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870  
To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C  
Date: Fri, 29 Jun 2007 20:56:54 GMT  
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250  
User-Agent: Cisco-CCM6.0  
Max-Forwards: 70  
CSeq: 105 UPDATE  
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off  
Content-Type: application/sdp  
Content-Length: 300

v=0  
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250  
s=SIP Call  
c=IN IP4 10.10.199.66  
t=0 0  
m=audio 4000 RTP/AVP 0 8 18 101  
a=rtpmap:0 PCMU/8000  
a=ptime:20  
a=rtpmap:8 PCMA/8000  
a=ptime:20  
a=rtpmap:18 G729/8000  
a=ptime:20  
a=sendonly  
a=rtpmap:101 telephone-event/8000  
a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[11] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKff23213039  
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870  
To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C  
Date: Fri, 29 Jun 2007 20:56:56 GMT  
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250  
Server: Cisco-SIPGateway/IOS-12.x  
CSeq: 105 UPDATE  
Allow-Events: telephone-event  
Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
Session-Expires: 1800;refresher=uac  
Require: timer  
Content-Type: application/sdp  
Content-Length: 194

v=0  
o=CiscoSystemsSIP-GW-UserAgent 7645 8052 IN IP4 10.10.199.93  
s=SIP Call  
c=IN IP4 10.10.199.93  
t=0 0  
m=audio 17334 RTP/AVP 0  
c=IN IP4 10.10.199.93  
a=recvonly  
a=rtpmap:0 PCMU/8000

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[12] UPDATE sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK100290eb3ad  
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870  
To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C  
Date: Fri, 29 Jun 2007 20:56:54 GMT  
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250

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```
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 106 UPDATE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 159
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 18214 RTP/AVP 0
a=rtpmap:0 PCMU/8000
aptime:20
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[13] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK100290eb3ad
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870
To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C
Date: Fri, 29 Jun 2007 20:56:56 GMT
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 106 UPDATE
Allow-Events: telephone-event
Contact: <sip:3600@10.10.199.93:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 194
```

```
v=0
o=CiscoSystemsSIP-GW-UserAgent 7645 8053 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 17334 RTP/AVP 0
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
aptime:20
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[14] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKfb48d2e202
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870
To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C
Date: Fri, 29 Jun 2007 20:56:56 GMT
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:3600@10.10.199.93:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 194
```

```
v=0
o=CiscoSystemsSIP-GW-UserAgent 7645 8053 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 17334 RTP/AVP 0
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
aptime:20
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[15] ACK sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK101172faf88
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870
To: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C
Date: Fri, 29 Jun 2007 20:56:54 GMT
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
```

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```
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 159
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 18214 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[16] BYE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK15BA7
From: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870
Date: Fri, 29 Jun 2007 20:57:03 GMT
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 70
Timestamp: 1183150623
CSeq: 101 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[17] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK15BA7
From: <sip:3600@10.10.199.93>;tag=28C6D7F0-115C
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470870
Date: Fri, 29 Jun 2007 20:57:03 GMT
Call-ID: 42eb3480-68517216-38f-fac712ac@10.10.199.250
Timestamp: 1183150623
CSeq: 101 BYE
Content-Length: 0
```

## 6. TLS

### 6.1 TLS Rejection with X509 Subject Name Mismatch

Title: TLS Rejection with X509 Subject Name Mismatch

Description:

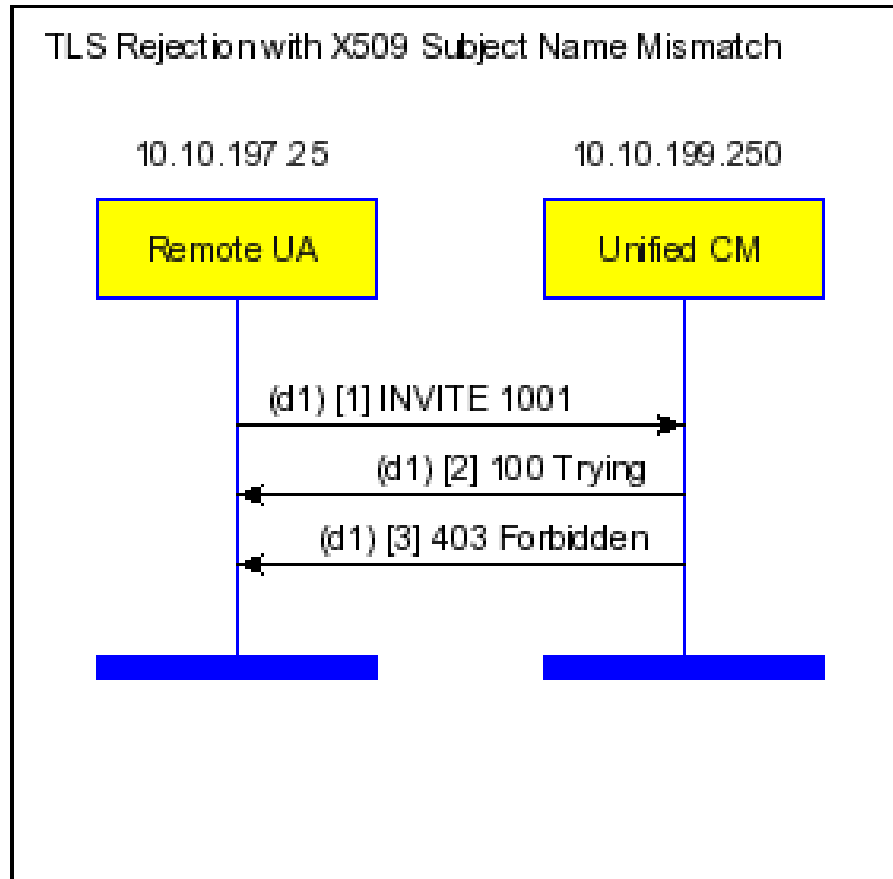
Incoming TLS is from a trusted peer but the X509 subject name or the cipher string from the peer's certificate doesn't match the values from the SIP trunk security profile on Cisco Unified CM.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = Remote UA, IP = 10.10.197.25



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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:1001@10.10.199.250:5061 SIP/2.0**

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7E1032

From: <sip:10.10.197.25>;tag=96D51BC0-259A

To: <sip:1001@10.10.199.250>

Date: Thu, 28 Jun 2007 22:16:00 GMT

Call-ID: FC38F3D8-24FB11DC-81C0E83B-9D0579C6@10.10.197.25

Supported: 100rel,timer,resource-priority,replaces

Min-SE: 1800

Cisco-Guid: 4231550896-620433884-2176706619-2634381766

User-Agent: Cisco-SIPGateway/IOS-12.x

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

CSeq: 101 INVITE

Max-Forwards: 70

Timestamp: 1183068960

Contact: <sip:10.10.197.25:5061;transport=tls>

Expires: 180

Allow-Events: telephone-event

Content-Type: application/sdp

Content-Disposition: session;handling=required

Content-Length: 241

v=0

o=CiscoSystemsSIP-GW-UserAgent 2397 4080 IN IP4 10.10.197.25

s=SIP Call

c=IN IP4 10.10.197.25

t=0 0

m=audio 19062 RTP/AVP 18 19

c=IN IP4 10.10.197.25

a=rtpmap:18 G729/8000

a=fmtp:18 annexb=no

a=rtpmap:19 CN/8000

a=ptime:20

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7E1032

From: <sip:10.10.197.25>;tag=96D51BC0-259A

To: <sip:1001@10.10.199.250>

Date: Thu, 28 Jun 2007 22:16:02 GMT

Call-ID: FC38F3D8-24FB11DC-81C0E83B-9D0579C6@10.10.197.25

Timestamp: 1183068960

CSeq: 101 INVITE

Allow-Events: presence

Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 403 Forbidden**

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7E1032

From: <sip:10.10.197.25>;tag=96D51BC0-259A

To: <sip:1001@10.10.199.250>;tag=581289464

Date: Thu, 28 Jun 2007 22:16:02 GMT

Call-ID: FC38F3D8-24FB11DC-81C0E83B-9D0579C6@10.10.197.25

Timestamp: 1183068960

CSeq: 101 INVITE

Allow-Events: presence

Content-Length: 0

## 7. T38

### 7.1 SIP Trunk Passes through T38 Fax Call between SIP Gateways

Title: SIP Trunk Passes through T38 Fax Call between SIP Gateways

Description:

Cisco Unified CM can pass through T38 fax calls using SIP trunk. This call flow shows how two SIP trunks let a fax call pass the Unified CM between two SIP gateways.

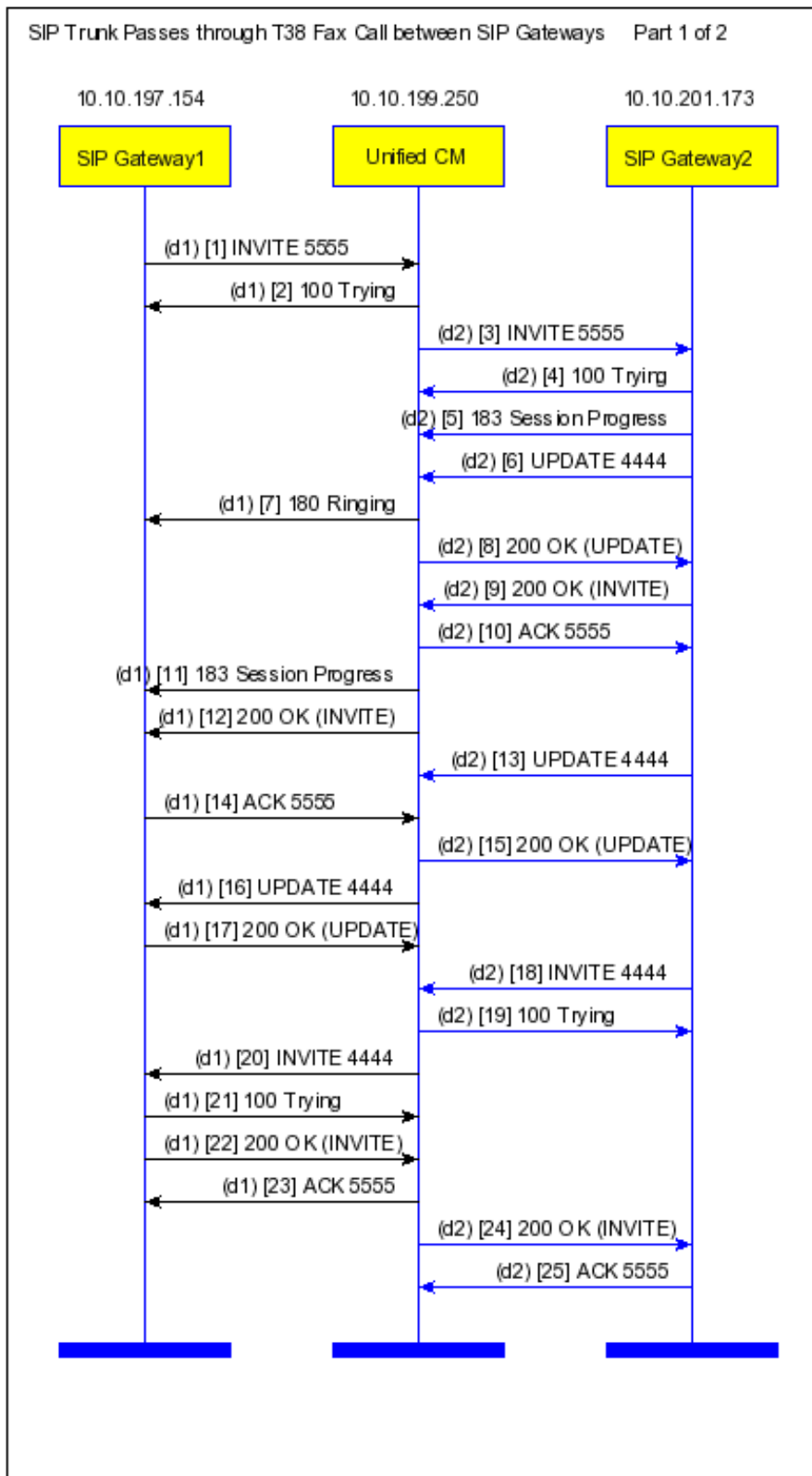
Current design does not support audio switch back from the fax, therefore the last reINVITE from SIP Gateway2 is rejected with 415.

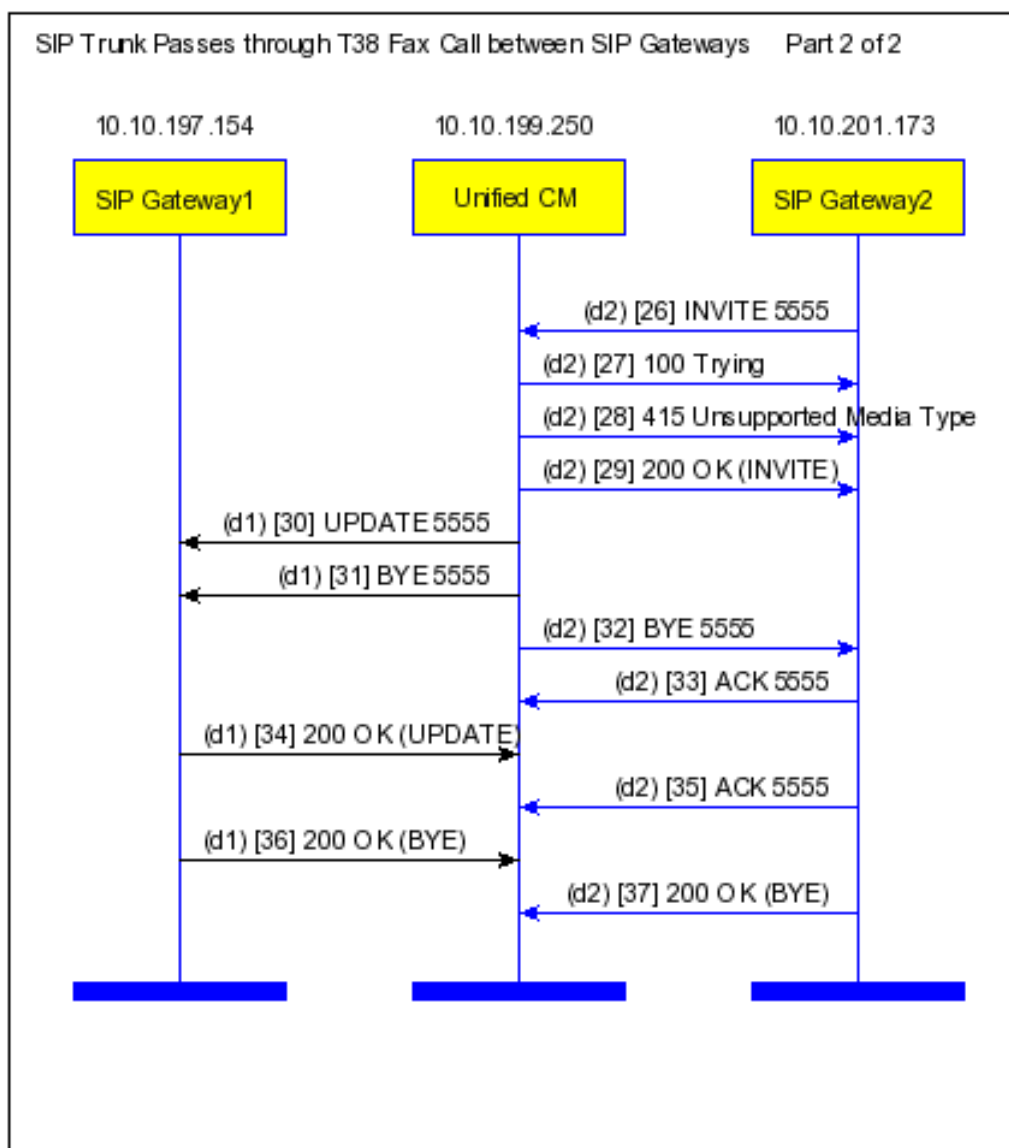
Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = SIP Gateway1, IP = 10.10.197.154

Node = SIP Gateway2, IP = 10.10.201.173

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[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[1] **INVITE sip:5555@10.10.199.250:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.197.154:5060;branch=z9hG4bK12CF587  
 Remote-Party-ID: <sip:4444@10.10.197.154>;party=calling;screen=no;privacy=off  
 From: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551  
 To: <sip:5555@10.10.199.250>  
 Date: Mon, 02 Jul 2007 22:31:37 GMT  
 Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154  
 Supported: 100rel,timer,resource-priority,replaces  
 Min-SE: 90  
 Cisco-Guid: 3519585899-673321436-2151007151-3453582622  
 User-Agent: Cisco-SIPGateway/IOS-12.x  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 CSeq: 101 INVITE  
 Max-Forwards: 70  
 Timestamp: 1183415497  
 Contact: <sip:4444@10.10.197.154:5060>  
 Expires: 1800  
 Allow-Events: telephone-event  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 244

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 5572 2057 IN IP4 10.10.197.154  
 s=SIP Call  
 c=IN IP4 10.10.197.154  
 t=0 0  
 m=audio 18714 RTP/AVP 18 19  
 c=IN IP4 10.10.197.154  
 a=rtpmap:18 G729/8000  
 a=fmtp:18 annexb=no  
 a=rtpmap:19 CN/8000  
 a=ptime:20

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[2] **SIP/2.0 100 Trying**

Via: SIP/2.0/UDP 10.10.197.154:5060;branch=z9hG4bK12CF587  
 From: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551  
 To: <sip:5555@10.10.199.250>  
 Date: Mon, 02 Jul 2007 22:29:41 GMT  
 Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154  
 Timestamp: 1183415497  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[3] **INVITE sip:5555@10.10.201.173:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6d5ec9f5cb  
 Remote-Party-ID: <sip:4444@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
 To: <sip:5555@10.10.201.173>  
 Date: Mon, 02 Jul 2007 22:29:41 GMT  
 Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:4444@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800  
 Max-Forwards: 69  
 Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[4] **SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6d5ec9f5cb  
 From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
 To: <sip:5555@10.10.201.173>  
 Date: Mon, 02 Jul 2007 22:28:59 GMT  
 Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow-Events: telephone-event  
 Content-Length: 0

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6d5ec9f5cb  
 From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
 To: <sip:5555@10.10.201.173>;tag=107EA538-17C5  
 Date: Mon, 02 Jul 2007 22:28:59 GMT  
 Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Allow-Events: telephone-event  
 Contact: <sip:5555@10.10.201.173:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 244

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 5206 5659 IN IP4 10.10.201.173  
 s=SIP Call  
 c=IN IP4 10.10.201.173  
 t=0 0  
 m=audio 16588 RTP/AVP 18 19  
 c=IN IP4 10.10.201.173  
 a=rtpmap:18 G729/8000  
 a=fmtp:18 annexb=no  
 a=rtpmap:19 CN/8000  
 a=ptime:20

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] UPDATE sip:4444@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK702264  
 From: <sip:5555@10.10.201.173>;tag=107EA538-17C5  
 To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
 Date: Mon, 02 Jul 2007 22:28:59 GMT  
 Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
 User-Agent: Cisco-SIPGateway/IOS-12.x  
 Max-Forwards: 6  
 Timestamp: 1183415339  
 CSeq: 101 UPDATE  
 Contact: <sip:5555@10.10.201.173:5060;transport=tcp>  
 Remote-Party-ID: <sip:5555@10.10.201.173>;party=calling;screen=yes;privacy=off  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] SIP/2.0 180 Ringing**

Via: SIP/2.0/UDP 10.10.197.154:5060;branch=z9hG4bK12CF587  
 From: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551  
 To: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828  
 Date: Mon, 02 Jul 2007 22:29:41 GMT  
 Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154  
 Timestamp: 1183415497  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:5555@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:5555@10.10.199.250:5060>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK702264  
 From: <sip:5555@10.10.201.173>;tag=107EA538-17C5  
 To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
 Date: Mon, 02 Jul 2007 22:29:41 GMT  
 Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
 Timestamp: 1183415339  
 CSeq: 101 UPDATE  
 Allow-Events: presence  
 Contact: <sip:5555@10.10.199.250:5060;transport=tcp>  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6d5ec9f5cb  
 From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
 To: <sip:5555@10.10.201.173>;tag=107EA538-17C5  
 Date: Mon, 02 Jul 2007 22:28:59 GMT  
 Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250

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```

Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:5555@10.10.201.173:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 244

```

```

v=0
o=CiscoSystemsSIP-GW-UserAgent 5206 5659 IN IP4 10.10.201.173
s=SIP Call
c=IN IP4 10.10.201.173
t=0 0
m=audio 16588 RTP/AVP 18 19
c=IN IP4 10.10.201.173
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
a=ptime:20

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[10] ACK sip:5555@10.10.201.173:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6e137f0889
From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
To: <sip:5555@10.10.201.173>;tag=107EA538-17C5
Date: Mon, 02 Jul 2007 22:29:41 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 183

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.197.154
t=0 0
m=audio 18714 RTP/AVP 18
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[11] SIP/2.0 183 Session Progress
Via: SIP/2.0/UDP 10.10.197.154:5060;branch=z9hG4bK12CF587
From: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
To: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
Date: Mon, 02 Jul 2007 22:29:41 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Timestamp: 1183415497
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:5555@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:5555@10.10.199.250:5060>
Content-Type: application/sdp
Content-Length: 183

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.201.173
t=0 0
m=audio 16588 RTP/AVP 18
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[12] SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.10.197.154:5060;branch=z9hG4bK12CF587
From: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
To: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
Date: Mon, 02 Jul 2007 22:29:41 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154

```



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```

Timestamp: 1183415497
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:5555@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:5555@10.10.199.250:5060>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 183

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.201.173
t=0 0
m=audio 16588 RTP/AVP 18
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[13] UPDATE sip:4444@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK71174F
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:29:06 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 6
Timestamp: 1183415346
CSeq: 102 UPDATE
Contact: <sip:5555@10.10.201.173:5060;transport=tcp>
Remote-Party-ID: <sip:5555@10.10.201.173>;party=calling;screen=no;privacy=off
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[14] ACK sip:5555@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.197.154:5060;branch=z9hG4bK12D0D6
From: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
To: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
Date: Mon, 02 Jul 2007 22:31:37 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: telephone-event
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[15] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK71174F
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:29:48 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Timestamp: 1183415346
CSeq: 102 UPDATE
Allow-Events: presence
Contact: <sip:5555@10.10.199.250:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[16] UPDATE sip:4444@10.10.197.154:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK6f1745df1c
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:29:48 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 101 UPDATE
Contact: <sip:5555@10.10.199.250:5060>
Remote-Party-ID: <sip:5555@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[17] SIP/2.0 200 OK

```

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Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK6f1745df1c  
 From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828  
 To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551  
 Date: Mon, 02 Jul 2007 22:31:44 GMT  
 Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 UPDATE  
 Allow-Events: telephone-event  
 Contact: <sip:5555@10.10.197.154:5060>  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[18] INVITE sip:4444@10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK722491  
 Remote-Party-ID: <sip:5555@10.10.201.173>;party=calling;screen=no;privacy=off  
 From: <sip:5555@10.10.201.173>;tag=107EA538-17C5  
 To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
 Date: Mon, 02 Jul 2007 22:29:42 GMT  
 Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
 Supported: 100rel,timer,resource-priority,replaces  
 Min-SE: 1800  
 Cisco-Guid: 1982097883-673321436-2150949515-1341985076  
 User-Agent: Cisco-SIPGateway/IOS-12.x  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 CSeq: 103 INVITE  
 Max-Forwards: 6  
 Timestamp: 1183415382  
 Contact: <sip:5555@10.10.201.173:5060;transport=tcp>  
 Expires: 1800  
 Allow-Events: telephone-event  
 Session-Expires: 1800;refresher=uas  
 Content-Type: application/sdp  
 Content-Length: 401

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 5206 5661 IN IP4 10.10.201.173  
 s=SIP Call  
 c=IN IP4 10.10.201.173  
 t=0 0  
 m=image 16588 udpt1 t38  
 c=IN IP4 10.10.201.173  
 a=T38FaxVersion:0  
 a=T38MaxBitRate:7200  
 a=T38FaxFilllBitRemoval:0  
 a=T38FaxTranscodingMMR:0  
 a=T38FaxTranscodingJBIG:0  
 a=T38FaxRateManagement:transferredTCF  
 a=T38FaxMaxBuffer:200  
 a=T38FaxMaxDatagram:72  
 a=T38FaxUdpEC:t38UDPRedundancy

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[19] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK722491  
 From: <sip:5555@10.10.201.173>;tag=107EA538-17C5  
 To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
 Date: Mon, 02 Jul 2007 22:30:25 GMT  
 Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
 CSeq: 103 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[20] INVITE sip:4444@10.10.197.154:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK701e6de0ae  
 Remote-Party-ID: <sip:5555@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828  
 To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551  
 Date: Mon, 02 Jul 2007 22:30:25 GMT  
 Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154  
 Supported: timer,replaces  
 Min-SE: 1800  
 Cisco-Guid: 3519585899-673321436-2151007151-3453582622  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 102 INVITE  
 Max-Forwards: 70  
 Contact: <sip:5555@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence

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```
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 364
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
t=0 0
m=image 16588 udptl t38
c=IN IP4 10.10.201.173
a=T38FaxVersion:0
a=T38MaxBitRate:7200
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
a=T38FaxUdpEC:t38UDPRedundancy
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[21] SIP/2.0 100 Trying**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK701e6de0ae
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:32:20 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 INVITE
Allow-Events: telephone-event
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[22] SIP/2.0 200 OK**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK701e6de0ae
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:32:20 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Remote-Party-ID: <sip:4444@10.10.197.154>;party=called;screen=no;privacy=off
Contact: <sip:5555@10.10.197.154:5060>
Supported: replaces
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 163
```

```
v=0
o=CiscoSystemsSIP-GW-UserAgent 5572 2058 IN IP4 10.10.197.154
s=SIP Call
c=IN IP4 10.10.197.154
t=0 0
m=image 18714 udptl t38
c=IN IP4 10.10.197.154
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[23] ACK sip:5555@10.10.197.154:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK71201cf9b2
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:30:25 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[24] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK722491
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:30:25 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
```

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```

Allow-Events: presence
Remote-Party-ID: <sip:4444@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:5555@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 227

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
t=0 0
m=image 18714 udptl t38
c=IN IP4 10.10.197.154
a=T38MaxBitRate:7200
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[25] ACK sip:5555@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7321C7
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:29:42 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Max-Forwards: 6
CSeq: 103 ACK
Allow-Events: telephone-event
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[26] INVITE sip:5555@10.10.199.250:5060;transport=tcp SIP/2.0**

```

Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7410A4
Remote-Party-ID: <sip:5555@10.10.201.173>;party=calling;screen=no;privacy=off
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:30:18 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Supported: 100rel,timer,resource-priority,replaces
Min-SE: 1800
Cisco-Guid: 1982097883-673321436-2150949515-1341985076
User-Agent: Cisco-SIPGateway/IOS-12.x
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
CSeq: 104 INVITE
Max-Forwards: 6
Timestamp: 1183415418
Contact: <sip:5555@10.10.201.173:5060;transport=tcp>
Expires: 1800
Allow-Events: telephone-event
Session-Expires: 1800;refresher=uas
Content-Type: application/sdp
Content-Length: 244

```

```

v=0
o=CiscoSystemsSIP-GW-UserAgent 5206 5662 IN IP4 10.10.201.173
s=SIP Call
c=IN IP4 10.10.201.173
t=0 0
m=audio 16588 RTP/AVP 18 19
c=IN IP4 10.10.201.173
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
a=ptime:20

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[27] SIP/2.0 100 Trying**

```

Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7410A4
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:31:00 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow-Events: presence
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[28] SIP/2.0 415 Unsupported Media Type**

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Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7410A4  
 From: <sip:5555@10.10.201.173>;tag=107EA538-17C5  
 To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
 Date: Mon, 02 Jul 2007 22:31:00 GMT  
 Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
 CSeq: 104 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[29] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7410A4  
 From: <sip:5555@10.10.201.173>;tag=107EA538-17C5  
 To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
 Date: Mon, 02 Jul 2007 22:31:00 GMT  
 Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
 CSeq: 104 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:4444@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:5555@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 195

v=0  
 o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.201.173  
 t=0 0  
 m=audio 16588 RTP/AVP 18  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=fmtp:18 annexb=no  
 a=inactive

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[30] UPDATE sip:5555@10.10.197.154:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK727b88f070  
 From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828  
 To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551  
 Date: Mon, 02 Jul 2007 22:30:25 GMT  
 Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 103 UPDATE  
 Contact: <sip:5555@10.10.199.250:5060>  
 Remote-Party-ID: <sip:5555@10.10.199.250>;party=calling;screen=yes;privacy=off  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[31] BYE sip:5555@10.10.197.154:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK73378de66c  
 From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828  
 To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551  
 Date: Mon, 02 Jul 2007 22:30:25 GMT  
 Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 104 BYE  
 Reason: Q.850;cause=47  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[32] BYE sip:5555@10.10.201.173:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK745dabe0f9  
 From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
 To: <sip:5555@10.10.201.173>;tag=107EA538-17C5  
 Date: Mon, 02 Jul 2007 22:31:00 GMT  
 Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 102 BYE  
 Reason: Q.850;cause=47  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[33] ACK sip:5555@10.10.199.250:5060;transport=tcp SIP/2.0

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Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7410A4  
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5  
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
Date: Mon, 02 Jul 2007 22:30:18 GMT  
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
Max-Forwards: 6  
CSeq: 104 ACK  
Allow-Events: telephone-event  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[34] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK727b88f070  
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828  
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551  
Date: Mon, 02 Jul 2007 22:32:56 GMT  
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154  
Server: Cisco-SIPGateway/IOS-12.x  
CSeq: 103 UPDATE  
Allow-Events: telephone-event  
Contact: <sip:5555@10.10.197.154:5060>  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[35] ACK sip:5555@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7321C7  
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5  
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
Date: Mon, 02 Jul 2007 22:30:18 GMT  
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
Max-Forwards: 6  
CSeq: 104 ACK  
Allow-Events: telephone-event  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[36] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK73378de66c  
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828  
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551  
Date: Mon, 02 Jul 2007 22:32:56 GMT  
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154  
Server: Cisco-SIPGateway/IOS-12.x  
CSeq: 104 BYE  
Reason: Q.850;cause=16  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[37] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK745dabe0f9  
From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829  
To: <sip:5555@10.10.201.173>;tag=107EA538-17C5  
Date: Mon, 02 Jul 2007 22:30:18 GMT  
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250  
Server: Cisco-SIPGateway/IOS-12.x  
CSeq: 102 BYE  
Reason: Q.850;cause=0  
Content-Length: 0

## 8. SipsUri

### 8.1 Incoming SIPS URI Request Redirected by Cisco Unified CM

Title: Incoming SIPS URI Request Redirected by Cisco Unified CM

Description:

SIPS URI is handled but not officially supported by Cisco Unified CM.

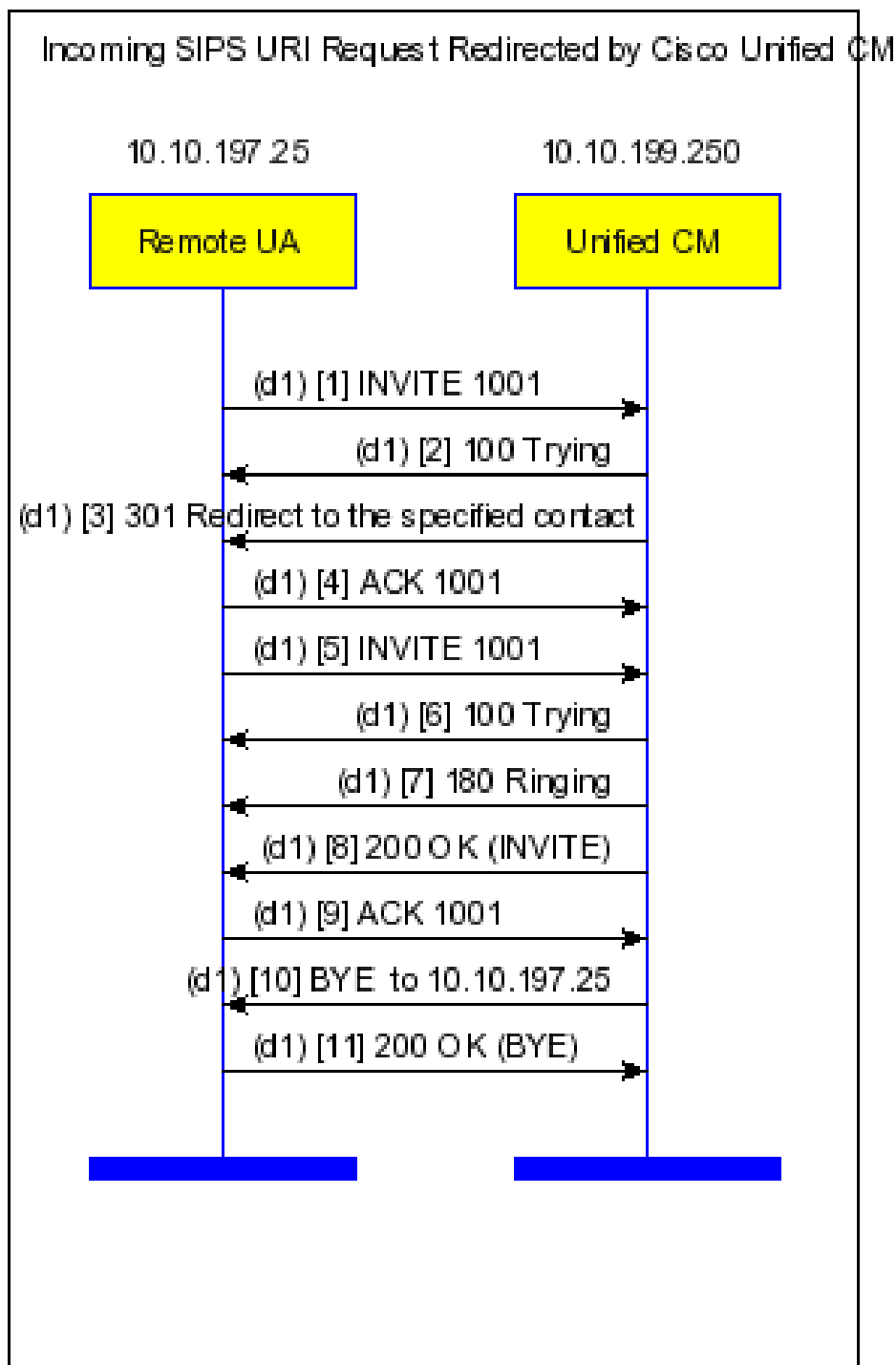
This scenario shows the CM behavior when the SIP URI Handling service parameter is set to redirect.

Incoming SIPS URI request is redirected to the same address but with SIP URI as directed by the SIPS URI service parameter.

Configuration:

Node = Remote UA, IP = 10.10.197.25

Node = Unified CM, IP = 10.10.199.250

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sips:1001@10.10.199.250:5061 SIP/2.0**

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7B253B  
 From: <sips:10.10.197.25>;tag=96836BC4-ED5  
 To: <sips:1001@10.10.199.250>  
 Date: Thu, 28 Jun 2007 20:46:46 GMT  
 Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25  
 Supported: 100rel,timer,resource-priority,replaces  
 Min-SE: 1800  
 Cisco-Guid: 2235598983-619647452-2176444475-2634381766  
 User-Agent: Cisco-SIPGateway/IOS-12.x  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 CSeq: 101 INVITE  
 Max-Forwards: 70  
 Timestamp: 1183063606  
 Contact: <sips:10.10.197.25:5061>  
 Expires: 180  
 Allow-Events: telephone-event  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 241

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 3238 4753 IN IP4 10.10.197.25  
 s=SIP Call  
 c=IN IP4 10.10.197.25  
 t=0 0  
 m=audio 17126 RTP/AVP 18 19  
 c=IN IP4 10.10.197.25  
 a=rtpmap:18 G729/8000  
 a=fmtp:18 annexb=no  
 a=rtpmap:19 CN/8000  
 a=ptime:20

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7B253B  
 From: <sips:10.10.197.25>;tag=96836BC4-ED5  
 To: <sips:1001@10.10.199.250>  
 Date: Thu, 28 Jun 2007 20:46:46 GMT  
 Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25  
 Timestamp: 1183063606  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 301 Redirect to the specified contact**

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7B253B  
 From: <sips:10.10.197.25>;tag=96836BC4-ED5  
 To: <sips:1001@10.10.199.250>;tag=1095486251  
 Date: Thu, 28 Jun 2007 20:46:46 GMT  
 Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25  
 Timestamp: 1183063606  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Contact: <sip:1001@10.10.199.250:5061;transport=tls>  
 Diversion: sips:1001@10.10.199.250:5061  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] ACK sips:1001@10.10.199.250:5061 SIP/2.0**

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7B253B  
 From: <sips:10.10.197.25>;tag=96836BC4-ED5  
 To: <sips:1001@10.10.199.250>;tag=1095486251  
 Date: Thu, 28 Jun 2007 20:46:46 GMT  
 Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: telephone-event  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] INVITE sip:1001@10.10.199.250:5061;transport=tls SIP/2.0**

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7C136A  
 From: <sip:10.10.197.25>;tag=96836BD4-1287  
 To: <sip:1001@10.10.199.250>  
 Date: Thu, 28 Jun 2007 20:46:46 GMT  
 Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25  
 Supported: 100rel,timer,resource-priority,replaces

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```

Min-SE: 1800
Cisco-Guid: 2235598983-619647452-2176444475-2634381766
User-Agent: Cisco-SIPGateway/IOS-12.x
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
CSeq: 102 INVITE
Max-Forwards: 70
Timestamp: 1183063606
Contact: <sip:10.10.197.25:5061;transport=tls>
Diversion: <sip:1001@10.10.199.250>
Expires: 180
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 241

```

```

v=0
o=CiscoSystemsSIP-GW-UserAgent 3238 4753 IN IP4 10.10.197.25
s=SIP Call
c=IN IP4 10.10.197.25
t=0 0
m=audio 17126 RTP/AVP 18 19
c=IN IP4 10.10.197.25
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
a=ptime:20

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] SIP/2.0 100 Trying**

```

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7C136A
From: <sip:10.10.197.25>;tag=96836BD4-1287
To: <sip:1001@10.10.199.250>
Date: Thu, 28 Jun 2007 20:46:46 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Timestamp: 1183063606
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] SIP/2.0 180 Ringing**

```

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7C136A
From: <sip:10.10.197.25>;tag=96836BD4-1287
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470600
Date: Thu, 28 Jun 2007 20:46:46 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Timestamp: 1183063606
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:1001@10.10.199.250:5061;transport=tls>
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

```

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7C136A
From: <sip:10.10.197.25>;tag=96836BD4-1287
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470600
Date: Thu, 28 Jun 2007 20:46:46 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Timestamp: 1183063606
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:1001@10.10.199.250:5061;transport=tls>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 183

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 18916 RTP/AVP 18
a=rtpmap:18 G729/8000

```

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a=ptime:20  
a=fmtp:18 annexb=no

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[9] ACK sip:1001@10.10.199.250:5061;transport=tls SIP/2.0  
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7DD7  
From: <sip:10.10.197.25>;tag=96836BD4-1287  
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470600  
Date: Thu, 28 Jun 2007 20:46:46 GMT  
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25  
Max-Forwards: 70  
CSeq: 102 ACK  
Allow-Events: telephone-event  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[10] BYE sip:10.10.197.25:5061;transport=tls SIP/2.0  
Via: SIP/2.0/TLS 10.10.199.250:5061;branch=z9hG4bK2740dfbabb  
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470600  
To: <sip:10.10.197.25>;tag=96836BD4-1287  
Date: Thu, 28 Jun 2007 20:46:51 GMT  
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25  
User-Agent: Cisco-CCM6.0  
Max-Forwards: 70  
CSeq: 101 BYE  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[11] SIP/2.0 200 OK  
Via: SIP/2.0/TLS 10.10.199.250:5061;branch=z9hG4bK2740dfbabb  
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470600  
To: <sip:10.10.197.25>;tag=96836BD4-1287  
Date: Thu, 28 Jun 2007 20:47:01 GMT  
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25  
Server: Cisco-SIPGateway/IOS-12.x  
CSeq: 101 BYE  
Reason: Q.850;cause=16  
Content-Length: 0

## 8.2 Incoming SIPS URI Request Rejected by Cisco Unified CM

Title: Incoming SIPS URI Request Rejected by Cisco Unified CM

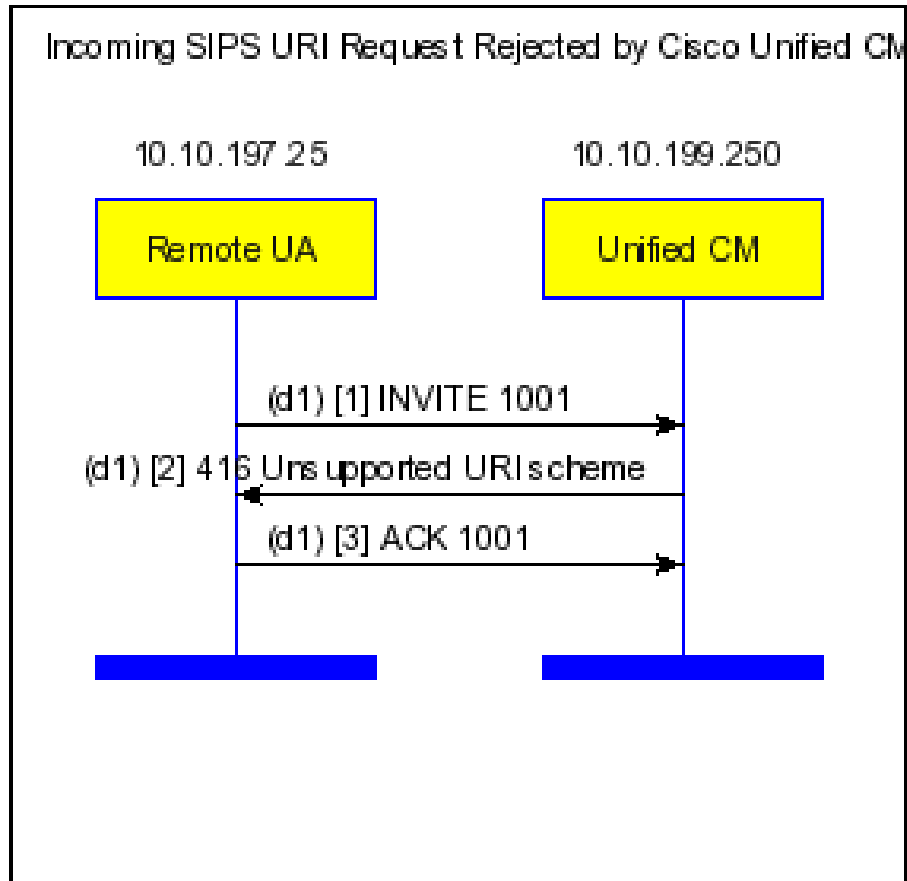
Description:

Incoming SIPS URI request is rejected as directed by the SIPS URI service parameter.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = Remote UA, IP = 10.10.197.25

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[1] INVITE sips:1001@10.10.199.250:5061 SIP/2.0

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7A5E0

From: <sips:10.10.197.25>;tag=968119B8-1F62

To: <sips:1001@10.10.199.250>

Date: Thu, 28 Jun 2007 20:44:14 GMT

Call-ID: 2A9B32A0-24EF11DC-81B8E83B-9D0579C6@10.10.197.25

Supported: 100rel,timer,resource-priority,replaces

Min-SE: 1800

Cisco-Guid: 714774136-619647452-2176182331-2634381766

User-Agent: Cisco-SIPGateway/IOS-12.x

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

CSeq: 101 INVITE

Max-Forwards: 70

Timestamp: 1183063454

Contact: <sips:10.10.197.25:5061>

Expires: 180

Allow-Events: telephone-event

Content-Type: application/sdp

Content-Disposition: session;handling=required

Content-Length: 241

v=0

o=CiscoSystemsSIP-GW-UserAgent 9205 6146 IN IP4 10.10.197.25

s=SIP Call

c=IN IP4 10.10.197.25

t=0 0

m=audio 16762 RTP/AVP 18 19

c=IN IP4 10.10.197.25

a=rtpmap:18 G729/8000

a=fmtp:18 annexb=no

a=rtpmap:19 CN/8000

a=ptime:20

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 416 Unsupported URI scheme

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7A5E0

From: <sips:10.10.197.25>;tag=968119B8-1F62

To: <sips:1001@10.10.199.250>;tag=74282742

Call-ID: 2A9B32A0-24EF11DC-81B8E83B-9D0579C6@10.10.197.25

CSeq: 101 INVITE

Timestamp: 1183063454

Reason: Q.850;cause=97

Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[3] ACK sips:1001@10.10.199.250:5061 SIP/2.0

Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7A5E0

From: <sips:10.10.197.25>;tag=968119B8-1F62

To: <sips:1001@10.10.199.250>;tag=74282742

Date: Thu, 28 Jun 2007 20:44:14 GMT

Call-ID: 2A9B32A0-24EF11DC-81B8E83B-9D0579C6@10.10.197.25

Max-Forwards: 70

CSeq: 101 ACK

Allow-Events: telephone-event

Content-Length: 0

## 9. Info

### 9.1 SIP Video Call Using INFO Method

Title: SIP Video Call Using INFO Method

Configuration:

Node = SIP Video Endpoint, IP = 10.10.10.14

Node = Unified CM, IP = 10.10.10.45

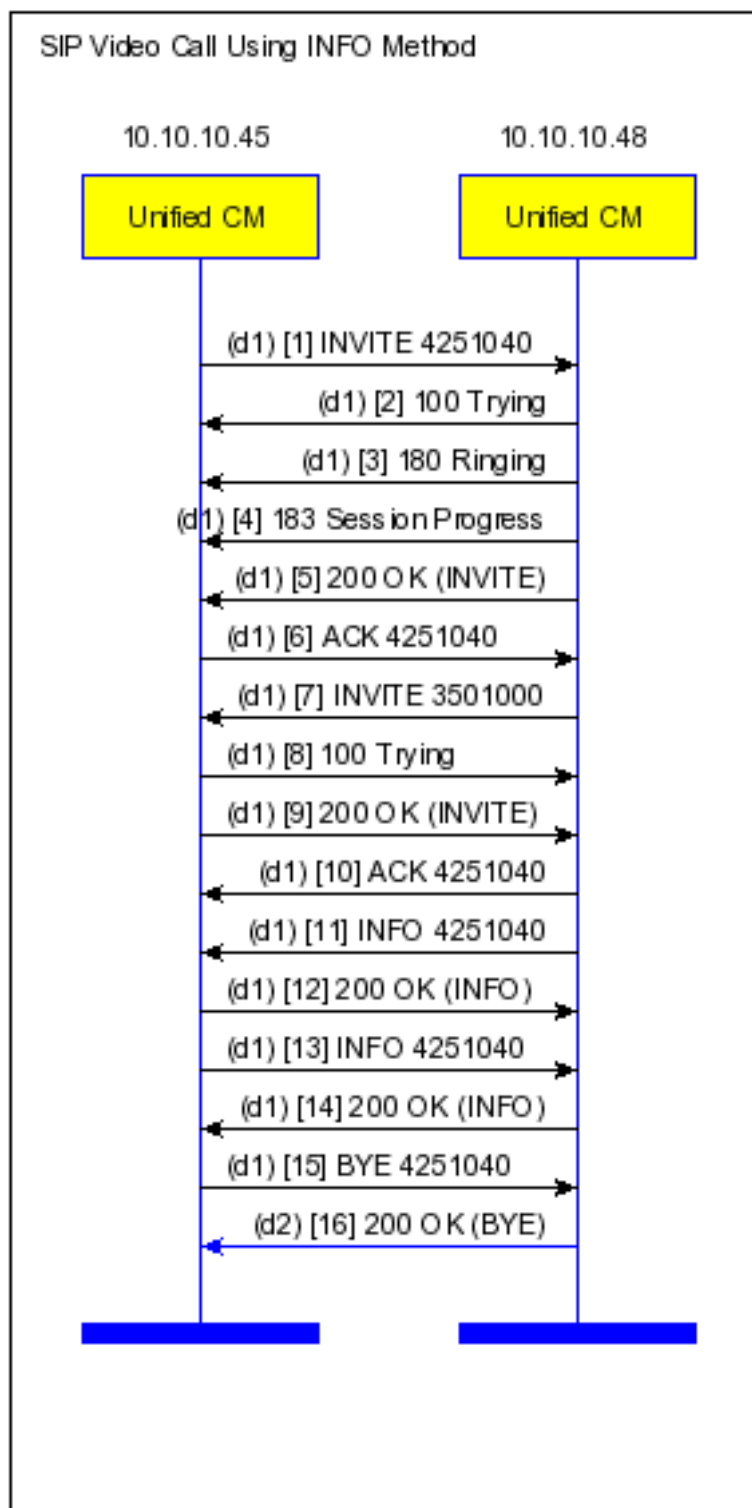
Node = Unified CM, IP = 10.10.10.48

Scenario:

The INFO method is used by video capable SIP endpoints to signal different types of commands. The two commands supported by the SIP trunk device are Picture Fast Update and Picture Freeze.

Picture Fast Update is triggered by an endpoint to request a full I-frame to rebuild the frame buffer. Picture Fast Update is generally triggered at the beginning of a video session or when packet loss is severe.

Picture Freeze is used to do exactly what it sounds like. If an endpoint wishes to stop updating a picture it sends this command to indicate the current buffer should be maintained.

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:42510400@10.10.10.48:5080 SIP/2.0**

Via: SIP/2.0/UDP 10.10.10.45:5080;branch=z9hG4bK1007fdf10bf  
 Remote-Party-ID: "CUPC 3501000" <sip:3501000@10.10.10.45>;party=calling;screen=yes;privacy=off  
 From: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612  
 To: <sip:42510400@10.10.10.48>  
 Date: Thu, 28 Jun 2007 15:39:45 GMT  
 Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.10.45:5080>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Contact: <sip:3501000@10.10.10.45:5080>;video;audio  
 Max-Forwards: 69  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/UDP 10.10.10.45:5080;branch=z9hG4bK1007fdf10bf  
 From: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612  
 To: <sip:42510400@10.10.10.48>  
 Date: Thu, 28 Jun 2007 15:39:45 GMT  
 Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 180 Ringing**

Via: SIP/2.0/UDP 10.10.10.45:5080;branch=z9hG4bK1007fdf10bf  
 From: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612  
 To: <sip:42510400@10.10.10.48>;tag=ccdbb47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530  
 Date: Thu, 28 Jun 2007 15:39:45 GMT  
 Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: "Ashley" <sip:42510400@10.10.10.48>;party=called;screen=yes;privacy=off  
 Contact: <sip:42510400@10.10.10.48:5080>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] SIP/2.0 183 Session Progress**

Via: SIP/2.0/UDP 10.10.10.45:5080;branch=z9hG4bK1007fdf10bf  
 From: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612  
 To: <sip:42510400@10.10.10.48>;tag=ccdbb47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530  
 Date: Thu, 28 Jun 2007 15:39:45 GMT  
 Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: "Ashley" <sip:42510400@10.10.10.48>;party=called;screen=yes;privacy=off  
 Contact: <sip:42510400@10.10.10.48:5080>  
 Content-Type: application/sdp  
 Content-Length: 597

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.48  
 s=SIP Call  
 t=0 0  
 m=audio 4000 RTP/AVP 9 0 8 18  
 c=IN IP4 10.10.10.48  
 a=rtpmap:9 G722/8000  
 a=ptime:20  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 m=video 4002 RTP/AVP 31 96 97 34  
 c=IN IP4 10.10.10.48  
 b=TIAS:384000  
 a=rtpmap:31 H261/90000

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```
a=fmtp:31 CIF=1;QCIF=1;MAXBR=3840;D
a=rtpmap:96 H263-1998/90000
a=fmtp:96 QCIF=1;CIF=1;MAXBR=3840;CUSTOM=352,240,1
a=rtpmap:97 H264/90000
a=fmtp:97 profile-level-id=42000D
a=rtpmap:34 H263/90000
a=fmtp:34 MAXBR=3840
a=sendonly
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.10.45:5080;branch=z9hG4bK1007fdf10bf
From: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612
To: <sip:4251040@10.10.10.48>;tag=ccdbb47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530
Date: Thu, 28 Jun 2007 15:39:45 GMT
Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: "Ashley" <sip:4251040@10.10.10.48>;party=called;screen=yes;privacy=off
Contact: <sip:4251040@10.10.10.48:5080>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 597
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.48
s=SIP Call
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18
c=IN IP4 10.10.10225
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
m=video 4002 RTP/AVP 31 96 97 34
c=IN IP4 10.10.10.48
b=TIAS:384000
a=rtpmap:31 H261/90000
a=fmtp:31 CIF=1;QCIF=1;MAXBR=3840;D
a=rtpmap:96 H263-1998/90000
a=fmtp:96 QCIF=1;CIF=1;MAXBR=3840;CUSTOM=352,240,1
a=rtpmap:97 H264/90000
a=fmtp:97 profile-level-id=42000D
a=rtpmap:34 H263/90000
a=fmtp:34 MAXBR=3840
a=sendonly
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[6] ACK sip:4251040@10.10.10.48:5080 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.10.45:5080;branch=z9hG4bK101246ab261
From: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612
To: <sip:4251040@10.10.10.48>;tag=ccdbb47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530
Date: Thu, 28 Jun 2007 15:39:45 GMT
Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 286
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.45
s=SIP Call
c=IN IP4 10.10.10.14
t=0 0
m=audio 16384 RTP/AVP 0
b=TIAS:64000
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvnly
m=video 16386 RTP/AVP 97
b=TIAS:384000
```

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a=rtpmap:97 H264/90000  
a=fmtp:97 profile-level-id=42E00C  
a=recvnonly

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[7] INVITE sip:3501000@10.10.10.45:5080 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.48:5080;branch=z9hG4bK2e064ad96e5  
Remote-Party-ID: "Ashley" <sip:4251040@10.10.10.48>;party=calling;screen=yes;privacy=off  
From: <sip:4251040@10.10.10.48>;tag=ccd4b47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530  
To: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612  
Date: Thu, 28 Jun 2007 15:39:46 GMT  
Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45  
Supported: timer,replaces  
Min-SE: 1800  
Cisco-Guid: 3394665472-1748096577-33463-805635333  
User-Agent: Cisco-CCM6.0  
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
CSeq: 101 INVITE  
Max-Forwards: 70  
Contact: <sip:4251040@10.10.10.48:5080>  
Expires: 180  
Allow-Events: presence, kpml  
Session-Expires: 1800;refresher=uac  
Content-Type: application/sdp  
Content-Length: 249

v=0  
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.10.48  
s=SIP Call  
c=IN IP4 10.10.10225  
t=0 0  
m=audio 20004 RTP/AVP 0  
a=rtpmap:0 PCMU/8000  
a=ptime:20  
m=video 20006 RTP/AVP 97  
b=TIAS:384000  
a=rtpmap:97 H264/90000  
a=fmtp:97 profile-level-id=42000C

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[8] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.10.48:5080;branch=z9hG4bK2e064ad96e5  
From: <sip:4251040@10.10.10.48>;tag=ccd4b47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530  
To: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612  
Date: Thu, 28 Jun 2007 15:39:46 GMT  
Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45  
CSeq: 101 INVITE  
Allow-Events: presence, kpml  
Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[9] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.48:5080;branch=z9hG4bK2e064ad96e5  
From: <sip:4251040@10.10.10.48>;tag=ccd4b47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530  
To: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612  
Date: Thu, 28 Jun 2007 15:39:46 GMT  
Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45  
CSeq: 101 INVITE  
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
Allow-Events: presence, kpml  
Remote-Party-ID: "CUPC 3501000" <sip:3501000@10.10.10.45>;party=called;screen=yes;privacy=off  
Contact: <sip:4251040@10.10.10.45:5080>  
Supported: replaces  
Session-Expires: 1800;refresher=uac  
Require: timer  
Content-Type: application/sdp  
Content-Length: 262

v=0  
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.10.45  
s=SIP Call  
c=IN IP4 10.10.10.14  
t=0 0  
m=audio 16384 RTP/AVP 0  
b=TIAS:64000  
a=rtpmap:0 PCMU/8000  
a=ptime:20  
m=video 16386 RTP/AVP 97  
b=TIAS:384000  
a=rtpmap:97 H264/90000

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a=fmtp:97 profile-level-id=42E00C

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[10] ACK sip:4251040@10.10.10.45:5080 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.48:5080;branch=z9hG4bK2e15ba284cf

From: <sip:4251040@10.10.10.48>;tag=ccdbb47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530

To: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612

Date: Thu, 28 Jun 2007 15:39:46 GMT

Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45

Max-Forwards: 70

CSeq: 101 ACK

Allow-Events: presence, kpml

Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[11] INFO sip:4251040@10.10.10.45:5080 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.48:5080;branch=z9hG4bK2e26b5145

From: <sip:4251040@10.10.10.48>;tag=ccdbb47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530

To: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612

Date: Thu, 28 Jun 2007 15:39:46 GMT

Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45

User-Agent: Cisco-CCM6.0

Max-Forwards: 70

CSeq: 102 INFO

Contact: <sip:4251040@10.10.10.48:5080>

Remote-Party-ID: "Ashley" <sip:4251040@10.10.10.48>;party=calling;screen=yes;privacy=off

Content-Type: application/media\_control+xml

Content-Length: 190

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>

<media\_control>

<vc\_primitive>

<to\_encoder>

<picture\_fast\_update/>

</to\_encoder>

</vc\_primitive>

</media\_control>

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[12] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.48:5080;branch=z9hG4bK2e26b5145

From: <sip:4251040@10.10.10.48>;tag=ccdbb47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530

To: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612

Date: Thu, 28 Jun 2007 15:39:46 GMT

Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45

CSeq: 102 INFO

Contact: <sip:4251040@10.10.10.45:5080>

Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[13] INFO sip:4251040@10.10.10.48:5080 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.45:5080;branch=z9hG4bK1086b6e0aa2

From: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612

To: <sip:4251040@10.10.10.48>;tag=ccdbb47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530

Date: Thu, 28 Jun 2007 15:39:46 GMT

Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45

User-Agent: Cisco-CCM6.0

Max-Forwards: 70

CSeq: 102 INFO

Contact: <sip:4251040@10.10.10.45:5080>

Remote-Party-ID: "CUPC 3501000" <sip:3501000@10.10.10.45>;party=calling;screen=yes;privacy=off

Content-Type: application/media\_control+xml

Content-Length: 190

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>

<media\_control>

<vc\_primitive>

<to\_encoder>

<picture\_fast\_update/>

</to\_encoder>

</vc\_primitive>

</media\_control>

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[14] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.45:5080;branch=z9hG4bK1086b6e0aa2

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From: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612  
To: <sip:4251040@10.10.10.48>;tag=ccdbb47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530  
Date: Thu, 28 Jun 2007 15:40:35 GMT  
Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45  
CSeq: 102 INFO  
Contact: <sip:4251040@10.10.10.48:5080>  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[15] BYE sip:4251040@10.10.10.48:5080 SIP/2.0**

Via: SIP/2.0/UDP 10.10.10.45:5080;branch=z9hG4bK10945a8260b  
From: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612  
To: <sip:4251040@10.10.10.48>;tag=ccdbb47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530  
Date: Thu, 28 Jun 2007 15:39:46 GMT  
Call-ID: ca567c00-6831d641-12fb-2d010.10.10.45  
User-Agent: Cisco-CCM6.0  
Max-Forwards: 70  
CSeq: 103 BYE  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[16] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.10.45:5080;branch=z9hG4bK10945a8260b  
From: "CUPC 3501000" <sip:3501000@10.10.10.45>;tag=59767ab7-7931-49bc-8b8e-166d4f2cee02-17123612  
To: <sip:4251040@10.10.10.48>;tag=ccdbb47a-2106-4cb4-9cb4-f3b0a7c6d6d7-29711530  
Date: Thu, 28 Jun 2007 15:40:56 GMT  
Call-ID: ca567c00-6831d641-12fb-2d10.10.10.45  
CSeq: 103 BYE  
Content-Length: 0

## 10. MWI

### 10.1 MWI Status via Unsolicited NOTIFY

Title: MWI Status via Unsolicited NOTIFY

Configuration:

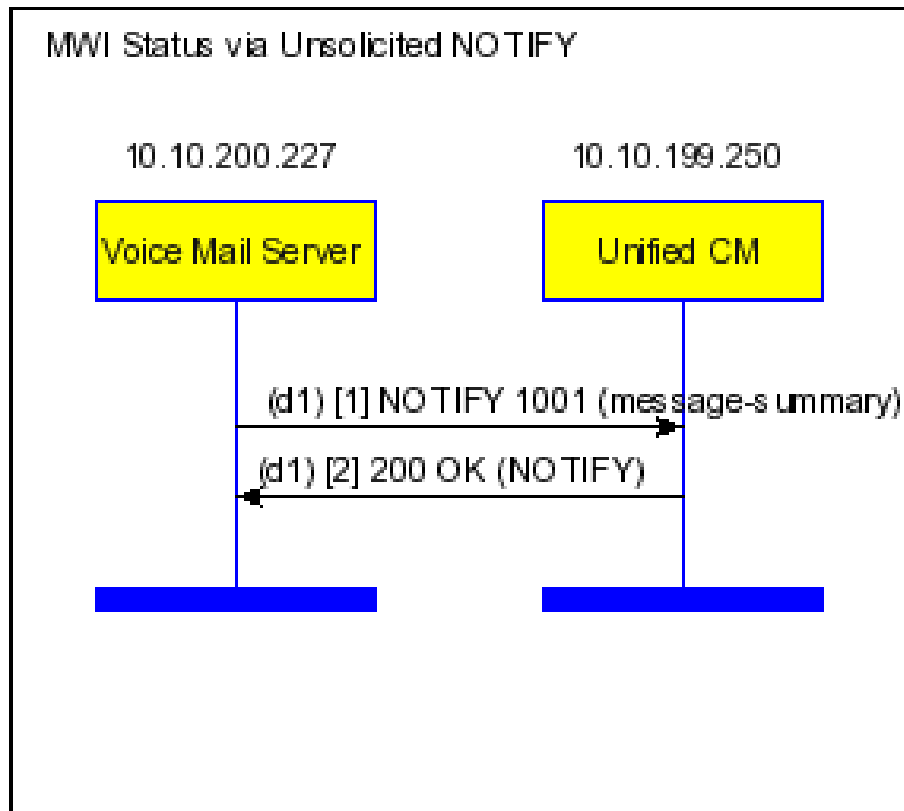
Node = Voice Mail Server, IP = 10.10.200.227

Node = Unified CM, IP = 10.10.199.250

Scenario:

RFC3842 describes a standard way of delivering voicemail status using the SIP SUBSCRIBE/NOTIFY framework. However, many SIP devices already deliver voicemail information using the format described in RFC3842 but using unsolicited NOTIFY.

The following demonstrates how Unified Cisco CM can accept unsolicited NOTIFY to deliver Message Waiting Indication (MWI) status. The example below shows how a SIP based voice-mail server could send a "Lamp On" status for the CM hosted device(s) assigned to directory number 1001.

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)  
[1] NOTIFY sip:1001@10.10.199.250:5060 SIP/2.0  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: <sip:5678@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>  
Call-ID: 1-18438@10.10.200.227  
CSeq: 1 NOTIFY  
Event: message-summary  
Allow: INVITE,ACK,BYE,CANCEL,OPTIONS,REGISTER,INFO,PRACK,SUBSCRIBE,NOTIFY,REFER,UPDATE  
Expires: 180  
Contact: sip:5678@10.10.200.227:5060  
Max-Forwards: 70  
Content-Type: text/plain  
Content-Length: 23  
  
Messages-Waiting: yes

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)  
[2] SIP/2.0 200 OK  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: <sip:5678@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>;tag=474531680  
Date: Wed, 27 Jun 2007 21:43:55 GMT  
Call-ID: 1-18438@10.10.200.227  
CSeq: 1 NOTIFY  
Content-Length: 0



## 11. Prack

### 11.1 Outbound Early Media Call with PRACK

Title: Outbound Early Media Call with PRACK

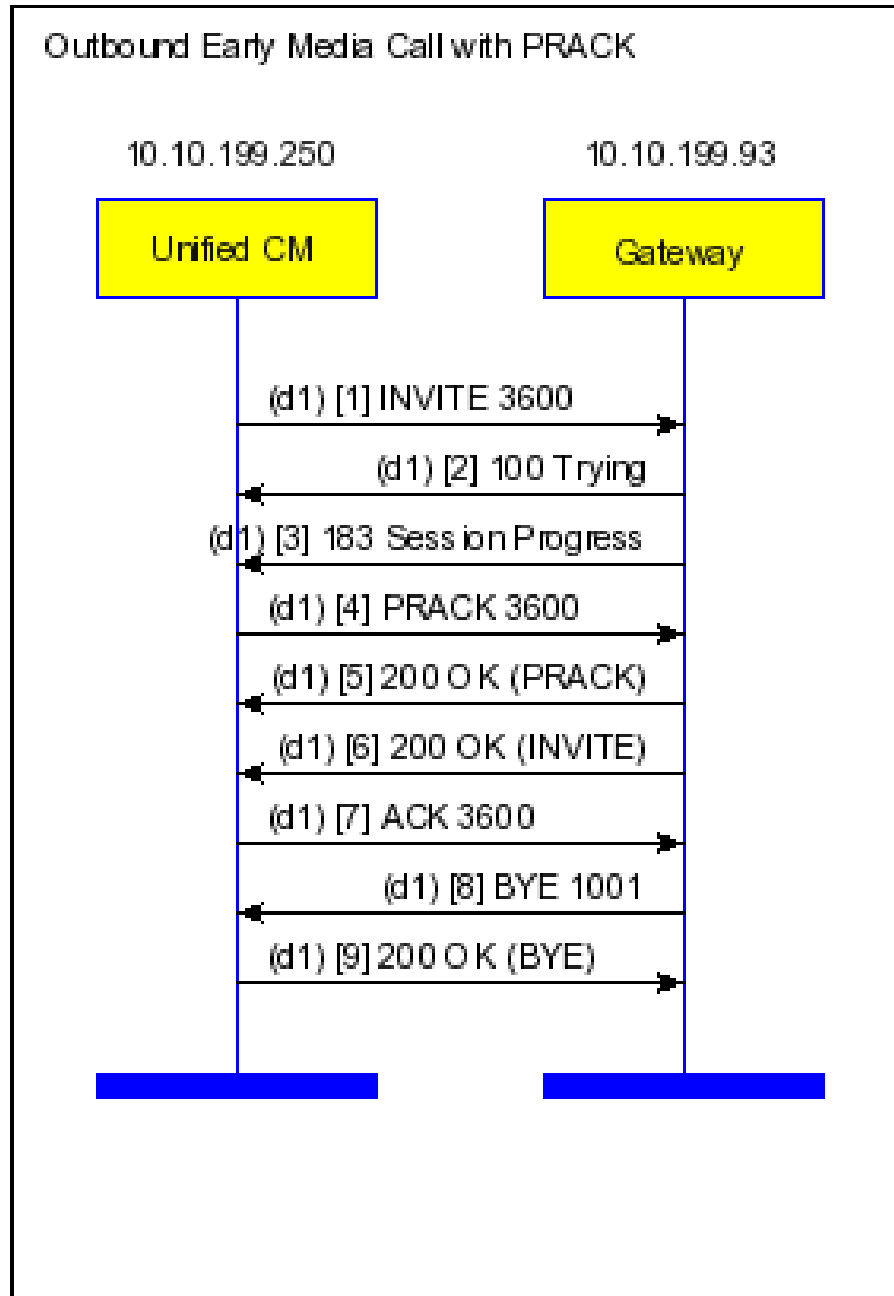
Description:

This flow shows a basic early media call from an SCCP phone to a FXS phone off of a Gateway via a SIP Trunk with rel1xx enabled. Outgoing INVITE has SDP.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = Gateway, IP = 10.10.199.93

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:3600@10.10.199.93:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1c6bf0738a  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226803  
 To: <sip:3600@10.10.199.93>  
 Date: Mon, 02 Jul 2007 15:55:31 GMT  
 Call-ID: a7d9a100-68911ff3-814-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.250  
 t=0 0  
 m=audio 24840 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1c6bf0738a  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226803  
 To: <sip:3600@10.10.199.93>;tag=3725EF30-1E56  
 Date: Mon, 02 Jul 2007 15:55:31 GMT  
 Call-ID: a7d9a100-68911ff3-814-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow-Events: telephone-event  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1c6bf0738a  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226803  
 To: <sip:3600@10.10.199.93>;tag=3725EF30-1E56  
 Date: Mon, 02 Jul 2007 15:55:31 GMT  
 Call-ID: a7d9a100-68911ff3-814-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Require: 100rel  
 RSeq: 4862  
 Allow-Events: telephone-event  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 194

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 2916 7371 IN IP4 10.10.199.93  
 s=SIP Call  
 c=IN IP4 10.10.199.93  
 t=0 0  
 m=audio 16614 RTP/AVP 0  
 c=IN IP4 10.10.199.93  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] PRACK sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1d4358fa45  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226803  
 To: <sip:3600@10.10.199.93>;tag=3725EF30-1E56  
 Date: Mon, 02 Jul 2007 15:55:31 GMT  
 Call-ID: a7d9a100-68911ff3-814-fac712ac@10.10.199.250  
 CSeq: 102 PRACK

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Rack: 4862 101 INVITE  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1d4358fa45  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226803  
 To: <sip:3600@10.10.199.93>;tag=3725EF30-1E56  
 Date: Mon, 02 Jul 2007 15:55:31 GMT  
 Call-ID: a7d9a100-68911ff3-814-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 102 PRACK  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1c6bf0738a  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226803  
 To: <sip:3600@10.10.199.93>;tag=3725EF30-1E56  
 Date: Mon, 02 Jul 2007 15:55:31 GMT  
 Call-ID: a7d9a100-68911ff3-814-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Allow-Events: telephone-event  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 194

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 2916 7371 IN IP4 10.10.199.93  
 s=SIP Call  
 c=IN IP4 10.10.199.93  
 t=0 0  
 m=audio 16614 RTP/AVP 0  
 c=IN IP4 10.10.199.93  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] ACK sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1e86cc471  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226803  
 To: <sip:3600@10.10.199.93>;tag=3725EF30-1E56  
 Date: Mon, 02 Jul 2007 15:55:31 GMT  
 Call-ID: a7d9a100-68911ff3-814-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence, kpml  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] BYE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK1B2438  
 From: <sip:3600@10.10.199.93>;tag=3725EF30-1E56  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226803  
 Date: Mon, 02 Jul 2007 15:55:33 GMT  
 Call-ID: a7d9a100-68911ff3-814-fac712ac@10.10.199.250  
 User-Agent: Cisco-SIPGateway/IOS-12.x  
 Max-Forwards: 70  
 Timestamp: 1183391736  
 CSeq: 101 BYE  
 Reason: Q.850;cause=16  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK1B2438  
 From: <sip:3600@10.10.199.93>;tag=3725EF30-1E56  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226803  
 Date: Mon, 02 Jul 2007 15:55:36 GMT  
 Call-ID: a7d9a100-68911ff3-814-fac712ac@10.10.199.250  
 Timestamp: 1183391736  
 CSeq: 101 BYE  
 Content-Length: 0

## 11.2 Outbound Delayed Media Call with PRACK

Title: Outbound Delayed Media Call with PRACK

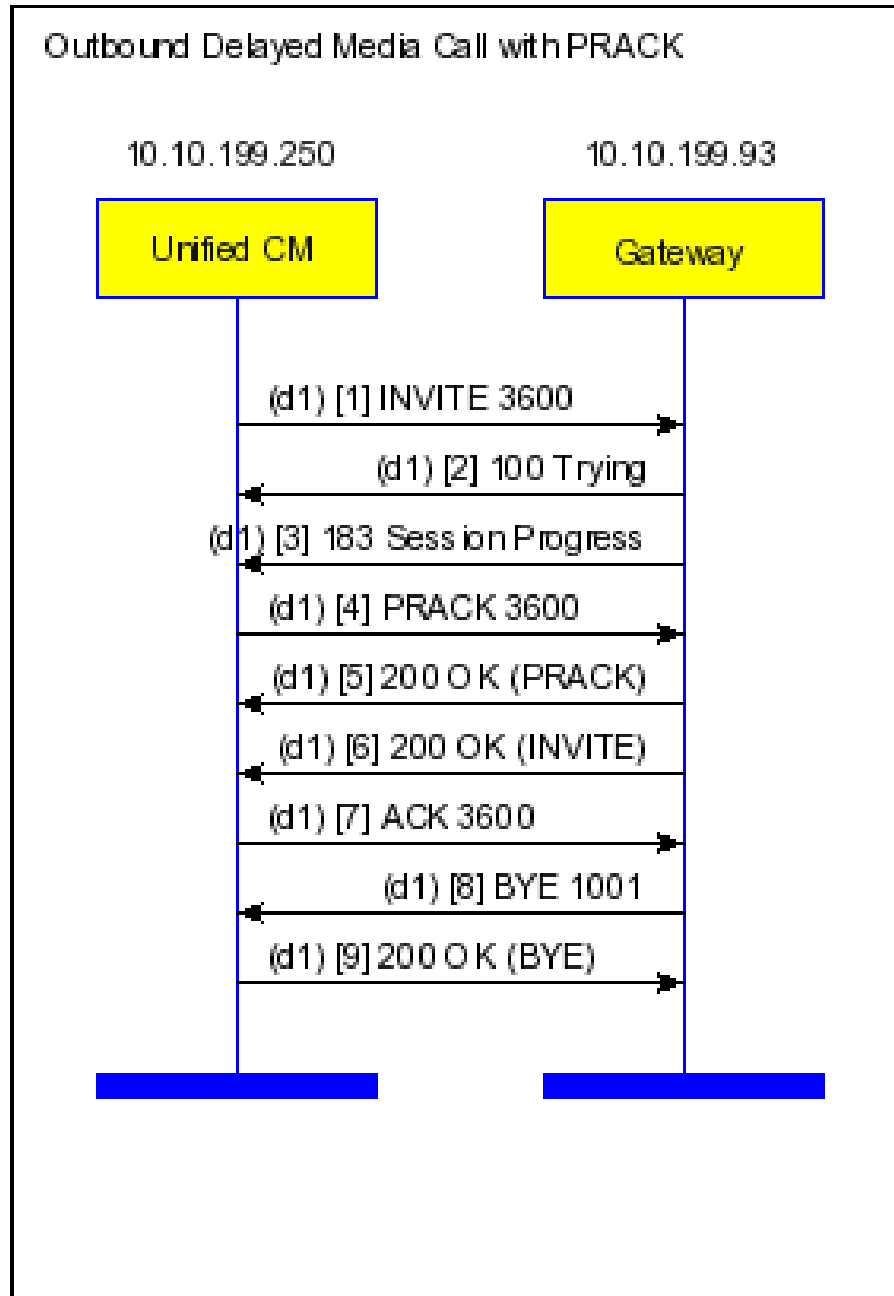
### Description:

This flow shows a basic delayed media call from SCCP phone to an FXS phone off of a Gateway via the SIP Trunk with rel1xx enabled. Outgoing INVITE has no SDP.

### Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = Gateway, IP = 10.10.199.93

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[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

**[1] INVITE sip:3600@10.10.199.93:5060 SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK164660921d  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226799  
 To: <sip:3600@10.10.199.93>  
 Date: Mon, 02 Jul 2007 15:52:11 GMT  
 Call-ID: 30a40d00-68911f2b-810-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

**[2] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK164660921d  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226799  
 To: <sip:3600@10.10.199.93>;tag=3722E568-11ED  
 Date: Mon, 02 Jul 2007 15:52:11 GMT  
 Call-ID: 30a40d00-68911f2b-810-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow-Events: telephone-event  
 Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

**[3] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK164660921d  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226799  
 To: <sip:3600@10.10.199.93>;tag=3722E568-11ED  
 Date: Mon, 02 Jul 2007 15:52:11 GMT  
 Call-ID: 30a40d00-68911f2b-810-fac712ac@10.10.199.250  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Require: 100rel  
 RSeq: 3226  
 Allow-Events: telephone-event  
 Contact: <sip:3600@10.10.199.93:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 277

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 2561 3866 IN IP4 10.10.199.93  
 s=SIP Call  
 c=IN IP4 10.10.199.93  
 t=0 0  
 m=audio 16960 RTP/AVP 0 8 18 19  
 c=IN IP4 10.10.199.93  
 a=rtpmap:0 PCMU/8000  
 a=rtpmap:8 PCMA/8000  
 a=rtpmap:18 G729/8000  
 a=fmtp:18 annexb=no  
 a=rtpmap:19 CN/8000

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

**[4] PRACK sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK174f628d9c  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226799  
 To: <sip:3600@10.10.199.93>;tag=3722E568-11ED  
 Date: Mon, 02 Jul 2007 15:52:11 GMT  
 Call-ID: 30a40d00-68911f2b-810-fac712ac@10.10.199.250  
 CSeq: 102 PRACK  
 RACK: 3226 101 INVITE  
 Max-Forwards: 70  
 Content-Type: application/sdp  
 Content-Length: 160

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250  
 s=SIP Call

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```
c=IN IP4 10.10.199.251
t=0 0
m=audio 28226 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK174f628d9c
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226799
To: <sip:3600@10.10.199.93>;tag=3722E568-11ED
Date: Mon, 02 Jul 2007 15:52:11 GMT
Call-ID: 30a40d00-68911f2b-810-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 PRACK
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] SIP/2.0 200 OK**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK164660921d
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226799
To: <sip:3600@10.10.199.93>;tag=3722E568-11ED
Date: Mon, 02 Jul 2007 15:52:11 GMT
Call-ID: 30a40d00-68911f2b-810-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:3600@10.10.199.93:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 277
```

```
v=0
o=CiscoSystemsSIP-GW-UserAgent 2561 3866 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 16960 RTP/AVP 0 8 18 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] ACK sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK182b2f5cd5
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226799
To: <sip:3600@10.10.199.93>;tag=3722E568-11ED
Date: Mon, 02 Jul 2007 15:52:11 GMT
Call-ID: 30a40d00-68911f2b-810-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 160
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 28226 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] BYE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK19D98
From: <sip:3600@10.10.199.93>;tag=3722E568-11ED
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226799
Date: Mon, 02 Jul 2007 15:52:13 GMT
Call-ID: 30a40d00-68911f2b-810-fac712ac@10.10.199.250
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 70
Timestamp: 1183391537
```



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CSeq: 101 BYE  
Reason: Q.850;cause=16  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK19D98

From: <sip:3600@10.10.199.93>;tag=3722E568-11ED

To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226799

Date: Mon, 02 Jul 2007 15:52:17 GMT

Call-ID: 30a40d00-68911f2b-810-fac712ac@10.10.199.250

Timestamp: 1183391537

CSeq: 101 BYE

Content-Length: 0

## 12. CallPreservation

### 12.1 Session Timers Negotiation & Refresh for the Sip Trunk Call on "Cisco Unified CM".

Title: Session Timers Negotiation & Refresh for the Sip Trunk Call on "Cisco Unified CM".

Description:

Cisco Unified IP Phone1---Cisco Unified CM1--siptrunk---Cisco Unified CM2---Cisco Unified IP Phone2

Note:

There are 2 Service Params "SIP Min-SE Value" & "SIP Session Expires Timer" and initial session timers negotiation for an Invite dialog is based on these.

For this scenario the following are configured values:-

"Cisco Unified CM1" (Min-SE 60, SE 90)

"Cisco Unified CM2" (Min-SE 120 SE 120)

For the Cisco Unified IP Phone1 to Cisco Unified IP Phone2 call as per above topology, the initial outgoing INVITE from "Cisco Unified CM1" contains the Min-SE header with value 60 secs and Session-Expires header with value 90 secs. The "Cisco Unified CM2" expects Min-SE value of 120 secs, so it sends 422 (SE Timer too small) indicating the required value in Min-SE header.

The "Cisco Unified CM1" sends an Invite with updated value in Session-Expires header. The "Cisco Unified CM2" accepts it and sends 200 OK with Session-Expires header having negotiated timeout and refresher=uas. This means the "Cisco Unified CM2" is the refresher. The refresher="uas" is set because "Cisco Unified CM1" (i.e uac) didn't specify the refresher and the uas has an option to choose itself as the refresher. With 200 OK and ACK exchange an Invite dialog gets established.

The session timeout negotiated on the sip trunk is 120 secs, thus session refresh happens every  $120/2 = 60$  secs.

There are 2 session refresh request/response exchanges depicted in the flow.

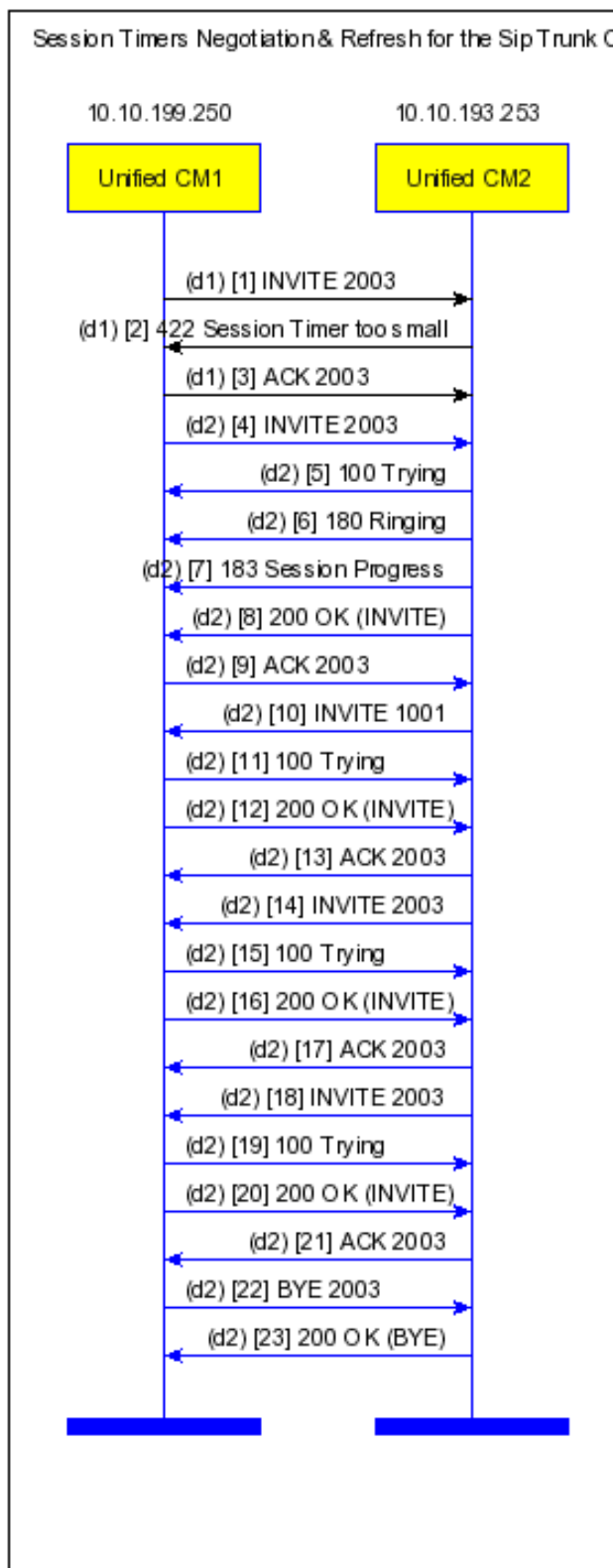
Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.193.253

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Session Timers Negotiation &amp; Refresh for the Sip Trunk Call on "Cisco Unif



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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[1] INVITE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK234ba8015  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 To: <sip:2003@10.10.193.253>  
 Date: Wed, 11 Jul 2007 20:15:25 GMT  
 Call-ID: 7450f200-69513a5d-7-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 60  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 90  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 422 Session Timer too small

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK234ba8015  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 To: <sip:2003@10.10.193.253>;tag=1563337971  
 Date: Wed, 11 Jul 2007 20:15:25 GMT  
 Call-ID: 7450f200-69513a5d-7-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Min-SE: 120  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[3] ACK sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK234ba8015  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 To: <sip:2003@10.10.193.253>;tag=1563337971  
 Date: Wed, 11 Jul 2007 20:15:25 GMT  
 Call-ID: 7450f200-69513a5d-7-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[4] INVITE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3458922d2  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 To: <sip:2003@10.10.193.253>  
 Date: Wed, 11 Jul 2007 20:15:25 GMT  
 Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 120  
 Min-SE: 120  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[5] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3458922d2  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 To: <sip:2003@10.10.193.253>  
 Date: Wed, 11 Jul 2007 20:15:25 GMT  
 Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[6] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3458922d2  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710

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Date: Wed, 11 Jul 2007 20:15:25 GMT  
 Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3458922d2  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710  
 Date: Wed, 11 Jul 2007 20:15:25 GMT  
 Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3458922d2  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710  
 Date: Wed, 11 Jul 2007 20:15:25 GMT  
 Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 120;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] ACK sip:2003@10.10.193.253:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK426181336  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710  
 Date: Wed, 11 Jul 2007 20:15:25 GMT

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```

Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 228

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 24298 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[10] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK15f121b3282
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970
Date: Wed, 11 Jul 2007 20:15:27 GMT
Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 120
Cisco-Guid: 1951461888-1766931037-6178-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 216

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 16410 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[11] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK15f121b3282
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970
Date: Wed, 11 Jul 2007 20:15:27 GMT
Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```

[12] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK15f121b3282
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970
Date: Wed, 11 Jul 2007 20:15:27 GMT
Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 120;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 216

```

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```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 24298 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[13] ACK sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK16074d4eec1
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970
Date: Wed, 11 Jul 2007 20:15:27 GMT
Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[14] INVITE sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1615f2acf1a
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970
Date: Wed, 11 Jul 2007 20:16:27 GMT
Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 120
Cisco-Guid: 1951461888-1766931037-6178-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 16410 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[15] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1615f2acf1a
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970
Date: Wed, 11 Jul 2007 20:16:27 GMT
Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[16] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1615f2acf1a
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970
Date: Wed, 11 Jul 2007 20:16:27 GMT
Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060;transport=tcp>
```

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Supported: replaces  
 Session-Expires: 120;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 24298 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[17] ACK sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK1627ea2125f  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 Date: Wed, 11 Jul 2007 20:16:27 GMT  
 Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence, kpml  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[18] INVITE sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK163149e3e27  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 Date: Wed, 11 Jul 2007 20:17:27 GMT  
 Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 120  
 Cisco-Guid: 1951461888-1766931037-6178-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 103 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 120;refresher=uac  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 16410 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[19] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK163149e3e27  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 Date: Wed, 11 Jul 2007 20:17:27 GMT  
 Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250  
 CSeq: 103 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[20] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK163149e3e27  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970  
 Date: Wed, 11 Jul 2007 20:17:27 GMT  
 Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250



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```
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires: 120;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 24298 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[21] ACK sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK16464818614
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970
Date: Wed, 11 Jul 2007 20:17:27 GMT
Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[22] BYE sip:2003@10.10.193.253:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK51f44fd2b
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710
Date: Wed, 11 Jul 2007 20:17:27 GMT
Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[23] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK51f44fd2b
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22340970
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517710
Date: Wed, 11 Jul 2007 20:18:04 GMT
Call-ID: 7450f200-69513a5d-8-fac712ac@10.10.199.250
CSeq: 102 BYE
Content-Length: 0
```

## 12.2 Periodic Refresh after Session Timer Negotiation Failure

Title: Periodic Refresh after Session Timer Negotiation Failure

### Description:

The scenario when Session Timers negotiation fails and periodic reInvite is attempted after configured interval.

Cisco Unified IP Phone--Cisco Unified CM----siptrunk---remoteUA

The session timers negotiation shall be considered to be failed for the following cases:

- a) For Cisco Unified IP Phone to remoteUA call, the Cisco Unified CM sends INVITE with Supported:timer, Min-SE and Session-Expires headers, in response the remote UA sends 200 OK without Session-Expires header.
- b) For remoteUA to Cisco Unified IP Phone call, the remote UA sends an initial INVITE without Supported:timer and Min-SE headers.

For the above cases when standard session timers negotiation fails, the Cisco Unified CM UA shall monitor the session using the periodic INVITE refresh procedure without the session timers headers.

The duration for the periodic refresh is configurable from the Cisco Unified CM's service parameter namely Session-Expires. The reInvite's shall be sent in the duration of configured Session-Expires value/2.

The following flow is depicting a) scenario.

### Configuration:

Node = Unified CM, IP = 10.10.253.2

Node = RemoteUA, IP = 10.10.253.4

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## Periodic Refresh after Session Timer Negotiation Failure



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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[1] INVITE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1d60f41884  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 12 Jul 2007 17:52:32 GMT  
 Call-ID: a8d2b580-69616a60-1a-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 60  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 90  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 422 Session Timer too small

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1d60f41884  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516  
 To: <sip:2003@10.10.193.253>;tag=1442724430  
 Date: Thu, 12 Jul 2007 17:52:32 GMT  
 Call-ID: a8d2b580-69616a60-1a-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Min-SE: 120  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[3] ACK sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1d60f41884  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516  
 To: <sip:2003@10.10.193.253>;tag=1442724430  
 Date: Thu, 12 Jul 2007 17:52:32 GMT  
 Call-ID: a8d2b580-69616a60-1a-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[4] INVITE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1e7bcb76f7  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 12 Jul 2007 17:52:32 GMT  
 Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 120  
 Min-SE: 120  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[5] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1e7bcb76f7  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 12 Jul 2007 17:52:32 GMT  
 Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[6] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1e7bcb76f7  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267

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Date: Thu, 12 Jul 2007 17:52:32 GMT  
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250  
CSeq: 101 INVITE  
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
Allow-Events: presence  
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
Contact: <sip:2003@10.10.193.253:5060>  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] SIP/2.0 183 Session Progress**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1e7bcb76f7  
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516  
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267  
Date: Thu, 12 Jul 2007 17:52:32 GMT  
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250  
CSeq: 101 INVITE  
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
Allow-Events: presence, kpml  
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
Contact: <sip:2003@10.10.193.253:5060>  
Content-Type: application/sdp  
Content-Length: 301

v=0  
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
s=SIP Call  
c=IN IP4 10.10.199.238  
t=0 0  
m=audio 4000 RTP/AVP 0 8 18 101  
a=rtpmap:0 PCMU/8000  
a=ptime:20  
a=rtpmap:8 PCMA/8000  
a=ptime:20  
a=rtpmap:18 G729/8000  
a=ptime:20  
a=sendonly  
a=rtpmap:101 telephone-event/8000  
a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1e7bcb76f7  
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516  
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267  
Date: Thu, 12 Jul 2007 17:52:32 GMT  
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250  
CSeq: 101 INVITE  
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
Allow-Events: presence, kpml  
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
Contact: <sip:2003@10.10.193.253:5060>  
Supported: replaces  
Content-Type: application/sdp  
Content-Length: 301

v=0  
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
s=SIP Call  
c=IN IP4 10.10.199.238  
t=0 0  
m=audio 4000 RTP/AVP 0 8 18 101  
a=rtpmap:0 PCMU/8000  
a=ptime:20  
a=rtpmap:8 PCMA/8000  
a=ptime:20  
a=rtpmap:18 G729/8000  
a=ptime:20  
a=sendonly  
a=rtpmap:101 telephone-event/8000  
a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] ACK sip:2003@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1f1fc31af4  
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516  
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267  
Date: Thu, 12 Jul 2007 17:52:32 GMT  
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250  
Max-Forwards: 70

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```
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 228
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 24936 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[10] INVITE sip:1001@10.10.199.250:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK71f776d04
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
Date: Thu, 12 Jul 2007 17:52:33 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 120
Cisco-Guid: 2832381312-1767991904-14-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060>
Expires: 180
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 17122 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[11] SIP/2.0 100 Trying**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK71f776d04
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
Date: Thu, 12 Jul 2007 17:52:33 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[12] SIP/2.0 200 OK**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK71f776d04
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
Date: Thu, 12 Jul 2007 17:52:33 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060>
Supported: replaces
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
```

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```
t=0 0
m=audio 24936 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[13] ACK sip:2003@10.10.199.250:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK88454492
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
Date: Thu, 12 Jul 2007 17:52:33 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[14] INVITE sip:2003@10.10.193.253:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK2049973286
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:53:18 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE: 60
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.199.250:5060>
Expires: 180
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 24936 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[15] SIP/2.0 100 Trying**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK2049973286
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:53:18 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[16] SIP/2.0 200 OK**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK2049973286
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:53:18 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060>
Supported: replaces
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
```

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```
c=IN IP4 10.10.199.238
t=0 0
m=audio 17122 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[17] ACK sip:2003@10.10.193.253:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK2158343c6f
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:53:18 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[18] INVITE sip:2003@10.10.193.253:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK22e4c2f42
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:54:03 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE: 60
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.199.250:5060>
Expires: 180
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 24936 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[19] SIP/2.0 100 Trying**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK22e4c2f42
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:54:03 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[20] SIP/2.0 200 OK**

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK22e4c2f42
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:54:03 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060>
Supported: replaces
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
```



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```
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 17122 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[21] ACK sip:2003@10.10.193.253:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK233989fca8
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:54:03 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[22] BYE sip:2003@10.10.193.253:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK244a0d362e
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:54:03 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 104 BYE
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

```
[23] SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK244a0d362e
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:54:48 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 104 BYE
Content-Length: 0
```

## 12.3 Sip Trunk Call Preservation when "Cisco Unified CM" is the "Refresher"

Title: Sip Trunk Call Preservation when "Cisco Unified CM" is the "Refresher"

Description:

RemoteUA--siptrunk---Cisco Unified CM---Cisco Unified IP Phone

The scenario for Sip Trunk Call Preservation when "Cisco Unified CM" is the "Refresher" for the Session Timers and session refresh failure condition occurs.

The Cisco Unified CM's Sip Trunk tries to send the re-Invite for Session Refresh (retry times) and when no response is received back, it would be due to either RemoteUA being shutdown or network failure on some segment for the signaling path to RemoteUA. For best effort handling of this failure condition the Cisco Unified CM assumes later i.e it could be due to network failure on signaling path.

The signaling and media channel between calling & called party may not necessarily be established through the same network. So Cisco Unified CM makes an assumption that media path between RemoteUA and Cisco Unified IP Phone may still be active, and it shouldn't be interrupted until hangup from Cisco Unified IP Phone.

Thus SIP Trunk on Cisco Unified CM takes an action to preserve the call towards the call control side (i.e Cisco Unified IP Phone side).

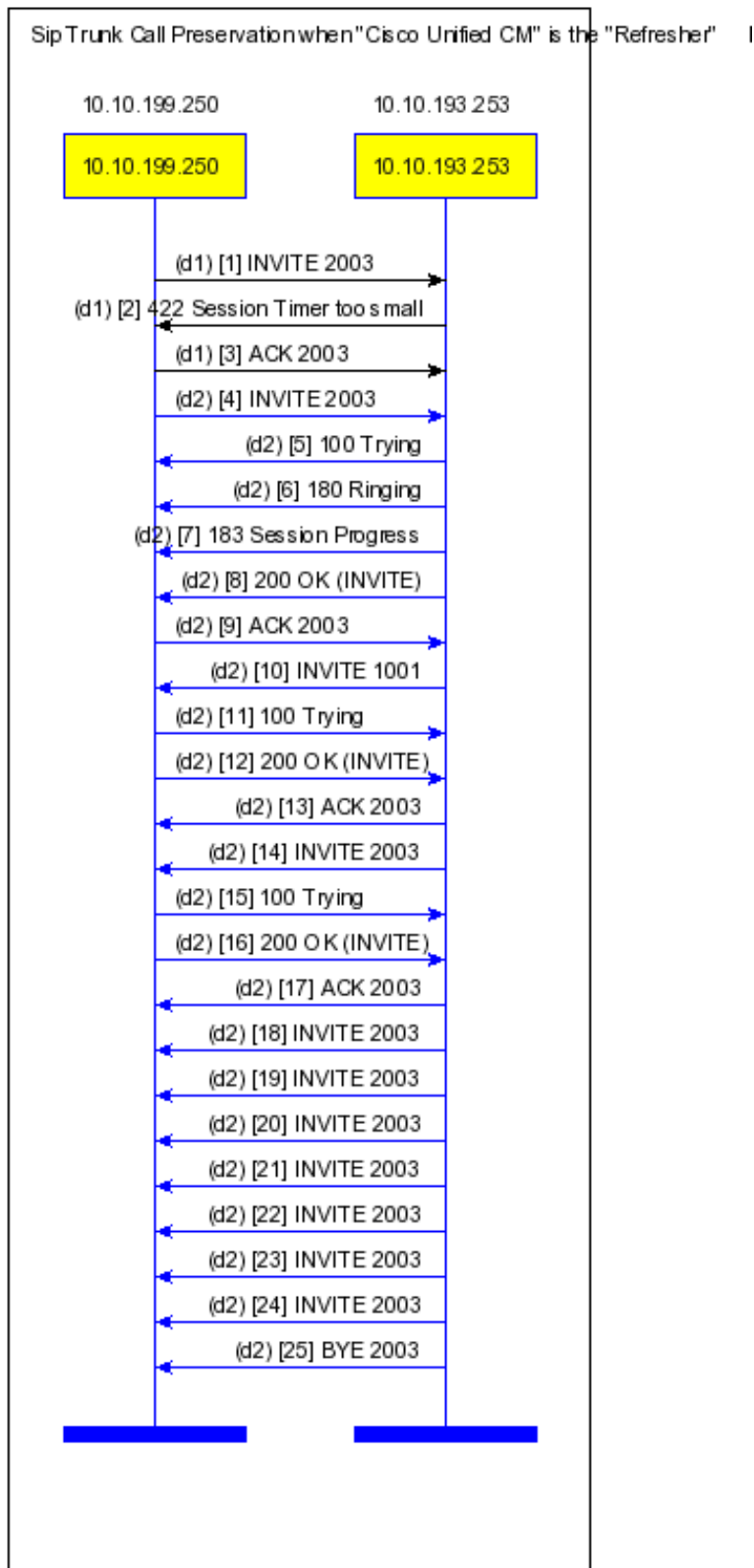
This results in Cisco Unified IP Phone maintaining the media for an active call, and results in having the softkeys disabled so that feature requests may not be performed. Also "TEMP FAIL" is displayed on the Cisco Unified IP Phone.

Also the SIP Trunk sends a BYE on the sip dialog with remoteUA, so that any intermediate Call stateful Proxy servers can clear the state info for the clearing dialog. The 200 OK for BYE may not be received as network to remoteUA already got disconnected. Then sip trunk call instance clears itself as signaling connection was already disconnected.

Configuration:

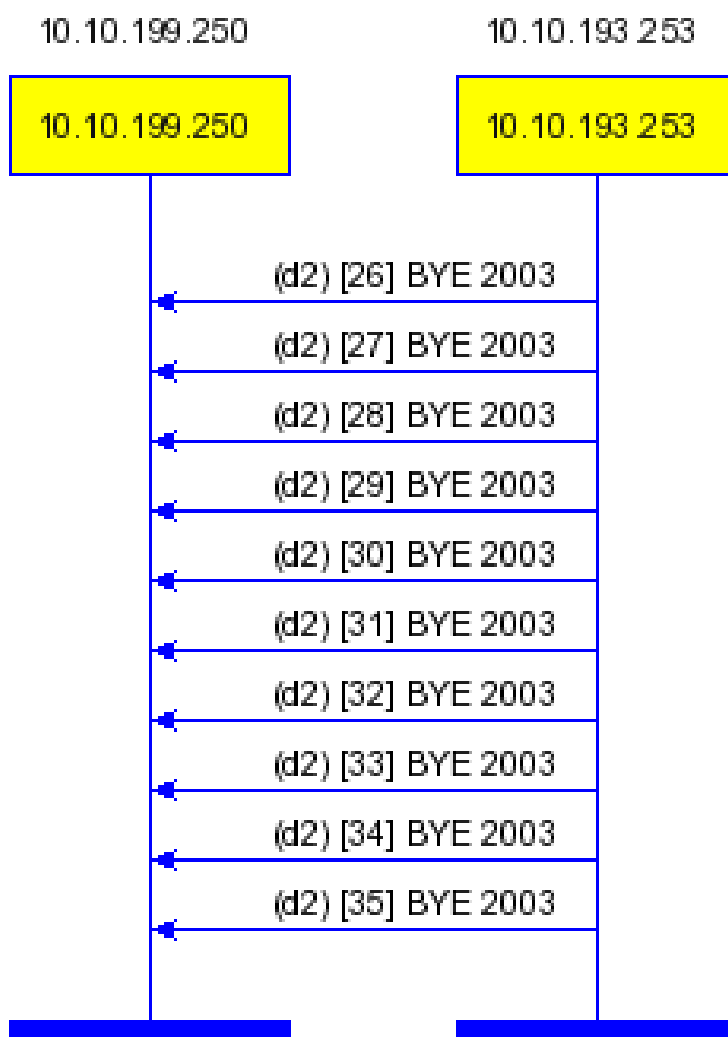
Node = Unified CM, IP = 10.10.253.3

Node = RemoteUA, IP = 10.10.253.2

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## Sip Trunk Call Preservation when "Cisco Unified CM" is the "Refresher"



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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[1] INVITE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKe7e34f60a  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 12 Jul 2007 16:41:22 GMT  
 Call-ID: b7b46a80-696159b2-25d-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 60  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 90  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 422 Session Timer too small

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKe7e34f60a  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 To: <sip:2003@10.10.193.253>;tag=1984215675  
 Date: Thu, 12 Jul 2007 16:41:22 GMT  
 Call-ID: b7b46a80-696159b2-25d-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Min-SE: 120  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[3] ACK sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKe7e34f60a  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 To: <sip:2003@10.10.193.253>;tag=1984215675  
 Date: Thu, 12 Jul 2007 16:41:22 GMT  
 Call-ID: b7b46a80-696159b2-25d-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[4] INVITE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKf1ef587cf  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 12 Jul 2007 16:41:22 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 120  
 Min-SE: 120  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[5] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKf1ef587cf  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 12 Jul 2007 16:41:22 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[6] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKf1ef587cf  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716

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Date: Thu, 12 Jul 2007 16:41:22 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] SIP/2.0 183 Session Progress**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKf1ef587cf  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 Date: Thu, 12 Jul 2007 16:41:22 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060>  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKf1ef587cf  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 Date: Thu, 12 Jul 2007 16:41:22 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060>  
 Supported: replaces  
 Session-Expires: 120;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] ACK sip:2003@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1054a18a4  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 Date: Thu, 12 Jul 2007 16:41:22 GMT

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```

Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 228

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 24026 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[10] INVITE sip:1001@10.10.199.250:5060 SIP/2.0**

```

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK1772f1dfc1a
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:41:25 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 120
Cisco-Guid: 3082054272-1767987634-6823-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 216

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 32592 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[11] SIP/2.0 100 Trying**

```

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK1772f1dfc1a
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:41:25 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[12] SIP/2.0 200 OK**

```

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK1772f1dfc1a
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:41:25 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060>
Supported: replaces
Session-Expires: 120;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 216

```

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```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 24026 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[13] ACK sip:2003@10.10.199.250:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK1786e8f14c2
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:41:25 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[14] INVITE sip:2003@10.10.199.250:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17945b34ec3
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:42:25 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 120
Cisco-Guid: 3082054272-1767987634-6823-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 32592 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[15] SIP/2.0 100 Trying**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17945b34ec3
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:42:25 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[16] SIP/2.0 200 OK**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17945b34ec3
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:42:25 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060>
```



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Supported: replaces  
 Session-Expires: 120;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 24026 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[17] ACK sip:2003@10.10.199.250:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17a1e3829b8  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 Date: Thu, 12 Jul 2007 16:42:25 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence, kpml  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[18] INVITE sip:2003@10.10.199.250:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17b610bad4c  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 Date: Thu, 12 Jul 2007 16:43:25 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 120  
 Cisco-Guid: 3082054272-1767987634-6823-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 103 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2003@10.10.193.253:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 120;refresher=uac  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 32592 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[19] INVITE sip:2003@10.10.199.250:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17b610bad4c  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 Date: Thu, 12 Jul 2007 16:43:25 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 120  
 Cisco-Guid: 3082054272-1767987634-6823-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 103 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2003@10.10.193.253:5060>  
 Expires: 180  
 Allow-Events: presence, kpml

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```
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 32592 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[20] INVITE sip:2003@10.10.199.250:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17b610bad4c
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:43:26 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 120
Cisco-Guid: 3082054272-1767987634-6823-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 32592 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[21] INVITE sip:2003@10.10.199.250:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17b610bad4c
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:43:28 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 120
Cisco-Guid: 3082054272-1767987634-6823-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 32592 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[22] INVITE sip:2003@10.10.199.250:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17b610bad4c  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 Date: Thu, 12 Jul 2007 16:43:32 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 120  
 Cisco-Guid: 3082054272-1767987634-6823-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 103 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2003@10.10.193.253:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 120;refresher=uac  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 32592 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[23] INVITE sip:2003@10.10.199.250:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17b610bad4c  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 Date: Thu, 12 Jul 2007 16:43:40 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 120  
 Cisco-Guid: 3082054272-1767987634-6823-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 103 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2003@10.10.193.253:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 120;refresher=uac  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 32592 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[24] INVITE sip:2003@10.10.199.250:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17b610bad4c  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 Date: Thu, 12 Jul 2007 16:43:56 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 120  
 Cisco-Guid: 3082054272-1767987634-6823-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH

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```
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 32592 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[25] BYE sip:2003@10.10.199.250:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17c2d18d34d
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:43:56 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[26] BYE sip:2003@10.10.199.250:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17c2d18d34d
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:43:56 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[27] BYE sip:2003@10.10.199.250:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17c2d18d34d
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:43:56 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[28] BYE sip:2003@10.10.199.250:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17c2d18d34d
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:43:56 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[29] BYE sip:2003@10.10.199.250:5060 SIP/2.0**

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17c2d18d34d
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743
Date: Thu, 12 Jul 2007 16:43:56 GMT
Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
```

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Max-Forwards: 70  
 CSeq: 104 BYE  
 Reason: Q.850;cause=86  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[30] BYE sip:2003@10.10.199.250:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17c2d18d34d  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 Date: Thu, 12 Jul 2007 16:43:56 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 104 BYE  
 Reason: Q.850;cause=86  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[31] BYE sip:2003@10.10.199.250:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17c2d18d34d  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 Date: Thu, 12 Jul 2007 16:43:56 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 104 BYE  
 Reason: Q.850;cause=86  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[32] BYE sip:2003@10.10.199.250:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17c2d18d34d  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 Date: Thu, 12 Jul 2007 16:43:56 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 104 BYE  
 Reason: Q.850;cause=86  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[33] BYE sip:2003@10.10.199.250:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17c2d18d34d  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 Date: Thu, 12 Jul 2007 16:43:56 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 104 BYE  
 Reason: Q.850;cause=86  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[34] BYE sip:2003@10.10.199.250:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17c2d18d34d  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 Date: Thu, 12 Jul 2007 16:43:56 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 104 BYE  
 Reason: Q.850;cause=86  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[35] BYE sip:2003@10.10.199.250:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK17c2d18d34d  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-19517716  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22360743  
 Date: Thu, 12 Jul 2007 16:43:56 GMT  
 Call-ID: b7b46a80-696159b2-25e-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 104 BYE

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Reason: Q.850;cause=86  
Content-Length: 0

## 12.4 SIP Trunk Call Preservation when "Cisco Unified CM" is "Non-Refresher"

Title: SIP Trunk Call Preservation when "Cisco Unified CM" is "Non-Refresher"

Description:

Cisco Unified IP Phone---Cisco Unified CM--siptrunk---RemoteUA

The scenario for Sip Trunk Call Preservation when "Cisco Unified CM" is the "Non-Refresher" for the Session Timers and session refresh failure condition occurs.

The Cisco Unified CM's Sip Trunk detects that session refresh isn't received in the negotiated duration, it would be due to either RemoteUA being shutdown or network failure on some segment for the signaling path to RemoteUA. For best effort handling of this failure condition the Cisco Unified CM assumes later i.e it could be due to network failure on signaling path.

The signaling and media channel between calling & called party may not necessarily be established through the same network. So Cisco Unified CM makes an assumption that media path between RemoteUA and Cisco Unified IP Phone may still be active, and it shouldn't be interrupted.

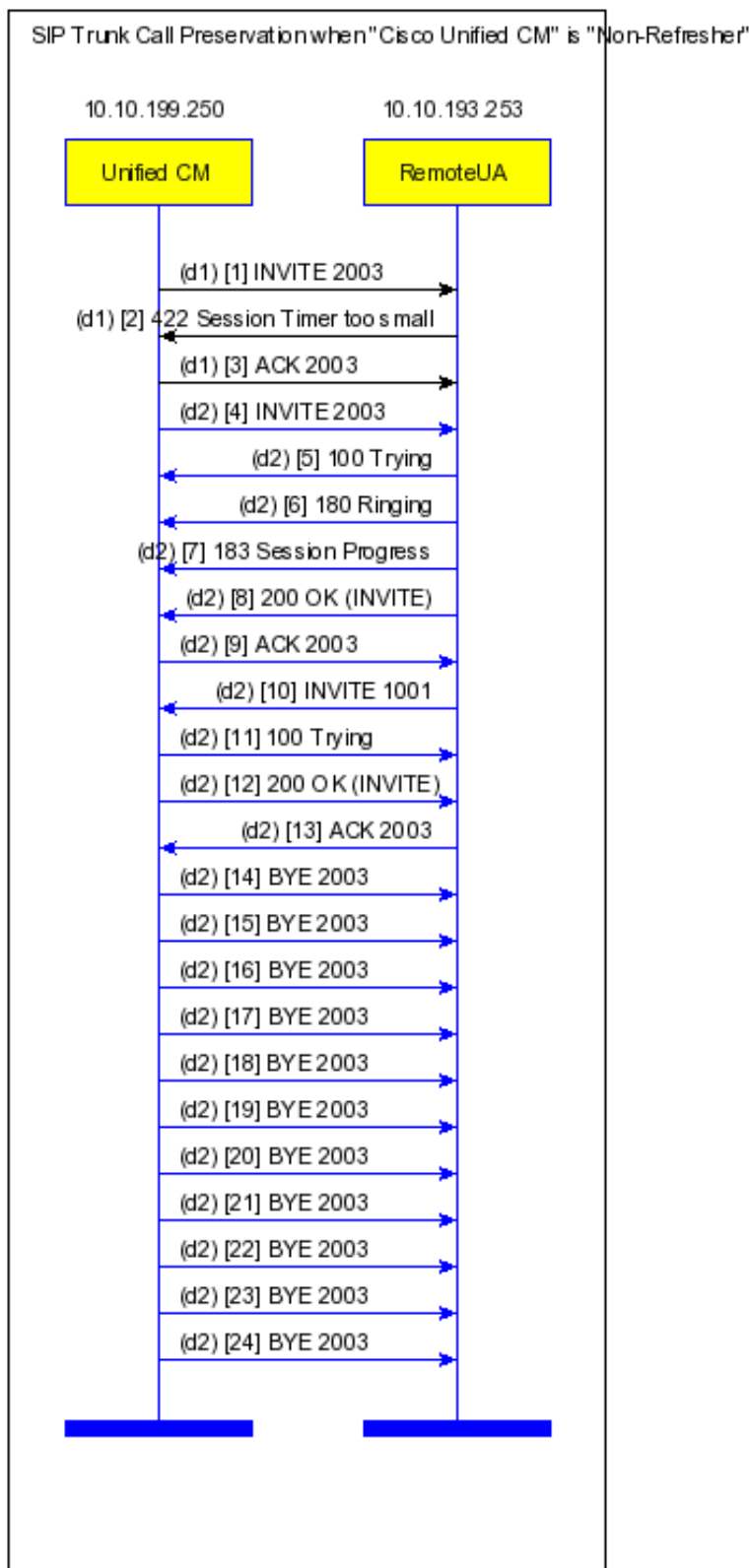
Thus SIP Trunk on Cisco Unified CM takes an action to preserve the call towards the call control side (i.e Cisco Unified IP Phone side). This results in Cisco Unified IP Phone maintaining the media for an active call, and results in having the softkeys disabled so that feature requests may not be performed. Also "TEMP FAIL" is displayed on the Cisco Unified IP Phone.

Also the SIP Trunk sends a BYE on the sip dialog with remoteUA, so that any intermediate Call stateful Proxy servers can clear the state info for the clearing dialog. The 200 OK for BYE may not be received as network to remoteUA already got disconnected. Then sip trunk call instance clears itself as signaling connection was already disconnected.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = RemoteUA, IP = 10.10.193.253

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[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[1] **INVITE sip:2003@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4832c1fbb9  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 12 Jul 2007 20:54:56 GMT  
 Call-ID: 23f49580-69619520-8e-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 60  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 90  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[2] **SIP/2.0 422 Session Timer too small**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4832c1fbb9  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>;tag=668956223  
 Date: Thu, 12 Jul 2007 20:54:56 GMT  
 Call-ID: 23f49580-69619520-8e-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Min-SE: 120  
 Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[3] **ACK sip:2003@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4832c1fbb9  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>;tag=668956223  
 Date: Thu, 12 Jul 2007 20:54:56 GMT  
 Call-ID: 23f49580-69619520-8e-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[4] **INVITE sip:2003@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK491223ce75  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 12 Jul 2007 20:54:56 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 120  
 Min-SE: 120  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[5] **SIP/2.0 100 Trying**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK491223ce75  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 12 Jul 2007 20:54:56 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]

[6] **SIP/2.0 180 Ringing**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK491223ce75  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985

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Date: Thu, 12 Jul 2007 20:54:56 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060>  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] SIP/2.0 183 Session Progress**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK491223ce75  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 Date: Thu, 12 Jul 2007 20:54:56 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060>  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK491223ce75  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 Date: Thu, 12 Jul 2007 20:54:56 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060>  
 Supported: replaces  
 Session-Expires: 120;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[9] ACK sip:2003@10.10.193.253:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4a3c91b60f  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 Date: Thu, 12 Jul 2007 20:54:56 GMT

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Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence  
 Content-Type: application/sdp  
 Content-Length: 228

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 21706 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=recvonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[10] INVITE sip:1001@10.10.199.250:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK07eca88d5  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 Date: Thu, 12 Jul 2007 20:54:58 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 Supported: 100rel,timer,replaces  
 Min-SE: 120  
 Cisco-Guid: 603231616-1768002848-2-4257288876  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Max-Forwards: 70  
 Contact: <sip:2003@10.10.193.253:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Session-Expires: 120;refresher=uac  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 30286 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[11] SIP/2.0 100 Trying**

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK07eca88d5  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 Date: Thu, 12 Jul 2007 20:54:58 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[12] SIP/2.0 200 OK**

Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK07eca88d5  
 From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 Date: Thu, 12 Jul 2007 20:54:58 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.199.250:5060>  
 Supported: replaces  
 Session-Expires: 120;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 216

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```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 21706 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[13] ACK sip:2003@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK1217f7021
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541
Date: Thu, 12 Jul 2007 20:54:58 GMT
Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[14] BYE sip:2003@10.10.193.253:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4b56ee5d9a
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985
Date: Thu, 12 Jul 2007 20:54:58 GMT
Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[15] BYE sip:2003@10.10.193.253:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4b56ee5d9a
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985
Date: Thu, 12 Jul 2007 20:54:58 GMT
Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[16] BYE sip:2003@10.10.193.253:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4b56ee5d9a
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985
Date: Thu, 12 Jul 2007 20:54:58 GMT
Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[17] BYE sip:2003@10.10.193.253:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4b56ee5d9a
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985
Date: Thu, 12 Jul 2007 20:54:58 GMT
Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[18] BYE sip:2003@10.10.193.253:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4b56ee5d9a
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541
```

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To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 Date: Thu, 12 Jul 2007 20:54:58 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 102 BYE  
 Reason: Q.850;cause=41  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[19] BYE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4b56ee5d9a  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 Date: Thu, 12 Jul 2007 20:54:58 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 102 BYE  
 Reason: Q.850;cause=41  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[20] BYE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4b56ee5d9a  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 Date: Thu, 12 Jul 2007 20:54:58 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 102 BYE  
 Reason: Q.850;cause=41  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[21] BYE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4b56ee5d9a  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 Date: Thu, 12 Jul 2007 20:54:58 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 102 BYE  
 Reason: Q.850;cause=41  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[22] BYE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4b56ee5d9a  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 Date: Thu, 12 Jul 2007 20:54:58 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 102 BYE  
 Reason: Q.850;cause=41  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[23] BYE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4b56ee5d9a  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 Date: Thu, 12 Jul 2007 20:54:58 GMT  
 Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 102 BYE  
 Reason: Q.850;cause=41  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[24] BYE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4b56ee5d9a  
 From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644541  
 To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22696985  
 Date: Thu, 12 Jul 2007 20:54:58 GMT

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Call-ID: 23f49580-69619520-8f-fac712ac@10.10.199.250  
User-Agent: Cisco-CCM6.0  
Max-Forwards: 70  
CSeq: 102 BYE  
Reason: Q.850;cause=41  
Content-Length: 0

## 13. 3xx

### 13.1 Incoming 3xx Redirection

Title: Incoming 3xx Redirection

Description:

Cisco Unified CM SIP trunk processes the incoming 3xx response by sending out new INVITE specified in the contact headers of the 3xx response.

Cisco Unified IP SCCP phone 1001 dials SIP Proxy phone 2108. SIP Proxy is in redirect mode, and therefore sends a 302 to the Cisco Unified CM

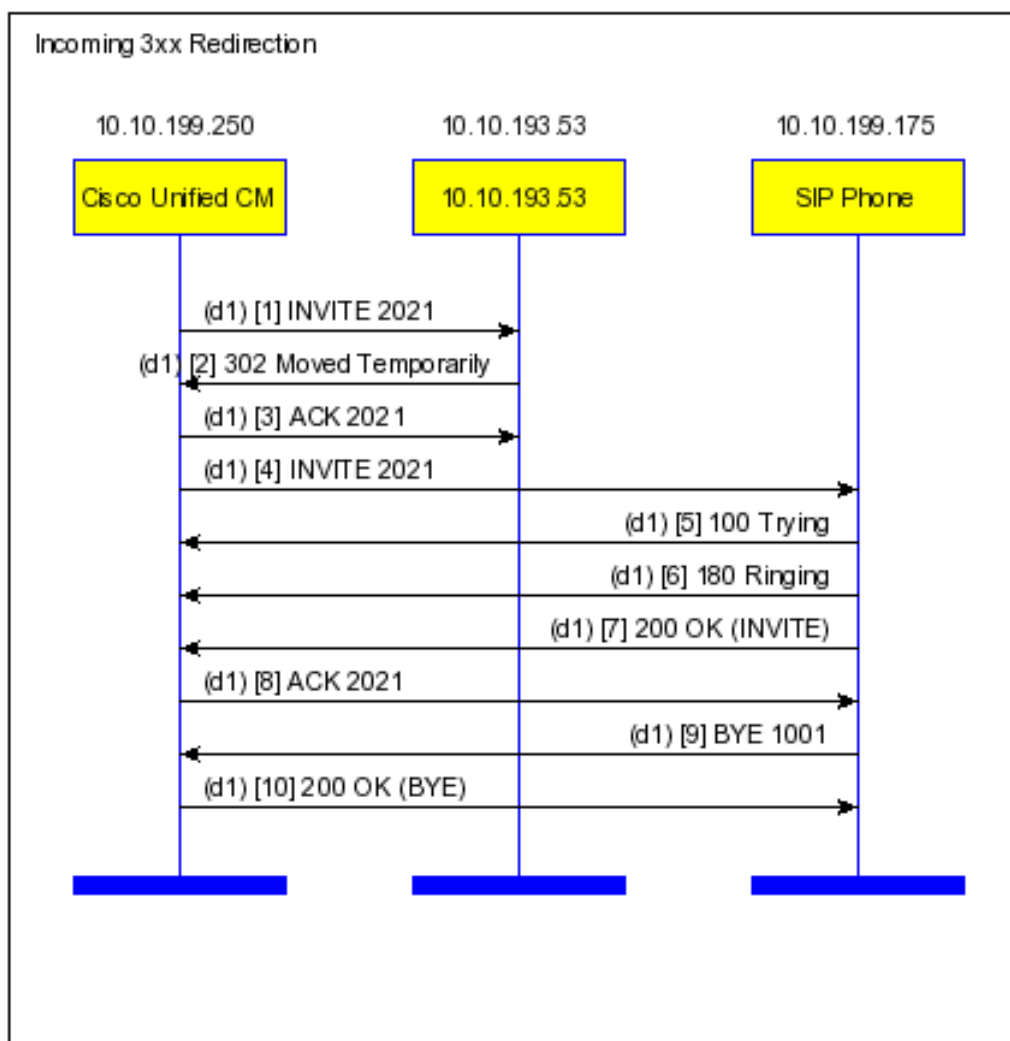
Cisco Unified CM processes the 3xx response and sends an INVITE to the contact address in the 3xx.

Configuration:

Node = Cisco Unified CM, IP = 10.10.199.250

Node = SIP Proxy, IP = 10.10.199.53

Node = SIP Phone, IP = 10.10.199.175

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[1] INVITE sip:2021@10.10.193.53:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4f46dfef77  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226818  
 To: <sip:2021@10.10.193.53>  
 Date: Mon, 02 Jul 2007 20:18:45 GMT  
 Call-ID: 6dcec600-68915da5-8a6-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[2] SIP/2.0 302 Moved Temporarily**

Via: SIP/2.0/UDP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK4f46dfef77  
 Call-ID: 6dcec600-68915da5-8a6-fac712ac@10.10.199.250  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226818  
 To: <sip:2021@10.10.193.53>;tag=7711f823-77cff29  
 CSeq: 101 INVITE  
 Contact: <sip:2021@10.10.199.175:5060>;+sip.instance="urn:uuid:00000000-0000-0000-0000-000f24aa92e8"  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[3] ACK sip:2021@10.10.193.53:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK4f46dfef77  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226818  
 To: <sip:2021@10.10.193.53>;tag=7711f823-77cff29  
 Date: Mon, 02 Jul 2007 20:18:45 GMT  
 Call-ID: 6dcec600-68915da5-8a6-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence, kpml  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] INVITE sip:2021@10.10.199.175:5060 SIP/2.0**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK50ea5c0c0  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226818  
 To: <sip:2021@10.10.193.53>  
 Date: Mon, 02 Jul 2007 20:18:45 GMT  
 Call-ID: 6dcec600-68915da5-8a6-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 102 INVITE  
 Contact: <sip:1001@10.10.199.250:5060>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[5] SIP/2.0 100 Trying**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK50ea5c0c0  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226818  
 To: <sip:2021@10.10.193.53>  
 Call-ID: 6dcec600-68915da5-8a6-fac712ac@10.10.199.250  
 Date: Mon, 02 Jul 2007 20:18:45 GMT  
 CSeq: 102 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] SIP/2.0 180 Ringing**

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK50ea5c0c0

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From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226818  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e828bc5010c8ec-22797899  
 Call-ID: 6dcec600-68915da5-8a6-fac712ac@10.10.199.250  
 Date: Mon, 02 Jul 2007 20:18:45 GMT  
 CSeq: 102 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[7] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK50ea5c0c0  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226818  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e828bc5010c8ec-22797899  
 Call-ID: 6dcec600-68915da5-8a6-fac712ac@10.10.199.250  
 Date: Mon, 02 Jul 2007 20:18:56 GMT  
 CSeq: 102 INVITE  
 Server: Cisco-CP7960G/7.5  
 Contact: <sip:2021@10.10.199.175:5060>  
 Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE  
 Supported: replaces  
 Content-Length: 259  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=optional

v=0  
 o=Cisco-SIPUA 10984 0 IN IP4 10.10.199.175  
 s=SIP Call  
 t=0 0  
 m=audio 19878 RTP/AVP 0 8 18 101  
 c=IN IP4 10.10.199.175  
 a=rtpmap:0 PCMU/8000  
 a=rtpmap:8 PCMA/8000  
 a=rtpmap:18 G729/8000  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15  
 a=sendrecv

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[8] ACK sip:2021@10.10.199.175:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK518b0aff5  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226818  
 To: <sip:2021@10.10.193.53>;tag=000f24aa92e828bc5010c8ec-22797899  
 Date: Mon, 02 Jul 2007 20:18:45 GMT  
 Call-ID: 6dcec600-68915da5-8a6-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 102 ACK  
 Allow-Events: presence, kpml  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 23062 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[9] BYE sip:1001@10.10.199.250:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.175:5060;branch=z9hG4bK0471289f  
 From: <sip:2021@10.10.193.53>;tag=000f24aa92e828bc5010c8ec-22797899  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226818  
 Call-ID: 6dcec600-68915da5-8a6-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 Date: Mon, 02 Jul 2007 20:19:01 GMT  
 CSeq: 101 BYE  
 User-Agent: Cisco-CP7960G/7.5  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[10] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.175:5060;branch=z9hG4bK0471289f  
 From: <sip:2021@10.10.193.53>;tag=000f24aa92e828bc5010c8ec-22797899  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226818

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Date: Mon, 02 Jul 2007 20:19:01 GMT  
Call-ID: 6dcec600-68915da5-8a6-fac712ac@10.10.199.250  
CSeq: 101 BYE  
Content-Length: 0

## 14. Authentication Authorization

### 14.1 Unified CM Gets Authenticated as UAC

Title: Unified CM Gets Authenticated as UAC

Description:

When Cisco Unified CM is challenged as a UAC, it looks up the user credentials from the given realm and send the new request with Authorization header.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = RemoteUA, IP = 10.10.193.253

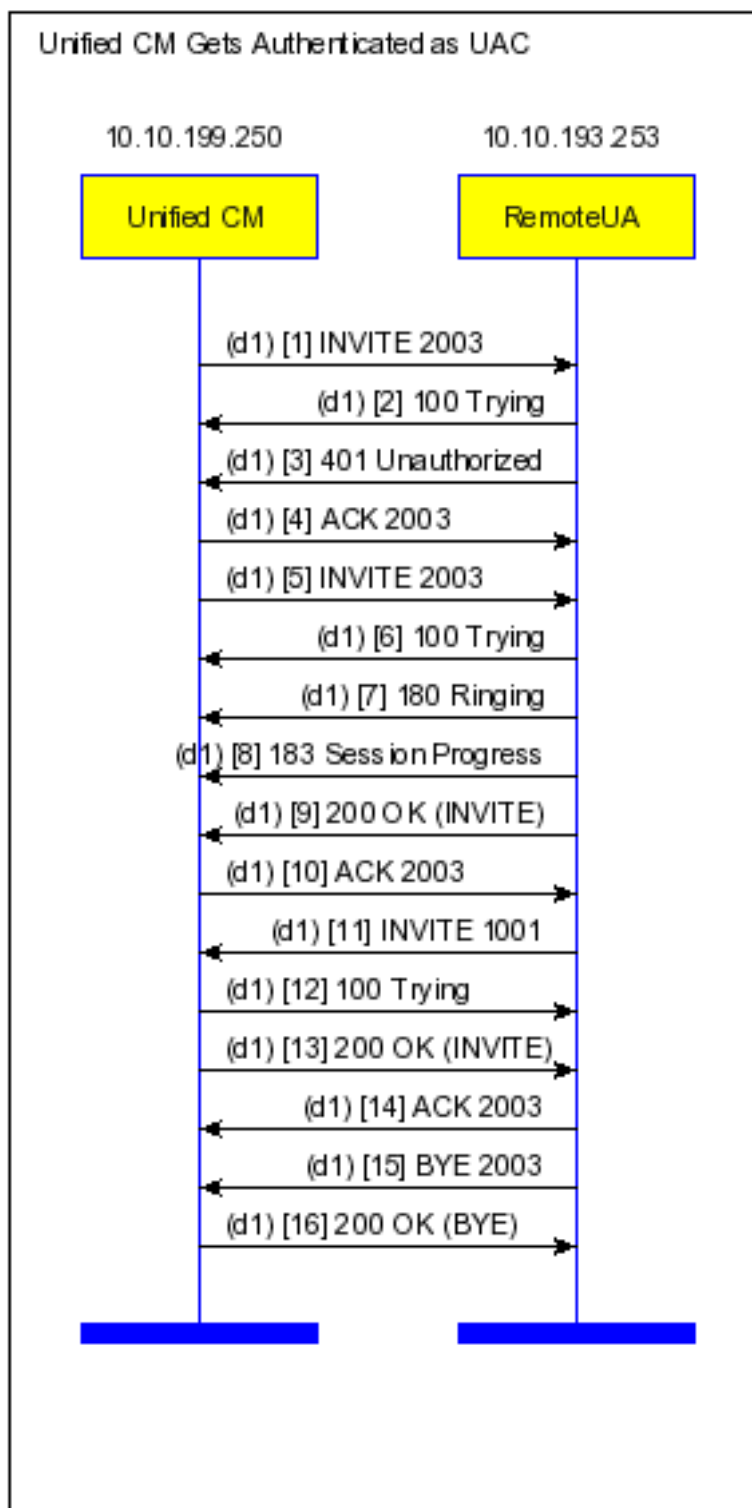
Scenario:

Unified CM phone 1001 calls a remote phone 2003 through SIP trunk

Remote UA returns 401

Unified CM looks up user credentials and sends out new INVITE with Authorization header

All the subsequent requests from Unified CM for this dialog will have Authorization header already

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[1] INVITE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3b3ae7dc80  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3b3ae7dc80  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[3] SIP/2.0 401 Unauthorized

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3b3ae7dc80  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>;tag=1093883919  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 WWW-Authenticate: Digest realm="StandAloneCluster", nonce="k7t2LKjO155zlYnS7fJ9aXWFgHc/vug2", algorithm=MD5  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[4] ACK sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3b3ae7dc80  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>;tag=1093883919  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence, kpml  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[5] INVITE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3c6e0a9898  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 102 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Authorization: Digest  
 username="sipuser1",realm="StandAloneCluster",uri="sip:2003@10.10.193.253:5060",response="1b78609f23a9517f3e8c55f669bbd8cd",nonce="k7t2LKjO155zlYnS7fJ9aXWFgHc/vug2",algorithm=MD5  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

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[diagram] Call-ID: [prev] [next]

**[6] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3c6e0a9898  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[diagram] Call-ID: [prev] [next]

**[7] SIP/2.0 180 Ringing**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3c6e0a9898  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[diagram] Call-ID: [prev] [next]

**[8] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3c6e0a9898  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[diagram] Call-ID: [prev] [next]

**[9] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3c6e0a9898  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101

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```

a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

```

[10] ACK sip:2003@10.10.193.253:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3d3d1ddc45
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620
To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745
Date: Thu, 28 Jun 2007 22:48:34 GMT
Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Authorization: Digest
username="sipuser1",realm="StandAloneCluster",uri="sip:2003@10.10.193.253:5060",response="1b78609f23a9517f3e8c55f669bbd8cd",nonce="k7t2LKjO155zlYnS7fJ9aXWFgHc/vug2",algorithm=MD5
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 28594 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

```

[11] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKa55afc5b96
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620
Date: Thu, 28 Jun 2007 22:48:37 GMT
Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 1800
Cisco-Guid: 2986627712-1749105346-7786-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 216

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 19622 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

```

[12] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKa55afc5b96
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620
Date: Thu, 28 Jun 2007 22:48:37 GMT
Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml

```



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Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)**[13] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKa55afc5b96  
 From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 Date: Thu, 28 Jun 2007 22:48:37 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 28594 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)**[14] ACK sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKa64456dd88  
 From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 Date: Thu, 28 Jun 2007 22:48:37 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence, kpml  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)**[15] BYE sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKa73ffcf9bf  
 From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 Date: Thu, 28 Jun 2007 22:48:37 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 102 BYE  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)**[16] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKa73ffcf9bf  
 From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 Date: Thu, 28 Jun 2007 22:48:42 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 102 BYE  
 Content-Length: 0

## 14.2 Unified CM Authenticates Incoming Request

Title: Unified CM Authenticates Incoming Request

### Description:

When a SIP trunk receives an incoming request, if authentication is enabled for this trunk, Cisco Unified CM will check the credential of the incoming request.

Unified CM will return 401 if authentication fails or the request doesn't have the Authorization header. If authorization is enabled for this trunk and authentication passes, Unified CM will also check the privileges against the username. Unified CM will return 403 if authorization fails.

### Configuration:

Node = Unified CM, IP = 10.10.193.253

Node = RemoteUA, IP = 10.10.199.250

### Scenario:

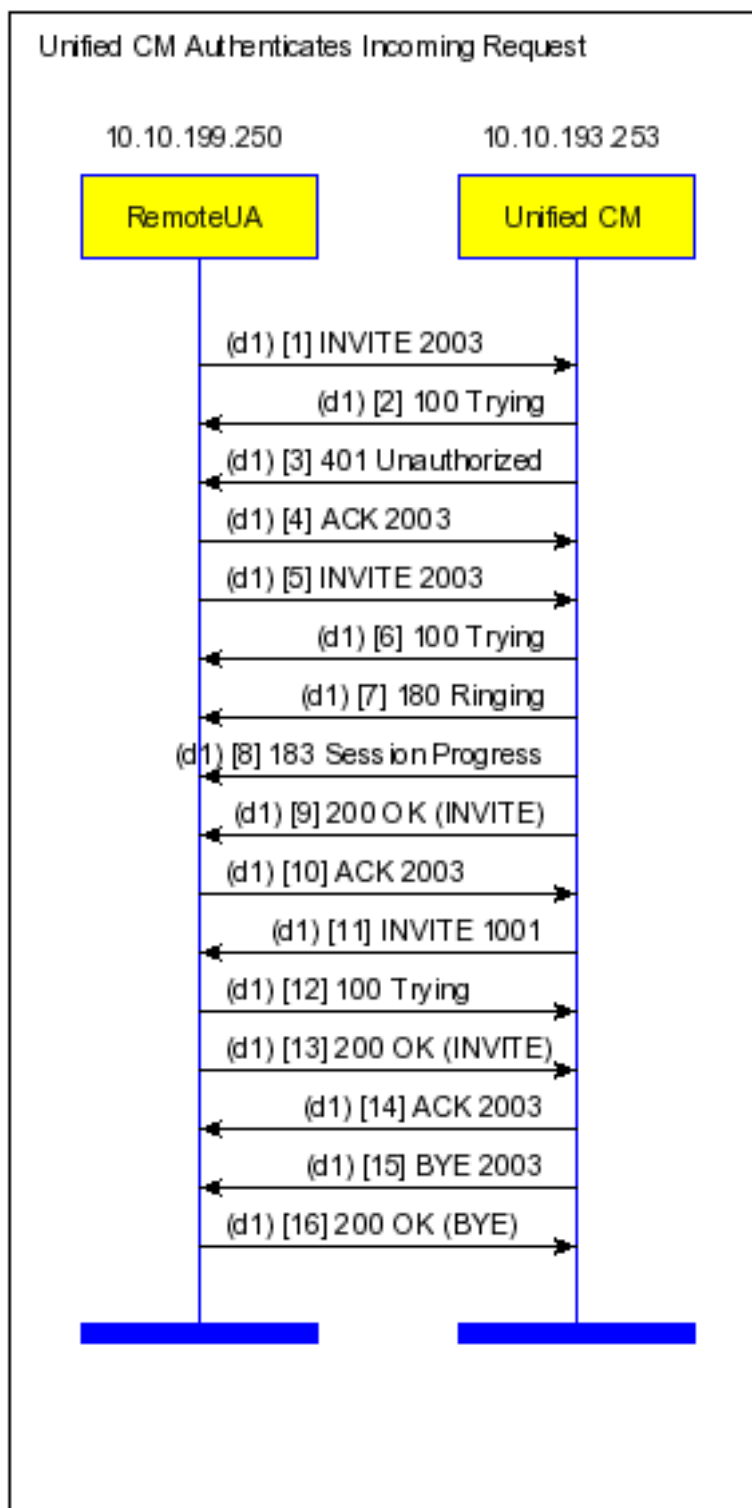
Remote phone 1001 calls a Unified CM phone 2003 through SIP trunk

Unified CM sends back 401 since the INVITE doesn't have the Authorization header

1001 sends new INVITE with Authorization header

Unified CM checks the Authorization header with its configured user credentials

Authentication passes, call moves on

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[1] INVITE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3b3ae7dc80  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3b3ae7dc80  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[3] SIP/2.0 401 Unauthorized

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3b3ae7dc80  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>;tag=1093883919  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 WWW-Authenticate: Digest realm="StandAloneCluster", nonce="k7t2LKjO155zlYnS7fJ9aXWFgHc/vug2", algorithm=MD5  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[4] ACK sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3b3ae7dc80  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>;tag=1093883919  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence, kpml  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[5] INVITE sip:2003@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3c6e0a9898  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 102 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence, kpml  
 Authorization: Digest  
 username="sipuser1",realm="StandAloneCluster",uri="sip:2003@10.10.193.253:5060",response="1b78609f23a9517f3e8c55f669bbd8cd",nonce="k7t2LKjO155zlYnS7fJ9aXWFgHc/vug2",algorithm=MD5  
 Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

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[diagram] Call-ID: [prev] [next]

**[6] SIP/2.0 100 Trying**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3c6e0a9898  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[diagram] Call-ID: [prev] [next]

**[7] SIP/2.0 180 Ringing**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3c6e0a9898  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[diagram] Call-ID: [prev] [next]

**[8] SIP/2.0 183 Session Progress**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3c6e0a9898  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=sendonly  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[diagram] Call-ID: [prev] [next]

**[9] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3c6e0a9898  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 Date: Thu, 28 Jun 2007 22:48:34 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 102 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.193.253:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uas  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 301

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.238  
 t=0 0  
 m=audio 4000 RTP/AVP 0 8 18 101

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```

a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

```

[10] ACK sip:2003@10.10.193.253:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3d3d1ddc45
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620
To: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745
Date: Thu, 28 Jun 2007 22:48:34 GMT
Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Authorization: Digest
username="sipuser1",realm="StandAloneCluster",uri="sip:2003@10.10.193.253:5060",response="1b78609f23a9517f3e
8c55f669bbd8cd",nonce="k7t2LKjO155zlYnS7fJ9aXWFGHc/vug2",algorithm=MD5
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 28594 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

```

[11] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKa55afc5b96
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620
Date: Thu, 28 Jun 2007 22:48:37 GMT
Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE: 1800
Cisco-Guid: 2986627712-1749105346-7786-4257288876
User-Agent: Cisco-CCM6.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 216

```

```

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 19622 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

```

[12] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKa55afc5b96
From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620
Date: Thu, 28 Jun 2007 22:48:37 GMT
Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml

```

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Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)**[13] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKa55afc5b96  
 From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 Date: Thu, 28 Jun 2007 22:48:37 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off  
 Contact: <sip:2003@10.10.199.250:5060;transport=tcp>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer  
 Content-Type: application/sdp  
 Content-Length: 216

v=0  
 o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250  
 s=SIP Call  
 c=IN IP4 10.10.199.251  
 t=0 0  
 m=audio 28594 RTP/AVP 0 101  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)**[14] ACK sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKa64456dd88  
 From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 Date: Thu, 28 Jun 2007 22:48:37 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 Max-Forwards: 70  
 CSeq: 101 ACK  
 Allow-Events: presence, kpml  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)**[15] BYE sip:2003@10.10.199.250:5060;transport=tcp SIP/2.0**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKa73ffcf9bf  
 From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 Date: Thu, 28 Jun 2007 22:48:37 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 User-Agent: Cisco-CCM6.0  
 Max-Forwards: 70  
 CSeq: 102 BYE  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)**[16] SIP/2.0 200 OK**

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bKa73ffcf9bf  
 From: <sip:2003@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-31103745  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470620  
 Date: Thu, 28 Jun 2007 22:48:42 GMT  
 Call-ID: b2045280-68413ac2-a1-fac712ac@10.10.199.250  
 CSeq: 102 BYE  
 Content-Length: 0

## 15. ACL

### 15.1 Access Control List, Deny Presence Subscription

Title: Access Control List, Deny Presence Subscription

Description:

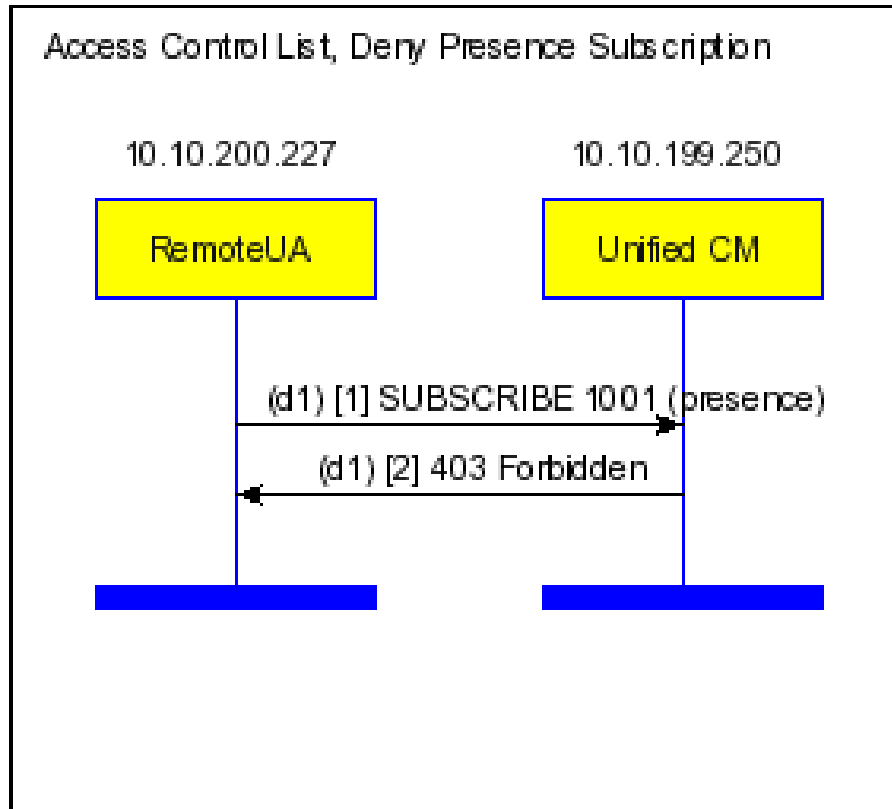
When a SIP trunk is configured not to allow Subscription with presence, an incoming SUBSCRIBE with presence event to this trunk is rejected with 403.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = RemoteUA, IP = 10.10.200.227



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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]  
[1] **SUBSCRIBE sip:1001@10.10.199.250:5060 SIP/2.0**  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: <sip:5678@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>  
Call-ID: 1-17044@10.10.200.227  
CSeq: 1777 SUBSCRIBE  
Event: presence  
Accept: application/dialog-info+xml  
Expires: 7200  
Contact: sip:5678@10.10.200.227:5060  
Max-Forwards: 70  
Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]  
[2] **SIP/2.0 403 Forbidden**  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: <sip:5678@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>;tag=590956363  
Date: Wed, 20 Jun 2007 20:30:27 GMT  
Call-ID: 1-17044@10.10.200.227  
CSeq: 1777 SUBSCRIBE  
Content-Length: 0

## 15.2 Access Control List, Deny Out of Dialog REFER

Title: Access Control List, Deny Out of Dialog REFER

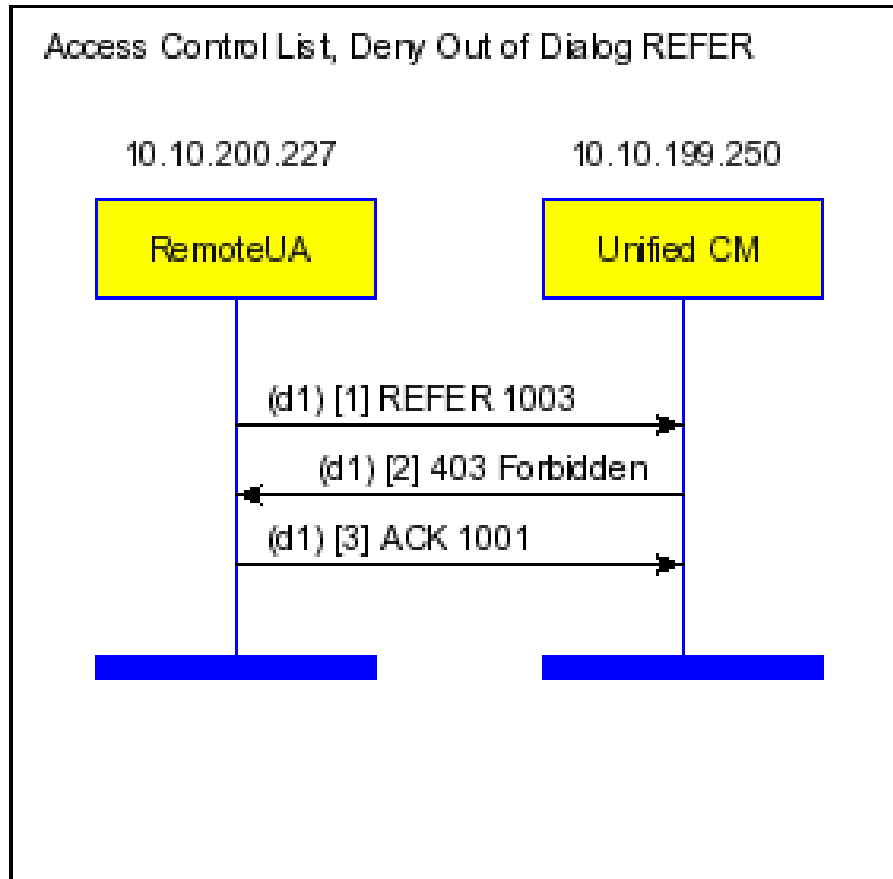
Description:

When a SIP trunk is configured not to allow out-of-dialog REFER, an incoming OOD REFER to this trunk is rejected with 403.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = RemoteUA, IP = 10.10.200.227

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[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]  
[1] **REFER sip:1003@10.10.199.250:5060 SIP/2.0**  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: 1100 <sip:1100@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>  
Call-ID: 1-17415@10.10.200.227  
Cseq: 103 REFER  
Contact: <sip:1100@10.10.200.227:5060>  
Refer-To: <sip:1009@10.10.199.250>  
Referred-By: <sip:1234@whatever.com>  
Max-Forwards: 70  
Subject: Performance Test  
Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]  
[2] **SIP/2.0 403 Forbidden**  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: 1100 <sip:1100@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>;tag=1642914962  
Date: Wed, 20 Jun 2007 21:01:02 GMT  
Call-ID: 1-17415@10.10.200.227  
CSeq: 103 REFER  
Content-Length: 0  
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]  
[3] **ACK sip:1001@10.10.199.250:5060 SIP/2.0**  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: sipp <sip:sipp@10.10.200.227:5060>;tag=1  
To: sut <sip:1001@10.10.199.250:5060>;tag=1642914962  
Call-ID: 1-17415@10.10.200.227  
CSeq: 1 ACK  
Contact: sip:sipp@10.10.200.227:5060  
Max-Forwards: 70  
Subject: Performance Test  
Content-Length: 0

### 15.3 Access Control List, Deny Unsolicited NOTIFY

Title: Access Control List, Deny Unsolicited NOTIFY

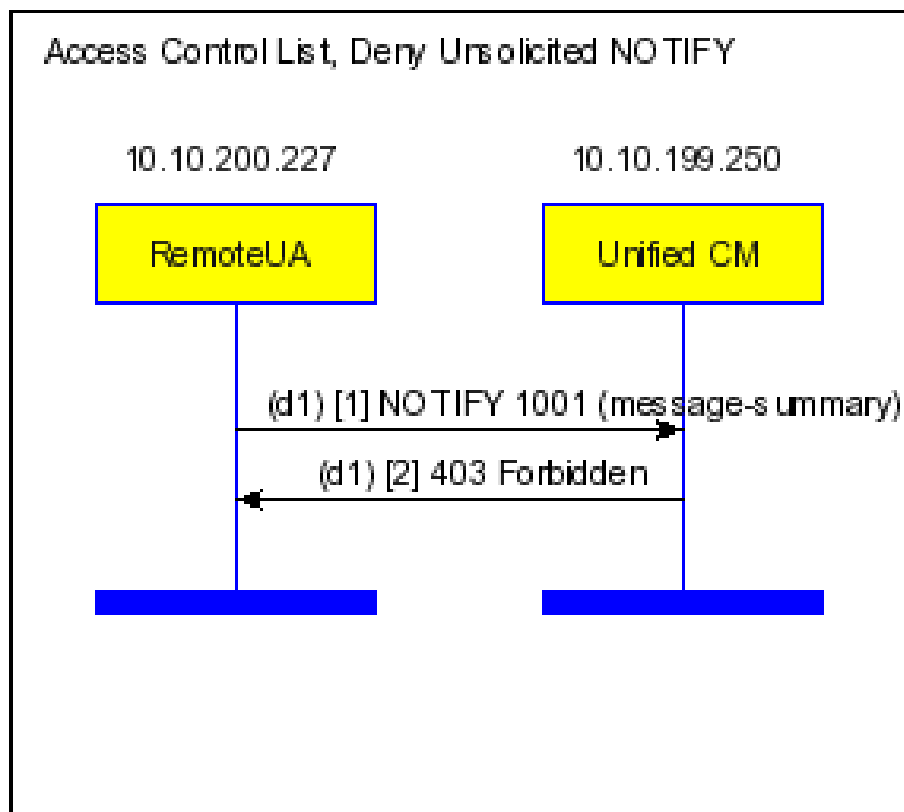
Description:

When a SIP trunk is configured not to allow Unsolicited NOTIFY, an incoming Unsolicited NOTIFY(MWI, for example) to this trunk is rejected with 403.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = RemoteUA, IP = 10.10.200.227

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[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]  
[1] NOTIFY sip:1001@10.10.199.250:5060 SIP/2.0  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: "Voicemail" <sip:5678@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>  
Call-ID: 1-18155@10.10.200.227  
CSeq: 101 NOTIFY  
Event: message-summary  
Contact: sip:5678@10.10.200.227:5060  
Max-Forwards: 70  
Content-Type: text/plain  
Content-Length: 23  
  
Messages-Waiting: yes

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]  
[2] SIP/2.0 403 Forbidden  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: "Voicemail" <sip:5678@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>;tag=1354836998  
Date: Thu, 21 Jun 2007 18:00:27 GMT  
Call-ID: 1-18155@10.10.200.227  
CSeq: 101 NOTIFY  
Content-Length: 0



## 15.4 Access Control List, Deny INVITE with Replaces Header

Title: Access Control List, Deny INVITE with Replaces Header

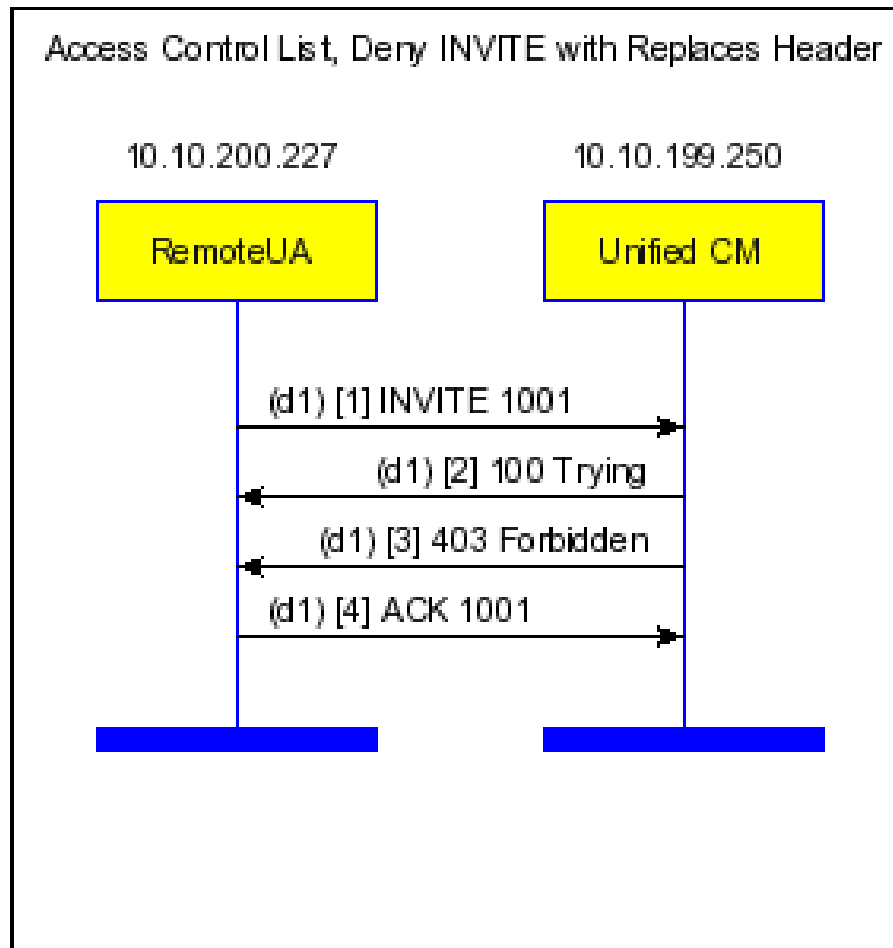
Description:

When a SIP trunk is configured not to allow Replaces header, an incoming INVITE with Replaces header to this trunk is rejected with 403.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = RemoteUA, IP = 10.10.200.227

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[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]  
**[1] INVITE sip:1001@10.10.199.250:5060 SIP/2.0**  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: <sip:5678@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>  
Call-ID: 1-11928@10.10.200.227  
CSeq: 1 INVITE  
Contact: sip:5678@10.10.200.227:5060  
Max-Forwards: 70  
Subject: Performance Test  
Content-Type: application/sdp  
Replaces: 42592@bobster.example.org;to-tag=7743;from-tag=6472  
Content-Length: 318

v=0  
o=CiscoSystemsCCM-SIP 2000 1000 IN IP4 10.10.193.222  
s=SIP Call  
c=IN IP4 10.10.193.222  
t=0 0  
m=audio 4000 RTP/AVP 2 0 8 18  
a=rtpmap:2 G726-32/8000  
a=ptime:120  
a=rtpmap:0 PCMU/8000  
a=ptime:40  
a=rtpmap:8 PCMA/8000  
a=ptime:40  
a=rtpmap:18 G729/8000  
a=ptime:60  
a=fmtp:18 annexa=yes;annexb=no  
a=sendonly

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]  
**[2] SIP/2.0 100 Trying**  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: <sip:5678@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>  
Date: Tue, 26 Jun 2007 16:04:16 GMT  
Call-ID: 1-11928@10.10.200.227  
CSeq: 1 INVITE  
Allow-Events: presence  
Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]  
**[3] SIP/2.0 403 Forbidden**  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: <sip:5678@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>;tag=397823258  
Date: Tue, 26 Jun 2007 16:04:16 GMT  
Call-ID: 1-11928@10.10.200.227  
CSeq: 1 INVITE  
Allow-Events: presence  
Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]  
**[4] ACK sip:1001@10.10.199.250:5060 SIP/2.0**  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: <sip:5678@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>;tag=397823258  
Call-ID: 1-11928@10.10.200.227  
CSeq: 1 ACK  
Contact: sip:5678@10.10.200.227:5060  
Max-Forwards: 70  
Subject: Performance Test  
Content-Length: 0

## 15.5 Access Control List, Deny REFER with Replaces Header

Title: Access Control List, Deny REFER with Replaces Header

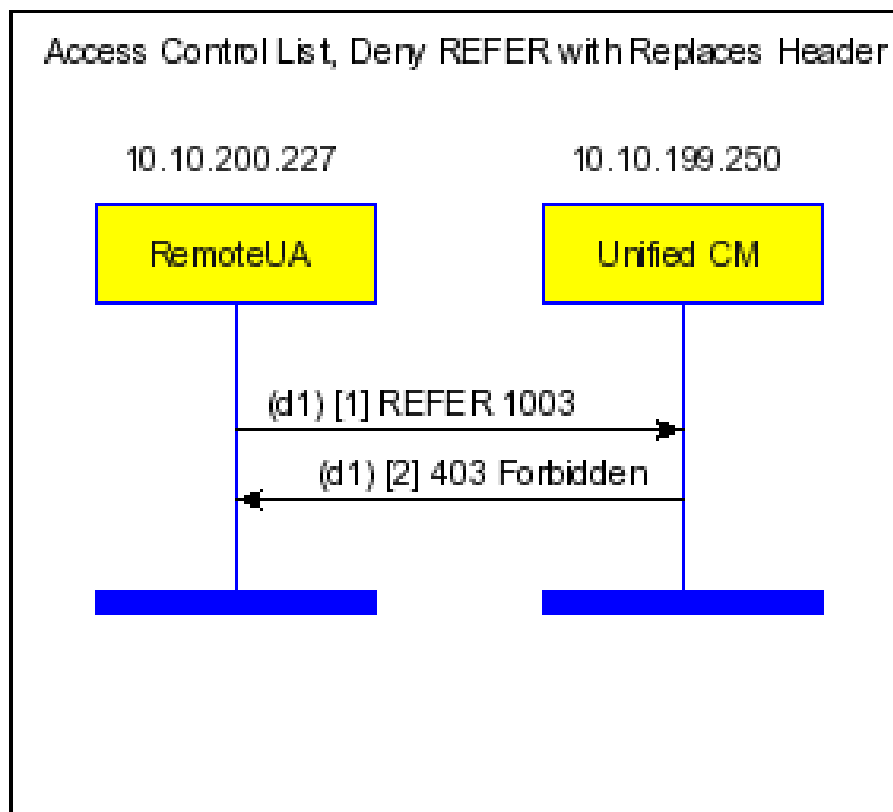
Description:

When a SIP trunk is configured not to allow Replaces header, an incoming REFER with Replaces header to this trunk is rejected with 403.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = RemoteUA, IP = 10.10.200.227

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[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]  
[1] **REFER sip:1003@10.10.199.250:5060 SIP/2.0**  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: 1100 <sip:1100@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>  
Call-ID: 1-12868@10.10.200.227  
Cseq: 103 REFER  
Contact: <sip:1100@10.10.200.227:5060>  
Refer-To: <sip:1009@10.10.199.250>  
Referred-By: <sip:1234@whatever.com>  
Max-Forwards: 70  
Subject: Performance Test  
Content-Length: 0

[[diagram](#)]    Call-ID: [[prev](#)] [[next](#)]  
[2] **SIP/2.0 403 Forbidden**  
Via: SIP/2.0/TCP 10.10.200.227:5060  
From: 1100 <sip:1100@10.10.200.227:5060>;tag=1  
To: <sip:1001@10.10.199.250:5060>;tag=1089420124  
Date: Tue, 26 Jun 2007 16:28:28 GMT  
Call-ID: 1-12868@10.10.200.227  
CSeq: 103 REFER  
Content-Length: 0  
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>

## 16. RSVP

### 16.1 Outgoing RSVP Call through SIP Trunk

Title: Outgoing RSVP Call through SIP Trunk

Description:

The scenario for a RSVP outgoing call from a Cisco Unified IP Phone to a UserAgent reachable through Cisco Unified CM's SIP Trunk.

The Cisco Unified IP Phone and the SipTrunk devices are in different locations and having RSVP policy=Mandatory between them.

During call setup, a RSVP agent shall be allocated for each device in a different location, which would provide rsvp media path as following:

```
Cisco Unified IP Phone<--unreserved media->RSVPAgent1(10.10.195.249)<--reserved media path--->RSVPAgent2(10.10.195.250)<--unreserved media->remoteUA
```

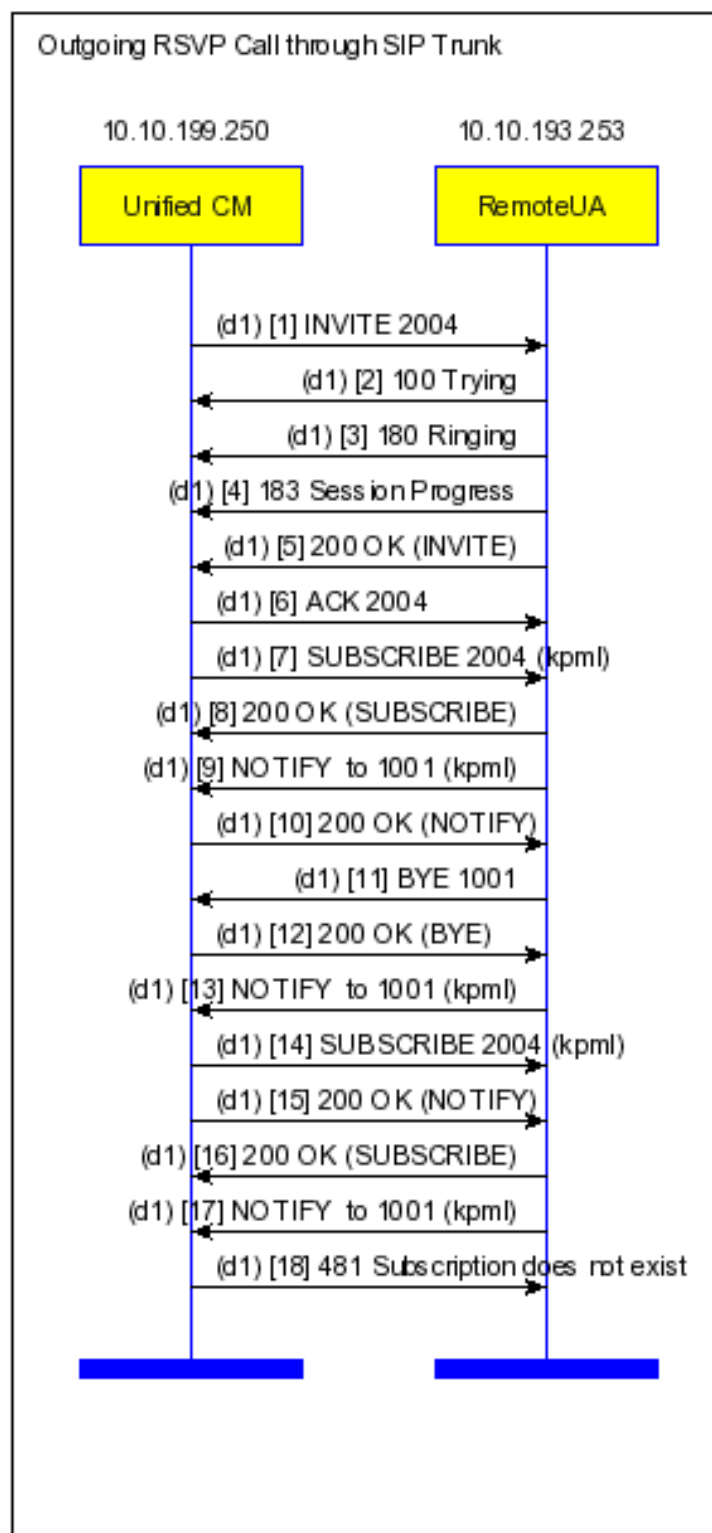
The RSVPAgent1 is catering to the Cisco Unified IP Phone's location. The RSVPAgent2 is catering to the Cisco Unified CM's SIP Trunk's location.

The rsvp reservation is relevant only between the location of Cisco Unified IP Phone & outgoing SipTrunk device. The standard rfc3312 for negotiation of the resources through preconditions is 'not' supported through the SIP trunk. Thus the remote is not made aware of the reservation.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = RemoteUA, IP = 10.10.193.253

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[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[1] INVITE sip:2004@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4b6fa6188c  
 Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814  
 To: <sip:2004@10.10.193.253>  
 Date: Mon, 02 Jul 2007 20:09:07 GMT  
 Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250  
 Supported: timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:1001@10.10.199.250:5060;transport=tcp>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4b6fa6188c  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814  
 To: <sip:2004@10.10.193.253>  
 Date: Mon, 02 Jul 2007 20:09:07 GMT  
 Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow-Events: presence  
 Content-Length: 0

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4b6fa6188c  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478  
 Date: Mon, 02 Jul 2007 20:09:07 GMT  
 Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Content-Length: 0

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4b6fa6188c  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478  
 Date: Mon, 02 Jul 2007 20:09:07 GMT  
 Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 Allow-Events: presence, kpml  
 Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/sdp  
 Content-Length: 346

v=0  
 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253  
 s=SIP Call  
 c=IN IP4 10.10.199.55  
 t=0 0  
 m=audio 30372 RTP/AVP 9 0 8 18 101  
 a=rtpmap:9 G722/8000  
 a=ptime:20  
 a=rtpmap:0 PCMU/8000  
 a=ptime:20  
 a=rtpmap:8 PCMA/8000  
 a=ptime:20  
 a=rtpmap:18 G729/8000  
 a=ptime:20  
 a=fmtp:18 annexb=no  
 a=rtpmap:101 telephone-event/8000  
 a=fmtp:101 0-15

[[diagram](#)] [Call-ID: \[prev\]](#) [[next](#)]

[5] SIP/2.0 200 OK

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```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4b6fa6188c
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478
Date: Mon, 02 Jul 2007 20:09:07 GMT
Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2004@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 346
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.55
t=0 0
m=audio 30372 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] ACK sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4c555c4334
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478
Date: Mon, 02 Jul 2007 20:09:07 GMT
Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 216
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.195.250
t=0 0
m=audio 18304 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] SUBSCRIBE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0**

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4d3e182246
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478
Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250
CSeq: 102 SUBSCRIBE
Date: Mon, 02 Jul 2007 20:09:10 GMT
User-Agent: Cisco-CCM6.0
Event: kpml
Expires: 7200
Contact: <sip:10.10.199.250:5060;transport=tcp>
Accept: application/kpml-response+xml
Max-Forwards: 70
Content-Type: application/kpml-request+xml
Content-Length: 370
```

```
<?xml version="1.0" encoding="UTF-8" ?>
<kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-request kpml-request.xsd" version="1.0">
```

```
<pattern interdigittimer="7260000" persist="persist">
```

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```

    <regex tag="dtmf">[x*#ABCD]</regex>
</pattern>

</kpml-request>

[diagram] Call-ID: [prev] [next]
[8] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4d3e182246
From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814
To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478
Date: Mon, 02 Jul 2007 20:09:10 GMT
Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250
CSeq: 102 SUBSCRIBE
Content-Length: 0
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Expires: 7200

[diagram] Call-ID: [prev] [next]
[9] NOTIFY sip:10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK6e7ca9e3f3
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814
Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250
CSeq: 101 NOTIFY
Max-Forwards: 70
Date: Mon, 02 Jul 2007 20:09:10 GMT
User-Agent: Cisco-CCM6.0
Event: kpml
Subscription-State: active;expires=7200
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Content-Length: 0

[diagram] Call-ID: [prev] [next]
[10] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK6e7ca9e3f3
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814
Date: Mon, 02 Jul 2007 20:09:10 GMT
Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250
CSeq: 101 NOTIFY
Content-Length: 0

[diagram] Call-ID: [prev] [next]
[11] BYE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK6f27e37339
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814
Date: Mon, 02 Jul 2007 20:09:10 GMT
Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250
User-Agent: Cisco-CCM6.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0

[diagram] Call-ID: [prev] [next]
[12] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK6f27e37339
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814
Date: Mon, 02 Jul 2007 20:10:07 GMT
Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250
CSeq: 102 BYE
Content-Length: 0

[diagram] Call-ID: [prev] [next]
[13] NOTIFY sip:10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK714b50a1c
From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478
To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814
Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Mon, 02 Jul 2007 20:10:07 GMT
User-Agent: Cisco-CCM6.0
Event: kpml
Subscription-State: terminated
Contact: <sip:2004@10.10.193.253:5060;transport=tcp>
Content-Length: 0

```

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[14] SUBSCRIBE sip:2004@10.10.193.253:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4e6dc75034  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478  
 Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250  
 CSeq: 103 SUBSCRIBE  
 Date: Mon, 02 Jul 2007 20:10:07 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: kpml  
 Expires: 0  
 Contact: <sip:10.10.199.250:5060;transport=tcp>  
 Max-Forwards: 70  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[15] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK714b50a1c  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814  
 Date: Mon, 02 Jul 2007 20:10:07 GMT  
 Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250  
 CSeq: 103 NOTIFY  
 Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[16] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4e6dc75034  
 From: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814  
 To: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478  
 Date: Mon, 02 Jul 2007 20:10:07 GMT  
 Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250  
 CSeq: 103 SUBSCRIBE  
 Content-Length: 0  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Expires: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[17] NOTIFY sip:10.10.199.250:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK72741b439c  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814  
 Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250  
 CSeq: 104 NOTIFY  
 Max-Forwards: 70  
 Date: Mon, 02 Jul 2007 20:10:07 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: kpml  
 Subscription-State: terminated;reason=timeout  
 Contact: <sip:2004@10.10.193.253:5060;transport=tcp>  
 Content-Type: application/kpml-response+xml  
 Content-Length: 348

```
<?xml version="1.0" encoding="UTF-8" ?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-response kpml-response.xsd" code="487" digits=""
forced_flush="false" suppressed="false" tag="dtmf" text="Subscription Expired" version="1.0"/>
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[18] SIP/2.0 481 Subscription does not exist

Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK72741b439c  
 From: <sip:2004@10.10.193.253>;tag=5f89d12c-9bbb-48d0-8059-7059bfe19b7c-18227478  
 To: <sip:1001@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226814  
 Date: Mon, 02 Jul 2007 20:10:07 GMT  
 Call-ID: 154af900-68915b63-8a0-fac712ac@10.10.199.250  
 CSeq: 104 NOTIFY  
 Content-Length: 0

## 17. Publish

### 17.1 Basic PUBLISH Operations

Title: Basic PUBLISH Operations

Description:

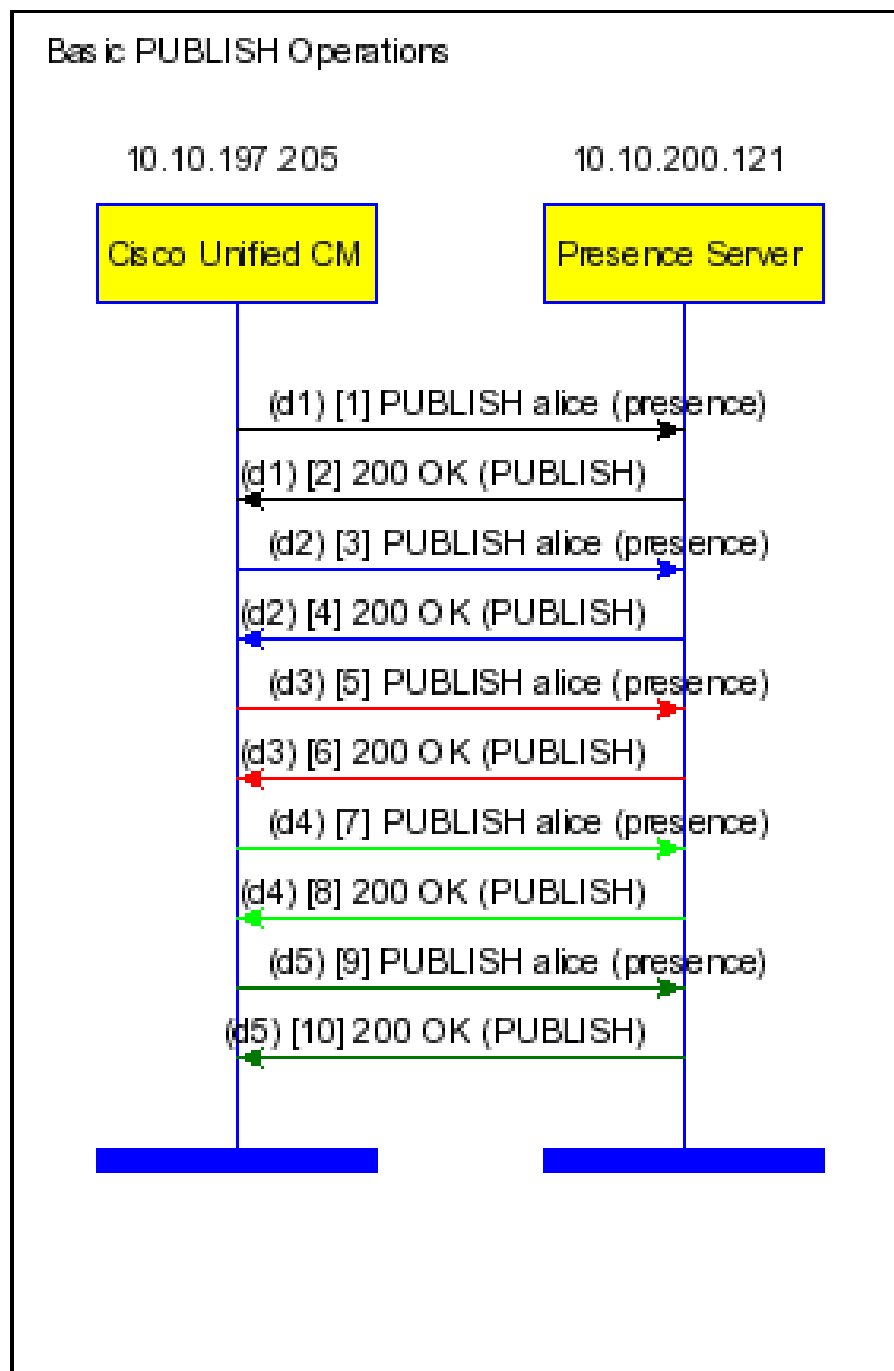
Cisco Unified CM SIP trunk supports line appearance based presence information publication by using SIP PUBLISH method. This flow shows the basic PUBLISH operations for a given line appearance.

- Directory number 4001 on IP PhoneA is associated with Presence Server's user alice.
- When PhoneA registers with CM, SIP trunk sends out creates the publication with no etags.
- After the refresh timer expires, SIP trunk refreshes the publication with empty presence body.
- When PhoneA goes offhook/onhook, SIP trunk modifies the publication with new presence bodies.
- After PhoneA unregisters from CM, SIP trunk deletes the publication with 0 Expires header.

Configuration:

Node = Cisco Unified CM, IP = 10.10.197.205

Node = Presence Server, IP = 10.10.200.121

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[1] PUBLISH sip:alice@10.10.200.121:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK652c0e687f  
 From: <sip:alice@10.10.197.205>;tag=569604502  
 To: <sip:alice@10.10.200.121>  
 Call-ID: 96730300-5f017047-28-cdc512ac@10.10.197.205  
 CSeq: 101 PUBLISH  
 Max-Forwards: 70  
 Date: Thu, 08 Mar 2007 20:21:27 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: presence  
 Expires: 3600  
 Content-Type: application/pidf+xml  
 Content-Length: 838

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.197.205"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-faf04d38-bd0a-a3ee-1645-f09409db4305">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=faf04d38-bd0a-a3ee-1645-
f09409db4305;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
    <model>Cisco 7960</model>
    <timestamp>2007-03-08T20:21:27Z</timestamp>
  </tuple>
</presence>
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK652c0e687f  
 From: <sip:alice@10.10.197.205>;tag=569604502  
 To: <sip:alice@10.10.200.121>;tag=4  
 Call-ID: 96730300-5f017047-28-cdc512ac@10.10.197.205  
 CSeq: 101 PUBLISH  
 Expires: 60  
 SIP-ETag: 4  
 Contact: <sip:10.10.200.121:5060;transport=UDP>  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[3] PUBLISH sip:alice@10.10.200.121:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK665612099d  
 From: <sip:alice@10.10.197.205>;tag=2127368877  
 To: <sip:alice@10.10.200.121>  
 Call-ID: b73b5880-5f01707e-29-cdc512ac@10.10.197.205  
 CSeq: 101 PUBLISH  
 Max-Forwards: 70  
 Date: Thu, 08 Mar 2007 20:22:22 GMT  
 User-Agent: Cisco-CCM6.0  
 Event: presence  
 Expires: 60  
 SIP-If-Match: 4  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK665612099d  
 From: <sip:alice@10.10.197.205>;tag=2127368877  
 To: <sip:alice@10.10.200.121>;tag=5  
 Call-ID: b73b5880-5f01707e-29-cdc512ac@10.10.197.205  
 CSeq: 101 PUBLISH  
 Expires: 60  
 SIP-ETag: 5  
 Contact: <sip:10.10.200.121:5060;transport=UDP>  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[5] PUBLISH sip:alice@10.10.200.121:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK67533f8fe7  
 From: <sip:alice@10.10.197.205>;tag=1539219134  
 To: <sip:alice@10.10.200.121>  
 Call-ID: c3bfb100-5f017093-2a-cdc512ac@10.10.197.205  
 CSeq: 101 PUBLISH

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```

Max-Forwards: 70
Date: Thu, 08 Mar 2007 20:22:43 GMT
User-Agent: Cisco-CCM6.0
Event: presence
Expires: 60
SIP-If-Match: 5
Content-Type: application/pidf+xml
Content-Length: 883

```

```

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.197.205"
  xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
  xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
  xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-faf04d38-bd0a-a3ee-1645-f09409db4305">
    <status>
      <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=faf04d38-bd0a-a3ee-1645-
f09409db4305;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
    <model>Cisco 7960</model>
    <timestamp>2007-03-08T20:22:43Z</timestamp>
  </tuple>
</presence>

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[6] SIP/2.0 200 OK**

```

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK67533f8fe7
From: <sip:alice@10.10.197.205>;tag=1539219134
To: <sip:alice@10.10.200.121>;tag=6
Call-ID: c3bfb100-5f017093-2a-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Expires: 60
SIP-ETag: 6
Contact: <sip:10.10.200.121:5060;transport=UDP>
Content-Length: 0

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[7] PUBLISH sip:alice@10.10.200.121:5060 SIP/2.0**

```

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK6857128f94
From: <sip:alice@10.10.197.205>;tag=1216130300
To: <sip:alice@10.10.200.121>
Call-ID: c5897480-5f017096-2b-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Thu, 08 Mar 2007 20:22:46 GMT
User-Agent: Cisco-CCM6.0
Event: presence
Expires: 60
SIP-If-Match: 6
Content-Type: application/pidf+xml
Content-Length: 838

```

```

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.197.205"
  xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
  xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
  xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-faf04d38-bd0a-a3ee-1645-f09409db4305">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=faf04d38-bd0a-a3ee-1645-
f09409db4305;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
    <model>Cisco 7960</model>
    <timestamp>2007-03-08T20:22:46Z</timestamp>
  </tuple>
</presence>

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

```

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK6857128f94
From: <sip:alice@10.10.197.205>;tag=1216130300

```



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To: <sip:alice@10.10.200.121>;tag=7  
Call-ID: c5897480-5f017096-2b-cdc512ac@10.10.197.205  
CSeq: 101 PUBLISH  
Expires: 60  
SIP-ETag: 7  
Contact: <sip:10.10.200.121:5060;transport=UDP>  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)  
**[9] PUBLISH sip:alice@10.10.200.121:5060 SIP/2.0**  
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK6955747662  
From: <sip:alice@10.10.197.205>;tag=353731281  
To: <sip:alice@10.10.200.121>  
Call-ID: cfab7300-5f0170a7-2c-cdc512ac@10.10.197.205  
CSeq: 101 PUBLISH  
Max-Forwards: 70  
Date: Thu, 08 Mar 2007 20:23:03 GMT  
User-Agent: Cisco-CCM6.0  
Event: presence  
Expires: 0  
SIP-If-Match: 7  
Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)  
**[10] SIP/2.0 200 OK**  
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK6955747662  
From: <sip:alice@10.10.197.205>;tag=353731281  
To: <sip:alice@10.10.200.121>;tag=8  
Call-ID: cfab7300-5f0170a7-2c-cdc512ac@10.10.197.205  
CSeq: 101 PUBLISH  
Expires: 60  
SIP-ETag: 8  
Contact: <sip:10.10.200.121:5060;transport=UDP>  
Content-Length: 0

## 17.2 PUBLISH with Shared Line, A Holds and B Resumes

Title: PUBLISH with Shared Line, A Holds and B Resumes

### Description:

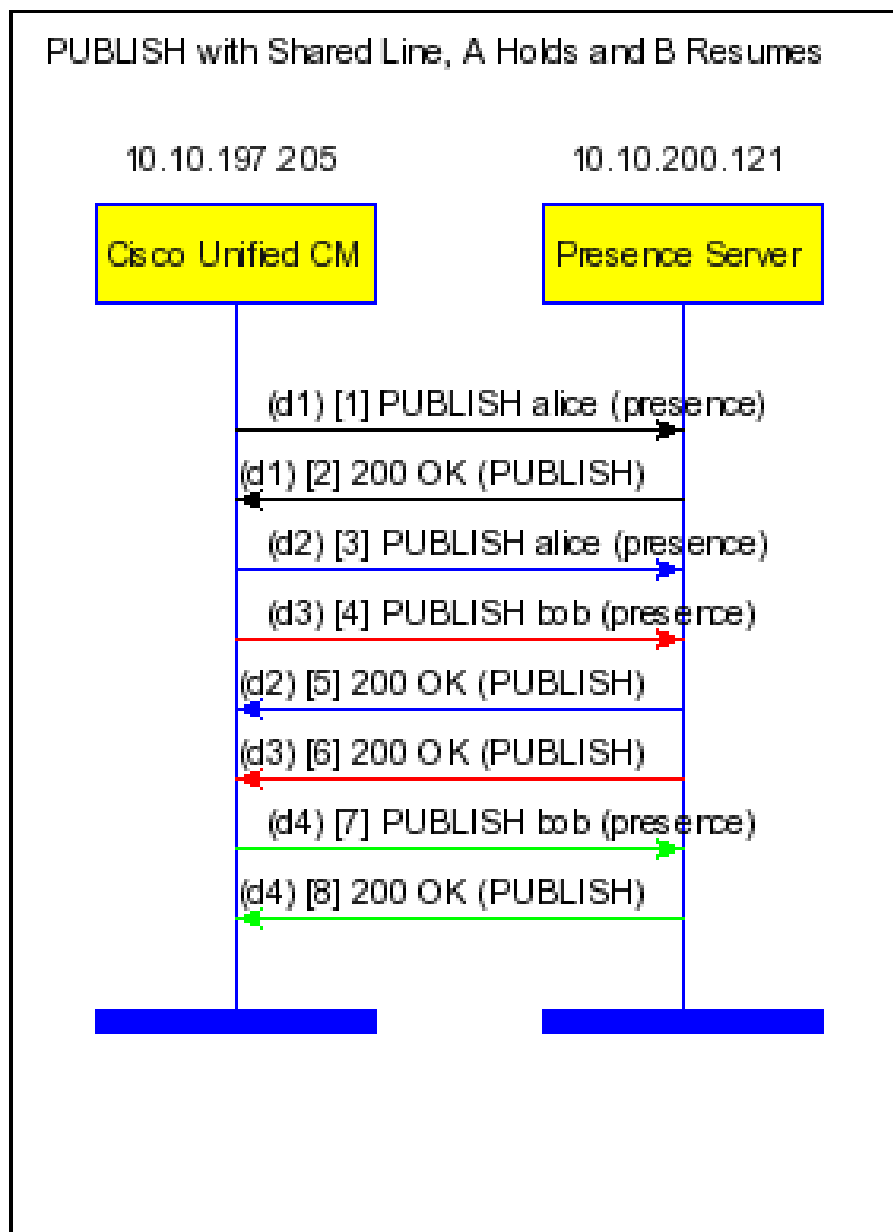
Since presence publication is line appearance based, the same directory number on different phones are treated separately.

- Directory number 4001 on IP PhoneA is associated with Presence Server's user alice.
- Directory number 4001 on IP PhoneB is associated with Presence Server's user bob.
- Alice made a phone call, since IP PhoneA owns the call, 4001 on PhoneA is published as busy.
- Alice hold the call. No new PUBLISH message since PhoneA still owns the call.
- Bob resumes the call from PhoneB, so PhoneB takes over the call ownership from PhoneA. 4001 on PhoneA is published as idle, and 4001 on PhoneB is published as busy.
- Bob hangs up the phone. 4001 on PhoneB is published as idle.

### Configuration:

Node = Cisco Unified CM, IP = 10.10.197.205

Node = Presence Server, IP = 10.10.200.121

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[1] PUBLISH sip:alice@10.10.200.121:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK741fefe54

From: <sip:alice@10.10.197.205>;tag=1481958193

To: <sip:alice@10.10.200.121>

Call-ID: 33cf3680-5f0174aa-8-cdc512ac@10.10.197.205

CSeq: 101 PUBLISH

Max-Forwards: 70

Date: Thu, 08 Mar 2007 20:40:10 GMT

User-Agent: Cisco-CCM6.0

Event: presence

Expires: 3600

SIP-If-Match: 19

Content-Type: application/pidf+xml

Content-Length: 883

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.197.205"
  xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd"
  xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
  xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-faf04d38-bd0a-a3ee-1645-f09409db4305">
    <status>
      <basic><closed></basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=faf04d38-bd0a-a3ee-1645-
f09409db4305;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
    <model>Cisco 7960</model>
    <timestamp>2007-03-08T20:40:10Z</timestamp>
  </tuple>
</presence>
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[2] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK741fefe54

From: <sip:alice@10.10.197.205>;tag=1481958193

To: <sip:alice@10.10.200.121>;tag=20

Call-ID: 33cf3680-5f0174aa-8-cdc512ac@10.10.197.205

CSeq: 101 PUBLISH

Expires: 3600

SIP-ETag: 20

Contact: <sip:10.10.200.121:5060;transport=UDP>

Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[3] PUBLISH sip:alice@10.10.200.121:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK8691fb172

From: <sip:alice@10.10.197.205>;tag=1216714818

To: <sip:alice@10.10.200.121>

Call-ID: 3b8edb00-5f0174b7-9-cdc512ac@10.10.197.205

CSeq: 101 PUBLISH

Max-Forwards: 70

Date: Thu, 08 Mar 2007 20:40:23 GMT

User-Agent: Cisco-CCM6.0

Event: presence

Expires: 3600

SIP-If-Match: 20

Content-Type: application/pidf+xml

Content-Length: 838

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.197.205"
  xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd"
  xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
  xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-faf04d38-bd0a-a3ee-1645-f09409db4305">
    <status>
      <basic><open></basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=faf04d38-bd0a-a3ee-1645-
f09409db4305;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
    <model>Cisco 7960</model>
    <timestamp>2007-03-08T20:40:23Z</timestamp>
  </tuple>
</presence>
```

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```
</tuple>
</presence>
```

```
[diagram] Call-ID: [prev] [next]
[4] PUBLISH sip:bob@10.10.200.121:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK9621b032b
From: <sip:bob@10.10.197.205>;tag=83696066
To: <sip:bob@10.10.200.121>
Call-ID: 3b8edb00-5f0174b7-a-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Thu, 08 Mar 2007 20:40:23 GMT
User-Agent: Cisco-CCM6.0
Event: presence
Expires: 3600
SIP-If-Match: 17
Content-Type: application/pidf+xml
Content-Length: 881
```

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="bob@10.10.197.205"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-5041f38c-1fb6-31db-e2bb-90030a46d89e">
    <status>
      <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=5041f38c-1fb6-31db-e2bb-90030a46d89e;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
    <model>Cisco 7960</model>
    <timestamp>2007-03-08T20:40:23Z</timestamp>
  </tuple>
</presence>
```

```
[diagram] Call-ID: [prev] [next]
[5] SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK8691fb172
From: <sip:alice@10.10.197.205>;tag=1216714818
To: <sip:alice@10.10.200.121>;tag=21
Call-ID: 3b8edb00-5f0174b7-9-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Expires: 3600
SIP-ETag: 21
Contact: <sip:10.10.200.121:5060;transport=UDP>
Content-Length: 0
```

```
[diagram] Call-ID: [prev] [next]
[6] SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK9621b032b
From: <sip:bob@10.10.197.205>;tag=83696066
To: <sip:bob@10.10.200.121>;tag=22
Call-ID: 3b8edb00-5f0174b7-a-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Expires: 3600
SIP-ETag: 22
Contact: <sip:10.10.200.121:5060;transport=UDP>
Content-Length: 0
```

```
[diagram] Call-ID: [prev] [next]
[7] PUBLISH sip:bob@10.10.200.121:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bKa4db3f2c4
From: <sip:bob@10.10.197.205>;tag=645063416
To: <sip:bob@10.10.200.121>
Call-ID: 3d589e80-5f0174ba-b-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Thu, 08 Mar 2007 20:40:26 GMT
User-Agent: Cisco-CCM6.0
Event: presence
Expires: 3600
SIP-If-Match: 22
Content-Type: application/pidf+xml
Content-Length: 836
```

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
```

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```

<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="bob@10.10.197.205"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-5041f38c-1fb6-31db-e2bb-90030a46d89e">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=5041f38c-1fb6-31db-e2bb-
90030a46d89e;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
    <model>Cisco 7960</model>
    <timestamp>2007-03-08T20:40:26Z</timestamp>
  </tuple>
</presence>

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

```

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bKa4db3f2c4
From: <sip:bob@10.10.197.205>;tag=645063416
To: <sip:bob@10.10.200.121>;tag=23
Call-ID: 3d589e80-5f0174ba-b-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Expires: 3600
SIP-ETag: 23
Contact: <sip:10.10.200.121:5060;transport=UDP>
Content-Length: 0

```

### 17.3 PUBLISH with Shared Line, A Holds and B Selects

Title: PUBLISH with Shared Line, A Holds and B Selects

Description:

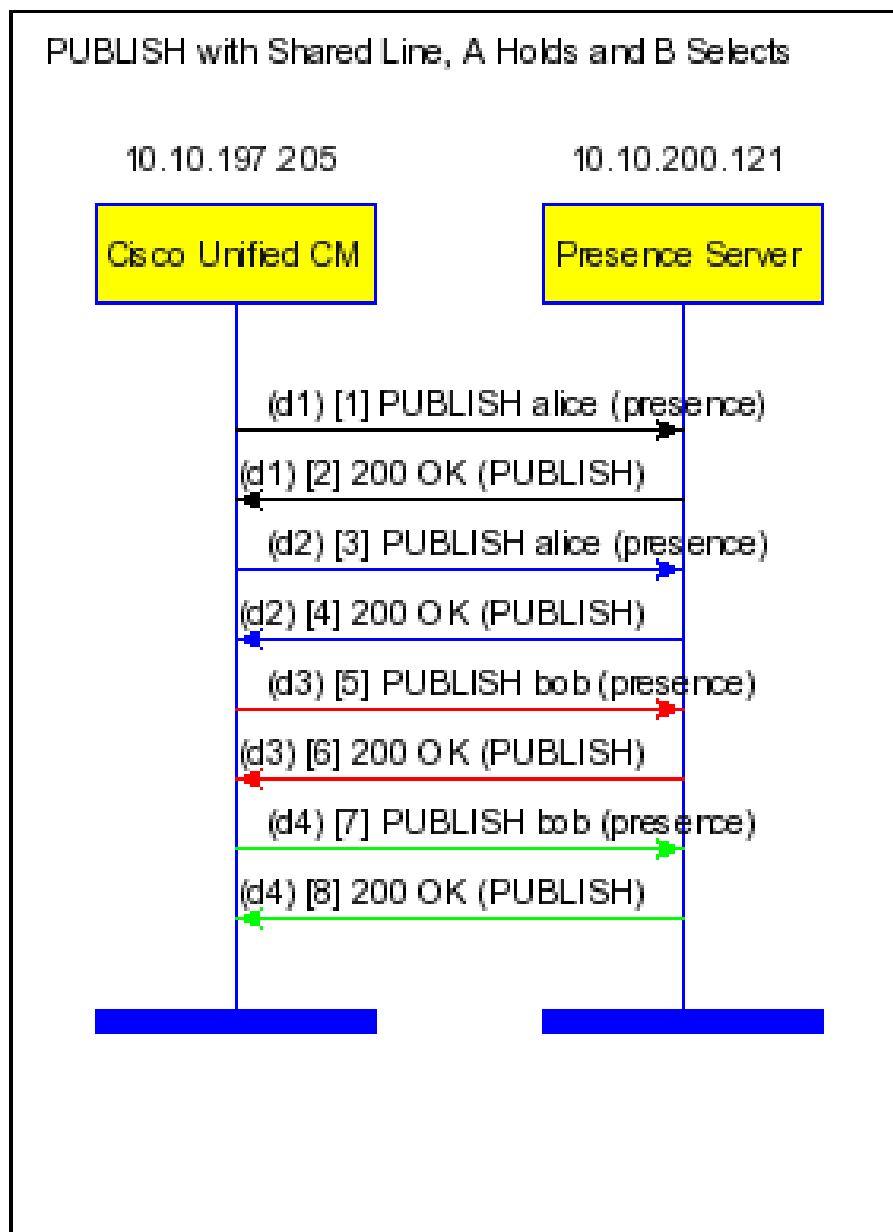
Since presence publication is line appearance based, the same directory number on different phones are treated separately.

- Directory number 4001 on IP PhoneA is associated with Presence Server's user alice.
- Directory number 4001 on IP PhoneB is associated with Presence Server's user bob.
- Alice made a phone call, since IP PhoneA owns the call, 4001 on PhoneA is published as busy.
- Alice hold the call. No new PUBLISH message since PhoneA still owns the call.
- Bob selects the call from PhoneB, so PhoneB takes over the call ownership from PhoneA. 4001 on PhoneA is published as idle, and 4001 on PhoneB is published as busy.
- Bob resumes the call. No new PUBLISH message since PhoneB still owns the call.
- Bob hangs up the phone. 4001 on PhoneB is published as idle.

Configuration:

Node = Cisco Unified CM, IP = 10.10.197.205

Node = Presence Server, IP = 10.10.200.121

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[1] PUBLISH sip:alice@10.10.200.121:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bKf76652d82

From: <sip:alice@10.10.197.205>;tag=1262611232

To: <sip:alice@10.10.200.121>

Call-ID: c8399900-5f0175a3-12-cdc512ac@10.10.197.205

CSeq: 101 PUBLISH

Max-Forwards: 70

Date: Thu, 08 Mar 2007 20:44:19 GMT

User-Agent: Cisco-CCM6.0

Event: presence

Expires: 3600

SIP-If-Match: 21

Content-Type: application/pidf+xml

Content-Length: 883

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.197.205"
  xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd"
  xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
  xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-faf04d38-bd0a-a3ee-1645-f09409db4305">
    <status>
      <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=faf04d38-bd0a-a3ee-1645-
f09409db4305;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
    <model>Cisco 7960</model>
    <timestamp>2007-03-08T20:44:19Z</timestamp>
  </tuple>
</presence>
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bKf76652d82

From: <sip:alice@10.10.197.205>;tag=1262611232

To: <sip:alice@10.10.200.121>;tag=24

Call-ID: c8399900-5f0175a3-12-cdc512ac@10.10.197.205

CSeq: 101 PUBLISH

Expires: 3600

SIP-ETag: 24

Contact: <sip:10.10.200.121:5060;transport=UDP>

Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[3] PUBLISH sip:alice@10.10.200.121:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK10c247f3b

From: <sip:alice@10.10.197.205>;tag=398171807

To: <sip:alice@10.10.200.121>

Call-ID: d5ef1e80-5f0175ba-13-cdc512ac@10.10.197.205

CSeq: 101 PUBLISH

Max-Forwards: 70

Date: Thu, 08 Mar 2007 20:44:42 GMT

User-Agent: Cisco-CCM6.0

Event: presence

Expires: 3600

SIP-If-Match: 24

Content-Type: application/pidf+xml

Content-Length: 838

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.197.205"
  xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd"
  xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
  xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-faf04d38-bd0a-a3ee-1645-f09409db4305">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=faf04d38-bd0a-a3ee-1645-
f09409db4305;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
    <model>Cisco 7960</model>
    <timestamp>2007-03-08T20:44:42Z</timestamp>
  </tuple>
</presence>
```

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```
</tuple>
</presence>
```

```
[diagram] Call-ID: [prev] [next]
[4] SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK10c247f3b
From: <sip:alice@10.10.197.205>;tag=398171807
To: <sip:alice@10.10.200.121>;tag=25
Call-ID: d5ef1e80-5f0175ba-13-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Expires: 3600
SIP-ETag: 25
Contact: <sip:10.10.200.121:5060;transport=UDP>
Content-Length: 0
```

```
[diagram] Call-ID: [prev] [next]
[5] PUBLISH sip:bob@10.10.200.121:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK117ecc877d
From: <sip:bob@10.10.197.205>;tag=14554351
To: <sip:bob@10.10.200.121>
Call-ID: d5ef1e80-5f0175ba-14-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Thu, 08 Mar 2007 20:44:42 GMT
User-Agent: Cisco-CCM6.0
Event: presence
Expires: 3600
SIP-If-Match: 23
Content-Type: application/pidf+xml
Content-Length: 881
```

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="bob@10.10.197.205"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-5041f38c-1fb6-31db-e2bb-90030a46d89e">
    <status>
      <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=5041f38c-1fb6-31db-e2bb-90030a46d89e;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
    <model>Cisco 7960</model>
    <timestamp>2007-03-08T20:44:42Z</timestamp>
  </tuple>
</presence>
```

```
[diagram] Call-ID: [prev] [next]
[6] SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK117ecc877d
From: <sip:bob@10.10.197.205>;tag=14554351
To: <sip:bob@10.10.200.121>;tag=26
Call-ID: d5ef1e80-5f0175ba-14-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Expires: 3600
SIP-ETag: 26
Contact: <sip:10.10.200.121:5060;transport=UDP>
Content-Length: 0
```

```
[diagram] Call-ID: [prev] [next]
[7] PUBLISH sip:bob@10.10.200.121:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK1217f837f4
From: <sip:bob@10.10.197.205>;tag=129127362
To: <sip:bob@10.10.200.121>
Call-ID: df788680-5f0175ca-15-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Thu, 08 Mar 2007 20:44:58 GMT
User-Agent: Cisco-CCM6.0
Event: presence
Expires: 3600
SIP-If-Match: 26
Content-Type: application/pidf+xml
Content-Length: 836
```

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
```

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```

<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="bob@10.10.197.205"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-5041f38c-1fb6-31db-e2bb-90030a46d89e">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=5041f38c-1fb6-31db-e2bb-
90030a46d89e;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
    <model>Cisco 7960</model>
    <timestamp>2007-03-08T20:44:58Z</timestamp>
  </tuple>
</presence>

```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[8] SIP/2.0 200 OK**

```

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK1217f837f4
From: <sip:bob@10.10.197.205>;tag=129127362
To: <sip:bob@10.10.200.121>;tag=27
Call-ID: df788680-5f0175ca-15-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Expires: 3600
SIP-ETag: 27
Contact: <sip:10.10.200.121:5060;transport=UDP>
Content-Length: 0

```

## 17.4 PUBLISH Support for Mobility

Title: PUBLISH Support for Mobility

Description:

This flow shows the PUBLISH support for mobility.

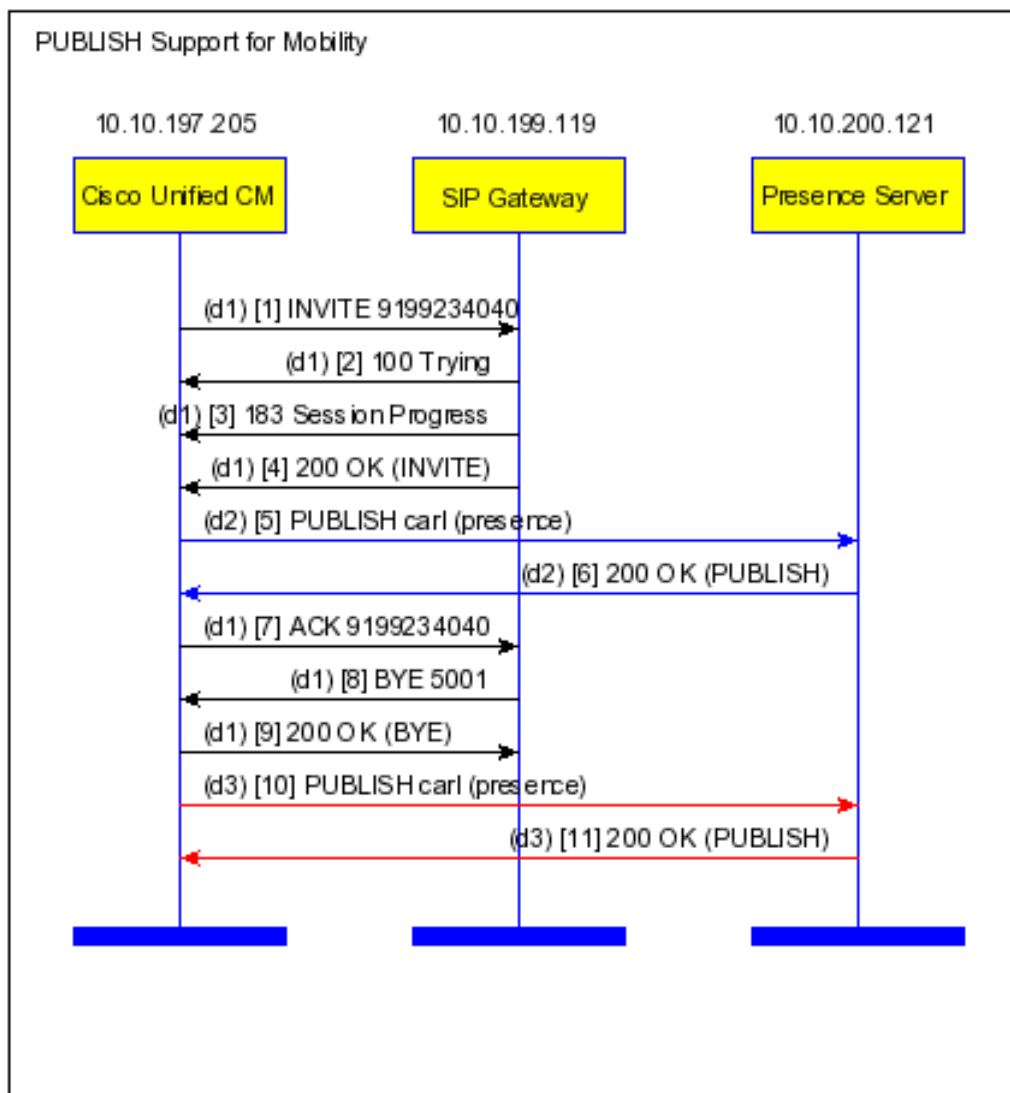
- Directory number 4001 is associated with a remote destination profile, which points to a mobile phone number 9199234040, connected to Unified CM through a SIP Gateway.
- The remote profile is associated with user carl.
- When 4001 is called, mobile number 9199234040 also rings.
- If the mobile phone answers the call, busy status is published. Since the remote destination is a mobile phone, the mobile number is in the PUBLISH message.
- After the call is terminated, idle status is published

Configuration:

Node = Cisco Unified CM, IP = 10.10.197.205

Node = Presence Server, IP = 10.10.200.121

Node = SIP Gateway, IP = 10.10.199.119

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[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[1] INVITE sip:9199234040@10.10.199.119:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK39357718e1  
 Remote-Party-ID: <sip:5001@10.10.197.205>;party=calling;screen=yes;privacy=off  
 From: <sip:5001@10.10.197.205>;tag=f0b6763c-24e1-4199-9bf6-98b785fdb2d8-24372571  
 To: <sip:9199234040@10.10.199.119>  
 Date: Wed, 11 Apr 2007 15:54:20 GMT  
 Call-ID: e7a86380-61d104ac-15-cdc512ac@10.10.197.205  
 Supported: 100rel,timer,replaces  
 Min-SE: 1800  
 User-Agent: Cisco-CCM6.0  
 Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH  
 CSeq: 101 INVITE  
 Contact: <sip:5001@10.10.197.205:5060>  
 Expires: 180  
 Allow-Events: presence  
 Session-Expires: 1800  
 Max-Forwards: 70  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK39357718e1  
 From: <sip:5001@10.10.197.205>;tag=f0b6763c-24e1-4199-9bf6-98b785fdb2d8-24372571  
 To: <sip:9199234040@10.10.199.119>;tag=71523EA4-1F1A  
 Date: Wed, 11 Apr 2007 15:54:20 GMT  
 Call-ID: e7a86380-61d104ac-15-cdc512ac@10.10.197.205  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow-Events: telephone-event  
 Content-Length: 0

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK39357718e1  
 From: <sip:5001@10.10.197.205>;tag=f0b6763c-24e1-4199-9bf6-98b785fdb2d8-24372571  
 To: <sip:9199234040@10.10.199.119>;tag=71523EA4-1F1A  
 Date: Wed, 11 Apr 2007 15:54:20 GMT  
 Call-ID: e7a86380-61d104ac-15-cdc512ac@10.10.197.205  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Allow-Events: telephone-event  
 Contact: <sip:9199234040@10.10.199.119:5060>  
 Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 385

v=0  
 o=CiscoSystemsSIP-GW-UserAgent 4299 5639 IN IP4 10.10.199.119  
 s=SIP Call  
 c=IN IP4 10.10.199.119  
 t=0 0  
 m=audio 16974 RTP/AVP 18 0 8 4 15 3 19  
 c=IN IP4 10.10.199.119  
 a=rtpmap:18 G729/8000  
 a=fmtp:18 annexb=no  
 a=rtpmap:0 PCMU/8000  
 a=rtpmap:8 PCMA/8000  
 a=rtpmap:4 G723/8000  
 a=fmtp:4 bitrate=6.3;annexa=no  
 a=rtpmap:15 G728/8000  
 a=rtpmap:3 GSM/8000  
 a=rtpmap:19 CN/8000

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK39357718e1  
 From: <sip:5001@10.10.197.205>;tag=f0b6763c-24e1-4199-9bf6-98b785fdb2d8-24372571  
 To: <sip:9199234040@10.10.199.119>;tag=71523EA4-1F1A  
 Date: Wed, 11 Apr 2007 15:54:20 GMT  
 Call-ID: e7a86380-61d104ac-15-cdc512ac@10.10.197.205  
 Server: Cisco-SIPGateway/IOS-12.x  
 CSeq: 101 INVITE  
 Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER  
 Allow-Events: telephone-event  
 Contact: <sip:9199234040@10.10.199.119:5060>  
 Supported: replaces  
 Session-Expires: 1800;refresher=uac  
 Require: timer

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Content-Type: application/sdp  
 Content-Disposition: session;handling=required  
 Content-Length: 385

```
v=0
o=CiscoSystemsSIP-GW-UserAgent 4299 5639 IN IP4 10.10.199.119
s=SIP Call
c=IN IP4 10.10.199.119
t=0 0
m=audio 16974 RTP/AVP 18 0 8 4 15 3 19
c=IN IP4 10.10.199.119
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:4 G723/8000
a=fmtp:4 bitrate=6.3;annexa=no
a=rtpmap:15 G728/8000
a=rtpmap:3 GSM/8000
a=rtpmap:19 CN/8000
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[5] PUBLISH sip:carl@10.10.200.121:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK3a7d2c1ff9
From: <sip:carl@10.10.197.205>;tag=1498770524
To: <sip:carl@10.10.200.121>
Call-ID: ee36db00-61d104b7-16-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Wed, 11 Apr 2007 15:54:31 GMT
User-Agent: Cisco-CCM6.0
Event: presence
Expires: 3600
SIP-If-Match: 5
Content-Type: application/pidf+xml
Content-Length: 897
```

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="carl@10.10.197.205"
  xmlns:r="urn:ietf:params:xml:ns:pidf:status:rp" xmlns:ce="urn:cisco:params:xml:ns:pidf:rp"
  xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
  xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-67e74c18-fdcf-a399-d979-ce5e73b54ae6">
    <status>
      <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=67e74c18-fdcf-a399-d979-
ce5e73b54ae6;npkid=dfebe739-0e22-29d5-4711-723e704d014b;mobile=9199234040</contact>
    <model>unknown</model>
    <timestamp>2007-04-11T15:54:31Z</timestamp>
  </tuple>
</presence>
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[6] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK3a7d2c1ff9
From: <sip:carl@10.10.197.205>;tag=1498770524
To: <sip:carl@10.10.200.121>;tag=6
Call-ID: ee36db00-61d104b7-16-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Expires: 3600
SIP-ETag: 6
Contact: <sip:10.10.200.121:5060;transport=UDP>
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

[7] ACK sip:9199234040@10.10.199.119:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK3b576af57d
From: <sip:5001@10.10.197.205>;tag=f0b6763c-24e1-4199-9bf6-98b785fdb2d8-24372571
To: <sip:9199234040@10.10.199.119>;tag=71523EA4-1F1A
Date: Wed, 11 Apr 2007 15:54:20 GMT
Call-ID: e7a86380-61d104ac-15-cdc512ac@10.10.197.205
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
```

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Content-Length: 160

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.197.205
s=SIP Call
c=IN IP4 10.10.193.223
t=0 0
m=audio 19288 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

```
[8] BYE sip:5001@10.10.197.205:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.119:5060;branch=z9hG4bKBF3F2
From: <sip:9199234040@10.10.199.119>;tag=71523EA4-1F1A
To: <sip:5001@10.10.197.205>;tag=f0b6763c-24e1-4199-9bf6-98b785fdb2d8-24372571
Date: Wed, 11 Apr 2007 15:54:31 GMT
Call-ID: e7a86380-61d104ac-15-cdc512ac@10.10.197.205
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 70
Timestamp: 1176306878
CSeq: 101 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

```
[9] SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.10.199.119:5060;branch=z9hG4bKBF3F2
From: <sip:9199234040@10.10.199.119>;tag=71523EA4-1F1A
To: <sip:5001@10.10.197.205>;tag=f0b6763c-24e1-4199-9bf6-98b785fdb2d8-24372571
Date: Wed, 11 Apr 2007 15:54:38 GMT
Call-ID: e7a86380-61d104ac-15-cdc512ac@10.10.197.205
Timestamp: 1176306878
CSeq: 101 BYE
Content-Length: 0
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

```
[10] PUBLISH sip:carl@10.10.200.121:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK3c15bb104d
From: <sip:carl@10.10.197.205>;tag=900339516
To: <sip:carl@10.10.200.121>
Call-ID: f858d980-61d104c8-17-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Wed, 11 Apr 2007 15:54:48 GMT
User-Agent: Cisco-CCM6.0
Event: presence
Expires: 3600
SIP-If-Match: 6
Content-Type: application/pidf+xml
Content-Length: 852
```

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="carl@10.10.197.205"
  xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd"
  xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
  xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfefe739-0e22-29d5-4711-723e704d014b-67e74c18-fdcf-a399-d979-ce5e73b54ae6">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=67e74c18-fdcf-a399-d979-
ce5e73b54ae6;npid=dfefe739-0e22-29d5-4711-723e704d014b;mobile=9199234040</contact>
    <model>unknown</model>
    <timestamp>2007-04-11T15:54:48Z</timestamp>
  </tuple>
</presence>
```

[[diagram](#)] Call-ID: [[prev](#)] [[next](#)]

```
[11] SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK3c15bb104d
From: <sip:carl@10.10.197.205>;tag=900339516
To: <sip:carl@10.10.200.121>;tag=7
Call-ID: f858d980-61d104c8-17-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Expires: 3600
SIP-ETag: 7
```



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Contact: <sip:10.10.200.121:5060;transport=UDP>  
Content-Length: 0

## 17.5 PUBLISH Support for DND

Title: PUBLISH Support for DND

Description:

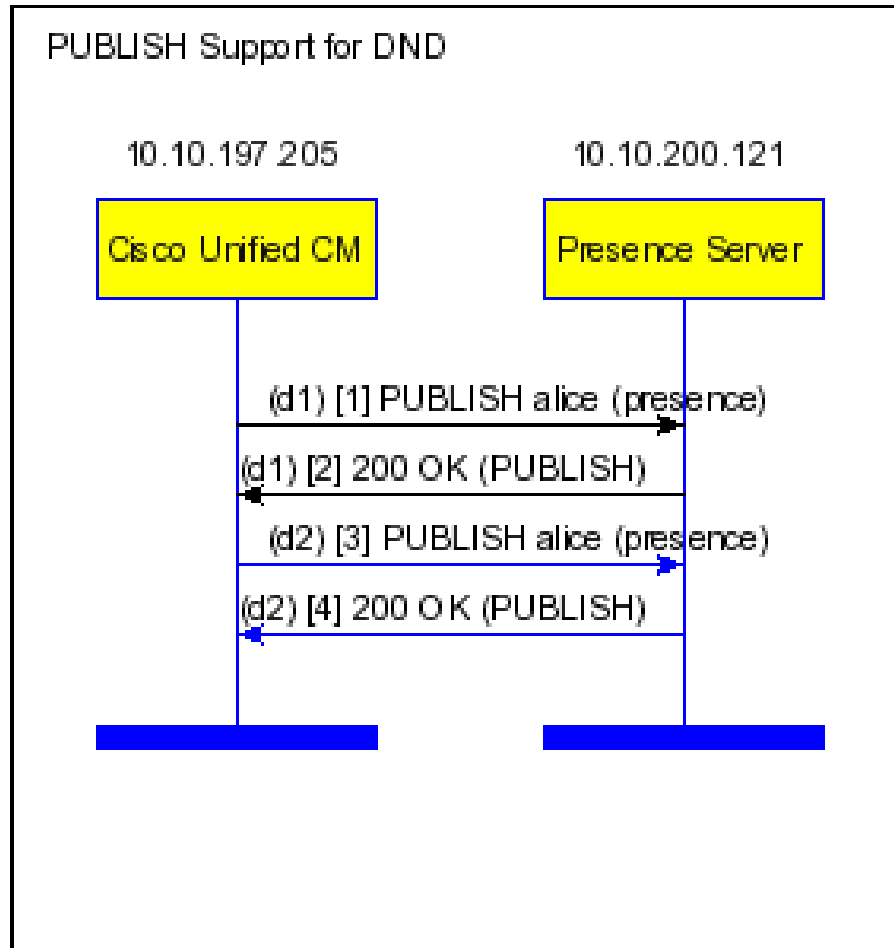
This flow shows the PUBLISH support for DND. DND status is published independent of the line appearance's busy/idle status.

- Directory number 4001 is associated with an end user alice.
- Phone has DND turned.
- When the phone becomes busy, DND status is published as well.
- When the phone becomes idle, DND status is published as well.

Configuration:

Node = Cisco Unified CM, IP = 10.10.197.205

Node = Presence Server, IP = 10.10.200.121

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[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[1] PUBLISH sip:alice@10.10.200.121:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK4217e8a043

From: <sip:alice@10.10.197.205>;tag=569854857

To: <sip:alice@10.10.200.121>

Call-ID: dade3c80-61d11a66-1d-cdc512ac@10.10.197.205

CSeq: 101 PUBLISH

Max-Forwards: 70

Date: Wed, 11 Apr 2007 17:27:02 GMT

User-Agent: Cisco-CCM6.0

Event: presence

Expires: 3600

SIP-If-Match: 12

Content-Type: application/pidf+xml

Content-Length: 967

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.197.205"
  xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd"
  xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
  xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-5041f38c-1fb6-31db-e2bb-90030a46d89e">
    <status>
      <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=5041f38c-1fb6-31db-e2bb-
90030a46d89e;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
    <model>Cisco 7960</model>
    <timestamp>2007-04-11T17:27:02Z</timestamp>
  </tuple>
  <dm:person>
    <r:activities>
      <ce:dnd/>
    </r:activities>
  </dm:person>
</presence>
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[2] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK4217e8a043

From: <sip:alice@10.10.197.205>;tag=569854857

To: <sip:alice@10.10.200.121>;tag=13

Call-ID: dade3c80-61d11a66-1d-cdc512ac@10.10.197.205

CSeq: 101 PUBLISH

Expires: 3600

SIP-ETag: 13

Contact: <sip:10.10.200.121:5060;transport=UDP>

Content-Length: 0

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

[3] PUBLISH sip:alice@10.10.200.121:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK431f06f95f

From: <sip:alice@10.10.197.205>;tag=602294964

To: <sip:alice@10.10.200.121>

Call-ID: dade3c80-61d11a66-1e-cdc512ac@10.10.197.205

CSeq: 101 PUBLISH

Max-Forwards: 70

Date: Wed, 11 Apr 2007 17:27:02 GMT

User-Agent: Cisco-CCM6.0

Event: presence

Expires: 3600

SIP-If-Match: 13

Content-Type: application/pidf+xml

Content-Length: 922

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.197.205"
  xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpidd" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpidd"
  xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
  xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="dfebe739-0e22-29d5-4711-723e704d014b-5041f38c-1fb6-31db-e2bb-90030a46d89e">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
  </tuple>
</presence>
```

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```
</sc:servcaps>
<contact priority="0.8">sip:4001@10.10.197.205:5060;dpkid=5041f38c-1fb6-31db-e2bb-
90030a46d89e;npkid=dfebe739-0e22-29d5-4711-723e704d014b</contact>
<model>Cisco 7960</model>
<timestamp>2007-04-11T17:27:02Z</timestamp>
</tuple>
<dm:person>
  <r:activities>
    <ce:dnd/>
  </r:activities>
</dm:person>
</presence>
```

[\[diagram\]](#) Call-ID: [\[prev\]](#) [\[next\]](#)

**[4] SIP/2.0 200 OK**

```
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK431f06f95f
From: <sip:alice@10.10.197.205>;tag=602294964
To: <sip:alice@10.10.200.121>;tag=14
Call-ID: dade3c80-61d11a66-1e-cdc512ac@10.10.197.205
CSeq: 101 PUBLISH
Expires: 3600
SIP-ETag: 14
Contact: <sip:10.10.200.121:5060;transport=UDP>
Content-Length: 0
```