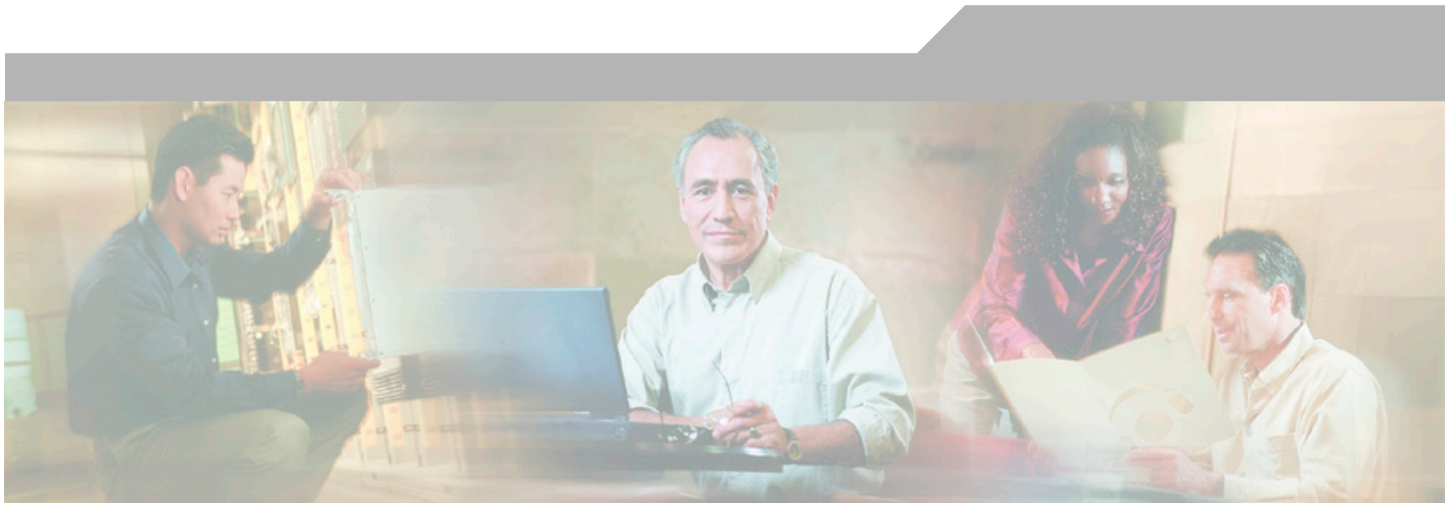


Session Initiation Protocol (SIP) Messaging Guide (Trunk) for Cisco Unified CallManager 5.0

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Session Initiation Protocol (SIP) Messaging Guide (Trunk) for Cisco Unified CallManager 5.0
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Preface

This document describes the implementation of the Session Initiation Protocol (SIP) in Cisco Unified CallManager Release 5.0.

The preface covers these topics:

- Audience
- Organization
- New and Changed Information
- Conventions
- Obtaining Documentation
- Documentation Feedback
- Cisco Product Security Overview
- Obtaining Technical Assistance
- Obtaining Additional Publications and Information

Audience

This document provides information for developers, vendors, and customers who are developing applications or products that integrate with Cisco Unified CallManager 5.0 using SIP messaging.

Organization

This document consists of the following chapters:

Chapter	Description
Chapter 1, "SIP Messages"	Provides an overview of SIP messages and compliance.
Chapter 2, "SIP Trunk Call Flows for Release 5.0"	Comprises a listing of all Release 5.0 SIP trunk messages, including sequence charts and examples of call flows.

New and Changed Information

The following new features were introduced and enhancements made to the SIP Trunk interface in Cisco Unified CallManager Release 5.0.

New Features

The following new features are included in the 5.x releases:

MTP check for outbound calls (Delayed Media)

In the 4.x releases all SIP trunks were required to allocate an MTP for DTMF support. In the 5.x releases, the MTP check box is no longer required; it is optional.

Removing this restriction in the 5.x releases increases overall performance and frees up the MTP resources for other applications to use. MTP's are no longer allocated for DTMF events if the endpoints can negotiate the use of RFC2833 or an out-of-band DTMF method end-to-end.

To avoid allocating a MTP for every call, the 5.x releases include the support for delayed media (INVITE without SDP). Delayed media is the default call flow scenario in this release. Users can still configure early media via the SIP Trunk configuration page, although early media results in allocating a MTP.

TLS / Security

In the 5.x releases the SIP trunk can be configured to use TLS.

RSVP

Blind Transfer from the SIP Network (via in-dialog REFER)

Attended Transfer from the SIP Network (via in-dialog REFER and REPLACES header)

The REPLACES header is used to logically replace an existing SIP dialog with a new SIP dialog. This primitive can be used to enable a variety of features, such as "Attended Transfer." The SIP Trunk supports the REPLACES header in the INVITE and in the REFER requests.

Click to Dial (using out-of-dialog REFER)

Configuring Multiple SIP Trunks using the same SIP port

In the 4.x releases each SIP trunk is configured with a unique local listening port. Incoming SIP messages are delivered to appropriate logical SIP trunkD process based solely on the incoming port. This routing method is known as port-based routing.

In the 5.x releases, multiple SIP trunks on the same listening port are allowed. Incoming SIP calls are routed based on the configured destination address and listening port or on the X509 certificate subject name. The messages received from different sources must be de-multiplexed and sent to the correct SIPD. With this routing method, customers can also restrict or allow access to addressable external SIP objects (that is, only allow incoming calls from a group of specified proxies).

Digest Authentication

In the 5.x releases the SIP Trunk supports Digest for authentication and authorization.

Presence

Support for BLF accross the SIP Trunk.

Message Waiting Indicator

The SIP trunk is enhanced to support message waiting indicator (MWI) from the SIP voice mail server (VM).

Access Control List (for the following messages/headers)

Presence subscription

Out-of-Dialog REFER

Unsolicited Notification

REPLACES Header

Support for Configuring a Default Non-Numeric Route Pattern Over the SIP Trunk

In release 4.x Cisco Unified CallManager could only route calls over SIP Trunks based on configured route patterns that were digits only. However, in this release there is a new configuration option in Cisco Unified CallManager to allow the administrator to configure and associate a route pattern other than digits (such as addresses that include host or domain names like msn.com, or IP addresses) with a SIP Trunk in that Cisco Unified CallManager cluster. This feature allows Cisco Unified CallManager hosted devices to call or route requests that use alphanumeric user names in the SIP request URI over SIP Trunks addressed to remote domains.

Conference Support

The SIP Trunk will support scheduled and Ad-hoc conference calls. However, in this release the SIP Trunk only recognizes the "isfocus" feature parameter; this flag is passed to the application with the contact header.

Enhanced SIP Redirection 3XX Support

In the 4.x release, the stack handles redirections (3xx response) internally. When a 3xx response is received by the SIP stack, the stack sends out a new INVITE to the contact in the 3xx response without notification to the application. In this release, this functionality is opened up to the application. Upon the receipt of a 3xx response the application now has the ability to take over the redirect handling. This allows for more security and routing capabilities when handling redirection by the application.

305 is still handled by the stack the same way it was done in release 4.x.

485 Ambiguous is not supported

Video Support

The 5.x releases support video calls.

Call Preservation

In 4.x the SIP trunk does not support Call Preservation. The SIP Trunk is enhanced in the 5.x releases so that active calls that exist within a Cisco Unified CallManager cluster will not be interrupted when one or more node(s) of the cluster fail or when communication between a device and its Cisco Unified CallManager node fails.

SIP T.38 Fax support

Fax Relay is supported in this release. The SIP Trunk supports calls that start as a voice call and then switch to T38 Fax.

Modified Features

The following features have been modified in this release:

Glare Condition Handling

RPID

In the 4.x releases some of the RPID fields were hard coded to default values that prevented the SIP phone from correctly displaying the calling party information.

New SIP Messages

The following SIP Messages are new in the 5.x releases:

REFER

The SIP Trunk in the 4.x releases did not support receiving REFER. In the 5.0 release Cisco Unified CallManager supports the inbound REFER method over the SIP Trunk. This enables Cisco Unified CallManager to support SIP-initiated transfer features and other advanced transfer-related features such as Web Transfer, Click-to-Dial, and other application services.

SUBSCRIBE

The SUB/NOT is needed to support the Presence functionality, out-of-band DTMF, and other applications. The SIP Trunk now supports receiving and sending of SUB/NOT messages.

The following new messages are also included in Cisco Unified CallManager Release 5.0:

- Basic Call
  - Basic Outgoing Call
  - Basic Incoming Call
  - Basic Early Media Call
  - Basic Early Media Call via an Inter Cluster SIP Trunk
  - Basic Call to a SCCP Device via an Inter Cluster SIP Trunk
  - Basic Call to a SIP Device via an Inter Cluster SIP Trunk
  - Basic Hold-resume Call via a SIP Trunk to a SIP Proxy
  - Basic Hold-resume Call via an Inter Cluster SIP Trunk
  - Basic Conference Call via an Inter Cluster SIP Trunk
- DTMF
  - Call Between Cisco Unified CallManager SCCP Phone and SIP Gateway Using KPML
  - Call Between Cisco Unified CallManager SCCP Phone and SIP Gateway Using RFC2833
- Presence
  - Outgoing Presence Subscription
  - Incoming Presence Subscription
  - Incoming Presence Forbidden for Authorization Failure

- Call Transfer
  - Basic Attended Transfer Call via an Inter Cluster SIP Trunk
  - Basic Early Transfer Call via an Inter Cluster SIP Trunk
  - Attended Transfer from Proxy to a SCCP Cisco Unified IP Phone
  - Attended Transfer using the Cisco Unified CallManager SIP Trunk
  - Early Attended Transfer to SIP Proxy via Cisco Unified CallManager SIP Trunk
  - Blind Transfer from a SIP Proxy Phone Using the SIP Trunk
- UPDATE Method
  - Early Transfer Call to SIP Gateway No PRACK via Cisco Unified CallManager SIP Trunk
  - Early Transfer Call to SIP Gateway with PRACK via Cisco Unified CallManager SIP Trunk
- TLS
  - TLS Rejection with X509 Subject Name Mismatch
- T38 Fax
  - SIP Trunk Passes Through T38 Fax Call Between SIP Gateways
  - SIP ICT Trunk Passes Through T38 Fax Call Between Two H323 Networks
  - SIP Trunk Passes Through T38 Fax Call Between SIP and H323 Networks
  - SIP Trunk Passes Through T38 Fax Call Between H323 and SIP Networks
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  - SIP Video Call Using INFO Method
- Message Waiting Indicator
  - MWI Status via Unsolicited NOTIFY
- PRACK
  - Outbound Early Media Call with PRACK
  - Outbound Delayed Media Call with PRACK
- Call Preservation
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  - Session Timers Negotiation and Refresh for the Outgoing SIP Trunk Call
  - Periodic Refresh after Session Timer Negotiation Failure
  - SIP Trunk Call Preservation when Cisco Unified CallManager is the Refresher
  - SIP Trunk Call Preservation when Cisco Unified CallManager is Not the Refresher
- 3xx Redirection
  - Incoming 3xx Redirection

- Authentication and Authorization
  - Cisco Unified CallManager Gets Authenticated as UAC
  - Cisco Unified CallManager Authenticates Incoming Request
- Access Control List
  - Access Control List, Deny Presence Subscription
  - Access Control List, Deny Out of Dialog REFER
  - Access Control List, Deny Unsolicited NOTIFY
  - Access Control List, Deny INVITE with Replaces Header
  - Access Control List, Deny REFER with Replaces Header
- Resource Reservation Protocol
  - Outgoing RSVP Call through SIP Trunk
- Click2Dial
  - Click2Dial from SIP Application Server to Cisco Unified IP SIP Phones

Modified SIP Message

The following SIP Message has been modified in this release:

UPDATE

Used for Remote-Party-ID and offer/answer in scenarios where the reINVITE cannot be sent, and PRACK is not enabled.

New SIP Headers

The following SIP Headers are new in this release:

Call-Info Header

The Call-Info header is used for DTMF for all scenarios unless the SIP Trunk is configured to use RFC2833 for DTMF signaling.

For example
Call-Info:
<sip:10.10.10.145:6080>; method="NOTIFY;Event=telephone-event;Duration=500"

Replaces Header

In this release Cisco Unified CallManager accepts the Replaces header in the INVITE and REFER.

SIP Stack

The SIP stack has been modified in this release as follows:

- Added support for generating the branch and sent-by parameters in the Via header and using them to identify transactions.
- Implementation of loose-routing based on the lr parameter in the 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 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 a 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.

Conventions

This document uses the following conventions:

Convention	Description
boldface font	Commands and keywords are in **boldface**.
italic font	Arguments for which you supply values are in *italics*.
[ ]	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 `screen` font.
`boldface screen` font	Information you must enter is in **`boldface screen`** font.
italic screen font	Arguments for which you supply values are in *italic screen* 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.

Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

International Cisco websites can be accessed from this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated regularly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual or quarterly subscription.

Registered Cisco.com users can order a single Documentation CD-ROM (product number DOC-CONDOCCD=) through the Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/ordering_place_order_ordering_tool_launch.html

All users can order annual or quarterly subscriptions through the online Subscription Store:

http://www.cisco.com/go/subscription

Click Subscriptions & Promotional Materials in the left navigation bar.

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/en/US/partner/ordering/index.shtml

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can submit e-mail comments about technical documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

http://www.cisco.com/go/psirt

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at: http://www.cisco.com/wwl/export/crypto/tool/stqrg.html.

If you require further assistance please contact us by sending email to export@cisco.com.

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—security-alert@cisco.com
- Nonemergencies—psirt@cisco.com

Tip We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.*x* through 8.*x*.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one that has the most recent creation date in this public key server list:

http://pgp.mit.edu:11371/pks/lookup?search=psirt%40cisco.com&op=index&exact=on

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour-a-day, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance. If you do not hold a valid Cisco service contract, please contact your reseller.

Developer Support

The Developer Support Program provides formalized support for Cisco Systems interfaces to enable developers, customers, and partners in the Cisco Service Provider solutions Ecosystem and Cisco AVVID Partner programs to accelerate their delivery of compatible solutions.

The Developer Support Engineers are an extension of the product technology engineering teams. They have direct access to the resources necessary to provide expert support in a timely manner.

For additional information on this program, refer to the Developer Support Program Web Site at www.cisco.com/go/developer support/.

Developers using the *SCCP Messaging Guide* are encouraged to join the Cisco Developer Support Program. This new program provides a consistent level of support while leveraging Cisco interfaces in development projects.

Note Cisco Technical Assistance Center (TAC) support does not include SCCP Developer support and is limited to Cisco AVVID installation/configuration and Cisco-developed applications. For more information about the Developer Support Program, please contact Cisco at developer-support@cisco.com.

Cisco TAC Website

The Cisco TAC website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year. The Cisco TAC website is located at this URL:

http://www.cisco.com/tac

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

http://tools.cisco.com/RPF/register/register.do

Opening a TAC Case

Using the online TAC Case Open Tool is the fastest way to open P3 and P4 cases. (P3 and P4 cases are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using the recommended resources, your case will be assigned to a Cisco TAC engineer. The online TAC Case Open Tool is located at this URL:

http://www.cisco.com/tac/caseopen

For P1 or P2 cases (P1 and P2 cases are those in which your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete listing of Cisco TAC contacts, go to this URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—Your network is “down” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Priority 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Priority 3 (P3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Priority 4 (P4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The Cisco Product Catalog describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

  http://www.cisco.com/en/US/products/products_catalog_links_launch.html

- Cisco Press publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

  http://www.ciscopress.com

- Packet magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- iQ Magazine is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

- Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

  http://www.cisco.com/en/US/learning/index.html



SIP Messages

This document describes the external interface for the Cisco Unified CallManager 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:

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  - SIP Compliance, page 1-2
  - SDP Compliance, page 1-6
- SIP Message Fields, page 1-7
  - Request Messages, page 1-7
  - Response Messages, page 1-14
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  - Calling Line and Name Identification Presentation, page 1-22
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Interface Compliance Summary

SIP Compliance

Table 1-1 identifies the RFC compliance for SIP Trunks.

Table 1-1 RFC Compliance for SIP Trunks

RFC	CallManager Supported	Comments
RFC2976 SIP INFO Method	Supported	Info method is used for video media; Picture Fast Update and Picture Freeze.
RFC2833 RTP Payload for DTMF Digits	Supported	
RFC2782 DNS SRV	Supported	
RFC3261 SIP: Session Initiation Protocol	Supported	
RFC3262 SIP Reliability of Provisional Responses	Supported	
RFC3264 Offer/Answer Model for SDP	Supported	
RFC3265 Specific Event Notification	Supported	
RFC3311 SIP UPDATE Method	Supported	
RFC 3515 SIP REFER Method	Partially Supported	SIP Trunk accepts inbound REFER's (in-dialog and out-of-dialog) - In this release CCM only supports method = INVITE in the Refer-To header. - CCM does not support multiple Refer requests within the same dialog.
RFC3842 SIP MWI Package	Partially Supported	SIP Trunk supports unsolicited NOTIFY events. It does not support Subscribe for MWI events notification
RFC3856 SIP PRESENCE Event Package	Supported	
RFC3859 Common Profile for Presence	Supported	
RFC3863 Presence Information Data	Supported	
RFC3891 SIP Replaces Header	Supported	INVITE w/Replaces and REFER w/Replaces
RFC 4028 Session Timers in the SIP	Supported	For outgoing Invite's, the SIP Trunk indicates support via Supported header. For incoming Invite's it accepts the Supported and Session-Expires headers.
Draft-ietf-sipping-kpml-07.txt	Supported	KPML Event Package (for OOB DTMF)
Draft-ietf-sip-privacy-05.txt	Supported	Remote Party ID (RPID) Header
Draft-levy-sip-diversion-08.txt	Supported	Draft-levy-sip-diversion-08.txt

Table 1-2 identifies SIP Trunk compliance for SIP requests.

Table 1-2 Compliance for SIP Requests

SIP Message	CallManager Supported	Comments
INVITE	Yes	Re-INIVTE also supported
ACK	Yes	
OPTIONS	No	SIP trunk doesn't support OPTIONS method.
INFO	Yes	INFO method is used for video support.
BYE	Yes	
CANCEL	Yes	
SUBSCRIBE	Yes	Supported events: kpml, presence
NOTIFY	Yes	Supported events: kpml, presence. In addition, unsolicited NOTIFY for DTMF and MWI is also supported
REFER	Yes	Cisco Unified CallManager SIP trunk supports inbound REFER only, both in-dialog and out-of-dialog.
REGISTER	No	405 Method Not Allowed will be sent for Cisco Unified CallManager SIP trunk.
PRACK	Yes	Have option to enable/disable via Cisco Unified CallManager Service Parameter
UPDATE	Yes	Cisco Unified CallManager supports receiving and generating UPDATE
PUBLISH	No	

Table 1-3 identifies the SIP Trunk compliance for SIP responses.

Table 1-3 Compliance to SIP Responses

SIP Message	CallManager Supported	Comment
1xx Response	Yes	
100 Trying	Yes	
180 Ringing	Yes	Early media is supported
181 Call Forward	No	Stack drops this message
182 Queued	No	Stack drops this message
183 Progress	Yes	Early media is supported
2xx Response	Yes	
200 OK	Yes	
202 OK	Yes	For REFER
3xx Response	Yes	
300-302, 305, 380, 385	Yes	Does not generate. Contacts new address in Contact header upon receiving.

Table 1-3 Compliance to SIP Responses (continued)

SIP Message	CallManager Supported	Comment
4xx Response	Yes	Upon receiving, initiates graceful call disconnect.
401	Yes	Cisco Unified CallManager SIP trunk sends out 401 (Unauthorized) if authentication and authorization is enabled. Cisco Unified CallManager SIP trunk also responds to inbound 401 challenges.
403	Yes	Cisco Unified CallManager SIP trunk sends out 403 (Forbidden) if a SIP method is on Access Control List.
405	Yes	Cisco Unified CallManager SIP trunk sends out 405 if the incoming SIP method is not supported
407	Yes	Cisco Unified CallManager SIP trunk responds to inbound 407 (Proxy Authentication Required) challenges
5xx Response	Yes	Upon receiving, new request is sent if additional address is present. Otherwise initiates graceful disconnect.
6xx Response	Yes	Not generated. Upon receiving, graceful disconnect is initiated.

Table 1-4 identifies the SIP Trunk compliance for SIP header fields.

Table 1-4 SIP Header Fields

SIP Header	CallManager Supported	Comments
Accept	No	
Accept-Encoding	No	
Accept-Language	No	
Alert-Info	No	
Allow	Yes	
Authentication-Info	No	
Authorization	Yes	
Allow-Events	Yes	kpml, presence
Call-Info	Yes	
Call-ID	Yes	
Contact	Yes	
Content-Disposition	No	
Content-Encoding	No	
Content-Language	No	
Content-Length	Yes	
Content-Type	Yes	Supported as: “sdp”, “kpml-request+xml”, “media_control+xml”, “text/plain”, “pidf+xml”, “simple-message-summary” Does not support “multipart”

Table 1-4 SIP Header Fields (continued)

SIP Header	CallManager Supported	Comments
CSeq	Yes	
Date	Yes	
Diversion	Yes	If it is present, it is always the Original Called Party info. The receiving side of this header always assume it is the Original Called Party info if present. In the case of chained-forwarding to a VM, the message will be left to the Original Called Party.
Encryption	No	
Error-Info	No	
Expires	Yes	
Event	Yes	
From	Yes	
Hide	No	
In-Reply-To	No	
Max-Forwards	Yes	Cisco Unified CallManager sets to 70 for outgoing INVITE, and does not increment/decrement it.
Min-Expires	Yes	
MIME-Version	No	
Organization	No	
Priority	No	
Proxy-Authenticate	Yes	Cisco Unified CallManager SIP trunk supports receiving this header in 407 responses.
Proxy-Authorization	Yes	Cisco Unified CallManager SIP trunk supports sending new request with this header after receiving 407 responses.
Proxy-Require	No	
RAck	Yes	
Record-Route	Yes	
Remote-Party-ID	Yes	Used for ID services including Connected Name & ID. Non-standard, just draft.
Replaces	Yes	For INVITE and REFER
Require	Yes	
Response-Key	No	
Retry-After	Yes	Send it but ignore receiving it
Route	Yes	
RSeq	Yes	
Server	Yes	
SIP-If-Match	No	For PUBLISH
SIP-Etag	No	For PUBLISH
Subject	No	

Table 1-4 SIP Header Fields (continued)

SIP Header	CallManager Supported	Comments
Supported	Yes	
Subscription-State	Yes	
Timestamp	Yes	
To	Yes	
Unsupported	Yes	
User-Agent	Yes	
Via	Yes	
Warning	Yes	
WWW-Authenticate	Yes	

SDP Compliance

Table 1-5 identifies the supported audio media types.

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	Support all combinations of annex A and B
RFC2833 DTMF	Telephony-event	Dynamically Assigned	Acceptable range is 96-127

Table 1-6 identifies the supported video media types.

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 identifies the supported application media types.

Table 1-7 Supported Application Media Type

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

Table 1-8 identifies the supported T38 Fax payload types.

Table 1-8 Supported T38fax Payload Type

Types	Encoding Name	Payload Type
T38fax	Not applied	Not applied

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.

Request Messages

INVITE

Table 1-9 INVITE Message Fields

Field	Example	Notes
Request-Line	`INVITE 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; destPort=configured destPort or resolved port from DNS SRV; cgpn for outgoing INVITE, and cdpn for incoming INVITE.
From	`From: "callerName" <sip:cgpn@CCM_IP_addr>`	callerName=caller display i.e. IP phone Cgpn = calling party number CCM_IP_addr=Cisco Unified CallManager IP address
To	`To: "calledName" <sip:cdpn@destIP;user=phone>`	calledName is included if available 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=Cisco Unified CallManager IP address Port=Cisco Unified CallManager Port Branch=Unique number

Table 1-9 INVITE Message Fields (continued)

Field	Example	Notes
Call-ID	`Call-ID: number@CCM_IP_addr`	Number is generated internally by Cisco Unified CallManager
Contact	`Contact: <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 is incremented for each new request within a dialog Method=INVITE
Max-Forwards	`Max-Forwards:number`	Number= an integer that limits the number of hops a request can make to reach its destination. It is decremented by one at each hop by SIP proxy. It is set to 6 for outgoing INVITE messages.
Remote-Party-Id	`Remote-Party-ID:"Alice Smith" <sip:9728135111@161.44.147.67;user=phone>; party=calling;screen=no;privacy=off`	Cisco Unified CallManager uses this SIP extension for more detailed description of Caller Identify and Privacy. It is also used to convey Connected Name and ID in a re-INVITE message.
Diversion	`Diversion: <sip:23222@172.18.193.123>;reason=no-answer`	Cisco Unified CallManager uses Diversion header to carry RDNIS. In this case, 23222 will be carried as the Original Called Party ID.
SDP	`v=0` `o=CiscoSystemsCCM-SIP 2000 1000 IN IP4 10.89.79.203` `s=SIP Call` `c=IN IP4 10.89.79.203` `t=0 0` `m=audio 32314 RTP/AVP 0 101` `a=rtpmap:0 PCMU/8000` `a=ptime:20` `a=rtpmap:101 telephone-event/8000` `a=fmtp:101 0-15`	If MTP is not enabled for the SIP Trunk, SDP is not in the initial INVITE. If MTP is enabled, Cisco Unified CallManager always includes telephone-event for RFC2833 DTMF in the SDP. This dynamic payload type is configurable under Cisco Unified CallManager Service parameter with a default value of 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 could also be FQDN SRV instead of destIP; destPort=configured destPort or resolved port from DNS SRV;
From	`From: "callerName" <sip:cgpn@CCM_IP_addr>`	callerName=caller display i.e. IP phone Cgpn = calling party number CCM_IP_addr=Cisco Unified CallManager IP address
To	`To: "calledName"<sip:cdpn@destIP;user=phone>`	calledName is included if available destIP=resolved IP address of configured DestAddr under SIPTrunk; it could also be FQDN SRV instead of destIP;

Table 1-10 ACK Message Fields (continued)

Field	Example	Notes
Via	`Via:SIP/2.0 IP addr:Port;Branch=number`	IP addr=Cisco Unified CallManager IP address Port=Cisco Unified CallManager Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Number is generated internally by Cisco Unified CallManager
CSeq	`Cseq: number method`	Number=a traditional sequence number that is incremented for each new request within a dialog Method=ACK
Max-Forwards	`Max-Forwards:number`	Number= Max-Forwards limits the number of hops a request can make to reach its destination. It consists of an integer that is decremented by one at each hop

BYE

Table 1-11 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 destPort=configured destPort or resolved port from DNS SRV
From	`From: "callerName" <sip:cgpn@CCM_IP_addr>`	callerName=caller display, such as IP phone Cgpn = calling party number CCM_IP_addr=Cisco Unified CallManager IP address
To	`To: "calledName" <sip:cdpn@destIP;user=phone>`	calledName is included if available 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=Cisco Unified CallManager IP address Port=Cisco Unified CallManager Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Number is generated internally by Cisco Unified CallManager
CSeq	`Cseq: number method`	Number=a traditional sequence number that is incremented for each new request within a dialog. Method=BYE
Max-Forwards	`Max-Forwards:number`	Number= Max-Forwards limits the number of hops a request can make to reach its destination. It consists of an integer that is decremented by one at each hop.

CANCEL

Table 1-12 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; destPort=configured destPort or resolved port from DNS SRV;
From	`From: "callerName" <sip:cgpn@CCM_IP_addr>`	callerName=caller display i.e. IP phone Cgpn = calling party number CCM_IP_addr=Cisco Unified CallManager IP address
To	`To: "calledName"<sip:cdpn@destIP;user=phone>`	calledName is included if available 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=Cisco Unified CallManager IP address Port=Cisco Unified CallManager Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Number is generated internally by Cisco Unified CallManager
CSeq	`Cseq: number method`	Number=a traditional sequence number that is incremented for each new request within a dialog Method=CANCEL
Max-Forwards	`Max-Forwards:number`	Number= Max-Forwards limits the number of hops a request can make to reach its destination. It consists of an integer that is decremented by one at each hop

PRACK

Table 1-13 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; destPort=configured destPort or resolved port from DNS SRV;
From	`From: "callerName" <sip:cgpn@CCM_IP_addr>`	callerName=caller display i.e. IP phone Cgpn = calling party number CCM_IP_addr=Cisco Unified CallManager IP address

Table 1-13 PRACK Message Fields (continued)

Field	Example	Notes
To	`To: "calledName"<sip:cdpn@destIP;user=phone>`	calledName is included if available 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=Cisco Unified CallManager IP address Port=Cisco Unified CallManager Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Number is generated internally by Cisco Unified CallManager
CSeq	`Cseq: number method`	Number=a traditional sequence number that is incremented for each new request within a dialog Method=PRACK
Rack	`Rack:number1 number2`	Number1=value from the RSeq header in the provisional response that is being acknowledged Number2=The next number and the method are copied from the CSeq in the response that is being acknowledged

UPDATE

Table 1-14 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 destPort=configured destPort or resolved port from DNS SRV
From	`From: "callerName" <sip:cgpn@CCM_IP_addr>`	callerName=caller display i.e. IP phone Cgpn = calling party number CCM_IP_addr=Cisco Unified CallManager IP address
To	`To: "calledName" <sip:cdpn@destIP;user=phone>`	calledName is included if available 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=Cisco Unified CallManager IP address Port=Cisco Unified CallManager Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Number is generated internally by Cisco Unified CallManager
Contact	`Contact: <sip:cgpn@CCM_IP_addr:localPort;user=phone>`	localPort = configured “Incoming port” of the indicated SIPTrunk

Table 1-14 UPDATE Message Fields (continued)

Field	Example	Notes
Cseq	`Cseq:number method`	Number=a traditional sequence number that is incremented for each new request within a dialog Method=UPDATE
Max-Forwards	`Max-Forwards:number`	Number= Max-Forwards serves to limit the number of hops a request can make on the way to its destination. It consists of an integer that is decremented by one at each hop
Remote-Party-Id	`Remote-Party-ID:"Alice Smith" <sip:9728135111@161.44.147.67;user=phone>; party=calling;screen=no;privacy=off`	Cisco Unified CallManager uses this SIP extension for more detailed description of Caller Identify and Privacy. It is also used to convey Connected Name and ID in a re-Invite message.
SDP	`m=audio 30844 RTP/AVP 0 101` `a=rtpmap:0 pcmu/8000` `a=rtpmap:101 telephone-event/8000` `a=fmtp:101 0-11`	Cisco Unified CallManager always includes telephone-event for RFC2833 DTMF. This dynamic payload type is configurable under Cisco Unified CallManager Service parameter.

SUBSCRIBE

Table 1-15 SUBSCRIBE Message Fields

Field	Example	Notes
Request-Line	`SUBSCRIBE sip:subscribee@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 destPort=configured destPort or resolved port from DNS SRV
From	`From: "callerName" <sip:cgpn@CCM_IP_addr>`	callerName=caller display, such as IP phone Cgpn = calling party number CCM_IP_addr=Cisco Unified CallManager IP address
To	`To: "calledName"<sip:cdpn@destIP;user=phone>`	calledName is included if available 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=Cisco Unified CallManager IP address Port=Cisco Unified CallManager Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Number is generated internally by CallManager
Contact	`Contact: <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 is incremented for each new request within a dialog Method=SUBSCRIBE

Table 1-15 SUBSCRIBE Message Fields (continued)

Field	Example	Notes
Expires	`Expires: number`	Number= duration of the subscription in seconds
Max-Forwards	`Max-Forwards:number`	Number= an integer that limits the number of hops a request can make on the way to its destination. It is decremented by one at each hop by sip proxy.
Event	`kpml, presence`	The Event Type that the Subscribe is for. Cisco Unified CallManager supports kpml and presence event packages.
Content-Type	`application/kpml-request+xml or message/sipfrag;version=2.0`	Cisco Unified CallManager SIP Trunk supports message/sipfrag;version=2.0, application/kpml-request+xml and application/pidf+xml

NOTIFY

Table 1-16 NOTIFY Message Fields

Field	Example	Notes
Request-Line	`NOTIFY sip:subscribee@destIP:destPort;SIP/2.0`	destIP = resolved IP address of configured DestAddr under SIPTrunk, it could also be FQDN SRV instead of destIP destPort=configured destPort or resolved port from DNS SRV
From	`From: "callerName" <sip:cgpn@CCM_IP_addr>`	callerName=caller display, such as IP phone Cgpn = calling party number CCM_IP_addr=Cisco Unified CallManager IP address
To	`To: "calledName"<sip:cdpn@destIP;user=phone>`	calledName is included if available 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=Cisco Unified CallManager IP address Port=Cisco Unified CallManager Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Number is generated internally by Cisco Unified CallManager
Contact	`Contact: <sip:cgpn@CCM_IP_addr:localPort>`	localPort = configured "Incoming port" of the indicated SIPTrunk
Cseq	`Cseq:number method`	Number=a traditional sequence number that is incremented for each new request within a dialog Method=NOTIFY
Subscription-State	`Subscription-State:state-value;expires=number`	State-value=active | pending | terminated Expires= authoritative subscription duration

Table 1-16 NOTIFY Message Fields (continued)

Field	Example	Notes
Max-Forwards	`Max-Forwards:number`	Number= an integer that limits the number of hops a request can make on the way to its destination. It is decremented by one at each hop by sip proxy.
Event	`kpml, presence`	The Event Type that the Notify is for. Cisco Unified CallManager supports kpml and presence event packages.
Content-Type	`application/kpml-request+xml or message/sipfrag;version=2.0`	Cisco Unified CallManager SIP Trunk supports message/sipfrag;version=2.0, application/kpml-request+xml and application/pidf+xml

Response Messages

1xx

Table 1-17 1XX Message Fields

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

2xx

Table 1-18 2XX Message Fields

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

3xx

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

Table 1-19 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 in Contact header field
From	`From: <sip: @10.89.79.203>;tag=16777234`	10.89.79.203 is Cisco Unified CallManager IP address 16777234 is the Call Id
To	`To: <sip:30000@10.89.73.75>;tag=0002fd06e9300108228d58c1-614f99be`	3000 is the Calling Party Number
Via	`Via: SIP/2.0/TCP 10.89.79.203:5060;received=10.89.79.203;branch=z9hG4bKfe8d27ec`	10.89.79.203=Cisco Unified CallManager IP address 5060=Cisco Unified CallManager Port Branch=Unique number
Contact	`Contact: <sip:30000@10.8.69.115:5060>`	localPort = configured “Incoming port” of the indicated SIPTrunk

4xx

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

Table 1-20 4XX Message Fields

Field	Example	Notes
Status Code	`SIP/2.0 487 Request Cancelled`	The request was terminated by a BYE or CANCEL request.
From	`From: <sip: @10.89.79.203>;tag=16777234`	10.89.79.203 is Cisco Unified CallManager IP address 16777234 is the Call Id
To	`To: <sip:30000@10.89.73.75>;tag=0002fd06e9300108228d58c1-614f99be`	3000 is the Calling Party Number
Via	`Via: SIP/2.0/TCP 10.89.79.203:5060;received=10.89.79.203;branch=z9hG4bKfe8d27ec`	10.89.79.203=Cisco Unified CallManager IP address 5060=Cisco Unified CallManager Port 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 1-21 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: <sip: @10.89.79.203>;tag=16777234`	10.89.79.203 is Cisco Unified CallManager IP address 16777234 is the Call Id
To	`To: <sip:30000@10.89.73.75>; tag=0002fd06e9300108228d58c1-614f99be`	3000 is the Calling Party Number
Via	`Via: SIP/2.0/TCP 10.89.79.203:5060; received=10.89.79.203; branch=z9hG4bKfe8d27ec`	10.89.79.203=Cisco Unified CallManager IP address 5060=Cisco Unified CallManager Port Branch=Unique number
Contact	`Contact: <sip:30000@10.8.69.115:5060>`	localPort = configured “Incoming port” of the indicated SIPTrunk

6xx

The callee's end system was contacted successfully, but the callee is busy and does not wish to take the call at this time.

Table 1-22 6XX Message Fields

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

Message Timers

The following timers are service parameters that are configurable in the Cisco Unified CallManager Administration page. Cisco Unified CallManager maintains the following configuration data for the SIP timers.

Table 1-23 Message Timers

Timer	Value(Default/range)	Definition
trying	500 ms/100-1000ms	The time to wait for a 100 response to an INVITE request
connect	500 ms / 100-1000ms	The time to wait for a 200 response to an ACK request.
disconnect	500 ms / 100-1000ms	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 / 100-1000ms	The amount of time that CallManager should wait before retransmitting the reliable 1xx responses.
prack	500 ms / 100-1000ms	The amount of time that CallManager should wait before retransmitting the PRACK request.
notify	500 ms / 100-1000ms	The amount of time that CallManager should wait before retransmitting the Notify message.

Message Retry Counts

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

Table 1-24 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.

SIP Status Code to Q.850 Cause Code Mapping

Table 1-25 lists the SIP Status Codes and maps them to the Q.850 Release Cause Codes.

Table 1-25 SIP Status Code to Q.850 Cause Code Mapping

SIP Status Code	Q.850 Cause Code	Q.850 Release Cause Description	Scenarios when generated by Cisco Unified CallManager (due to internal errors)
404 Not Found 485 Ambiguous 604 Does not exist anywhere	1 Unallocated (unassigned) number	Indicates that the destination requested by the calling user 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 491 Request pending 493 Undecipherable 600 Busy everywhere	17 User busy	Indicates that the called party is unable to accept another call because the user busy condition has been encountered. This cause value can be generated by the called user or by the network. In the case of user determined user busy, it is noted that the user equipment is compatible with the call.	User is already using the telephone.
480 Temporarily unavailable	18 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 is not answering the telephone.
401 Unauthorized 402 Payment Required 403 Forbidden 407 Proxy Authentication Required 600 Decline	21 Call rejected	Indicates that the equipment sending this cause code does not wish to accept this call, although it could have accepted the call because the equipment sending the cause is neither busy nor incompatible. Might also be generated by the network indicating 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.	Subscriber has a service constraint that does not accept this call.
410 Gone	22 Number changed	Returned to a calling party when the called number indicated by the calling party is no longer assigned. The new called party number might optionally be included in this diagnostic field.	A subscriber has changed their number.

Table 1-25 SIP Status Code to Q.850 Cause Code Mapping (continued)

SIP Status Code	Q.850 Cause Code	Q.850 Release Cause Description	Scenarios when generated by Cisco Unified CallManager (due to internal errors)
482 Loop detected 483 Too many hops	25 Exchange routing error	Indicates that the destination indicated by the user cannot be reached because an intermediate exchange has released the call due to reaching a limit in executing the hop counter procedure.	Network routing error
484 Address incomplete	28 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 is calling out using a network type number (enterprise) instead of Unknown or National.
487 Request terminated 488 Not acceptable here 606 Not acceptable	31 Normal unspecified	Reports a normal event only when no other cause in the normal class applies.	Normal operation.
502 Bad gateway	38 Network out of order	Indicates that the network is not functioning correctly and that the condition is likely to last for an extended period.	Network failure.
400 Bad Request 481 Call leg does not exist 500 Server internal error 503 Service Unavailable	41 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 Service or option not available, unspecified	Reports a service or option not available event only when no other cause in the service or option not available class applies.	Service not available.
406 Not acceptable 415 Unsupported media type 501 Not implemented	79 Service or option not implemented, unspecified	Reports a service or option not implemented event only when no other cause in the service or option not implemented class applies.	Service not implemented.

Table 1-25 SIP Status Code to Q.850 Cause Code Mapping (continued)

SIP Status Code	Q.850 Cause Code	Q.850 Release Cause Description	Scenarios when generated by Cisco Unified CallManager (due to internal errors)
408 Request timeout 504 Server timeout	102 Recovery on timer expiry	Indicates that a procedure has been initiated by the expiration of a timer in association with error handling procedures.	•No H.323 call proceeding •No H.323 alerting or connect message received from the terminating gateway •Invite expires timer reached maximum number of retries allowed
411 Length required 413 Request entity too long 414 Request URI too long 416 Unsupported URI scheme 420 Bad extension 421 Extension required 423 Interval too brief 505 SIP version not supported 513 Message too large	127 Internal error, unspecified	CC_CAUSE_INTERWORKING Indicates that there has been inter-working with a network that does not provide causes for actions it takes. Precise cause cannot be ascertained.	Failed to send message to Public Switched Telephone Network (PSTN)

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

Identification Services

This section describes the SIP Identification Services in Cisco Unified CallManager. 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 CallManager 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 CallManager conveys these ID services in SIP using the Remote-Party-ID header. Table 1-26 captures the support levels for the various parameters.

Table 1-26 Support Levels for Various Parameters

Parameter	Values	Notes
party	calling called	Ignored if received by Cisco Unified CallManager. Set to called for outgoing INVITE or UPDATE from Cisco Unified CallManager. Set to calling for outgoing responses from Cisco Unified CallManager.
id-type	subscriber user term	Ignored if received by Cisco Unified CallManager. Set to subscriber for outgoing requests and responses.

Table 1-26 Support Levels for Various Parameters (continued)

Parameter	Values	Notes
privacy	full name uri off	Supported if received by Cisco Unified CallManager. Cisco Unified CallManager also supports sending all values in either INVITE or UPDATE requests and responses for the same.
screen	no yes	Ignored if received by Cisco Unified CallManager. Cisco Unified CallManager always sends yes when generating an Remote-Party-ID header.

The following topics are covered in the sections that follow:

- Calling Line and Name Identification Presentation, page 1-22
- Calling Line and Name Identification Restriction, page 1-22
- Connected Line and Name Identification Presentation, page 1-23
- Connected Line and Name Identification Restriction, page 1-23

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

Calling Line and Name Identification Presentation

Number and Name restriction can be configured 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 is set to “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:

```
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.

```
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

Connected Number (Line) and Name Identification is a supplementary service which provides the calling user the called (connected) user's number and/or name.

Cisco Unified CallManager 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 is still 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 is still 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 information are included with **privacy=*full***. For example:

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

4. **None** – When both name and number are allowed.

   For example if Cisco Unified CallManager receives an INVITE destined to extension 9728135001. Cisco Unified CallManager includes the called party's name in 18x and 200 messages as follows:

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

Troubleshooting

Table 1-27 highlights some of the common problems that might be encountered when configuring a SIP Trunk.

Table 1-27 Troubleshooting SIP Trunk Configuration

Symptom	Possible Cause	Recommended Action
Cannot receive or make calls through a SIP Trunk.	SIP Trunks are not initialized since the CallManager process is not part of a Cisco Unified CallManager Group	Associate the CallManager process to a Cisco Unified CallManager Group. 1. Go to the Cisco Unified CallManager GUI and under the “System” pull down menu select “CallManager Group”. 2. Click on “find” and select a group name (such as Default). 3. Make sure the Cisco Unified CallManager is under the “Selected Cisco Unified CallManagers” section. Example SDL logs illustrating how a SIP Trunk fails initialization because the Cisco Unified CallManager node is not a member of a Cisco Unified CallManager Group: `|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`
All outbound calls associated with a SIP Trunk may get rejected by the UAS with a 4xx response, or signaling may go through but no audio path is detected.	This is a rare possibility but some 3rd party SIP UA’s may not support delayed media INVITE’s.	SIP Trunk’s default configuration results in sending INVITE(without SDP). It was defined this way to prevent the use of an MTP resource. It’s recommended that the “MTP Required” checkbox on the SIP Trunk configuration page be left unchecked; however, if 3rd party devices do not support delayed media INVITE requests then this box can be checked. Note that a reset is needed on the SIP Trunk for the change to take effect.

Table 1-27 Troubleshooting SIP Trunk Configuration (continued)

Symptom	Possible Cause	Recommended Action
DTMF digits are not getting sent to the remote SIP device; such as a Unity Voice Mail server.	Could be an interop issue. The SIP Trunk supports RFC2833 and Out-of-Band methods when sending DTMF tones across the network. - Most SIP devices support RFC2833. - The OOB methods supported are KPML and Unsolicited Notify. KPML is not widely used in the market place at this time. Currently the only known products supporting KPML are the Cisco TNP phones, Cisco Unified CallManager, and Cisco IOS Gateways (12.4 and later). Unsolicited Notify is a non-standard method and is used only on Cisco IOS Gateways (12.2 and later). Unity does not support either one at this time. If connecting Unity to Cisco Unified CallManager via SCCP then OOB is assumed.	Check if an MTP resource is allocated for the call. Basically… - If both parties have at least one common DTMF method then an MTP is *not* required. - If one party only supports Out-of-Band while the other only supports RFC2833 then an MTP is required. For RFC23833 DTMF events verify that the media stream (via Sniffer) contain packets with the DTMF Payload Type value. For OOB incoming/outgoing NOTIFY messages are captured in ccm trace file. Example of Subscribing for DTMF-KPML: SUBSCRIBE sip:172.18.199.61:5060 SIP/2.0 Via: SIP/2.0/UDP 172.18.199.62:5060;branch=z9hG4bK1BD From: <sip:3601@172.18.199.62>;tag=169AEB4-93D To: "sccp_3000" <sip:3000@172.18.199.61>;tag=520767e3-a20b-488e-9ca2-3b1506ab9e 94-24577005 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: <sip:3601@172.18.199.62:5060> 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> SIP/2.0 200 OK Via: SIP/2.0/UDP 172.18.199.62:5060;branch=z9hG4bK1BD From: <sip:3601@172.18.199.62>;tag=169AEB4-93D To: "sccp_3000" <sip:3000@172.18.199.61>;tag=520767e3-a20b-488e-9ca2-3b1506ab9e 94-24577005 Call-ID: 47b5f280-2de1b302-3fc-3dc712ac@172.18.199.61 CSeq: 101 SUBSCRIBE Content-Length: 0 Contact: <sip:172.18.199.61:5060> Expires: 3600

Table 1-27 Troubleshooting SIP Trunk Configuration (continued)

Symptom	Possible Cause	Recommended Action
DTMF digits are not getting sent to the remote SIP device (continued)		Example of an outbound KPML NOTIFY message. NOTIFY sip:3010@172.18.199.92:5060 SIP/2.0 Via: SIP/2.0/UDP 172.18.199.61:5060;branch=z9hG4bK48b28f9b From: <sip:3010@172.18.199.61>;tag=520767e3-a20b-488e-9ca2-3b1506ab9e 94-26499709 To: <sip:3501@172.18.199.92>;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: <sip:172.18.199.61:5060> Content-Type: application/kpml-response+xml Content-Length: 177 <?xml version="1.0" encoding="UTF-8" standalone="no" ?> <kpml-response code="200" digits="1" forced_flush="false" suppressed="false" tag="dtmf" text="Success" version="1.0"/> Example of negotiating Unsolicited NOTIFY. Request: INVITE sip:3501@172.18.199.92:5060 SIP/2.0 Call-Info: <sip:172.18.199.61:5060>;method="NOTIFY;Event=telephone-event;D uration=500" Response: SIP/2.0 200 OK Call-Info: <sip:172.18.199.92:5060>;method="NOTIFY;Event=telephone-event;D uration=500" Example of an outbound Unsolicited NOTIFY message. 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" <sip:3010@172.18.199.61>;tag=520767e3-a20b-488e-9ca2-3b1506ab9e 94-26499723 To: <sip:3501@172.18.199.92>;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: <sip:172.18.199.61:5060> Content-Type: audio/telephone-event Content-Length: 4

Table 1-27 Troubleshooting SIP Trunk Configuration (continued)

Symptom	Possible Cause	Recommended Action
UAS responds to an INVITE request with a 401 (Unauthorized)	Authentication or Authorization is failing	If authentication or authorization are not needed, make sure the appropriate checkboxes on the SIP Trunk Security Profile page are unchecked. or Configure the application user on Cisco Unified CallManager with proper authorization. Configure the UAC to match credentials on Cisco Unified CallManager. `INVITE sip:5000@172.18.193.222 SIP/2.0` `Via: SIP/2.0/UDP 172.18.194.208:5060;branch=z9hG4bK5ba60c17` `From: "4900"` `<sip:4900@172.18.193.222>;tag=000f24c6a16f000d171bb590-611445d9` `To: <sip:5000@172.18.193.222>` `Call-ID: 000f24c6-a16f000c-245cb98c-57a622e0@172.18.194.208` `.....` `SIP/2.0 401 Unauthorized` `From: "4900"` `<sip:4900@172.18.193.222>;tag=000f24c6a16f000d171bb590-611445d9` `To: <sip:5000@172.18.193.222>;tag=466540560` `Call-ID: 000f24c6-a16f000c-245cb98c-57a622e0@172.18.194.208` `CSeq: 101 INVITE` `WWW-Authenticate: DIGEST realm="siptrunk4l",` `nonce="YoK5FiEuXpeIlp52EnUWFLIU1m24t5gV", algorithm=MD5` `Content-Length: 0` `.....`
UAS responds to a SIP request with a 403 (Forbidden).	In the System->Security Profile->SIP Security Profile page, and per the default settings, the following features require authorization: - Presence Subscription - OOD REFER - Unsolicited NOTIFY - INVITE and REFER w/ Replaces header	If authentication or authorization are not needed, make sure the appropriate checkboxes on the SIP Trunk Security Profile page are unchecked. or Configure the application user on Cisco Unified CallManager with proper authorization. Configure the UAC to match credentials on Cisco Unified CallManager. `INVITE sip:5000@172.18.193.222:5060 SIP/2.0` `Via: SIP/2.0/UDP 172.18.195.83:5060` `From: sipp <sip:sipp@172.18.195.83:5060>;tag=1` `To: sut <sip:5000@172.18.193.222:5060>` `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 <sip:sipp@172.18.195.83:5060>;tag=1` `To: sut <sip:5000@172.18.193.222:5060>;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`

Table 1-27 Troubleshooting SIP Trunk Configuration (continued)

Symptom	Possible Cause	Recommended Action
UAS responds to a SIP request with a 404 Not Found	Digit analysis failed to find the device or the 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 ccm host or ip address and there is not a SIP route pattern to route this number or dn, then Digit Analysis will fail.
Potential problems with forking Downstream SIP endpoints don't 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 then the SIP Trunk is required to use an MTP. Make sure the "MTP Required" checkbox is checked on the SIP Trunk configuration page.
TLS connection for SIP trunk fails with "HandleSSLError - TLS protocol error…" in SDI log (ccmtrace).	TLS SIP trunk peer's X509 certificate has not been imported into the local Cisco Unified CallManager trust store or is the incorrect version.	Ensure that the peer's X509 certificate is version 3 and has been properly imported into the local Cisco Unified CallManager's trust store.
TLS connection for SIP trunk fails with a 'ConnectionFailure' alarm on the TLS SIP trunk.	X509 Certificate validation has failed for the TLS SIP trunk peer.	Possible problems are X509 Subject Name mismatch or cipher string mismatch. Check SDL log for more detailed logs under 'validTLSConnection' log. Reason code 1 – Got X509 certificate for neither Authenticate or Encrypted trunk. (Shouldn't happen.) Reason code 2 – X509 Subject Common Name (CN=) mismatch with trunk's security profile settings. Reason code 3 – TLS cipher string mismatch. (This is determined by trunk's security profile 'Device Security Mode' settings.)
TLS connection from a SIP device to Cisco Unified CallManager via SIP fails with '416 Unsupported URI Scheme' or fails following a '301 Redirect'.	Cisco Unified CallManager does not support SIPS URI handling and the SIP UA will not complete a TLS connection without SIPS URI support.	Do not use SIP TLS connections between CCM and a SIP UA that doesn't support SIPS URI.
No Diversion header in the outgoing INVITE message when the call is forwarded	The SIP Trunk configuration option "Redirecting Diversion Header Delivery - outbound" is not checked	Make sure that the "Redirecting Diversion Header Delivery - outbound" is checked.



CHAPTER 2

SIP Trunk Call Flows for Release 5.0

This chapter describes SIP trunk call flows introduced or modified in Cisco Unified CallManager Release 5.0. It shows the interfaces and interactions between Cisco Unified CallManager and SIP networks for basic calls and supplementary services. The new features and enhancements introduced in this release do not impose any backward compatibility implications on previous versions of the SIP Trunk.

In comparison to the call flows in Release 4.x, Release 5.0 no longer requires preallocation of an MTP resource on the SIP trunk. As a result of not allocating an MTP, outbound INVITE messages do not contain SDP information. It is only when an MTP is allocated that the SIP trunk sends SDP in the INVITE. This is a key difference between Release 5.0 and Release 4.x.

If an MTP is configured on the SIP trunk then the call flows in Release 4.x still apply. The default behavior for Cisco Unified CallManager, however, is to remove the MTP across the SIP trunk. This section describes the default behavior.

Note There are few SIP devices that are not SIP compliant, and therefore, they do not support delayed media (INVITE without SDP), in order to interoperate with these types of devices the SIP Trunk associated with these devices must have MTP enabled.

The following SIP trunk call flows are described in this section:

Basic Call

- Basic Outgoing Call
- Basic Incoming Call
- Basic Early Media Call via an Inter Cluster SIP Trunk
- Basic Early Media Call
- Basic Hold-resume Call via an Inter Cluster SIP Trunk
- Basic Conference Call via an Inter Cluster SIP Trunk
- Basic Call to a SCCP Device via an Inter Cluster SIP Trunk
- Basic Call to a SIP Device via an Inter Cluster SIP Trunk
- Basic Attended Transfer Call via an Inter Cluster SIP TrunkTrunk
- Basic Early Transfer Call via a Inter Cluster SIP Trunk
- Basic Hold-resume Call via a SIP Trunk to a SIP Proxy

DTMF

- Call Between Cisco Unified CallManager SCCP Phone and SIP Gateway Using KPML
- Call Between Cisco Unified CallManager SCCP Phone and SIP Gateway Using Unsolicited NOTIFY
- Call Between Cisco Unified CallManager SCCP Phone and SIP Gateway Using RFC2833

Presence

- Outgoing Presence Subscription
- Incoming Presence Subscription
- Incoming Presence Forbidden for Authorization Failure

Call Transfer

- Attended Transfer from Proxy to a SCCP Cisco Unified IP Phone
- Attended Transfer Using the Cisco Unified CallManager SIP Trunk
- Early Attended Transfer to SIP Proxy via Cisco Unified CallManager SIP Trunk
- Blind Transfer from a SIP Proxy Phone using the SIP Trunk

UPDATE Method

- Early Transfer Call to SIP Gateway No PRACK via Cisco Unified CallManager SIP Trunk
- Early Transfer Call to SIP Gateway with PRACK via Cisco Unified CallManager SIP Trunk

TLS

- TLS Rejection with X509 Subject Name Mismatch

T38 Fax

- SIP Trunk Passes Through T38 Fax Call Between SIP Gateways
- SIP ICT Trunk Passes Through T38 Fax Call Between Two H323 Networks
- SIP Trunk Passes Through T38 Fax Call Between SIP and H323 Networks
- SIP Trunk Passes Through T38 Fax Call Between H323 and SIP Networks
- SIP Trunk Passes Through T38 Fax Call Between SIP and H323(MTP) Networks
- SIP Trunk Passes Through T38 Fax Call Between H323(MTP) and SIP Networks

SIPS URI

- Incoming SIPS URI Request Redirected by Cisco Unified CallManager
- Incoming SIPS URI Request Rejected by Cisco Unified CallManager

INFO Method

- SIP Video Call Using INFO Method

Message Waiting Indicator

- MWI Status via Unsolicited NOTIFY

PRACK Method

- Outbound Early Media Call with PRACK
- Outbound Delayed Media Call with PRACK

Call Preservation

- Session Timers Negotiation and Refresh for the Incoming SIP Trunk Call on Cisco Unified CallManager
- Session Timers Negotiation and Refresh for the Outgoing SIP Trunk Call
- Periodic Refresh after Session Timer Negotiation Failure
- SIP Trunk Call Preservation when Cisco Unified CallManager is the Refresher
- SIP Trunk Call Preservation when Cisco Unified CallManager is not the Refresher

3xx Redirection

- Incoming 3xx Redirection

Authentication and Authorization

- Cisco Unified CallManager Gets Authenticated as UAC
- Cisco Unified CallManager Authenticates Incoming Request

Access Control List

- Access Control List, Deny Presence Subscription
- Access Control List, Deny Out of Dialog REFER
- Access Control List, Deny Unsolicited NOTIFY
- Access Control List, Deny INVITE with Replaces Header
- Access Control List, Deny REFER with Replaces Header

Resource Reservation Protocol

- Outgoing RSVP Call through SIP Trunk
- Incoming RSVP SIP Trunk Call

Click2Dial

- Click2Dial from SIP APP Server to Cisco IP SIP Phones

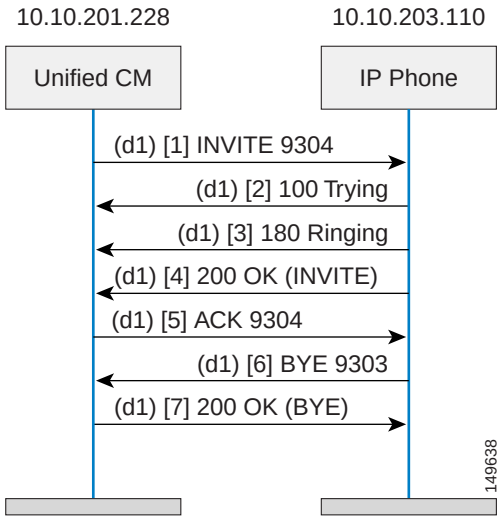
Basic Call

Basic Outgoing Call

The following call flow illustrates the SIP messaging that takes place between a Cisco Unified CallManager and a Cisco Unified IP Phone via a SIP trunk.

- Cisco Unified CallManager sent out the initial INVITE.
- Configuration:
  - Node = Unified CM, IP = 10.10.201.228
  - Node = IP Phone, IP = 10.10.203.110

Basic outgoing call




```
[1] INVITE sip:9304@10.10.203.110:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK2ab2ff19
Remote-Party-ID: <sip:9303@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29576274
To: <sip:9304@10.10.203.110>
Date: Mon, 13 Feb 2006 18:43:24 GMT
Call-ID: 9ba17380-3f01d34c-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:9303@10.10.201.228:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.201.228:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK2ab2ff19
From: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29576274
To: <sip:9304@10.10.203.110>
Call-ID: 9ba17380-3f01d34c-2-e4c912ac@10.10.201.228
Date: Mon, 13 Feb 2006 18:43:21 GMT
CSeq: 101 INVITE
Server: Cisco-CP7960G/7.5
Contact: <sip:9304@10.10.203.110:5060>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK2ab2ff19
From: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29576274
To: <sip:9304@10.10.203.110>;tag=000dbd740456000e2d3adbf5-1acde543
Call-ID: 9ba17380-3f01d34c-2-e4c912ac@10.10.201.228
Date: Mon, 13 Feb 2006 18:43:21 GMT
CSeq: 101 INVITE
```

```
Server: Cisco-CP7960G/7.5
Contact: <sip:9304@10.10.203.110:5060>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Content-Length: 0

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK2ab2ff19
From: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29576274
To: <sip:9304@10.10.203.110>;tag=000dbd740456000e2d3adbf5-1acde543
Call-ID: 9ba17380-3f01d34c-2-e4c912ac@10.10.201.228
Date: Mon, 13 Feb 2006 18:43:24 GMT
CSeq: 101 INVITE
Server: Cisco-CP7960G/7.5
Contact: <sip:9304@10.10.203.110:5060>
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 5348 0 IN IP4 10.10.203.110
s=SIP Call
t=0 0
m=audio 30828 RTP/AVP 18 0 8 101
c=IN IP4 10.10.203.110
a=rtpmap:18 G729/8000
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv

[5] ACK sip:9304@10.10.203.110:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK7628b67
From: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29576274
To: <sip:9304@10.10.203.110>;tag=000dbd740456000e2d3adbf5-1acde543
Date: Mon, 13 Feb 2006 18:43:24 GMT
Call-ID: 9ba17380-3f01d34c-2-e4c912ac@10.10.201.228
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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.109
t=0 0
m=audio 29090 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[6] BYE sip:9303@10.10.201.228:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.203.110:5060;branch=z9hG4bK52919c91
From: <sip:9304@10.10.203.110>;tag=000dbd740456000e2d3adbf5-1acde543
To: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29576274
Call-ID: 9ba17380-3f01d34c-2-e4c912ac@10.10.201.228
Max-Forwards: 70
Date: Mon, 13 Feb 2006 18:43:27 GMT
CSeq: 101 BYE
User-Agent: Cisco-CP7960G/7.5
Content-Length: 0
```

```
[7] SIP/2.0 200 OK

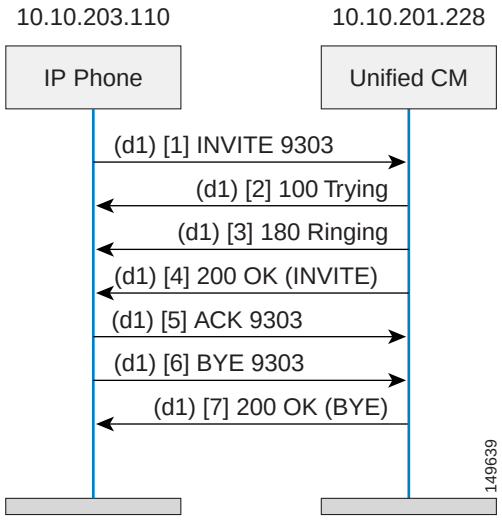
Via: SIP/2.0/UDP 10.10.203.110:5060;branch=z9hG4bK52919c91
From: <sip:9304@10.10.203.110>;tag=000dbd740456000e2d3adbf5-1acde543
To: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29576274
Date: Mon, 13 Feb 2006 18:43:30 GMT
Call-ID: 9ba17380-3f01d34c-2-e4c912ac@10.10.201.228
CSeq: 101 BYE
Content-Length: 0
```

Basic Incoming Call

The following call flow illustrates the SIP messaging that takes place between a Cisco Unified CallManager and a Cisco Unified IP Phone via a SIP trunk.

- Cisco Unified IP Phone sent out the initial INVITE.
- Configuration:
  - Node = Unified CM, IP = 10.10.201.228
  - Node = IP Phone, IP = 10.10.203.110

Basic Incoming call




```
[1] INVITE sip:9303@10.10.201.228 SIP/2.0

Via: SIP/2.0/UDP 10.10.203.110:5060;branch=z9hG4bK69f0ea61
From: "9304" <sip:9304@10.10.201.228>;tag=000dbd740456001472a54a06-761e2f4e
To: <sip:9303@10.10.201.228>
Call-ID: 000dbd74-04560003-04b6d538-1e73b51b@10.10.203.110
Max-Forwards: 70
Date: Mon, 13 Feb 2006 18:48:08 GMT
CSeq: 101 INVITE
User-Agent: Cisco-CP7960G/7.5
Contact: <sip:9304@10.10.203.110:5060>
Expires: 180
Accept: application/sdp
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 25890 0 IN IP4 10.10.203.110
s=SIP Call
t=0 0
m=audio 30832 RTP/AVP 18 0 8 101
c=IN IP4 10.10.203.110
a=rtpmap:18 G729/8000
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.203.110:5060;branch=z9hG4bK69f0ea61
From: "9304" <sip:9304@10.10.201.228>;tag=000dbd740456001472a54a06-761e2f4e
To: <sip:9303@10.10.201.228>
Date: Mon, 13 Feb 2006 18:48:11 GMT
Call-ID: 000dbd74-04560003-04b6d538-1e73b51b@10.10.203.110
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.203.110:5060;branch=z9hG4bK69f0ea61
From: "9304" <sip:9304@10.10.201.228>;tag=000dbd740456001472a54a06-761e2f4e
To: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29577577
Date: Mon, 13 Feb 2006 18:48:11 GMT
Call-ID: 000dbd74-04560003-04b6d538-1e73b51b@10.10.203.110
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9303@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9303@10.10.201.228:5060>
Content-Length: 0

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.203.110:5060;branch=z9hG4bK69f0ea61
From: "9304" <sip:9304@10.10.201.228>;tag=000dbd740456001472a54a06-761e2f4e
To: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29577577
Date: Mon, 13 Feb 2006 18:48:11 GMT
Call-ID: 000dbd74-04560003-04b6d538-1e73b51b@10.10.203.110
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:9303@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9303@10.10.201.228:5060>
Content-Type: application/sdp
Content-Length: 216
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.109
t=0 0
m=audio 24980 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

```
[5] ACK sip:9303@10.10.201.228:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.203.110:5060;branch=z9hG4bK4f1bef9d
From: "9304" <sip:9304@10.10.201.228>;tag=000dbd740456001472a54a06-761e2f4e
To: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29577577
Call-ID: 000dbd74-04560003-04b6d538-1e73b51b@10.10.203.110
Max-Forwards: 70
Date: Mon, 13 Feb 2006 18:48:11 GMT
CSeq: 101 ACK
User-Agent: Cisco-CP7960G/7.5
Content-Length: 0

[6] BYE sip:9303@10.10.201.228:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.203.110:5060;branch=z9hG4bK19bd232e
From: "9304" <sip:9304@10.10.201.228>;tag=000dbd740456001472a54a06-761e2f4e
To: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29577577
Call-ID: 000dbd74-04560003-04b6d538-1e73b51b@10.10.203.110
Max-Forwards: 70
Date: Mon, 13 Feb 2006 18:48:13 GMT
CSeq: 102 BYE
User-Agent: Cisco-CP7960G/7.5
Content-Length: 0

[7] SIP/2.0 200 OK

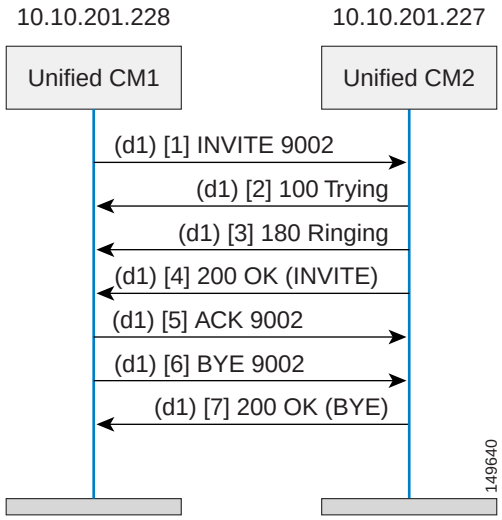
Via: SIP/2.0/UDP 10.10.203.110:5060;branch=z9hG4bK19bd232e
From: "9304" <sip:9304@10.10.201.228>;tag=000dbd740456001472a54a06-761e2f4e
To: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29577577
Date: Mon, 13 Feb 2006 18:48:16 GMT
Call-ID: 000dbd74-04560003-04b6d538-1e73b51b@10.10.203.110
CSeq: 102 BYE
Content-Length: 0
```

Basic Early Media Call via an Inter Cluster SIP Trunk

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

- Cisco Unified CallManager (CM1) sent out the initial INVITE with SDP.
- Configuration:
  - Node = Unified CM1, IP = 10.10.201.228
  - Node = Unified CM2, IP = 10.10.201.227

Basic Early Media Call via an Inter Cluster SIP Trunk




```
[1] INVITE sip:9002@10.10.201.227:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK44ebed7d
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29935926
To: <sip:9002@10.10.201.227>
Date: Tue, 14 Feb 2006 19:42:14 GMT
Call-ID: fe167480-3f213296-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:9309@10.10.201.228:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Max-Forwards: 70
Content-Type: application/sdp
Content-Length: 216
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.201.228
t=0 0
m=audio 24598 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK44ebed7d
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29935926
To: <sip:9002@10.10.201.227>
Date: Tue, 14 Feb 2006 19:42:14 GMT
Call-ID: fe167480-3f213296-2-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

```
[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK44ebed7d
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29935926
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540947
Date: Tue, 14 Feb 2006 19:42:14 GMT
Call-ID: fe167480-3f213296-2-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Content-Length: 0

[4] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK44ebed7d
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29935926
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540947
Date: Tue, 14 Feb 2006 19:42:14 GMT
Call-ID: fe167480-3f213296-2-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 216
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.201.227
t=0 0
m=audio 24588 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[5] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK29bffd76
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29935926
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540947
Date: Tue, 14 Feb 2006 19:42:14 GMT
Call-ID: fe167480-3f213296-2-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0

[6] BYE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK3db4b620
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29935926
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540947
Date: Tue, 14 Feb 2006 19:42:14 GMT
Call-ID: fe167480-3f213296-2-e4c912ac@10.10.201.228
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0
```

```
[7] SIP/2.0 200 OK

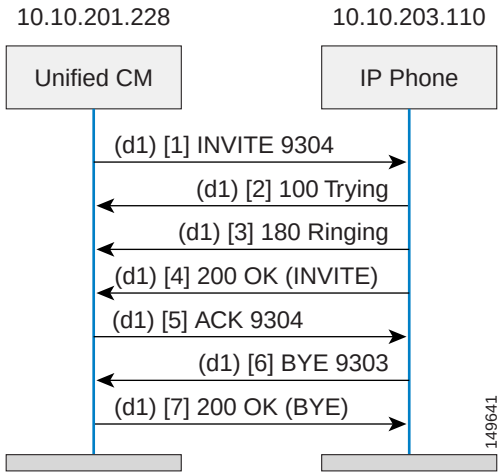
Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK3db4b620
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29935926
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540947
Date: Tue, 14 Feb 2006 19:42:16 GMT
Call-ID: fe167480-3f213296-2-e4c912ac@10.10.201.228
CSeq: 102 BYE
Content-Length: 0
```

Basic Early Media Call

The following call flow illustrates the SIP messaging that takes place between a Cisco Unified CallManager and a Cisco Unified IP Phone via a SIP trunk.

- Cisco Unified CallManager sent out the initial INVITE with SDP.
- Configuration:
  - Node = Unified CM, IP = 10.10.201.228
  - Node = IP Phone, IP = 10.10.203.110

Basic Early Media Call




```
[1] INVITE sip:9304@10.10.203.110:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK3fdf6bbb
Remote-Party-ID: <sip:9303@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29922530
To: <sip:9304@10.10.203.110>
Date: Tue, 14 Feb 2006 18:45:48 GMT
Call-ID: 1bdfdb80-3f21255c-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:9303@10.10.201.228:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.201.228:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Type: application/sdp
```

```
Content-Length: 216
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.201.228
t=0 0
m=audio 24590 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK3fdf6bbb
From: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29922530
To: <sip:9304@10.10.203.110>
Call-ID: 1bdfdb80-3f21255c-2-e4c912ac@10.10.201.228
Date: Tue, 14 Feb 2006 18:45:51 GMT
CSeq: 101 INVITE
Server: Cisco-CP7960G/7.5
Contact: <sip:9304@10.10.203.110:5060>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK3fdf6bbb
From: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29922530
To: <sip:9304@10.10.203.110>;tag=000dbd74045605b114517212-2456f52c
Call-ID: 1bdfdb80-3f21255c-2-e4c912ac@10.10.201.228
Date: Tue, 14 Feb 2006 18:45:51 GMT
CSeq: 101 INVITE
Server: Cisco-CP7960G/7.5
Contact: <sip:9304@10.10.203.110:5060>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Content-Length: 0

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK3fdf6bbb
From: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29922530
To: <sip:9304@10.10.203.110>;tag=000dbd74045605b114517212-2456f52c
Call-ID: 1bdfdb80-3f21255c-2-e4c912ac@10.10.201.228
Date: Tue, 14 Feb 2006 18:45:53 GMT
CSeq: 101 INVITE
Server: Cisco-CP7960G/7.5
Contact: <sip:9304@10.10.203.110:5060>
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 6207 0 IN IP4 10.10.203.110
s=SIP Call
t=0 0
m=audio 30848 RTP/AVP 0 101
c=IN IP4 10.10.203.110
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

```
[5] ACK sip:9304@10.10.203.110:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK62692c80
From: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29922530
To: <sip:9304@10.10.203.110>;tag=000dbd74045605b114517212-2456f52c
Date: Tue, 14 Feb 2006 18:45:48 GMT
Call-ID: 1bdfdb80-3f21255c-2-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0

[6] BYE sip:9303@10.10.201.228:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.203.110:5060;branch=z9hG4bK09f792a3
From: <sip:9304@10.10.203.110>;tag=000dbd74045605b114517212-2456f52c
To: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29922530
Call-ID: 1bdfdb80-3f21255c-2-e4c912ac@10.10.201.228
Max-Forwards: 70
Date: Tue, 14 Feb 2006 18:45:56 GMT
CSeq: 101 BYE
User-Agent: Cisco-CP7960G/7.5
Content-Length: 0

[7] SIP/2.0 200 OK

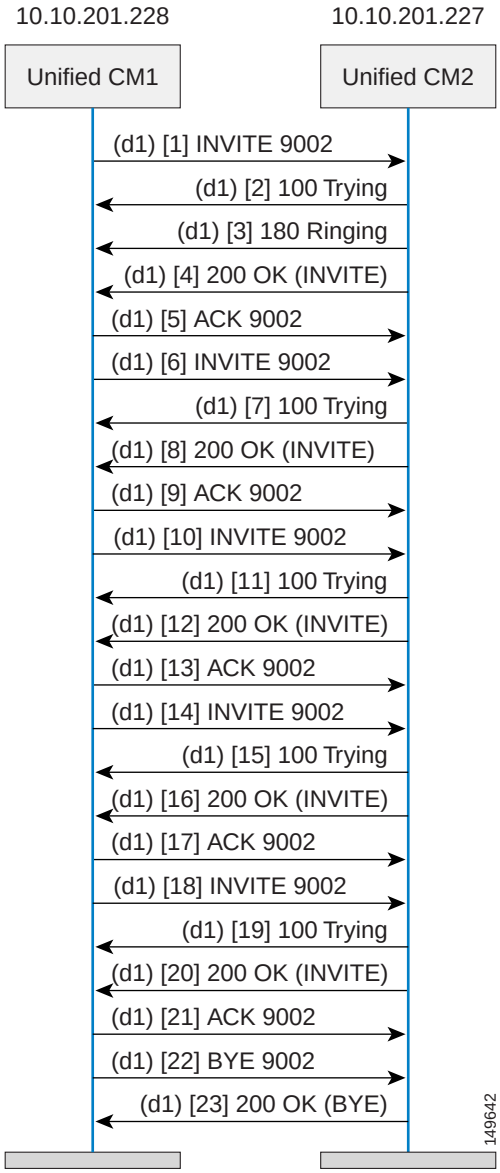
Via: SIP/2.0/UDP 10.10.203.110:5060;branch=z9hG4bK09f792a3
From: <sip:9304@10.10.203.110>;tag=000dbd74045605b114517212-2456f52c
To: <sip:9303@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29922530
Date: Tue, 14 Feb 2006 18:45:54 GMT
Call-ID: 1bdfdb80-3f21255c-2-e4c912ac@10.10.201.228
CSeq: 101 BYE
Content-Length: 0
```

Basic Hold-resume Call via an Inter Cluster SIP Trunk

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

- Cisco Unified CallManager (CM1) initiated the "hold" and then resumed the call.
- Configuration:
  - Node = Unified CM1, IP = 10.10.201.228
  - Node = Unified CM2, IP = 10.10.201.227

Basic Hold-resume Call via an Inter Cluster SIP Trunk




```
1] INVITE sip:9002@10.10.201.227:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK3031bf1e
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>
Date: Tue, 14 Feb 2006 19:49:24 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:9309@10.10.201.228:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Max-Forwards: 70
Content-Length: 0
```

```
[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK3031bf1e
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>
Date: Tue, 14 Feb 2006 19:49:24 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK3031bf1e
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:24 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Content-Length: 0

[4] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK3031bf1e
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:24 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 311
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 28592 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

[5] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK7ea85dc4
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:24 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 24204 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[6] INVITE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK53924e74
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:27 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uas
Content-Type: application/sdp
Content-Length: 221
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 24204 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

[7] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK53924e74
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:27 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0

[8] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK53924e74
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:27 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
```

```
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 28592 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

[9] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK7b9ffa5d
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:27 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Length: 0

[10] INVITE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK12078864
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:27 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uas
Content-Length: 0

[11] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK12078864
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:27 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow-Events: presence
Content-Length: 0
```

```
[12] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK12078864
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:27 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 311
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 28592 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

[13] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK4b690b99
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:27 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 227
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.201.228
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

[14] INVITE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK757ae77d
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:30 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
Supported: timer,replaces
```

```
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uas
Content-Type: application/sdp
Content-Length: 220
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.201.228
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

[15] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK757ae77d
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:30 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
CSeq: 104 INVITE
Allow-Events: presence
Content-Length: 0

[16] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK757ae77d
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:30 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 28592 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

[17] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK17b1e3b9
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
```

```
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:30 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence
Content-Length: 0

[18] INVITE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK5276c935
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:30 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 105 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uas
Content-Length: 0

[19] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK5276c935
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:30 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
CSeq: 105 INVITE
Allow-Events: presence
Content-Length: 0

[20] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK5276c935
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:30 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
CSeq: 105 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 311
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 28592 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

[21] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK460714a5
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:30 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 105 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 216
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 24620 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[22] BYE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK4b1a491c
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:30 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 106 BYE
Content-Length: 0

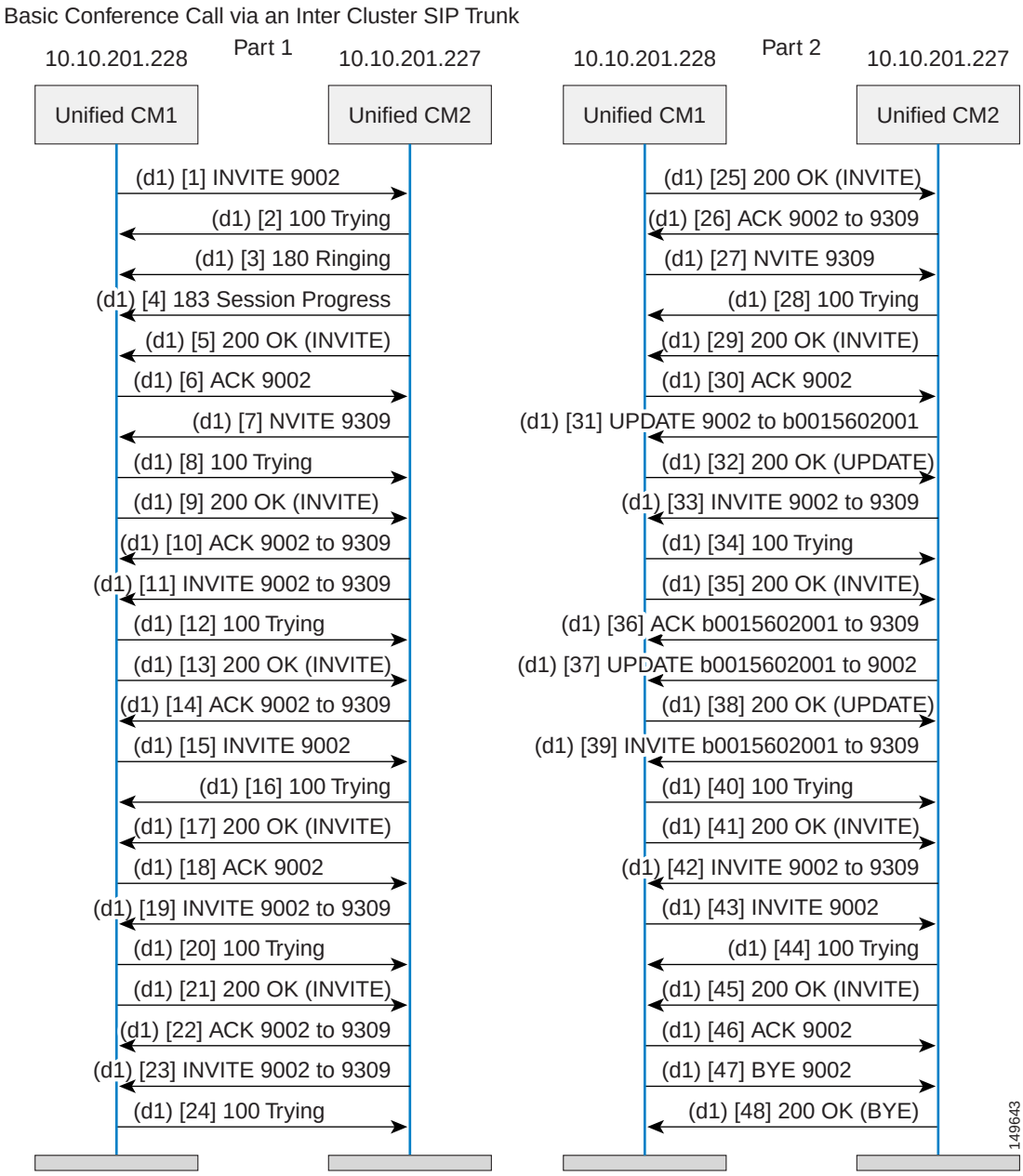
[23] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK4b1a491c
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29937862
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540952
Date: Tue, 14 Feb 2006 19:49:31 GMT
Call-ID: fe633f80-3f213444-1-e4c912ac@10.10.201.228
CSeq: 106 BYE
Content-Length: 0
```

Basic Conference Call via an Inter Cluster SIP Trunk

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

- Cisco Unified IP Phone A (registered at Unified CM2) conferenced to Cisco Unified IP Phone B (registered at Unified CM2 as well).
- Configuration:
  - Node = Unified CM1, IP = 10.10.201.228
  - Node = Unified CM2, IP = 10.10.201.227



```
[1] INVITE sip:9002@10.10.201.227:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK2ee7c65d
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>
Date: Tue, 14 Feb 2006 20:07:05 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:9309@10.10.201.228:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK2ee7c65d
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>
Date: Tue, 14 Feb 2006 20:07:05 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK2ee7c65d
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:05 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Content-Length: 0

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK2ee7c65d
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:05 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 311
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 31642 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

[5] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK2ee7c65d
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:05 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 311
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 31642 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

[6] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK2905c4aa
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:05 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 31990 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

```
[7] INVITE sip:9309@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK6eca0765
Remote-Party-ID: <sip:9002@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:13 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 1993015296-1059141737-6237-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 316
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 31642 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=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[8] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK6eca0765
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:13 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[9] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK6eca0765
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:13 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
```

```
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 31990 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

[10] ACK sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK6c05295c
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:13 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0

[11] INVITE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK30711107
Remote-Party-ID: <sip:9002@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:13 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 1993015296-1059141737-6237-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Length: 0

[12] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK30711107
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:13 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0

[13] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK30711107
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:13 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 102 INVITE
```

```
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 301
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.201.228
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

[14] ACK sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK500823c7
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:13 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 227
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.201.227
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

[15] INVITE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1598b5fa
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:13 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.228:5060;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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 32654 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[16] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1598b5fa
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:13 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0

[17] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1598b5fa
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:13 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 227
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.201.227
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

[18] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK7012f092
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:13 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Length: 0
```

```
[19] INVITE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK253e608
Remote-Party-ID: <sip:9002@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 1993015296-1059141737-6237-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 220
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.201.227
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

[20] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK253e608
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow-Events: presence
Content-Length: 0

[21] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK253e608
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
```

```
t=0 0
m=audio 32654 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

[22] ACK sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK29170006
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Content-Length: 0

[23] INVITE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK60fc3856
Remote-Party-ID: <sip:9002@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 1993015296-1059141737-6237-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Length: 0

[24] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK60fc3856
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 104 INVITE
Allow-Events: presence
Content-Length: 0

[25] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK60fc3856
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
```

```
Content-Type: application/sdp
Content-Length: 301
v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.201.228
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

[26] ACK sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK2203ecc6
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.201.227
t=0 0
m=audio 24604 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

[27] INVITE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK35d05a1e
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.228:5060;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 10.10.201.228
```

```
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 17126 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[28] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK35d05a1e
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow-Events: presence
Content-Length: 0

[29] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK35d05a1e
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 216
v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.201.227
t=0 0
m=audio 24604 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[30] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK30d3da94
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Content-Length: 0

[31] UPDATE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK35a1f1b0
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
```

```
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 105 UPDATE
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Remote-Party-ID: "Conference"
<sip:b0015602001@10.10.201.227>;party=calling;screen=yes;privacy=uri
Content-Length: 0

[32] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK35a1f1b0
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:22 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 105 UPDATE
Allow-Events: presence
Contact: <sip:b0015602001@10.10.201.228:5060;transport=tcp>
Content-Length: 0

[33] INVITE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK7b2b0fc0
Remote-Party-ID: "Conference"
<sip:b0015602001@10.10.201.227>;party=calling;screen=yes;privacy=uri
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 1993015296-1059141737-6237-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 106 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 221
v=0
o=CiscoSystemsCCM-SIP 2000 8 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 24604 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

[34] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK7b2b0fc0
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 106 INVITE
Allow-Events: presence
Content-Length: 0
```

```
[35] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK7b2b0fc0
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 106 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:b0015602001@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 8 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 17126 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

[36] ACK sip:b0015602001@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK7866154f
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 106 ACK
Allow-Events: presence
Content-Length: 0

[37] UPDATE sip:b0015602001@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK7dc33b32
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 107 UPDATE
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Remote-Party-ID: <sip:9002@10.10.201.227>;party=calling;screen=yes;privacy=off
Content-Length: 0

[38] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK7dc33b32
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 107 UPDATE
Allow-Events: presence
```

```
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Content-Length: 0

[39] INVITE sip:b0015602001@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK298b8c70
Remote-Party-ID: <sip:9002@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 1993015296-1059141737-6237-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 108 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Length: 0

[40] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK298b8c70
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 108 INVITE
Allow-Events: presence
Content-Length: 0

[41] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK298b8c70
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 108 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 301
v=0
o=CiscoSystemsCCM-SIP 2000 9 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.201.228
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

[42] ACK sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK4cbaa08c
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 108 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 9 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 31642 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

[43] INVITE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK4be358c9
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.228:5060;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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 18704 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[44] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK4be358c9
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:37 GMT
```

```
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 104 INVITE
Allow-Events: presence
Content-Length: 0

[45] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK4be358c9
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 217
v=0
o=CiscoSystemsCCM-SIP 2000 10 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 31642 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[46] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK80994c7
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence
Content-Length: 0

[47] BYE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1f6f032f
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:37 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 105 BYE
Content-Length: 0

[48] SIP/2.0 200 OK

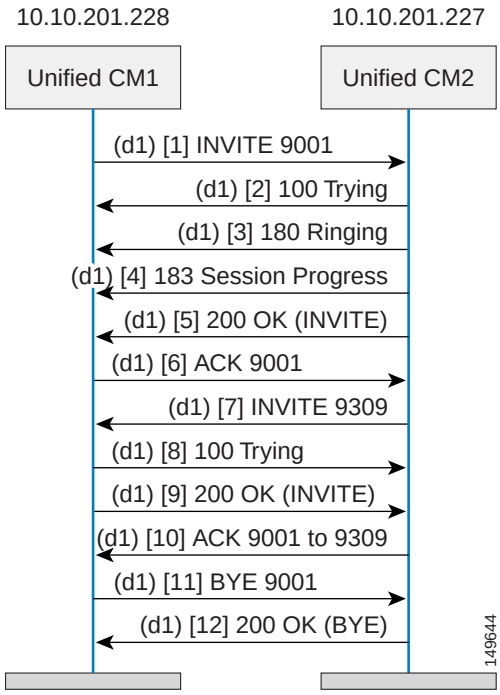
Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1f6f032f
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29942138
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540965
Date: Tue, 14 Feb 2006 20:07:42 GMT
Call-ID: 76cb0000-3f213869-1-e4c912ac@10.10.201.228
CSeq: 105 BYE
Content-Length: 0
```

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

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

- Cisco Unified CallManager (CM1) sent out the initial INVITE.
- Configuration:
  - Node = Unified CM1, IP = 10.10.201.228
  - Node = Unified CM2, IP = 10.10.201.227

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




```
[1] INVITE sip:9001@10.10.201.227:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK45166141
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29930994
To: <sip:9001@10.10.201.227>
Date: Tue, 14 Feb 2006 19:20:36 GMT
Call-ID: f86b5f80-3f212d84-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:9309@10.10.201.228:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Max-Forwards: 70
Content-Length: 0
```

```
[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK45166141
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29930994
To: <sip:9001@10.10.201.227>
Date: Tue, 14 Feb 2006 19:20:36 GMT
Call-ID: f86b5f80-3f212d84-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK45166141
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29930994
To: <sip:9001@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540933
Date: Tue, 14 Feb 2006 19:20:36 GMT
Call-ID: f86b5f80-3f212d84-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9001@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9001@10.10.201.227:5060;transport=tcp>
Content-Length: 0

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK45166141
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29930994
To: <sip:9001@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540933
Date: Tue, 14 Feb 2006 19:20:36 GMT
Call-ID: f86b5f80-3f212d84-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9001@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9001@10.10.201.227:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 301
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.201.227
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

[5] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK45166141
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29930994
To: <sip:9001@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540933
Date: Tue, 14 Feb 2006 19:20:36 GMT
Call-ID: f86b5f80-3f212d84-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9001@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9001@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
```

```
Require: timer
Content-Type: application/sdp
Content-Length: 301
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.201.227
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

[6] ACK sip:9001@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK163e2aca
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29930994
To: <sip:9001@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540933
Date: Tue, 14 Feb 2006 19:20:36 GMT
Call-ID: f86b5f80-3f212d84-1-e4c912ac@10.10.201.228
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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 31686 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

[7] INVITE sip:9309@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK6ec39a57
Remote-Party-ID: <sip:9001@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9001@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540933
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29930994
Date: Tue, 14 Feb 2006 19:20:38 GMT
Call-ID: f86b5f80-3f212d84-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 4167786368-1059138948-6166-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:9001@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 216
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.201.227
s=SIP Call
```

```
c=IN IP4 10.10.203.107
t=0 0
m=audio 22030 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[8] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK6ec39a57
From: <sip:9001@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540933
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29930994
Date: Tue, 14 Feb 2006 19:20:38 GMT
Call-ID: f86b5f80-3f212d84-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[9] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK6ec39a57
From: <sip:9001@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540933
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29930994
Date: Tue, 14 Feb 2006 19:20:38 GMT
Call-ID: f86b5f80-3f212d84-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9001@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 216
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 31686 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[10] ACK sip:9001@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK785ee48f
From: <sip:9001@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540933
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29930994
Date: Tue, 14 Feb 2006 19:20:38 GMT
Call-ID: f86b5f80-3f212d84-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0

[11] BYE sip:9001@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK5a9a4f31
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29930994
To: <sip:9001@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540933
Date: Tue, 14 Feb 2006 19:20:38 GMT
Call-ID: f86b5f80-3f212d84-1-e4c912ac@10.10.201.228
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
```

```
CSeq: 102 BYE
Content-Length: 0

[12] SIP/2.0 200 OK

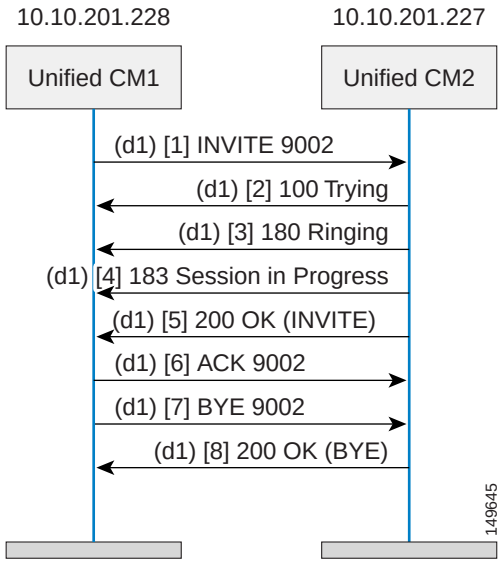
Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK5a9a4f31
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29930994
To: <sip:9001@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540933
Date: Tue, 14 Feb 2006 19:20:39 GMT
Call-ID: f86b5f80-3f212d84-1-e4c912ac@10.10.201.228
CSeq: 102 BYE
Content-Length: 0
```

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

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

- Cisco Unified CallManager (CM1) sent out the initial INVITE.
- Configuration:
  - Node = Unified CM1, IP = 10.10.201.228
  - Node = Unified CM2, IP = 10.10.201.227

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




```
[1] INVITE sip:9002@10.10.201.227:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1eaeb076
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29931794
To: <sip:9002@10.10.201.227>
Date: Tue, 14 Feb 2006 19:24:00 GMT
Call-ID: 72034d80-3f212e50-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
```

```
CSeq: 101 INVITE
Contact: <sip:9309@10.10.201.228:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1eaeb076
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29931794
To: <sip:9002@10.10.201.227>
Date: Tue, 14 Feb 2006 19:24:00 GMT
Call-ID: 72034d80-3f212e50-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1eaeb076
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29931794
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540936
Date: Tue, 14 Feb 2006 19:24:00 GMT
Call-ID: 72034d80-3f212e50-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Content-Length: 0

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1eaeb076
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29931794
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540936
Date: Tue, 14 Feb 2006 19:24:00 GMT
Call-ID: 72034d80-3f212e50-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 311
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 31244 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
```

```
[5] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1eaeb076
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29931794
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540936
Date: Tue, 14 Feb 2006 19:24:00 GMT
Call-ID: 72034d80-3f212e50-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 311
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 31244 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

[6] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK6fb61fe5
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29931794
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540936
Date: Tue, 14 Feb 2006 19:24:00 GMT
Call-ID: 72034d80-3f212e50-1-e4c912ac@10.10.201.228
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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 19252 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[7] BYE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK463de5dd
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29931794
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540936
Date: Tue, 14 Feb 2006 19:24:00 GMT
Call-ID: 72034d80-3f212e50-1-e4c912ac@10.10.201.228
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0
```

```
[8] SIP/2.0 200 OK

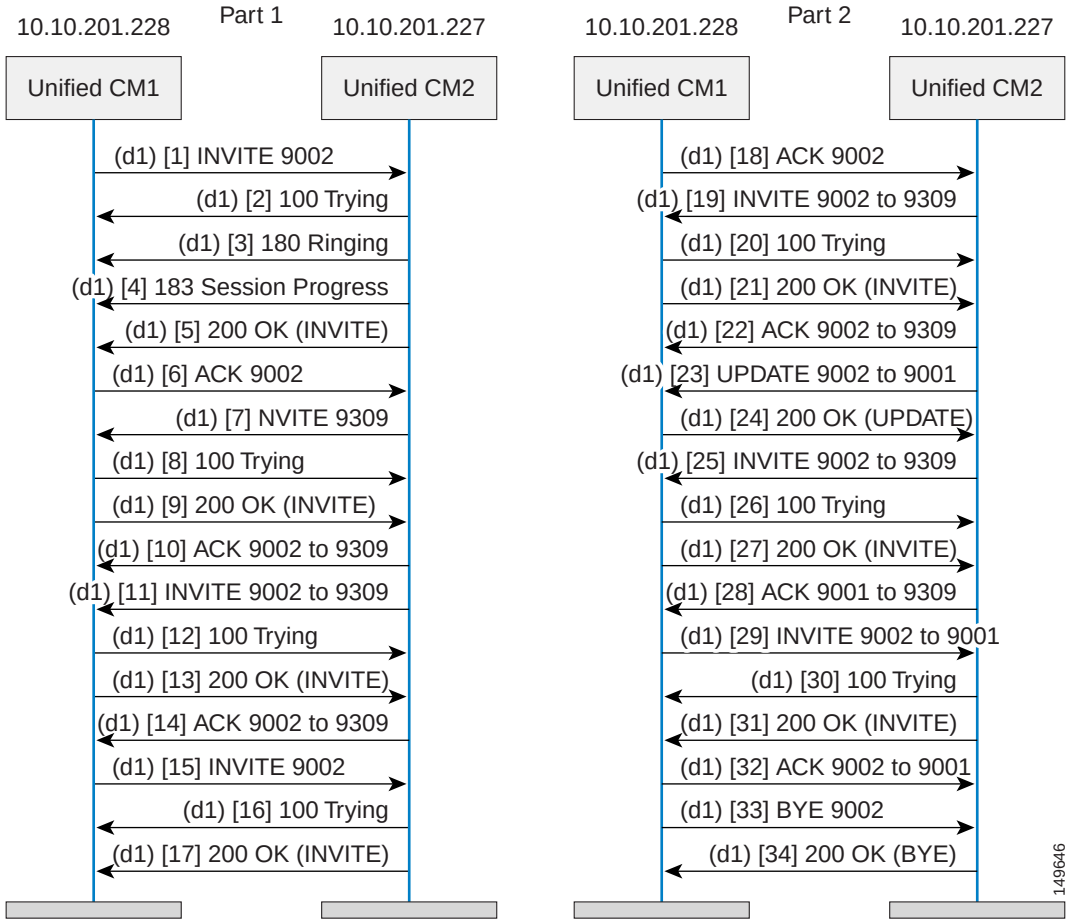
Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK463de5dd
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29931794
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540936
Date: Tue, 14 Feb 2006 19:24:04 GMT
Call-ID: 72034d80-3f212e50-1-e4c912ac@10.10.201.228
CSeq: 102 BYE
Content-Length: 0
```

Basic Attended Transfer Call via an Inter Cluster SIP Trunk

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

- Cisco Unified IP Phone A (registered at Unified CM2) made an attended transfer to Cisco Unified IP Phone B (registered at Unified CM2 as well).
- Configuration:
  - Node = Unified CM1, IP = 10.10.201.228
  - Node = Unified CM2, IP = 10.10.201.227

Basic Attended Transfer Call via an Inter Cluster SIP Trunk



```
[1] INVITE sip:9002@10.10.201.227:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1dfb6a1c
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>
Date: Tue, 14 Feb 2006 20:04:38 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:9309@10.10.201.228:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1dfb6a1c
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227
Date: Tue, 14 Feb 2006 20:04:38 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1dfb6a1c
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:38 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Content-Length: 0

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1dfb6a1c
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:38 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 311
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 22060 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

[5] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1dfb6a1c
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:38 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 311
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 22060 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

[6] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK443a6e1d
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:38 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 17314 RTP/AVP 0 10
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

```
[7] INVITE sip:9309@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK2937034c
Remote-Party-ID: <sip:9002@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:42 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 523015296-1059141590-6231-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 316
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 22060 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=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[8] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK2937034c
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:42 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[9] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK2937034c
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:42 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 228
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 17314 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

[10] ACK sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK60f00925
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:42 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0

[11] INVITE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK385fb5aa
Remote-Party-ID: <sip:9002@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:42 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 523015296-1059141590-6231-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Length: 0

[12] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK385fb5aa
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:42 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0

[13] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK385fb5aa
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:42 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
```

```
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 301
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.201.228
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

[14] ACK sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK1a374dd8
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:42 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 227
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.201.227
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

[15] INVITE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK65dbc842
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:42 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.228:5060;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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 17530 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[16] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK65dbc842
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:42 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0

[17] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK65dbc842
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:42 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 227
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.201.227
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

[18] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK12459481
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:42 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Length: 0
```

```
[19] INVITE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK3bf8101c
Remote-Party-ID: <sip:9002@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 523015296-1059141590-6231-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 220
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.201.227
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

[20] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK3bf8101c
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow-Events: presence
Content-Length: 0

[21] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK3bf8101c
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.201.228
s=SIP Call
```

```
c=IN IP4 10.10.203.106
t=0 0
m=audio 17530 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

[22] ACK sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK3a442879
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Content-Length: 0

[23] UPDATE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK37e53850
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 UPDATE
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Remote-Party-ID: <sip:9001@10.10.201.227>;party=calling;screen=yes;privacy=off
Content-Length: 0

[24] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK37e53850
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 104 UPDATE
Allow-Events: presence
Contact: <sip:9001@10.10.201.228:5060;transport=tcp>
Content-Length: 0

[25] INVITE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK5cbc89e1
Remote-Party-ID: <sip:9001@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 523015296-1059141590-6231-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 105 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
```

```
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Length: 0

[26] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK5cbc89e1
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 105 INVITE
Allow-Events: presence
Content-Length: 0

[27] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK5cbc89e1
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 105 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9001@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 301
v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.201.228
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

[28] ACK sip:9001@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bKac5826e
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 105 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.107
t=0 0
```

```
m=audio 25088 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

[29] INVITE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK3773c11c
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:9001@10.10.201.228:5060;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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 18372 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[30] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK3773c11c
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow-Events: presence
Content-Length: 0

[31] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK3773c11c
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9001@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
```

```
Content-Length: 216
v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.107
t=0 0
m=audio 25088 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[32] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK6d84b8ea
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Content-Length: 0

[33] BYE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK5bf712e7
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:50 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 BYE
Content-Length: 0

[34] SIP/2.0 200 OK

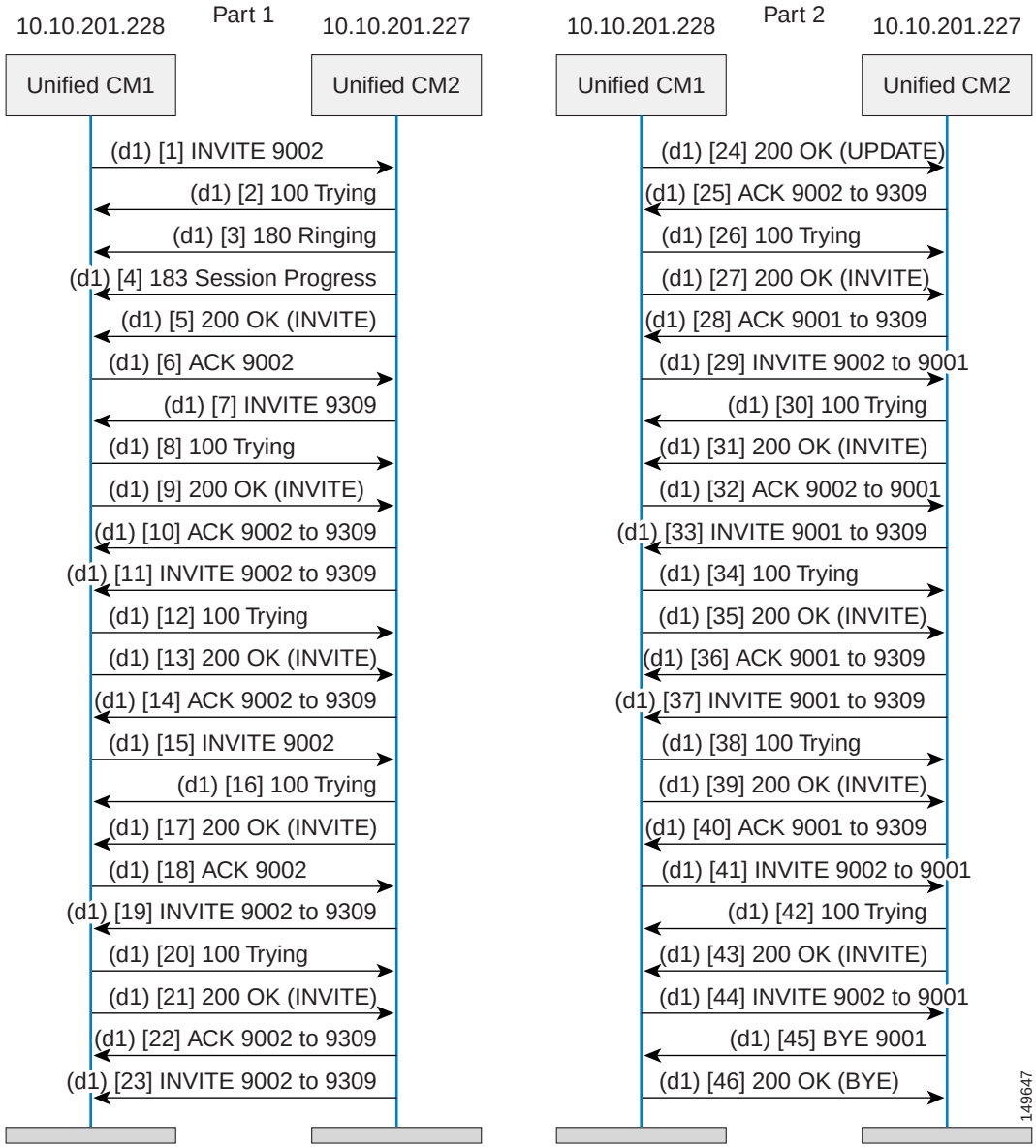
Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK5bf712e7
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29941550
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540960
Date: Tue, 14 Feb 2006 20:04:54 GMT
Call-ID: 1f2c9480-3f2137d6-1-e4c912ac@10.10.201.228
CSeq: 104 BYE
Content-Length: 0
```

Basic Early Transfer Call via a Inter Cluster SIP Trunk

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

- Cisco Unified IP Phone A (registered at Unified CM2) made an early transfer to Cisco Unified IP Phone B (registered at Unified CM2 as well).
- Configuration:
  - Node = Unified CM1, IP = 10.10.201.228
  - Node = Unified CM2, IP = 10.10.201.227

Basic Early Transfer Call via an Inter Cluster SIP Trunk



```
[1] INVITE sip:9002@10.10.201.227:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK37b25e2b
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>
Date: Tue, 14 Feb 2006 20:01:46 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:9309@10.10.201.228:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK37b25e2b
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>
Date: Tue, 14 Feb 2006 20:01:46 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK37b25e2b
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:01:46 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Content-Length: 0

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK37b25e2b
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:01:46 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 311
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 24858 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

[5] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK37b25e2b
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:01:46 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 311
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.108
t=0 0
m=audio 24858 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

[6] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK7d5c9de8
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:01:46 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 16548 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

```
[7] INVITE sip:9309@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK43d879e1
Remote-Party-ID: <sip:9002@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:50 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 3097982592-1059141418-6224-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 316
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 24858 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=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[8] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK43d879e1
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:50 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[9] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK43d879e1
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:50 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
```

```
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 16548 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

[10] ACK sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK19301752
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:50 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0

[11] INVITE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK2b2ef9b6
Remote-Party-ID: <sip:9002@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:50 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 3097982592-1059141418-6224-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Length: 0

[12] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK2b2ef9b6
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:50 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0

[13] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK2b2ef9b6
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:50 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
```

```
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 301
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.201.228
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

[14] ACK sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK71004a8c
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:50 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 227
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.201.227
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

[15] INVITE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK79837cae
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:01:50 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.228:5060;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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 16756 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[16] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK79837cae
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:01:50 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0

[17] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK79837cae
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:01:50 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9002@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 227
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.201.227
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

[18] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK38ac37d9
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:01:50 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Length: 0
```

```
[19] INVITE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK2ce94f36
Remote-Party-ID: <sip:9002@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 3097982592-1059141418-6224-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 220
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.201.227
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

[20] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK2ce94f36
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow-Events: presence
Content-Length: 0

[21] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK2ce94f36
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
```

```
t=0 0
m=audio 16756 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

[22] ACK sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK270b7617
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Content-Length: 0

[23] UPDATE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK13de4ef0
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 UPDATE
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Remote-Party-ID: <sip:9001@10.10.201.227>;party=calling;screen=yes;privacy=off
Content-Length: 0

[24] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK13de4ef0
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 104 UPDATE
Allow-Events: presence
Contact: <sip:9001@10.10.201.228:5060;transport=tcp>
Content-Length: 0

[25] INVITE sip:9002@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK101e9b58
Remote-Party-ID: <sip:9001@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 3097982592-1059141418-6224-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 105 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
```

```
Session-Expires: 1800;refresher=uac
Content-Length: 0

[26] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK101e9b58
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 105 INVITE
Allow-Events: presence
Content-Length: 0

[27] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK101e9b58
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 105 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9001@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 301
v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.201.228
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

[28] ACK sip:9001@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK31fd4c65
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 105 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 227
v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.201.227
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

[29] INVITE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK61bf8e9e
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:9001@10.10.201.228:5060;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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 17592 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[30] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK61bf8e9e
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow-Events: presence
Content-Length: 0

[31] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK61bf8e9e
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9001@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 227
v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.201.227
s=SIP Call
```

```
c=IN IP4 10.10.201.227
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

[32] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK1d24d567
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:01:59 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Content-Length: 0

[33] INVITE sip:9001@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK1e888405
Remote-Party-ID: <sip:9001@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 3097982592-1059141418-6224-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 106 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 220
v=0
o=CiscoSystemsCCM-SIP 2000 8 IN IP4 10.10.201.227
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

[34] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK1e888405
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 106 INVITE
Allow-Events: presence
Content-Length: 0
```

```
[35] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK1e888405
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 106 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9001@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 8 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 17592 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

[36] ACK sip:9001@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK24d75191
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 106 ACK
Allow-Events: presence
Content-Length: 0

[37] INVITE sip:9001@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK4ff73c25
Remote-Party-ID: <sip:9001@10.10.201.227>;party=calling;screen=yes;privacy=off
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 3097982592-1059141418-6224-3821605548
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 107 INVITE
Max-Forwards: 70
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires: 1800;refresher=uac
Content-Length: 0
```

```
[38] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK4ff73c25
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 107 INVITE
Allow-Events: presence
Content-Length: 0

[39] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK4ff73c25
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 107 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9309@10.10.201.228>;party=called;screen=yes;privacy=off
Contact: <sip:9001@10.10.201.228:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 301
v=0
o=CiscoSystemsCCM-SIP 2000 9 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.201.228
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

[40] ACK sip:9001@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK551fd3f8
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 107 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 9 IN IP4 10.10.201.227
s=SIP Call
c=IN IP4 10.10.203.107
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

[41] INVITE sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK711f6f80
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:9001@10.10.201.228:5060;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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 17916 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[42] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK711f6f80
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 104 INVITE
Allow-Events: presence
Content-Length: 0

[43] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK711f6f80
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:9001@10.10.201.227>;party=called;screen=yes;privacy=off
Contact: <sip:9002@10.10.201.227:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 217
v=0
o=CiscoSystemsCCM-SIP 2000 10 IN IP4 10.10.201.227
s=SIP Call
```

```
c=IN IP4 10.10.203.107
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

[44] ACK sip:9002@10.10.201.227:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.228;branch=z9hG4bK160c86b
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
To: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence
Content-Length: 0

[45] BYE sip:9001@10.10.201.228:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK63bb8f94
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:02:02 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 108 BYE
Content-Length: 0

[46] SIP/2.0 200 OK

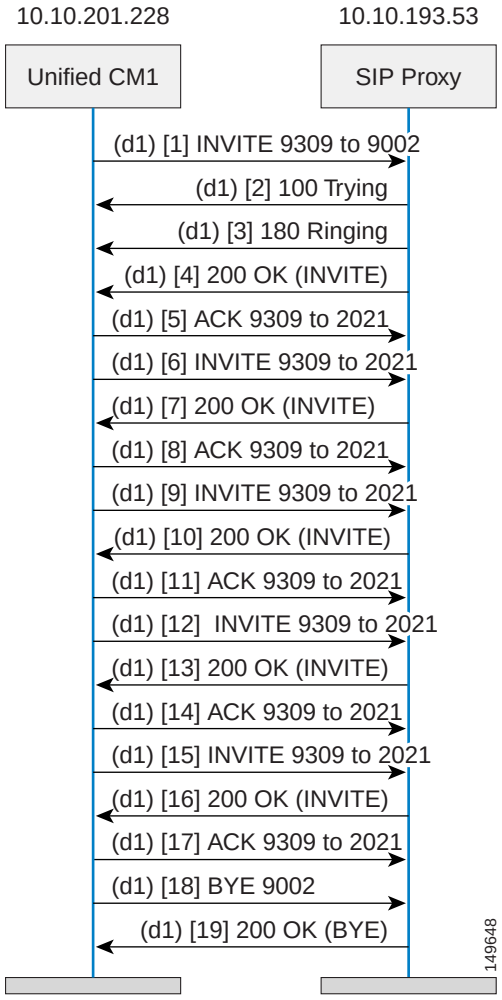
Via: SIP/2.0/TCP 10.10.201.227;branch=z9hG4bK63bb8f94
From: <sip:9002@10.10.201.227>;tag=f5356241-600b-496b-91af-e076425f07d3-28540954
To: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-29940798
Date: Tue, 14 Feb 2006 20:02:03 GMT
Call-ID: b8a77680-3f21372a-2-e4c912ac@10.10.201.228
CSeq: 108 BYE
Content-Length: 0
```

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

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

- Cisco Unified CallManager initiated the "hold" and then resumed the call.
- Configuration:
  - Node = Unified CM, IP = 10.10.201.228
  - Node = SIP Proxy, IP = 10.10.193.53

Basic Hold-resume Call with a Cisco IP Proxy




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

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK4032f583
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>
Date: Wed, 15 Feb 2006 14:20:22 GMT
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:9309@10.10.201.228:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.201.228:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0
```

```
[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.201.228:5060;received=10.10.201.228;branch=z9hG4bK4032f583
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Date: Wed, 15 Feb 2006 14:17:05 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

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.201.228:5060;received=10.10.201.228;branch=z9hG4bK4032f583
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Date: Wed, 15 Feb 2006 14:17:05 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

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.201.228:5060;received=10.10.201.228;branch=z9hG4bK4032f583
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Date: Wed, 15 Feb 2006 14:17:11 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 22753 0 IN IP4 10.10.199.175
s=SIP Call
t=0 0
m=audio 19714 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

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

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK3fbaa5b6
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Date: Wed, 15 Feb 2006 14:20:22 GMT
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
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 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 22588 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

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

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK479bebf5
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Date: Wed, 15 Feb 2006 14:20:36 GMT
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:9309@10.10.201.228:5060>
Expires: 180
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 221
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 22588 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

[7] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK479bebf5
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Date: Wed, 15 Feb 2006 14:17:19 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 22753 1 IN IP4 10.10.199.175
s=SIP Call
t=0 0
m=audio 19714 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

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

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK6988ec8c
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Date: Wed, 15 Feb 2006 14:20:36 GMT
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, kpml
Content-Length: 0

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

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK27a5034c
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Date: Wed, 15 Feb 2006 14:20:36 GMT
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:9309@10.10.201.228:5060>
Expires: 180
Allow-Events: presence, kpml
Content-Length: 0

[10] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK27a5034c
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Date: Wed, 15 Feb 2006 14:17:20 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: 259
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 22753 1 IN IP4 10.10.199.175
s=SIP Call
t=0 0
m=audio 19714 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
```

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

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK5eb4fdd8
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Date: Wed, 15 Feb 2006 14:20:36 GMT
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 227
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.201.228
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

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

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK1edf2ae9
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Date: Wed, 15 Feb 2006 14:20:41 GMT
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:9309@10.10.201.228:5060>
Expires: 180
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 220
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.201.228
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

[13] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK1edf2ae9
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Date: Wed, 15 Feb 2006 14:17:24 GMT
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: 209
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 22753 3 IN IP4 10.10.199.175
s=SIP Call
t=0 0
m=audio 19714 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

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

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK8a6a806
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Date: Wed, 15 Feb 2006 14:20:41 GMT
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence, kpml
Content-Length: 0

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

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK44b1bc4b
Remote-Party-ID: <sip:9309@10.10.201.228>;party=calling;screen=yes;privacy=off
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Date: Wed, 15 Feb 2006 14:20:41 GMT
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 105 INVITE
Max-Forwards: 70
Contact: <sip:9309@10.10.201.228:5060>
Expires: 180
Allow-Events: presence, kpml
Content-Length: 0

[16] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK44b1bc4b
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Date: Wed, 15 Feb 2006 14:17:25 GMT
CSeq: 105 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 22753 3 IN IP4 10.10.199.175
s=SIP Call
t=0 0
```

```
m=audio 19714 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

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

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK645a2405
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Date: Wed, 15 Feb 2006 14:20:41 GMT
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Max-Forwards: 70
CSeq: 105 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216
v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.201.228
s=SIP Call
c=IN IP4 10.10.203.106
t=0 0
m=audio 23958 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

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

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK73057f61
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Date: Wed, 15 Feb 2006 14:20:41 GMT
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 106 BYE
Content-Length: 0

[19] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.201.228:5060;branch=z9hG4bK73057f61
From: <sip:9309@10.10.201.228>;tag=69a5de24-d471-4214-a73b-7c3e594b36b1-30204502
To: <sip:2021@10.10.193.53>;tag=000f24aa92e8155e4cc9022a-2083eff2
Call-ID: 31a6dc80-3f3138a6-1-e4c912ac@10.10.201.228
Date: Wed, 15 Feb 2006 14:17:28 GMT
CSeq: 106 BYE
Server: Cisco-CP7960G/7.5
Content-Length: 0
```

DTMF

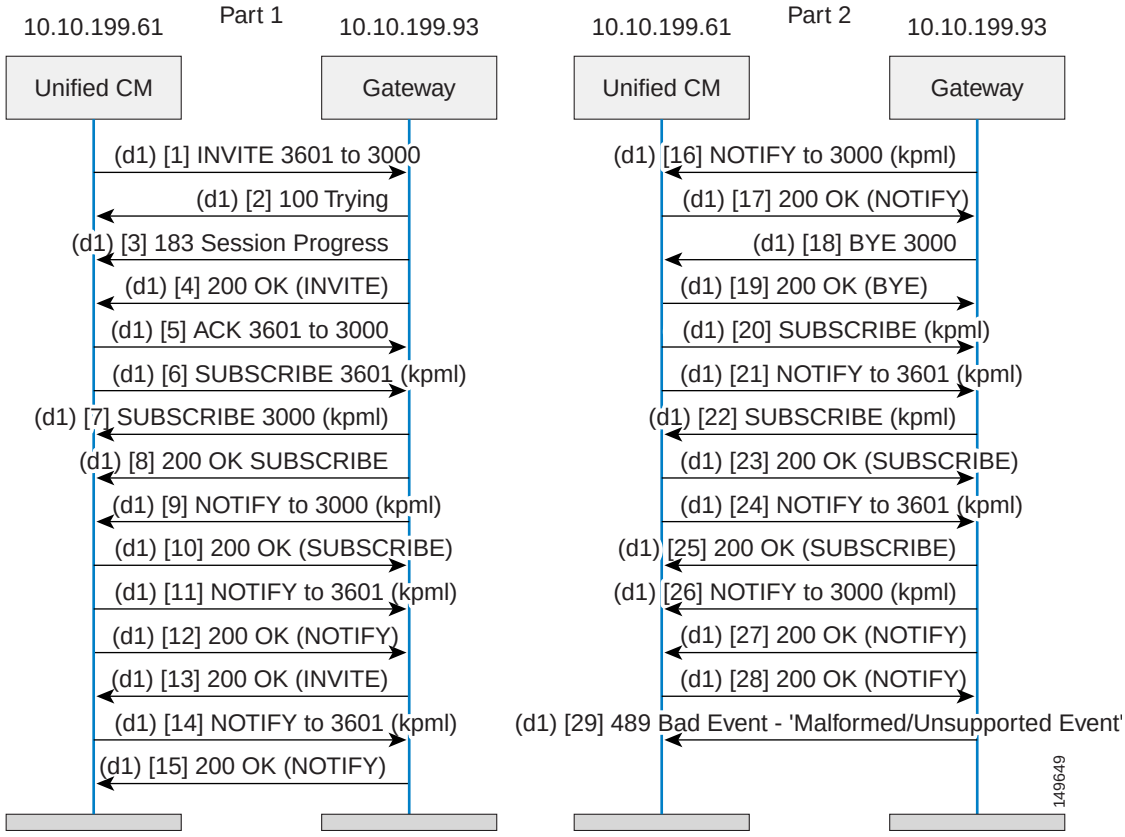
Call Between Cisco Unified CallManager SCCP Phone and SIP Gateway Using KPML

The following call flow illustrates the SIP messaging that takes place between an SCCP phone hosted by a Cisco Unified CallManager 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 CallManager 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 CallManager and the SIP GW will terminate both local and remote KPML subscriptions. Therefore, it is normal to see the Cisco Unified CallManager either send or receive a 489 Bad Event. This signifies that the subscription has already been removed.

- Configuration:
  - Node = Unified CM, IP = 10.10.199.61
  - Node = Gateway, IP = 10.10.199.93

Call between Cisco Unified CallManager SCCP phone and SIP Gateway using KPML




```
[1] INVITE sip:3601@10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bKe40d0d
Remote-Party-ID: "sccp_3000" <sip:3000@10.10.199.61>;party=calling;screen=yes;privacy=off
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>
Date: Wed, 15 Feb 2006 16:00:35 GMT
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:3000@10.10.199.61:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.61:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bKe40d0d
```

```
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Date: Wed, 15 Feb 2006 16:00:35 GMT
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: kpml, telephone-event
Content-Length: 0

[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bKe40d0d
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Date: Wed, 15 Feb 2006 16:00:35 GMT
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
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:3601@10.10.199.93:5060>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 218
v=0
o=CiscoSystemsSIP-GW-UserAgent 5775 9505 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 16636 RTP/AVP 0 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:19 CN/8000
a=ptime:20

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bKe40d0d
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Date: Wed, 15 Feb 2006 16:00:35 GMT
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
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:3601@10.10.199.93:5060>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 218
v=0
o=CiscoSystemsSIP-GW-UserAgent 5775 9505 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 16636 RTP/AVP 0 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:19 CN/8000
```

```
a=ptime:20

[5] ACK sip:3601@10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK5cd72c7c
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Date: Wed, 15 Feb 2006 16:00:35 GMT
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 158
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.61
s=SIP Call
c=IN IP4 10.10.199.57
t=0 0
m=audio 20186 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[6] SUBSCRIBE sip:3601@10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK44ba8143
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 102 SUBSCRIBE
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:00:38 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Expires: 7200
Contact: <sip:10.10.199.61:5060>
Accept: application/kpml-response+xml
Content-Type: application/kpml-request+xml
Content-Length: 213
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<kpml-request version="1.0">
 <pattern interdigittimer="500000" persist="persist">
 <regex tag="dtmf">[x*#ABCD]</regex>
 </pattern>
</kpml-request>

[7] SUBSCRIBE sip:3000@10.10.199.61:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK7C1148
From: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 101 SUBSCRIBE
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:00:38 GMT
User-Agent: Cisco-SIPGateway/IOS-12.x
Event: kpml
Expires: 7200
Contact: <sip:10.10.199.93:5060>
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>

[8] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK44ba8143
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 102 SUBSCRIBE
Content-Length: 0
Contact: <sip:10.10.199.93:5060>
Expires: 7200

[9] NOTIFY sip:10.10.199.61:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK7DBB5
From: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:00:38 GMT
User-Agent: Cisco-SIPGateway/IOS-12.x
Event: kpml
Subscription-State: active
Contact: <sip:10.10.199.93:5060>
Content-Length: 0

[10] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK7C1148
From: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
Date: Wed, 15 Feb 2006 16:00:39 GMT
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 101 SUBSCRIBE
Content-Length: 0
Contact: <sip:10.10.199.61:5060>
Expires: 3600

[11] NOTIFY sip:10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK5ba303c0
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:00:39 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Subscription-State: active;expires=3600
Contact: <sip:10.10.199.61:5060>
Content-Length: 0

[12] SIP/2.0 200 OK
```

```
Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK7DBB5
From: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
Date: Wed, 15 Feb 2006 16:00:39 GMT
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 102 NOTIFY
Content-Length: 0

[13] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK5ba303c0
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 103 NOTIFY
Content-Length: 0

[14] NOTIFY sip:10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK7e715b4
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 104 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:00:48 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Subscription-State: active;expires=3591
Contact: <sip:10.10.199.61:5060>
Content-Type: application/kpml-response+xml
Content-Length: 177
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<kpml-response code="200" digits="1" forced_flush="false" suppressed="false" tag="dtmf"
text="Success"
version="1.0"/>

[15] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK7e715b4
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 104 NOTIFY
Content-Length: 0

[16] NOTIFY sip:10.10.199.61:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK7E5F0
From: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:00:58 GMT
User-Agent: Cisco-SIPGateway/IOS-12.x
Event: kpml
Subscription-State: active
Contact: <sip:10.10.199.93:5060>
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="1"
tag="dtmf"/>

[17] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK7E5F0
From: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
Date: Wed, 15 Feb 2006 16:00:58 GMT
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 103 NOTIFY
Content-Length: 0

[18] BYE sip:3000@10.10.199.61:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK7F44E
From: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
Date: Wed, 15 Feb 2006 16:00:38 GMT
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 70
Timestamp: 1140019264
CSeq: 104 BYE
Reason: Q.850;cause=16
Content-Length: 0

[19] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK7F44E
From: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
Date: Wed, 15 Feb 2006 16:01:04 GMT
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
Timestamp: 1140019264
CSeq: 104 BYE
Content-Length: 0

[20] SUBSCRIBE sip:10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK1dc235ee
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 105 SUBSCRIBE
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:01:04 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Expires: 0
Contact: <sip:10.10.199.61:5060>
Content-Length: 0

[21] NOTIFY sip:10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bKce2da53
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 106 NOTIFY
Max-Forwards: 70
```

```
Date: Wed, 15 Feb 2006 16:01:04 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Subscription-State: terminated
Contact: <sip:10.10.199.61:5060>
Content-Length: 0

[22] SUBSCRIBE sip:10.10.199.61:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK80232D
From: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 105 SUBSCRIBE
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:01:04 GMT
User-Agent: Cisco-SIPGateway/IOS-12.x
Event: kpml
Expires: 0
Contact: <sip:10.10.199.93:5060>
Content-Length: 0

[23] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK80232D
From: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
Date: Wed, 15 Feb 2006 16:01:04 GMT
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 105 SUBSCRIBE
Content-Length: 0
Contact: <sip:10.10.199.61:5060>
Expires: 0

[24] NOTIFY sip:10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK2ce6c7d2
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 107 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:01:04 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Subscription-State: terminated;reason=timeout
Contact: <sip:10.10.199.61:5060>
Content-Type: application/kpml-response+xml
Content-Length: 189
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<kpml-response code="487" digits="" forced_flush="false" suppressed="false" tag="dtmf"
text="Subscription
Expired" version="1.0"/>

[25] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK1dc235ee
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 105 SUBSCRIBE
Content-Length: 0
```

```
Contact: <sip:10.10.199.93:5060>
Expires: 0

[26] NOTIFY sip:10.10.199.61:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK811043
From: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 106 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:01:04 GMT
User-Agent: Cisco-SIPGateway/IOS-12.x
Event: kpml
Subscription-State: terminated
Contact: <sip:10.10.199.93:5060>
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"/>

[27] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bKce2da53
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 106 NOTIFY
Content-Length: 0

[28] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK811043
From: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
Date: Wed, 15 Feb 2006 16:01:04 GMT
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 106 NOTIFY
Content-Length: 0

[29] SIP/2.0 489 Bad Event - 'Malformed/Unsupported Event'

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK2ce6c7d2
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30228326
To: <sip:3601@10.10.199.93>;tag=43A6301C-1EA
Call-ID: 31add900-3f315023-4-3dc712ac@10.10.199.61
CSeq: 107 NOTIFY
Allow-Events: telephone-event
Content-Length: 0
```

Call Between Cisco Unified CallManager SCCP Phone and SIP Gateway Using Unsolicited NOTIFY

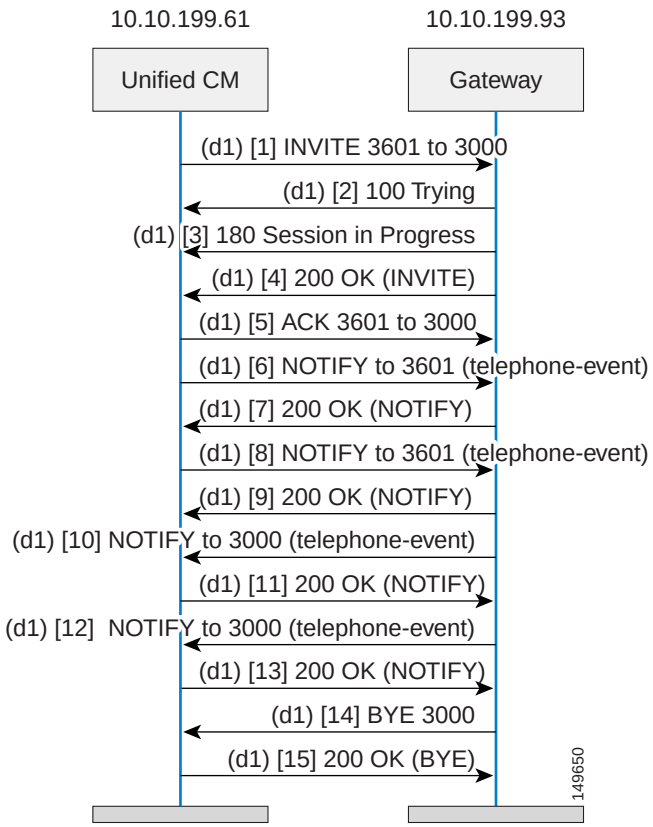
The following call flow illustrates the SIP messaging that takes place between a SCCP phone hosted by a Cisco Unified CallManager and a SIP Gateway via a SIP trunk. The SIP trunk DTMF Signaling Method is configured for NoPreference and the SIP GW dtmf-relay for the associated dial peer is configured for sip-notify.

Traces to note are the advertisement of Unsolicited NOTIFY support in the

Call-Info header and the Unsolicited NOTIFY methods used to signal digit events between the Cisco Unified CallManager and the Gateway. The data carried in the NOTIFY message (ie. the DTMF tone) is not displayed in the message since it's not a printable character. Also note that one DTMF event results in two NOTIFY messages. The first NOTIFY enables, or turns on, the DTMF tone and the second NOTIFY disables, or turns off, the DTMF tone.

- Configuration:
  - Node = Unified CM, IP = 10.10.199.61
  - Node = Gateway, IP = 10.10.199.93

Call between Cisco Unified CallManager SCCP phone and SIP Gateway using Unsolicited NOTIFY




```
[1] INVITE sip:3601@10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK56cfc653
Remote-Party-ID: "sccp_3000" <sip:3000@10.10.199.61>;party=calling;screen=yes;privacy=off
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
To: <sip:3601@10.10.199.93>
Date: Wed, 15 Feb 2006 16:20:59 GMT
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
```

```
Contact: <sip:3000@10.10.199.61:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.61:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK56cfc653
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
To: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
Date: Wed, 15 Feb 2006 16:20:59 GMT
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0

[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK56cfc653
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
To: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
Date: Wed, 15 Feb 2006 16:20:59 GMT
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
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:3601@10.10.199.93:5060>
Call-Info: <sip:10.10.199.93:5060>;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 5486 5493 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 18336 RTP/AVP 0 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:19 CN/8000
a=ptime:20

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK56cfc653
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
To: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
Date: Wed, 15 Feb 2006 16:20:59 GMT
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
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:3601@10.10.199.93:5060>
Call-Info: <sip:10.10.199.93:5060>;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 5486 5493 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 18336 RTP/AVP 0 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:19 CN/8000
a=ptime:20

[5] ACK sip:3601@10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK1bca1d0b
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
To: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
Date: Wed, 15 Feb 2006 16:20:59 GMT
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 158
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.61
s=SIP Call
c=IN IP4 10.10.199.57
t=0 0
m=audio 27898 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[6] NOTIFY sip:10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bKecfc464
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
To: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:21:07 GMT
User-Agent: Cisco-CCM5.0
Event: telephone-event;rate=1000
Subscription-State: active;expires=-1285164408
Contact: <sip:10.10.199.61:5060>
Content-Type: audio/telephone-event
Content-Length: 4

[7] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bKecfc464
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
To: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
CSeq: 102 NOTIFY
Content-Length: 0

[8] NOTIFY sip:10.10.199.93:5060 SIP/2.0
```

```
Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK6ad8ced8
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
To: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:21:07 GMT
User-Agent: Cisco-CCM5.0
Event: telephone-event;rate=1000
Subscription-State: active;expires=185797128
Contact: <sip:10.10.199.61:5060>
Content-Type: audio/telephone-event
Content-Length: 4

[9] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK6ad8ced8
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
To: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
CSeq: 103 NOTIFY
Content-Length: 0

[10] NOTIFY sip:3000@10.10.199.61:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK82130A
From: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
CSeq: 101 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:21:13 GMT
User-Agent: Cisco-SIPGateway/IOS-12.x
Event: telephone-event
Subscription-State: active
Contact: <sip:10.10.199.93:5060>
Content-Type: audio/telephone-event
Content-Length: 4

[11] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK82130A
From: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
Date: Wed, 15 Feb 2006 16:21:13 GMT
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
CSeq: 101 NOTIFY
Content-Length: 0

[12] NOTIFY sip:3000@10.10.199.61:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK83B61
From: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:21:13 GMT
User-Agent: Cisco-SIPGateway/IOS-12.x
Event: telephone-event
Subscription-State: active
Contact: <sip:10.10.199.93:5060>
Content-Type: audio/telephone-event
```

```
Content-Length: 4

[13] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK83B61
From: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
Date: Wed, 15 Feb 2006 16:21:13 GMT
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
CSeq: 102 NOTIFY
Content-Length: 0

[14] BYE sip:3000@10.10.199.61:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK84119F
From: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
Date: Wed, 15 Feb 2006 16:21:02 GMT
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 70
Timestamp: 1140020478
CSeq: 103 BYE
Reason: Q.850;cause=16
Content-Length: 0

[15] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK84119F
From: <sip:3601@10.10.199.93>;tag=43B8DD1C-1E08
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30232898
Date: Wed, 15 Feb 2006 16:21:18 GMT
Call-ID: b3d6d00-3f3154eb-a-3dc712ac@10.10.199.61
Timestamp: 1140020478
CSeq: 103 BYE
Content-Length: 0
```

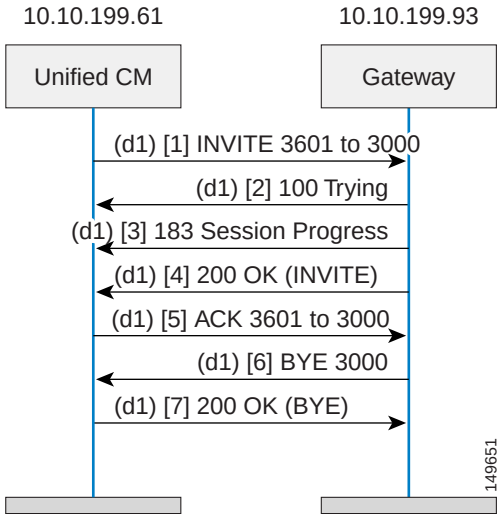
Call Between Cisco Unified CallManager SCCP Phone and SIP Gateway Using RFC2833

The following call flow illustrates the SIP messaging that takes place between an SCCP phone hosted by a Cisco Unified CallManager 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 the SCCP phone and the SIP Gateway support RFC2833 style DTMF signaling, no out-of-band DTMF signaling takes place. The DTMF is 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 = 10.10.199.61
  - Node = Gateway, IP = 10.10.199.9

Call between Cisco Unified CallManager SCCP phone and SIP Gateway using RFC2833




```
[1] INVITE sip:3601@10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK2eeb5cdd
Remote-Party-ID: "sccp_3000" <sip:3000@10.10.199.61>;party=calling;screen=yes;privacy=off
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30236478
To: <sip:3601@10.10.199.93>
Date: Wed, 15 Feb 2006 16:35:02 GMT
Call-ID: 1b50480-3f315836-6-3dc712ac@10.10.199.61
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:3000@10.10.199.61:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.61:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK2eeb5cdd
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30236478
To: <sip:3601@10.10.199.93>;tag=43C5B7E4-2220
Date: Wed, 15 Feb 2006 16:35:02 GMT
Call-ID: 1b50480-3f315836-6-3dc712ac@10.10.199.61
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0

[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK2eeb5cdd
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30236478
To: <sip:3601@10.10.199.93>;tag=43C5B7E4-2220
```

```
Date: Wed, 15 Feb 2006 16:35:02 GMT
Call-ID: 1b50480-3f315836-6-3dc712ac@10.10.199.61
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:3601@10.10.199.93:5060>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 274
v=0
o=CiscoSystemsSIP-GW-UserAgent 7249 5627 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 19412 RTP/AVP 0 101 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=rtpmap:19 CN/8000
a=ptime:20

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK2eeb5cdd
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30236478
To: <sip:3601@10.10.199.93>;tag=43C5B7E4-2220
Date: Wed, 15 Feb 2006 16:35:02 GMT
Call-ID: 1b50480-3f315836-6-3dc712ac@10.10.199.61
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:3601@10.10.199.93:5060>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 274
v=0
o=CiscoSystemsSIP-GW-UserAgent 7249 5627 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 19412 RTP/AVP 0 101 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=rtpmap:19 CN/8000
a=ptime:20

[5] ACK sip:3601@10.10.199.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.61:5060;branch=z9hG4bK4167c45e
From: "sccp_3000"
<sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30236478
To: <sip:3601@10.10.199.93>;tag=43C5B7E4-2220
Date: Wed, 15 Feb 2006 16:35:02 GMT
Call-ID: 1b50480-3f315836-6-3dc712ac@10.10.199.61
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
```

```
Content-Length: 214
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.61
s=SIP Call
c=IN IP4 10.10.199.57
t=0 0
m=audio 30230 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[6] BYE sip:3000@10.10.199.61:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK851EF4
From: <sip:3601@10.10.199.93>;tag=43C5B7E4-2220
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30236478
Date: Wed, 15 Feb 2006 16:35:05 GMT
Call-ID: 1b50480-3f315836-6-3dc712ac@10.10.199.61
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 70
Timestamp: 1140021341
CSeq: 101 BYE
Reason: Q.850;cause=16
Content-Length: 0

[7] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.199.93:5060;branch=z9hG4bK851EF4
From: <sip:3601@10.10.199.93>;tag=43C5B7E4-2220
To: "sccp_3000" <sip:3000@10.10.199.61>;tag=4afadcdc-0169-479d-ba6a-855a1847684f-30236478
Date: Wed, 15 Feb 2006 16:35:41 GMT
Call-ID: 1b50480-3f315836-6-3dc712ac@10.10.199.61
Timestamp: 1140021341
CSeq: 101 BYE
Content-Length: 0
```

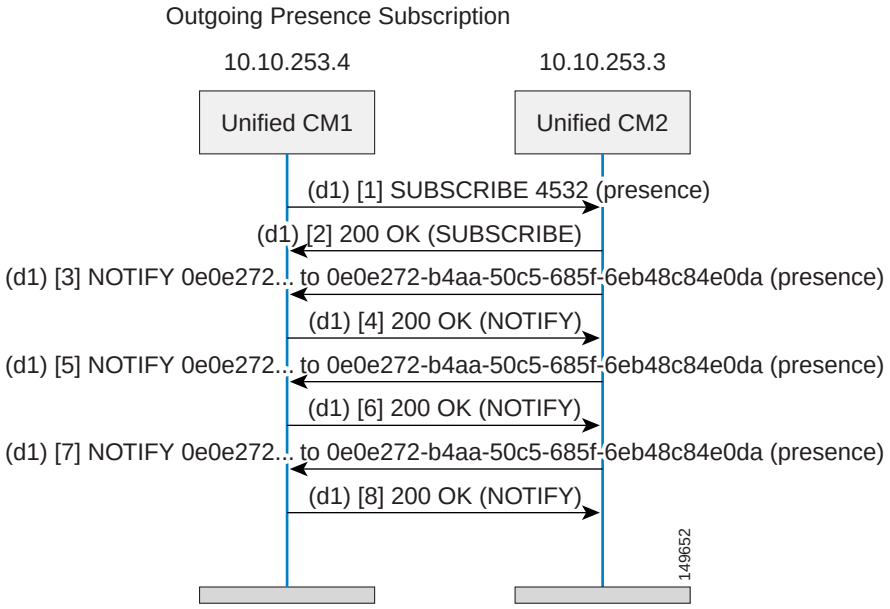
Presence

Outgoing Presence Subscription

The scenario showing the outgoing BLF subscription for Presence from SCCP phone (4501) on Cisco Unified CallManager1 through SIP Trunk to Cisco Unified CallManager2 for remote party(DN 4532).

1. The Cisco Unified CallManager2 sends the 200 OK for Subscribe, then it sends a NOTIFY with Subscription-State: active;expires=3600 and PIDF XML with status 'open'.
2. 2) When the remote party(DN 4532) is offhook then Cisco Unified CallManager2 sends a NOTIFY with PIDF XML containing status <e:activities>on-the-phone</e:activities>.
3. 3) When the remote party(DN 4532) is onhook, the Cisco Unified CallManager2 sends a NOTIFY with PIDF XML containing status open.

- Configuration:
  - Node = Unified CM1, IP = 10.10.253.4
  - Node = Unified CM2, IP = 10.10.253.3




```
[1] SUBSCRIBE sip:4532@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK5293b8f1
From: <sip:0e0e0272-b4aa-50c5-685f-6eb48c84e0da@10.10.253.4>;tag=1603629304
To: <sip:4532@10.10.253.3>
Call-ID: 49696b00-3f21f257-3e-4fd4c0a@10.10.253.4
CSeq: 101 SUBSCRIBE
Max-Forwards: 70
Date: Wed, 15 Feb 2006 09:20:23 GMT
User-Agent: Cisco-CCM5.0
Event: presence
Expires: 3600
```

```
Contact: <sip:0e0e0272-b4aa-50c5-685f-6eb48c84e0da@10.10.253.4:5060>
Accept: application/pidf+xml
Content-Length: 0

[2] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK5293b8f1
From: <sip:0e0e0272-b4aa-50c5-685f-6eb48c84e0da@10.10.253.4>;tag=1603629304
To: <sip:4532@10.10.253.3>;tag=632666699
Date: Wed, 15 Feb 2006 09:20:23 GMT
Call-ID: 49696b00-3f21f257-3e-4fd4c0a@10.10.253.4
CSeq: 101 SUBSCRIBE
Content-Length: 0
Contact: <sip:4532@10.10.253.3:5060>
Expires: 3600

[3] NOTIFY sip:0e0e0272-b4aa-50c5-685f-6eb48c84e0da@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bKc60faae
From: <sip:4532@10.10.253.3>;tag=632666699
To: <sip:0e0e0272-b4aa-50c5-685f-6eb48c84e0da@10.10.253.4>;tag=1603629304
Call-ID: 49696b00-3f21f257-3e-4fd4c0a@10.10.253.4
CSeq: 101 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 09:20:23 GMT
User-Agent: Cisco-CCM5.0
Event: presence
Subscription-State: active;expires=3600
Contact: <sip:4532@10.10.253.3:5060>
Content-Type: application/pidf+xml
Content-Length: 522
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:4532@10.10.253.3"
xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpid"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
 <tuple id="cmp-4532-29039">
 <status>
 <basic>open</basic>
 </status>
 <sc:servcaps>
 <sc:audio>true</sc:audio>
 </sc:servcaps>
 <contact priority="0.8">sip:4532@10.10.253.3:5060</contact>
 <timestamp>2006-02-15T09:20:23Z</timestamp>
 </tuple>
</presence>

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bKc60faae
From: <sip:4532@10.10.253.3>;tag=632666699
To: <sip:0e0e0272-b4aa-50c5-685f-6eb48c84e0da@10.10.253.4>;tag=1603629304
Date: Wed, 15 Feb 2006 09:20:23 GMT
Call-ID: 49696b00-3f21f257-3e-4fd4c0a@10.10.253.4
CSeq: 101 NOTIFY
Content-Length: 0

[5] NOTIFY sip:0e0e0272-b4aa-50c5-685f-6eb48c84e0da@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK509d20f1
From: <sip:4532@10.10.253.3>;tag=632666699
To: <sip:0e0e0272-b4aa-50c5-685f-6eb48c84e0da@10.10.253.4>;tag=1603629304
Call-ID: 49696b00-3f21f257-3e-4fd4c0a@10.10.253.4
CSeq: 102 NOTIFY
```

```
Max-Forwards: 70
Date: Wed, 15 Feb 2006 09:21:00 GMT
User-Agent: Cisco-CCM5.0
Event: presence
Subscription-State: active;expires=3563
Contact: <sip:4532@10.10.253.3:5060>
Content-Type: application/pidf+xml
Content-Length: 591
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:4532@10.10.253.3"
xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpid"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
 <tuple id="cmp-4532-29039">
 <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:4532@10.10.253.3:5060</contact>
 <timestamp>2006-02-15T09:21:00Z</timestamp>
 </tuple>
</presence>

[6] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK509d20f1
From: <sip:4532@10.10.253.3>;tag=632666699
To: <sip:0e0e0272-b4aa-50c5-685f-6eb48c84e0da@10.10.253.4>;tag=1603629304
Date: Wed, 15 Feb 2006 09:21:00 GMT
Call-ID: 49696b00-3f21f257-3e-4fd4c0a@10.10.253.4
CSeq: 102 NOTIFY
Content-Length: 0
[7] NOTIFY sip:0e0e0272-b4aa-50c5-685f-6eb48c84e0da@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK7b7f0c9d
From: <sip:4532@10.10.253.3>;tag=632666699
To: <sip:0e0e0272-b4aa-50c5-685f-6eb48c84e0da@10.10.253.4>;tag=1603629304
Call-ID: 49696b00-3f21f257-3e-4fd4c0a@10.10.253.4
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 09:21:05 GMT
User-Agent: Cisco-CCM5.0
Event: presence
Subscription-State: active;expires=3558
Contact: <sip:4532@10.10.253.3:5060>
Content-Type: application/pidf+xml
Content-Length: 522
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:4532@10.10.253.3"
xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpid"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
 <tuple id="cmp-4532-29039">
 <status>
 <basic>open</basic>
 </status>
 <sc:servcaps>
 <sc:audio>true</sc:audio>
 </sc:servcaps>
 <contact priority="0.8">sip:4532@10.10.253.3:5060</contact>
 <timestamp>2006-02-15T09:21:05Z</timestamp>
```

```
 </tuple>
</presence>

[8] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK7b7f0c9d
From: <sip:4532@10.10.253.3>;tag=632666699
To:<sip:0e0e0272-b4aa-50c5-685f-6eb48c84e0da@10.10.253.4>;tag=1603629304
Date: Wed, 15 Feb 2006 09:21:05 GMT
Call-ID: 49696b00-3f21f257-3e-4fd4c0a@10.10.253.4
CSeq: 103 NOTIFY
Content-Length: 0
```

Incoming Presence Subscription

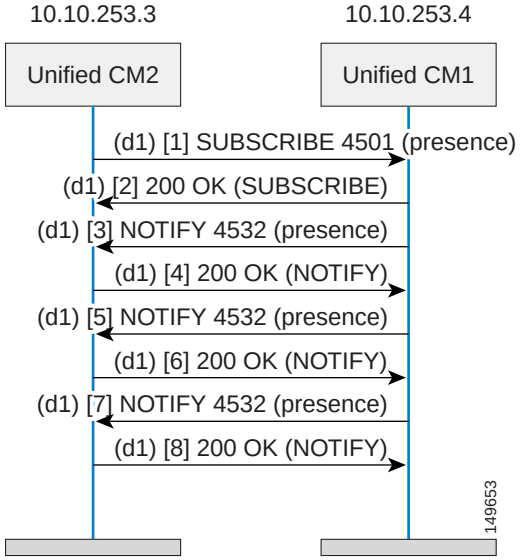
The scenario for incoming 'presence' subscription on Cisco Unified CallManager's SIP trunk for the SCCP phone's (DN:4501) BLF status.

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 subscribee, Notifier sends the Notify request on sip trunk, carrying the BLF status in PIDF XML.
4. The remote (Cisco Unified CallManager2) responds by sending 200 OK for Notify.
5. When the SCCP 4501 is offhook another NOTIFY with "on-the-phone" in the PIDF is sent on the sip trunk.
6. When SCCP 4501 is onhook again, another NOTIFY to update the status is sent.

- Configuration:
  - Node = Unified CM1, IP = 10.10.253.4
  - Node = Unified CM2, IP = 10.10.253.3

Incoming Presence Subscription




```
[1] SUBSCRIBE sip:4501@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.253.3;branch=z9hG4bK66a7d763
From: <sip:4532@10.10.253.3>;tag=335166169
To: <sip:4501@10.10.253.4>
Call-ID: 1ecbe200-3f21f3bd-707f-3fd4c0a@10.10.253.3
CSeq: 101 SUBSCRIBE
Max-Forwards: 70
Date: Wed, 15 Feb 2006 09:26:21 GMT
User-Agent: Cisco-CCM5.0
Event: presence
Expires: 3600
Contact: <sip:4532@10.10.253.3:5060;transport=tcp>
Accept: application/pidf+xml
Content-Length: 0

[2] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.253.3;branch=z9hG4bK66a7d763
From: <sip:4532@10.10.253.3>;tag=335166169
To: <sip:4501@10.10.253.4>;tag=1421254583
Date: Wed, 15 Feb 2006 09:26:21 GMT
Call-ID: 1ecbe200-3f21f3bd-707f-3fd4c0a@10.10.253.3
CSeq: 101 SUBSCRIBE
Content-Length: 0
Contact: <sip:4501@10.10.253.4:5060;transport=tcp>
Expires: 3600

[3] NOTIFY sip:4532@10.10.253.3:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.253.4;branch=z9hG4bK5e1c52bb
From: <sip:4501@10.10.253.4>;tag=1421254583
To: <sip:4532@10.10.253.3>;tag=335166169
Call-ID: 1ecbe200-3f21f3bd-707f-3fd4c0a@10.10.253.3
CSeq: 101 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 09:26:21 GMT
User-Agent: Cisco-CCM5.0
Event: presence
Subscription-State: active;expires=3600
```

```
Contact: <sip:4501@10.10.253.4:5060;transport=tcp>
Content-Type: application/pidf+xml
Content-Length: 519
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:4501@10.10.253.4"
xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpid"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
 <tuple id="cmp-4501-82">
 <status>
 <basic>open</basic>
 </status>
 <sc:servcaps>
 <sc:audio>true</sc:audio>
 </sc:servcaps>
 <contact priority="0.8">sip:4501@10.10.253.4:5060</contact>
 <timestamp>2006-02-15T09:26:21Z</timestamp>
 </tuple>
</presence>

[4] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.253.4;branch=z9hG4bK5e1c52bb
From: <sip:4501@10.10.253.4>;tag=1421254583
To: <sip:4532@10.10.253.3>;tag=335166169
Date: Wed, 15 Feb 2006 09:26:21 GMT
Call-ID: 1ecbe200-3f21f3bd-707f-3fd4c0a@10.10.253.3
CSeq: 101 NOTIFY
Content-Length: 0

[5] NOTIFY sip:4532@10.10.253.3:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.253.4;branch=z9hG4bK41ce9393
From: <sip:4501@10.10.253.4>;tag=1421254583
To: <sip:4532@10.10.253.3>;tag=335166169
Call-ID: 1ecbe200-3f21f3bd-707f-3fd4c0a@10.10.253.3
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 09:27:43 GMT
User-Agent: Cisco-CCM5.0
Event: presence
Subscription-State: active;expires=3518
Contact: <sip:4501@10.10.253.4:5060;transport=tcp>
Content-Type: application/pidf+xml
Content-Length: 588
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:4501@10.10.253.4"
xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpid"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
 <tuple id="cmp-4501-82">
 <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:4501@10.10.253.4:5060</contact>
 <timestamp>2006-02-15T09:27:43Z</timestamp>
 </tuple>
</presence>

[6] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.253.4;branch=z9hG4bK41ce9393
From: <sip:4501@10.10.253.4>;tag=1421254583
```

```
To: <sip:4532@10.10.253.3>;tag=335166169
Date: Wed, 15 Feb 2006 09:27:43 GMT
Call-ID: 1ecbe200-3f21f3bd-707f-3fd4c0a@10.10.253.3
CSeq: 102 NOTIFY
Content-Length: 0

[7] NOTIFY sip:4532@10.10.253.3:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.253.4;branch=z9hG4bK74823ea8
From: <sip:4501@10.10.253.4>;tag=1421254583
To: <sip:4532@10.10.253.3>;tag=335166169
Call-ID: 1ecbe200-3f21f3bd-707f-3fd4c0a@10.10.253.3
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 09:27:49 GMT
User-Agent: Cisco-CCM5.0
Event: presence
Subscription-State: active;expires=3512
Contact: <sip:4501@10.10.253.4:5060;transport=tcp>
Content-Type: application/pidf+xml
Content-Length: 519
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:4501@10.10.253.4"
xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpid"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
 <tuple id="cmp-4501-82">
 <status>
 <basic>open</basic>
 </status>
 <sc:servcaps>
 <sc:audio>true</sc:audio>
 </sc:servcaps>
 <contact priority="0.8">sip:4501@10.10.253.4:5060</contact>
 <timestamp>2006-02-15T09:27:49Z</timestamp>
 </tuple>
</presence>

[8] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.253.4;branch=z9hG4bK74823ea8
From: <sip:4501@10.10.253.4>;tag=1421254583
To: <sip:4532@10.10.253.3>;tag=335166169
Date: Wed, 15 Feb 2006 09:27:49 GMT
Call-ID: 1ecbe200-3f21f3bd-707f-3fd4c0a@10.10.253.3
CSeq: 103 NOTIFY
Content-Length: 0
```

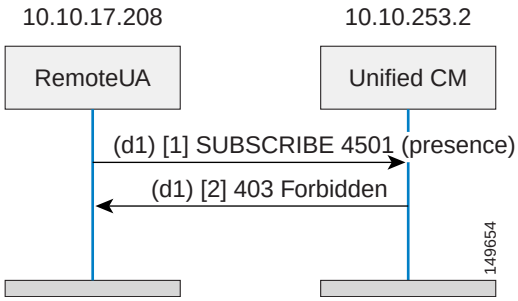
Incoming Presence Forbidden for Authorization Failure

The presence authorization failure for the scenario when incoming presence subscription is received on a Cisco Unified CallManagers SIP trunk for the SCCP phone's (DN:4501) 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 CallManager 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 = 10.10.253.2
  - Node = RemoteUA, IP = 10.10.17.208

Incoming Presence Forbidden for Authorization Failure




```
[1] SUBSCRIBE sip:4501@10.10.253.2 SIP/2.0

Via: SIP/2.0/UDP 10.10.17.208:7131;branch=z9hG4bK7be9c1bd
From: <sip:10.10.17.208>;tag=ef52bb70-3647
To: <sip:4501@10.10.253.2>
Call-ID: 65663532-62623730-2d326338-662d3200@10.10.17.208
CSeq: 101 SUBSCRIBE
Max-Forwards: 70
Date: Tue Dec 24 10:55:03 2002
User-Agent: Cisco-SIPHarnessUA
Event: presence;id=123
Expires: 34
Contact: <sip:10.10.17.208:7131>
Content-Length: 0

[2] SIP/2.0 403 Forbidden

Via: SIP/2.0/UDP 10.10.17.208:7131;branch=z9hG4bK7be9c1bd
From: <sip:10.10.17.208>;tag=ef52bb70-3647
To: <sip:4501@10.10.253.2>;tag=29808088
Call-ID: 65663532-62623730-2d326338-662d3200@10.10.17.208
CSeq: 101 SUBSCRIBE
Content-Length: 0
```

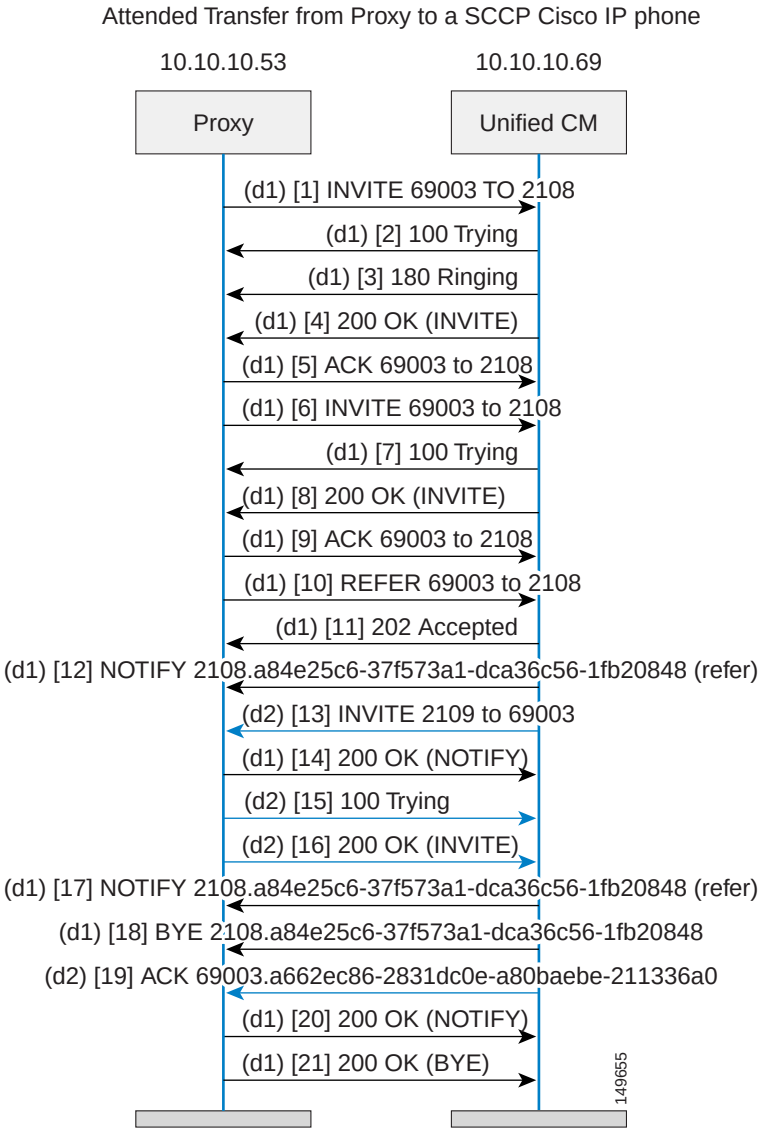
Call Transfer

Attended Transfer from Proxy to a SCCP Cisco Unified IP Phone

The following call flow illustrates the SIP messaging that takes place between SIP phones connceted to a SIP Proxy and a SCCP Cisco Unified IP Phone via a SIP trunk.

1. SIP Proxy phone 2108 calls Cisco Unified IP Phone 69003
2. SCCP Cisco Unified IP Phone 69003 answers the call
3. SIP Proxy phone 2108 presses transfer softkey and dials another SIP Proxy phone 2109
4. SIP Proxy phone 2109 answers the call
5. Now 2108 and 2109 are talking, 69003 is on hold
6. SIP Proxy phone 2108 presses transfer softkey again
7. SIP Proxy phone 2109 and SCCP Cisco Unified IP Phone 69003 are talking
8. SCCP Cisco Unified IP Phone 69003 ends the call

- Configuration:
  - Node = Unified CM, IP = 10.10.10.69
  - Node = Proxy, IP = 10.10.10.53




```
[1] INVITE sip:69003@10.10.10.69:5060;transport=udp SIP/2.0

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=a84e25c6-37f573a1-dca36c56-1fb20848-1
Record-Route:
<sip:2108.a84e25c6-37f573a1-dca36c56-1fb20848@10.10.10.53:5060;maddr=10.10.10.53>

Via: SIP/2.0/UDP 10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK23648693
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
To: <sip:69003@10.10.10.53>
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
Max-Forwards: 69
Date: Tue, 14 Feb 2006 15:54:42 GMT
CSeq: 101 INVITE
User-Agent: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Expires: 180
Accept: application/sdp
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
```

```
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=calling;id-type=subscriber;privacy=off;screen=yes
Supported: replaces
Content-Length: 259
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 24631 0 IN IP4 10.10.10.53
s=SIP Call
t=0 0
m=audio 21552 RTP/AVP 0 8 18 101
c=IN IP4 10.10.10.53
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

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=a84e25c6-37f573a1-dca36c56-1fb20848-1,SIP/2.0/UDP
10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK23648693
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
To: <sip:69003@10.10.10.53>
Date: Tue, 14 Feb 2006 15:52:05 GMT
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=a84e25c6-37f573a1-dca36c56-1fb20848-1,SIP/2.0/UDP
10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK23648693
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
Date: Tue, 14 Feb 2006 15:52:05 GMT
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:69003@10.10.10.69>;party=called;screen=yes;privacy=off
Contact: <sip:69003@10.10.10.69:5060>
Record-Route:
<sip:2108.a84e25c6-37f573a1-dca36c56-1fb20848@10.10.10.53:5060;maddr=10.10.10.53>
Content-Length: 0

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=a84e25c6-37f573a1-dca36c56-1fb20848-1,SIP/2.0/UDP
10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK23648693
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
Date: Tue, 14 Feb 2006 15:52:05 GMT
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:69003@10.10.10.69>;party=called;screen=yes;privacy=off
Contact: <sip:69003@10.10.10.69:5060>
Record-Route:
<sip:2108.a84e25c6-37f573a1-dca36c56-1fb20848@10.10.10.53:5060;maddr=10.10.10.53>
Content-Type: application/sdp
```

```
Content-Length: 214
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.10.43
t=0 0
m=audio 32218 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
[5] ACK sip:69003@10.10.10.69:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=51555db7-99b1e096-37a3a828-b006c7d0-1

Via: SIP/2.0/UDP 10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK5260beb0
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
Max-Forwards: 69
Date: Tue, 14 Feb 2006 15:54:44 GMT
CSeq: 101 ACK
User-Agent: Cisco-CP7960G/8.0
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=calling;id-type=subscriber;privacy=off;screen=yes
Content-Length: 0

[6] INVITE sip:69003@10.10.10.69:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=177dcdda-1e8c29f0-69dbca63-25f1e803-1
Record-Route:
<sip:2108.177dcdda-1e8c29f0-69dbca63-25f1e803@10.10.10.53:5060;maddr=10.10.10.53>

Via: SIP/2.0/UDP 10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK48756385
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
Max-Forwards: 69
Date: Tue, 14 Feb 2006 15:54:57 GMT
CSeq: 102 INVITE
User-Agent: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=calling;id-type=subscriber;privacy=off;screen=yes
Content-Length: 259
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 24631 1 IN IP4 10.10.10.53
s=SIP Call
t=0 0
m=audio 21552 RTP/AVP 0 8 18 101
c=IN IP4 10.10.10.53
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=sendonly

[7] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=177dcdda-1e8c29f0-69dbca63-25f1e803-1,SIP/2.0/UDP
10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK48756385
```

```
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
Date: Tue, 14 Feb 2006 15:52:20 GMT
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0

[8] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=177dcdda-1e8c29f0-69dbca63-25f1e803-1,SIP/2.0/UDP
10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK48756385
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
Date: Tue, 14 Feb 2006 15:52:20 GMT
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:69003@10.10.10.69>;party=called;screen=yes;privacy=off
Contact: <sip:69003@10.10.10.69:5060>
Record-Route:
<sip:2108.177dcdda-1e8c29f0-69dbca63-25f1e803@10.10.10.53:5060;maddr=10.10.10.53>
Content-Type: application/sdp
Content-Length: 226
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.10.43
t=0 0
m=audio 32218 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

[9] ACK sip:69003@10.10.10.69:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=177dcdda-1e8c29f0-69dbca63-25f1e803-1

Via: SIP/2.0/UDP 10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK78220ad9
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
Max-Forwards: 69
Date: Tue, 14 Feb 2006 15:54:57 GMT
CSeq: 102 ACK
User-Agent: Cisco-CP7960G/8.0
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=calling;id-type=subscriber;privacy=off;screen=yes
Content-Length: 0

[10] REFER sip:69003@10.10.10.69:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=c3783516-32092211-c6672cd5-db18dd62-1
Record-Route:
<sip:2108.c3783516-32092211-c6672cd5-db18dd62@10.10.10.53:5060;maddr=10.10.10.53>

Via: SIP/2.0/UDP 10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK67027499
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
Max-Forwards: 69
```

```
Date: Tue, 14 Feb 2006 15:55:36 GMT
CSeq: 103 REFER
User-Agent: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=calling;id-type=subscriber;privacy=off;screen=yes
Refer-To:
<sip:2109@10.10.10.53?Replaces=000c851c-e20f001d-561cc9a1-2f2839af%4010.10.10.53%3Bto-
tag%3D000f24ba3b0b001222f56d1a-19eed07c%3Bfrom-tag%3D000c851ce20f06701a211c38-152f5467>
Referred-By: "sip2108" <sip:2108@10.10.10.53>
Content-Length: 0

[11] SIP/2.0 202 Accepted

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=c3783516-32092211-c6672cd5-db18dd62-1,SIP/2.0/UDP
10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK67027499
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
Date: Tue, 14 Feb 2006 15:52:59 GMT
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
CSeq: 103 REFER
Content-Length: 0
Contact: <sip:69003@10.10.10.69:5060>

[12] NOTIFY
sip:2108.a84e25c6-37f573a1-dca36c56-1fb20848@10.10.10.53:5060;maddr=10.10.10.53 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK7a1d9c5a
From: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
To: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
CSeq: 101 NOTIFY
Max-Forwards: 70
Date: Tue, 14 Feb 2006 15:52:59 GMT
User-Agent: Cisco-CCM5.0
Event: refer
Subscription-State: active;expires=60
Route: <sip:2108@10.10.10.53:5060;transport=udp>
Contact: <sip:69003@10.10.10.69:5060>
Content-Type: message/sipfrag;version=2.0
Content-Length: 20
SIP/2.0 100 Trying

[13] INVITE sip:2109@10.10.10.53:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK4db8fd6c
Remote-Party-ID: <sip:69003@10.10.10.69>;party=calling;screen=yes;privacy=off
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880686
To: <sip:2109@10.10.10.53>
Date: Tue, 14 Feb 2006 15:52:59 GMT
Call-ID: f7780500-3f11fcdb-8-45c712ac@10.10.10.69
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:69003@10.10.10.69:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.10.69:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 68
Replaces: 000c851c-e20f001d-561cc9a1-2f2839af@10.10.10.53;
to-tag=000f24ba3b0b001222f56d1a-19eed07c;
from-tag=000c851ce20f06701a211c38-152f5467
```

```
Content-Length: 0

[14] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK7a1d9c5a
From: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
To: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
Date: Tue, 14 Feb 2006 15:55:36 GMT
CSeq: 101 NOTIFY
Content-Length: 0

[15] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK4db8fd6c
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880686
To: <sip:2109@10.10.10.53>
Call-ID: f7780500-3f11fcdb-8-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 15:55:51 GMT
CSeq: 101 INVITE
Server: CSCO/7
Contact: <sip:2109@172.18.199.151:5060>
Record-Route:
<sip:69003.a662ec86-2831dc0e-a80baebe-211336a0@10.10.10.69:5060;maddr=10.10.10.53>
Content-Length: 0

[16] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK4db8fd6c
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880686
To: <sip:2109@10.10.10.53>;tag=000f24ba3b0b001371a6f3b5-475a7c00
Call-ID: f7780500-3f11fcdb-8-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 15:55:51 GMT
CSeq: 101 INVITE
Server: CSCO/7
Contact: <sip:2109@172.18.199.151:5060>
Record-Route:
<sip:69003.a662ec86-2831dc0e-a80baebe-211336a0@10.10.10.69:5060;maddr=10.10.10.53>
Content-Type: application/sdp
Content-Length: 251
v=0
o=Cisco-SIPUA 21783 17870 IN IP4 172.18.199.151
s=SIP Call
c=IN IP4 172.18.199.151
t=0 0
m=audio 28074 RTP/AVP 0 8 18 101
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

[17] NOTIFY
sip:2108.a84e25c6-37f573a1-dca36c56-1fb20848@10.10.10.53:5060;maddr=10.10.10.53 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK49d3878b
From: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
To: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Tue, 14 Feb 2006 15:53:00 GMT
User-Agent: Cisco-CCM5.0
Event: refer
```

```
Subscription-State: terminated;reason=noresource
Route: <sip:2108@10.10.10.53:5060;transport=udp>
Contact: <sip:69003@10.10.10.69:5060>
Content-Type: message/sipfrag;version=2.0
Content-Length: 16
SIP/2.0 200 OK

[18] BYE sip:2108.a84e25c6-37f573a1-dca36c56-1fb20848@10.10.10.53:5060;maddr=10.10.10.53
SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK28581b51
From: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
To: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
Date: Tue, 14 Feb 2006 15:52:59 GMT
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
Route: <sip:2108@10.10.10.53:5060;transport=udp>
CSeq: 103 BYE
Content-Length: 0

[19] ACK sip:69003.a662ec86-2831dc0e-a80baebe-211336a0@10.10.10.69:5060;maddr=10.10.10.53
SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK56654860
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880686
To: <sip:2109@10.10.10.53>;tag=000f24ba3b0b001371a6f3b5-475a7c00
Date: Tue, 14 Feb 2006 15:52:59 GMT
Call-ID: f7780500-3f11fcdb-8-45c712ac@10.10.10.69
Route: <sip:2109@172.18.199.151:5060>
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 214
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.10.43
t=0 0
m=audio 21274 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[20] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK49d3878b
From: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
To: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
Date: Tue, 14 Feb 2006 15:55:37 GMT
CSeq: 102 NOTIFY
Content-Length: 0

[21] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK28581b51
From: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29880681
To: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f066f5f8b9e63-5dab07c5
Call-ID: 000c851c-e20f001c-6f735619-53a9c204@10.10.10.53
Date: Tue, 14 Feb 2006 15:55:37 GMT
CSeq: 103 BYE
```

```
Server: Cisco-CP7960G/8.0
Content-Length: 0
```

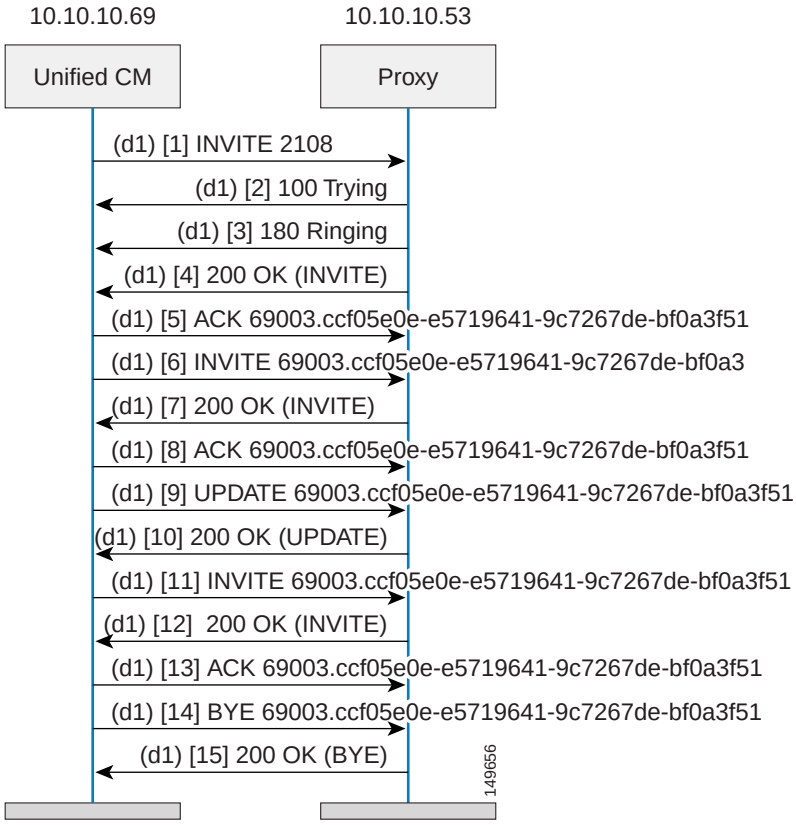
Attended Transfer Using the Cisco Unified CallManager SIP Trunk

The following call flow illustrates the SIP messaging that takes place between Cisco IP SCCP phones, and a SIP Proxy via a SIP trunk.

1. Cisco IP SCCP phone 69003 calls Cisco IP SCCP phone 69000
2. Cisco IP SCCP phone 69000 answers the call
3. Cisco IP SCCP phone 69003 presses transfer softkey and dials 2108 a SIP Proxy phone
4. SIP Proxy phone 2108 answers the call
5. Cisco IP SCCP phone 69000 is on MOH
6. Cisco IP SCCP phone 69003 press transfer softkey again
7. Cisco IP SCCP phone 69000 and SIP phone 2108 are connected and talking
8. Cisco IP SCCP phone 69000 ends the call

- Configuration:
  - Node = Unified CM, IP = 10.10.10.69
  - Node = Proxy, IP = 10.10.10.53

Attended Transfer using the Cisco Unified CallManager SIP Trunk




```
[1] INVITE sip:2108@10.10.10.53:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK469d1751
Remote-Party-ID: <sip:69003@10.10.10.69>;party=calling;screen=yes;privacy=off
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>
Date: Tue, 14 Feb 2006 16:06:51 GMT
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:69003@10.10.10.69:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.10.69:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK469d1751
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 16:09:28 GMT
CSeq: 101 INVITE
```

```
Server: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Record-Route:
<sip:69003.ccf05e0e-e5719641-9c7267de-bf0a3f51@10.10.10.69:5060;maddr=10.10.10.53>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=called;id-type=subscriber;privacy=off;screen=yes
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK469d1751
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 16:09:28 GMT
CSeq: 101 INVITE
Server: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Record-Route:
<sip:69003.ccf05e0e-e5719641-9c7267de-bf0a3f51@10.10.10.69:5060;maddr=10.10.10.53>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=called;id-type=subscriber;privacy=off;screen=yes
Content-Length: 0

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK469d1751
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 16:09:33 GMT
CSeq: 101 INVITE
Server: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Record-Route:
<sip:69003.ccf05e0e-e5719641-9c7267de-bf0a3f51@10.10.10.69:5060;maddr=10.10.10.53>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=called;id-type=subscriber;privacy=off;screen=yes
Supported: replaces
Content-Length: 259
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 25687 0 IN IP4 10.10.10.53
s=SIP Call
t=0 0
m=audio 21556 RTP/AVP 0 8 18 101
c=IN IP4 10.10.10.53
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

[5] ACK sip:69003.ccf05e0e-e5719641-9c7267de-bf0a3f51@10.10.10.69:5060;maddr=10.10.10.53
SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK5f1054c8
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
```

```
Date: Tue, 14 Feb 2006 16:06:51 GMT
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Route: <sip:2108@10.10.10.53:5060;transport=udp>
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 214
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.10.43
t=0 0
m=audio 22944 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[6] INVITE
sip:69003.ccf05e0e-e5719641-9c7267de-bf0a3f51@10.10.10.69:5060;maddr=10.10.10.53 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK430e0d86
Remote-Party-ID: <sip:69003@10.10.10.69>;party=calling;screen=yes;privacy=off
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
Date: Tue, 14 Feb 2006 16:07:05 GMT
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Route: <sip:2108@10.10.10.53:5060;transport=udp>
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2108@10.10.10.69:5060>
Expires: 180
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 220
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 22944 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

[7] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK430e0d86
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 16:09:42 GMT
CSeq: 102 INVITE
Server: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Record-Route:
<sip:2108.f914dbb2-66bae834-866a0793-d3d2db06@10.10.10.69:5060;maddr=10.10.10.53>
```

```
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=called;id-type=subscriber;privacy=off;screen=yes
Supported: replaces
Content-Length: 209
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 25687 1 IN IP4 10.10.10.53
s=SIP Call
t=0 0
m=audio 21556 RTP/AVP 0 101
c=IN IP4 10.10.10.53
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=inactive

[8] ACK sip:69003.ccf05e0e-e5719641-9c7267de-bf0a3f51@10.10.10.69:5060;maddr=10.10.10.53
SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK7ddbf632
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
Date: Tue, 14 Feb 2006 16:07:05 GMT
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Route: <sip:2108@10.10.10.53:5060;transport=udp>
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, kpml
Content-Length: 0

[9] UPDATE
sip:69003.ccf05e0e-e5719641-9c7267de-bf0a3f51@10.10.10.69:5060;maddr=10.10.10.53 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK233e07d6
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
Date: Tue, 14 Feb 2006 16:07:05 GMT
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
Route: <sip:2108@10.10.10.53:5060;transport=udp>
CSeq: 103 UPDATE
Contact: <sip:2108@10.10.10.69:5060>
Remote-Party-ID: "sccp96000" <sip:69000@10.10.10.69>;party=calling;screen=yes;privacy=off
Content-Length: 0

[10] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK233e07d6
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 16:09:43 GMT
CSeq: 103 UPDATE
Server: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Record-Route:
<sip:2108.4b44162d-790ae05e-f058cd75-12cd2721@10.10.10.69:5060;maddr=10.10.10.53>
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 25687 1 IN IP4 10.10.10.53
s=SIP Call
t=0 0
m=audio 21556 RTP/AVP 0 8 18 101
c=IN IP4 10.10.10.53
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

[11] INVITE
sip:69003.ccf05e0e-e5719641-9c7267de-bf0a3f51@10.10.10.69:5060;maddr=10.10.10.53 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK52c927a8
Remote-Party-ID: "sccp96000" <sip:69000@10.10.10.69>;party=calling;screen=yes;privacy=off
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
Date: Tue, 14 Feb 2006 16:07:06 GMT
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Route: <sip:2108@10.10.10.53:5060;transport=udp>
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:2108@10.10.10.69:5060>
Expires: 180
Allow-Events: presence, kpml
Content-Length: 0

[12] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK52c927a8
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 16:09:43 GMT
CSeq: 104 INVITE
Server: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Record-Route:
<sip:2108.79be559a-3958b9c9-a4fa1b3f-b3532d88@10.10.10.69:5060;maddr=10.10.10.53>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=called;id-type=subscriber;privacy=off;screen=yes
Supported: replaces
Content-Length: 259
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 25687 1 IN IP4 10.10.10.53
s=SIP Call
t=0 0
m=audio 21556 RTP/AVP 0 8 18 101
c=IN IP4 10.10.10.53
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

[13] ACK sip:69003.ccf05e0e-e5719641-9c7267de-bf0a3f51@10.10.10.69:5060;maddr=10.10.10.53
SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK7239e24e
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
Date: Tue, 14 Feb 2006 16:07:07 GMT
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Route: <sip:2108@10.10.10.53:5060;transport=udp>
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 10.10.10.69
s=SIP Call
c=IN IP4 172.18.194.197
t=0 0
m=audio 24854 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[14] BYE sip:69003.ccf05e0e-e5719641-9c7267de-bf0a3f51@10.10.10.69:5060;maddr=10.10.10.53
SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK75072ca
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
Date: Tue, 14 Feb 2006 16:07:07 GMT
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
Route: <sip:2108@10.10.10.53:5060;transport=udp>
CSeq: 105 BYE
Content-Length: 0

[15] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK75072ca
From: <sip:69003@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29884089
To: <sip:2108@10.10.10.53>;tag=000c851ce20f0673126539d4-52cd9a19
Call-ID: e7612500-3f21001b-6-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 16:09:52 GMT
CSeq: 105 BYE
Server: Cisco-CP7960G/8.0
Content-Length: 0
```

Early Attended Transfer to SIP Proxy via Cisco Unified CallManager SIP Trunk

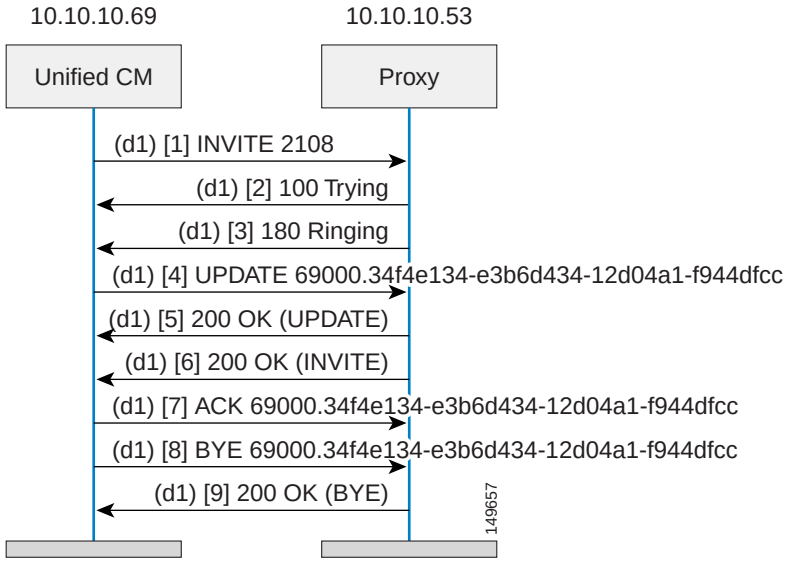
The following call flow illustrates the SIP messaging that takes place between Cisco IP SCCP phones hosted by a Cisco Unified CallManager and a SIP Proxy via a Cisco Unified CallManager SIP trunk.

1. Cisco IP SCCP phone 69000 calls Cisco IP SCCP phone 69003
2. Cisco IP SCCP phone 69003 answers the call
3. Cisco IP SCCP phone 69000 presses the transfer softkey and dials 2108 a SIP Proxy phone

4. SIP Porxy phone 2108 is ringing
5. Cisco IP SCCP phone 69003 is on MOH
6. Cisco IP SCCP phone 69000 press transfer softkey again
7. Cisco IP SCCP phone 69003 hears SIP phone 2108 ringing
8. SIP Proxy phone 2108 answers the call
9. Cisco IP SCCP phone 69003 and SIP Proxy phone 2108 are talking
10. Cisco IP SCCP phone 69003 ends the call

- Configuration:
  - Node = Unified CM, IP = 10,.10.10.69
  - Node = Proxy, IP = 10.10.10.53

Early Attended Transfer to SIP Proxy
via Cisco Unified CallManager SIP Trunk




```
[1] INVITE sip:2108@10.10.10.53:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK4b3df619
Remote-Party-ID: "sccp96000" <sip:69000@10.10.10.69>;party=calling;screen=yes;privacy=off
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29885817
To: <sip:2108@10.10.10.53>
Date: Tue, 14 Feb 2006 16:14:51 GMT
Call-ID: 57b5500-3f2101fb-9-45c712ac@10.10.10.69
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:69000@10.10.10.69:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.10.69:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0
```

```
[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK4b3df619
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29885817
To: <sip:2108@10.10.10.53>
Call-ID: 57b5500-3f2101fb-9-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 16:17:28 GMT
CSeq: 101 INVITE
Server: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Record-Route:
<sip:69000.34f4e134-e3b6d434-124d04a1-f944dfcc@10.10.10.69:5060;maddr=10.10.10.53>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=called;id-type=subscriber;privacy=off;screen=yes
Content-Length: 0
[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK4b3df619
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29885817
To: <sip:2108@10.10.10.53>;tag=000c851ce20f06783be36002-30d83c46
Call-ID: 57b5500-3f2101fb-9-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 16:17:28 GMT
CSeq: 101 INVITE
Server: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Record-Route:
<sip:69000.34f4e134-e3b6d434-124d04a1-f944dfcc@10.10.10.69:5060;maddr=10.10.10.53>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=called;id-type=subscriber;privacy=off;screen=yes
Content-Length: 0

[4] UPDATE
sip:69000.34f4e134-e3b6d434-124d04a1-f944dfcc@10.10.10.69:5060;maddr=10.10.10.53 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK6c171fdb
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29885817
To: <sip:2108@10.10.10.53>;tag=000c851ce20f06783be36002-30d83c46
Date: Tue, 14 Feb 2006 16:14:51 GMT
Call-ID: 57b5500-3f2101fb-9-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
Route: <sip:2108@10.10.10.53:5060;transport=udp>
CSeq: 102 UPDATE
Contact: <sip:2108@10.10.10.69:5060>
Remote-Party-ID: <sip:69003@10.10.10.69>;party=calling;screen=yes;privacy=off
Content-Length: 0

[5] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK6c171fdb
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29885817
To: <sip:2108@10.10.10.53>;tag=000c851ce20f06783be36002-30d83c46
Call-ID: 57b5500-3f2101fb-9-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 16:17:31 GMT
CSeq: 102 UPDATE
Server: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
```

```
Record-Route:
<sip:2108.984ec8ff-b6e4be20-b29196b2-202a6039@10.10.10.69:5060;maddr=10.10.10.53>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Content-Length: 0

[6] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK4b3df619
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29885817
To: <sip:2108@10.10.10.53>;tag=000c851ce20f06783be36002-30d83c46
Call-ID: 57b5500-3f2101fb-9-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 16:17:38 GMT
CSeq: 101 INVITE
Server: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Record-Route:
<sip:2108.984ec8ff-b6e4be20-b29196b2-202a6039@10.10.10.69:5060;maddr=10.10.10.53>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=called;id-type=subscriber;privacy=off;screen=yes
Supported: replaces
Content-Length: 259
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 18559 0 IN IP4 10.10.10.53
s=SIP Call
t=0 0
m=audio 21566 RTP/AVP 0 8 18 101
c=IN IP4 10.10.10.53
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

[7] ACK sip:69000.34f4e134-e3b6d434-124d04a1-f944dfcc@10.10.10.69:5060;maddr=10.10.10.53
SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK4ffebcaa
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29885817
To: <sip:2108@10.10.10.53>;tag=000c851ce20f06783be36002-30d83c46
Date: Tue, 14 Feb 2006 16:14:51 GMT
Call-ID: 57b5500-3f2101fb-9-45c712ac@10.10.10.69
Route: <sip:2108@10.10.10.53:5060;transport=udp>
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 214
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.10.43
t=0 0
m=audio 22276 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

```
[8] BYE sip:69000.34f4e134-e3b6d434-124d04a1-f944dfcc@10.10.10.69:5060;maddr=10.10.10.53
SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK31dac632
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29885817
To: <sip:2108@10.10.10.53>;tag=000c851ce20f06783be36002-30d83c46
Date: Tue, 14 Feb 2006 16:14:51 GMT
Call-ID: 57b5500-3f2101fb-9-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
Route: <sip:2108@10.10.10.53:5060;transport=udp>
CSeq: 103 BYE
Content-Length: 0

[9] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK31dac632
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29885817
To: <sip:2108@10.10.10.53>;tag=000c851ce20f06783be36002-30d83c46
Call-ID: 57b5500-3f2101fb-9-45c712ac@10.10.10.69
Date: Tue, 14 Feb 2006 16:17:41 GMT
CSeq: 103 BYE
Server: Cisco-CP7960G/8.0
Content-Length: 0
```

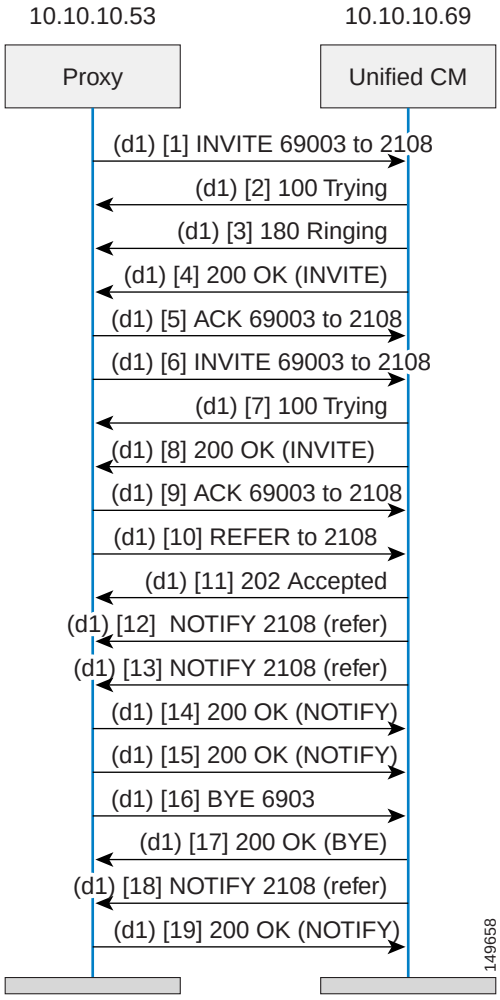
Blind Transfer from a SIP Proxy Phone using the SIP Trunk

The following call flow illustrates the SIP messaging that takes place between a SIP Proxy phone to two Cisco IP SCCP phones hosted by a Cisco Unified CallManager via a SIP trunk.

1. SIP Proxy phone 2108 calls Cisco IP SCCP phone 69003
2. Cisco IP SCCP phone 69003 answers the call.
3. SIP Proxy phone 2108 presses the blind transfer softkey and dials Cisco IP SCCP phone 69000.
4. Cisco IP SCCP phone 69000 is ringing
5. Cisco IP SCCP phone 69003 hears ring back
6. Cisco SCCP phone 69000 answers the call

- Configuration:
  - Node = Unified CM, IP = 10.10.10.69
  - Node = Proxy, IP = 10.10.10.53

Basic Transfer from a SIP Proxy Phone using the SIP Trunk




```
[1] INVITE sip:69003@10.10.10.69:5060;transport=udp SIP/2.0

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=f85227d2-288d4d80-735bc109-368e1351-1

Via: SIP/2.0/UDP 10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK081147ec
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
Max-Forwards: 69
Date: Thu, 16 Feb 2006 11:32:19 GMT
CSeq: 101 INVITE
User-Agent: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Expires: 180
Accept: application/sdp
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=calling;id-type=subscriber;privacy=off;screen=yes
Supported: replaces
Content-Length: 259
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
```

```
o=Cisco-SIPUA 21700 0 IN IP4 10.10.10.53
s=SIP Call
t=0 0
m=audio 21588 RTP/AVP 0 8 18 101
c=IN IP4 10.10.10.53
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

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=f85227d2-288d4d80-735bc109-368e1351-1,SIP/2.0/UDP
10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK081147ec
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>
Date: Thu, 16 Feb 2006 11:29:33 GMT
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=f85227d2-288d4d80-735bc109-368e1351-1,SIP/2.0/UDP
10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK081147ec
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
Date: Thu, 16 Feb 2006 11:29:33 GMT
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:69003@10.10.10.69>;party=called;screen=yes;privacy=off
Contact: <sip:69003@10.10.10.69:5060>
Content-Length: 0

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=f85227d2-288d4d80-735bc109-368e1351-1,SIP/2.0/UDP
10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK081147ec
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
Date: Thu, 16 Feb 2006 11:29:33 GMT
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:69003@10.10.10.69>;party=called;screen=yes;privacy=off
Contact: <sip:69003@10.10.10.69:5060>
Content-Type: application/sdp
Content-Length: 214
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.10.43
t=0 0
m=audio 25730 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[5] ACK sip:69003@10.10.10.69:5060 SIP/2.0
```

```
Via: SIP/2.0/UDP 10.10.10.53:5060;branch=90b103c3-926b429f-60accdaa-cb101fc9-1

Via: SIP/2.0/UDP 10.10.10.53:5060;received=10.10.10.53;branch=z9hG4bK4aa51f42
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
Max-Forwards: 69
Date: Thu, 16 Feb 2006 11:32:20 GMT
CSeq: 101 ACK
User-Agent: Cisco-CP7960G/8.0
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=calling;id-type=subscriber;privacy=off;screen=yes
Content-Length: 0

[6] INVITE sip:69003@10.10.10.69:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=z9hG4bK35c8efaa
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
Max-Forwards: 70
Date: Thu, 16 Feb 2006 11:32:23 GMT
CSeq: 102 INVITE
User-Agent: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=calling;id-type=subscriber;privacy=off;screen=yes
Content-Length: 259
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 21700 1 IN IP4 10.10.10.53
s=SIP Call
t=0 0
m=audio 21588 RTP/AVP 0 8 18 101
c=IN IP4 10.10.10.53
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=sendonly

[7] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=z9hG4bK35c8efaa
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
Date: Thu, 16 Feb 2006 11:29:37 GMT
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0

[8] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=z9hG4bK35c8efaa
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
Date: Thu, 16 Feb 2006 11:29:37 GMT
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:69003@10.10.10.69>;party=called;screen=yes;privacy=off
Contact: <sip:69003@10.10.10.69:5060>
Content-Type: application/sdp
```

```
Content-Length: 226
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.10.43
t=0 0
m=audio 25730 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

[9] ACK sip:69003@10.10.10.69:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=z9hG4bK73b70df4
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
Max-Forwards: 70
Date: Thu, 16 Feb 2006 11:32:23 GMT
CSeq: 102 ACK
User-Agent: Cisco-CP7960G/8.0
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=calling;id-type=subscriber;privacy=off;screen=yes
Content-Length: 0

[10] REFER sip:10.10.10.69 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=z9hG4bK359581af
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
Max-Forwards: 70
Date: Thu, 16 Feb 2006 11:33:13 GMT
CSeq: 103 REFER
User-Agent: Cisco-CP7960G/8.0
Contact: <sip:2108@10.10.10.53:5060;transport=udp>
Remote-Party-ID: "sip2108"
<sip:2108@10.10.10.53>;party=calling;id-type=subscriber;privacy=off;screen=yes
Refer-To: sip:69000@10.10.10.69
Referred-By: "sip2108" <sip:2108@10.10.10.53>
Content-Length: 0

[11] SIP/2.0 202 Accepted

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=z9hG4bK359581af
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
Date: Thu, 16 Feb 2006 11:30:27 GMT
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
CSeq: 103 REFER
Content-Length: 0
Contact: <sip:69003@10.10.10.69:5060>

[12] NOTIFY sip:2108@10.10.10.53:5060;transport=udp SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK54014050
From: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
To: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
CSeq: 101 NOTIFY
Max-Forwards: 70
Date: Thu, 16 Feb 2006 11:30:27 GMT
User-Agent: Cisco-CCM5.0
Event: refer
Subscription-State: active;expires=60
```

```
Contact: <sip:69003@10.10.10.69:5060>
Content-Type: message/sipfrag;version=2.0
Content-Length: 20
SIP/2.0 100 Trying

[13] NOTIFY sip:2108@10.10.10.53:5060;transport=udp SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK15c71c00
From: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
To: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Thu, 16 Feb 2006 11:30:27 GMT
User-Agent: Cisco-CCM5.0
Event: refer
Subscription-State: active;expires=60
Contact: <sip:69003@10.10.10.69:5060>
Content-Type: message/sipfrag;version=2.0
Content-Length: 21
SIP/2.0 180 Ringing

[14] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK54014050
From: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
To: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
Date: Thu, 16 Feb 2006 11:33:13 GMT
CSeq: 101 NOTIFY
Content-Length: 0

[15] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK15c71c00
From: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
To: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
Date: Thu, 16 Feb 2006 11:33:13 GMT
CSeq: 102 NOTIFY
Content-Length: 0

[16] BYE sip:69003@10.10.10.69:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=z9hG4bK291f69bd
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
Max-Forwards: 70
Date: Thu, 16 Feb 2006 11:33:13 GMT
CSeq: 104 BYE
User-Agent: Cisco-CP7960G/8.0
Content-Length: 0

[17] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.53:5060;branch=z9hG4bK291f69bd
From: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
To: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
Date: Thu, 16 Feb 2006 11:30:27 GMT
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
CSeq: 104 BYE
Content-Length: 0

[18] NOTIFY sip:2108@10.10.10.53:5060;transport=udp SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK6b2b8fc3
```

```
From: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
To: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Thu, 16 Feb 2006 11:30:32 GMT
User-Agent: Cisco-CCM5.0
Event: refer
Subscription-State: terminated;reason=noresource
Contact: <sip:69003@10.10.10.69:5060>
Content-Type: message/sipfrag;version=2.0
Content-Length: 16
SIP/2.0 200 OK

[19] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK6b2b8fc3
From: <sip:69003@10.10.10.53>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-30508985
To: "sip2108" <sip:2108@10.10.10.53>;tag=000c851ce20f06d90c64c300-1ec8f497
Call-ID: 000c851c-e20f0028-1da3d801-2acced1f@10.10.10.53
Date: Thu, 16 Feb 2006 11:33:18 GMT
CSeq: 103 NOTIFY
Content-Length: 0
```

UPDATE Method

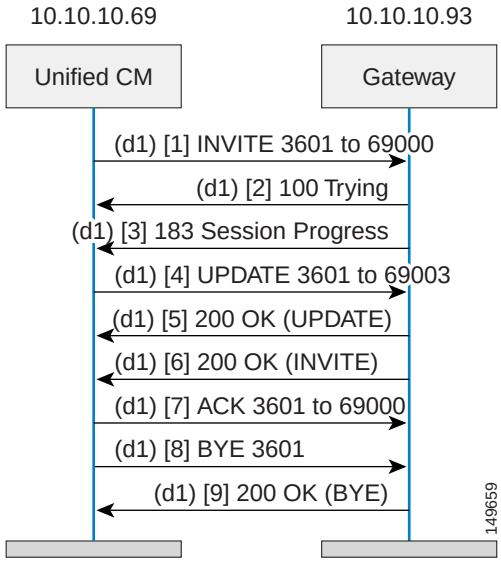
Early Transfer Call to SIP Gateway No PRACK via Cisco Unified CallManager SIP Trunk

The following call flow illustrates the SIP messaging that takes place between Cisco Unified CallManager IP SCCP phones hosted by a Cisco Unified CallManager, and a SIP GW via a Cisco Unified CallManager SIP trunk.

1. Cisco IP SCCP 69000 calls Cisco IP SCCP 69003.
2. The Cisco IP SCCP 690003 answers the call.
3. Cisco IP SCCP 69000 presses the trnasfer key and calls 3601 a SIP GW phone via a Cisco Unified CallManager SIP Trunk.
4. GW 3601 phone is ringing, and Cisco IP SCCP 69000 presses the transfer key again.
5. GW 3601 phone answers the call.
6. GW 3601 phone and Cisco IP SCCP 69003 talking.
7. Cisco IP SCCP 69003 ends the call.

- Configuration:
  - Node = Unified CM, IP = 10.10.10.69
  - Node = Gateway, IP = 10.10.10.93

Early Transfer to Gateway NO PRACK
via Cisco Unified CallManager SIP Trunk




```
[1] INVITE sip:3601@10.10.10.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK49be4f59
Remote-Party-ID: "sccp96000" <sip:69000@10.10.10.69>;party=calling;screen=yes;privacy=off
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890540
To: <sip:3601@10.10.10.93>
Date: Tue, 14 Feb 2006 17:02:35 GMT
Call-ID: b08f0d00-3f210d2b-4-45c712ac@10.10.10.69
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:69000@10.10.10.69:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.10.69:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK49be4f59
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890540
To: <sip:3601@10.10.10.93>;tag=3EB89C1C-475
Date: Tue, 14 Feb 2006 17:02:35 GMT
Call-ID: b08f0d00-3f210d2b-4-45c712ac@10.10.10.69
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0

[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK49be4f59
```

```
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890540
To: <sip:3601@10.10.10.93>;tag=3EB89C1C-475
Date: Tue, 14 Feb 2006 17:02:35 GMT
Call-ID: b08f0d00-3f210d2b-4-45c712ac@10.10.10.69
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:3601@10.10.10.93:5060>
Call-Info: <sip:10.10.10.93:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 217
v=0
o=CiscoSystemsSIP-GW-UserAgent 283 3046 IN IP4 10.10.10.93
s=SIP Call
c=IN IP4 10.10.10.93
t=0 0
m=audio 19138 RTP/AVP 0 19
c=IN IP4 10.10.10.93
a=rtpmap:0 PCMU/8000
a=rtpmap:19 CN/8000
a=ptime:20

[4] UPDATE sip:3601@10.10.10.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK605c062a
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890540
To: <sip:3601@10.10.10.93>;tag=3EB89C1C-475
Date: Tue, 14 Feb 2006 17:02:35 GMT
Call-ID: b08f0d00-3f210d2b-4-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 102 UPDATE
Contact: <sip:69000@10.10.10.69:5060>
Remote-Party-ID: <sip:69003@10.10.10.69>;party=calling;screen=yes;privacy=off
Call-Info: <sip:10.10.10.69:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Length: 0

[5] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK605c062a
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890540
To: <sip:3601@10.10.10.93>;tag=3EB89C1C-475
Date: Tue, 14 Feb 2006 17:02:38 GMT
Call-ID: b08f0d00-3f210d2b-4-45c712ac@10.10.10.69
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 UPDATE
Allow-Events: telephone-event
Content-Length: 0

[6] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK49be4f59
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890540
To: <sip:3601@10.10.10.93>;tag=3EB89C1C-475
Date: Tue, 14 Feb 2006 17:02:38 GMT
Call-ID: b08f0d00-3f210d2b-4-45c712ac@10.10.10.69
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:3601@10.10.10.93:5060>
Call-Info: <sip:10.10.10.93:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 217
v=0
o=CiscoSystemsSIP-GW-UserAgent 283 3046 IN IP4 10.10.10.93
s=SIP Call
c=IN IP4 10.10.10.93
t=0 0
m=audio 19138 RTP/AVP 0 19
c=IN IP4 10.10.10.93
a=rtpmap:0 PCMU/8000
a=rtpmap:19 CN/8000
a=ptime:20

[7] ACK sip:3601@10.10.10.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK6e207e50
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890540
To: <sip:3601@10.10.10.93>;tag=3EB89C1C-475
Date: Tue, 14 Feb 2006 17:02:35 GMT
Call-ID: b08f0d00-3f210d2b-4-45c712ac@10.10.10.69
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 158
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.199.43
t=0 0
m=audio 30740 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[8] BYE sip:3601@10.10.10.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK4436ed95
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890540
To: <sip:3601@10.10.10.93>;tag=3EB89C1C-475
Date: Tue, 14 Feb 2006 17:02:35 GMT
Call-ID: b08f0d00-3f210d2b-4-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 103 BYE
Content-Length: 0

[9] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK4436ed95
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890540
To: <sip:3601@10.10.10.93>;tag=3EB89C1C-475
Date: Tue, 14 Feb 2006 17:02:57 GMT
Call-ID: b08f0d00-3f210d2b-4-45c712ac@10.10.10.69
Server: Cisco-SIPGateway/IOS-12.x
```

```
CSeq: 103 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

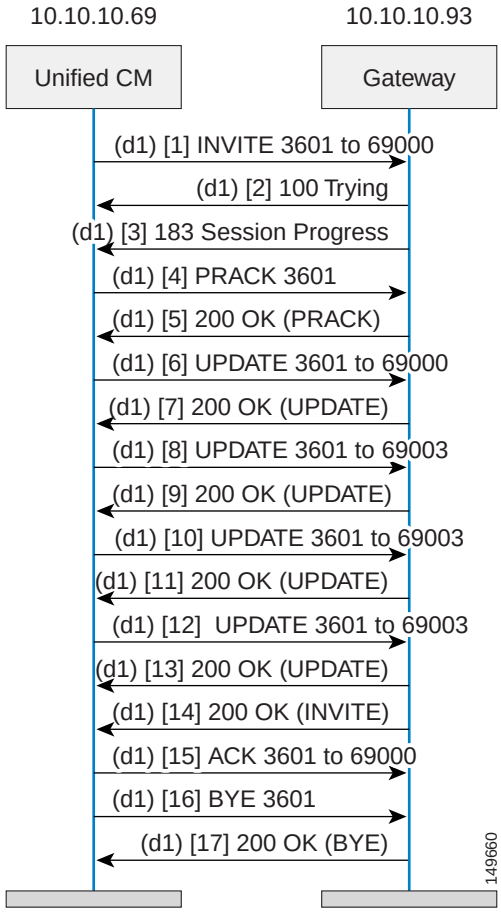
Early Transfer Call to SIP Gateway with PRACK via Cisco Unified CallManager SIP Trunk

The following call flow illustrates the SIP messaging that takes place between Cisco Unified CallManager IP SCCP phones hosted by a Cisco Unified CallManager, and a SIP GW via a Cisco Unified CallManager SIP trunk.

1. Cisco IP SCCP 69000 calls Cisco IP SCCP 69003
2. The Cisco IP SCCP 690003 answers the call
3. Cisco IP SCCP 69000 presses the trnasfer key and calls 3601 a SIP GW phone via a Cisco Unified CallManager SIP Trunk
4. GW 3601 phone is ringing, and Cisco IP SCCP 69000 presses the transfer key again
5. GW 3601 phone answers the call
6. GW 3601 phone and Cisco IP SCCP 69003 talking
7. Cisco IP SCCP 69003 ends the call

- Configuration:
  - Node = Unified CM, IP = 10.10.10.69
  - Node = Gateway, IP = 10.10.10.93

Early Transfer to Gateway with PRACK
via Cisco Unified CallManager SIP Trunk




```
[1] INVITE sip:3601@10.10.10.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK3321b98b
Remote-Party-ID: "sccp96000" <sip:69000@10.10.10.69>;party=calling;screen=yes;privacy=off
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>
Date: Tue, 14 Feb 2006 16:55:54 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
Supported: 100rel,timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:69000@10.10.10.69:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.10.69:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK3321b98b
```

```
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:55:54 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0

[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK3321b98b
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:55:54 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
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: 6235
Allow-Events: telephone-event
Contact: <sip:3601@10.10.10.93:5060>
Call-Info: <sip:10.10.10.93:5060>;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 7495 8157 IN IP4 10.10.10.93
s=SIP Call
c=IN IP4 10.10.10.93
t=0 0
m=audio 19118 RTP/AVP 0 19
c=IN IP4 10.10.10.93
a=rtpmap:0 PCMU/8000
a=rtpmap:19 CN/8000
a=ptime:20

[4] PRACK sip:3601@10.10.10.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK202eceda
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:55:54 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
CSeq: 102 PRACK
RAck: 6235 101 INVITE
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.194.197
t=0 0
m=audio 22542 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[5] SIP/2.0 200 OK
```

```
Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK202eceda
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:55:54 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 PRACK
Content-Length: 0

[6] UPDATE sip:3601@10.10.10.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK198e716c
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:55:54 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 103 UPDATE
Contact: <sip:69000@10.10.10.69:5060>
Remote-Party-ID: "sccp96000" <sip:69000@10.10.10.69>;party=calling;screen=yes;privacy=off
Call-Info: <sip:10.10.10.69:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Type: application/sdp
Content-Length: 164
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 22542 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive

[7] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK198e716c
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:56:01 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 103 UPDATE
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Length: 206
v=0
o=CiscoSystemsSIP-GW-UserAgent 7495 8157 IN IP4 10.10.10.93
s=SIP Call
c=IN IP4 10.10.10.93
t=0 0
m=audio 19118 RTP/AVP 0
c=IN IP4 10.10.10.93
a=inactive
a=rtpmap:0 PCMU/8000
a=ptime:20

[8] UPDATE sip:3601@10.10.10.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK4010462a
```

```
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:55:54 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 UPDATE
Contact: <sip:69000@10.10.10.69:5060>
Remote-Party-ID: <sip:69003@10.10.10.69>;party=calling;screen=yes;privacy=off
Call-Info: <sip:10.10.10.69:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Length: 0

[9] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK4010462a
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:56:01 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 104 UPDATE
Allow-Events: telephone-event
Content-Length: 0

[10] UPDATE sip:3601@10.10.10.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK5d619e94
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:55:54 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 105 UPDATE
Contact: <sip:69000@10.10.10.69:5060>
Remote-Party-ID: <sip:69003@10.10.10.69>;party=calling;screen=yes;privacy=off
Call-Info: <sip:10.10.10.69:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Type: application/sdp
Content-Length: 299
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.10.69
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
[11] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK5d619e94
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:56:01 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
```

```
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 105 UPDATE
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Length: 194
v=0
o=CiscoSystemsSIP-GW-UserAgent 7495 8158 IN IP4 10.10.10.93
s=SIP Call
c=IN IP4 10.10.10.93
t=0 0
m=audio 19118 RTP/AVP 0
c=IN IP4 10.10.10.93
a=recvonly
a=rtpmap:0 PCMU/8000

[12] UPDATE sip:3601@10.10.10.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK2f430a02
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:55:54 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 106 UPDATE
Contact: <sip:69000@10.10.10.69:5060>
Remote-Party-ID: <sip:69003@10.10.10.69>;party=calling;screen=yes;privacy=off
Call-Info: <sip:10.10.10.69:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Type: application/sdp
Content-Length: 158
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.199.43
t=0 0
m=audio 22532 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[13] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK2f430a02
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:56:01 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 106 UPDATE
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Length: 194
v=0
o=CiscoSystemsSIP-GW-UserAgent 7495 8159 IN IP4 10.10.10.93
s=SIP Call
c=IN IP4 10.10.10.93
t=0 0
m=audio 19118 RTP/AVP 0
c=IN IP4 10.10.10.93
a=rtpmap:0 PCMU/8000
a=ptime:20
[14] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK3321b98b
```

```
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:56:01 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
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:3601@10.10.10.93:5060>
Call-Info: <sip:10.10.10.93:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 194
v=0
o=CiscoSystemsSIP-GW-UserAgent 7495 8159 IN IP4 10.10.10.93
s=SIP Call
c=IN IP4 10.10.10.93
t=0 0
m=audio 19118 RTP/AVP 0
c=IN IP4 10.10.10.93
a=rtpmap:0 PCMU/8000
a=ptime:20

[15] ACK sip:3601@10.10.10.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK33170481
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:55:54 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 158
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.199.43
t=0 0
m=audio 22532 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[16] BYE sip:3601@10.10.10.93:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK4062e20a
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:55:54 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 107 BYE
Content-Length: 0

[17] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK4062e20a
```

```
From: "sccp96000"
<sip:69000@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-29890535
To: <sip:3601@10.10.10.93>;tag=3EB27A18-475
Date: Tue, 14 Feb 2006 16:56:22 GMT
Call-ID: c18b4e80-3f210b9a-3-45c712ac@10.10.10.69
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 107 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

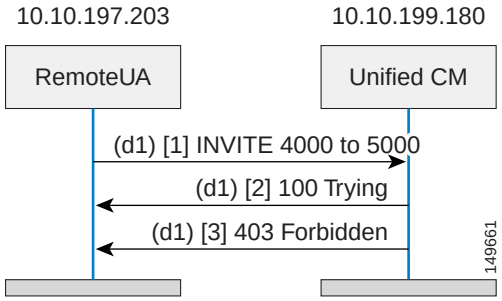
TLS

TLS Rejection with X509 Subject Name Mismatch

Incoming TLS is from a trusted peer but the X509 subject name or the cipher string from the peer's certificate does not match the values from the SIP trunk security profile on Cisco Unified CallManager.

- Configuration:
  - Node = Unified CM, IP = 10.10.199.180
  - Node = Remote UA, IP = 10.10.197.203

TLS Rejection with X509 Subject Name Mismatch




```
[1] INVITE sip:4000@10.10.199.180:5061 SIP/2.0

Via: SIP/2.0/TLS 10.10.197.203;branch=z9hG4bK30be1a76
Remote-Party-ID: <sip:5000@10.10.197.203>;party=calling;screen=yes;privacy=off
From: <sip:5000@10.10.197.203>;tag=ee3b8e46-a2eb-4d39-9819-2161df1bcaff-28556356
To: <sip:4000@10.10.199.180>
Date: Fri, 17 Feb 2006 17:31:32 GMT
Call-ID: 3b217780-3f610874-286d-cbc512ac@10.10.197.203
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:5000@10.10.197.203:5061;transport=tls>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.197.203:5061>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TLS 10.10.197.203;branch=z9hG4bK30be1a76
From: <sip:5000@10.10.197.203>;tag=ee3b8e46-a2eb-4d39-9819-2161df1bcaff-28556356
To: <sip:4000@10.10.199.180>
Date: Fri, 17 Feb 2006 17:31:32 GMT
Call-ID: 3b217780-3f610874-286d-cbc512ac@10.10.197.203
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[3] SIP/2.0 403 Forbidden

Via: SIP/2.0/TLS 10.10.197.203;branch=z9hG4bK30be1a76
From: <sip:5000@10.10.197.203>;tag=ee3b8e46-a2eb-4d39-9819-2161df1bcaff-28556356
To: <sip:4000@10.10.199.180>;tag=393194119
```

```
Date: Fri, 17 Feb 2006 17:31:32 GMT
Call-ID: 3b217780-3f610874-286d-cbc512ac@10.10.197.203
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

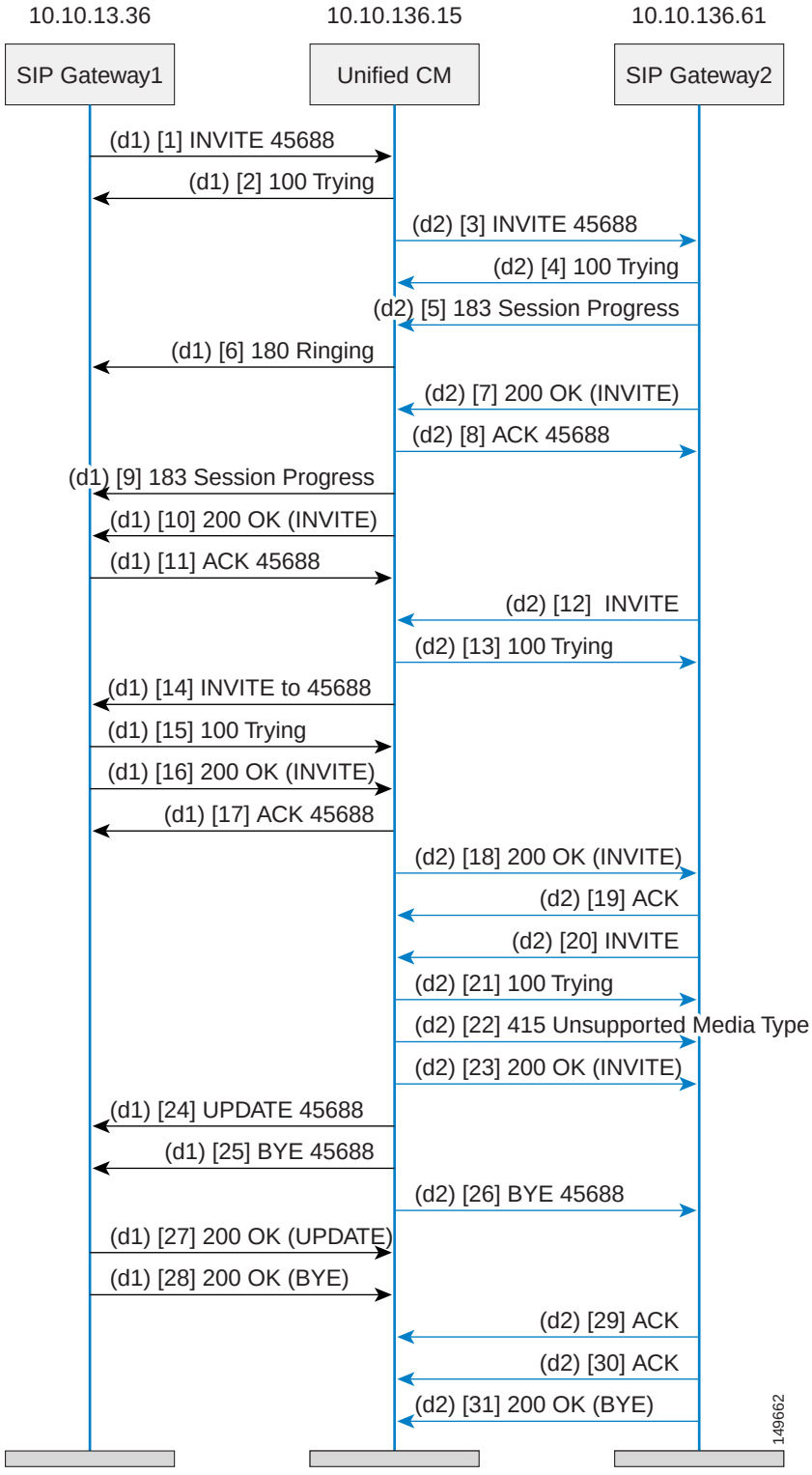
T38 Fax

SIP Trunk Passes Through T38 Fax Call Between SIP Gateways

Cisco Unified CallManager can pass through T38 fax calls using SIP trunks. This call flow shows how two SIP trunks let a fax call pass through the Cisco Unified CallManager 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 = 10.10.136.15
  - Node = SIP Gateway1, IP = 10.10.13.36
  - Node = SIP Gateway2, IP = 10.10.136.61

SIP Trunk Passes through T38 Fax Call between SIP Gateways



```
[1] INVITE sip:45688@10.10.136.15:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.13.36:5060;branch=z9hG4bK344A7
From: <sip:10.10.13.36>;tag=43B157C0-1EBE
To: <sip:45688@10.10.136.15>
Date: Sat, 16 Nov 2002 06:59:03 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
Supported: 100rel,timer,resource-priority,replaces
Min-SE: 1800
Cisco-Guid: 3082768956-4167504342-2158489790-524492001
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: 1037429943
Contact: <sip:10.10.13.36:5060>
Expires: 180
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 215
v=0
o=CiscoSystemsSIP-GW-UserAgent 3187 7446 IN IP4 10.10.13.36
s=SIP Call
c=IN IP4 10.10.13.36
t=0 0
m=audio 17046 RTP/AVP 0 19
c=IN IP4 10.10.13.36
a=rtpmap:0 PCMU/8000
a=rtpmap:19 CN/8000
a=ptime:20

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.13.36:5060;branch=z9hG4bK344A7
From: <sip:10.10.13.36>;tag=43B157C0-1EBE
To: <sip:45688@10.10.136.15>
Date: Wed, 25 Jan 2006 02:21:22 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
Timestamp: 1037429943
CSeq: 101 INVITE
Allow-Events: presence, dialog
Content-Length: 0

[3] INVITE sip:45688@10.10.136.61:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK722ea0bf
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
To: <sip:45688@10.10.136.61>
Date: Wed, 25 Jan 2006 02:21:22 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:10.10.136.15:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog
Max-Forwards: 69
Content-Length: 0

[4] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK722ea0bf
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
To: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
```

```
Date: Sun, 27 Jul 2003 20:06:45 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0
```

[5] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK722ea0bf
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
To: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
Date: Sun, 27 Jul 2003 20:06:45 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
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:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 230
v=0
o=CiscoSystemsSIP-GW-UserAgent 3244 4129 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 18686 RTP/AVP 0 8 19
c=IN IP4 10.10.136.61
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:19 CN/8000
```

[6] SIP/2.0 180 Ringing

```
Via: SIP/2.0/UDP 10.10.13.36:5060;branch=z9hG4bK344A7
From: <sip:10.10.13.36>;tag=43B157C0-1EBE
To: <sip:45688@10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770623
Date: Wed, 25 Jan 2006 02:21:22 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
Timestamp: 1037429943
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog
Remote-Party-ID: <sip:45688@10.10.136.15>;party=called;screen=yes;privacy=off
Contact: <sip:45688@10.10.136.15:5060>
Content-Length: 0
```

[7] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK722ea0bf
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
To: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
Date: Sun, 27 Jul 2003 20:06:45 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
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:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 230
```

```
v=0
o=CiscoSystemsSIP-GW-UserAgent 3244 4129 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 18686 RTP/AVP 0 8 19
c=IN IP4 10.10.136.61
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:19 CN/8000

[8] ACK sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK95ca6af
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
To: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
Date: Wed, 25 Jan 2006 02:21:22 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, dialog
Content-Type: application/sdp
Content-Length: 157
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.136.15
s=SIP Call
c=IN IP4 10.10.13.36
t=0 0
m=audio 17046 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[9] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.13.36:5060;branch=z9hG4bK344A7
From: <sip:10.10.13.36>;tag=43B157C0-1EBE
To: <sip:45688@10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770623
Date: Wed, 25 Jan 2006 02:21:22 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
Timestamp: 1037429943
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog
Remote-Party-ID: <sip:45688@10.10.136.15>;party=called;screen=yes;privacy=off
Contact: <sip:45688@10.10.136.15:5060>
Content-Type: application/sdp
Content-Length: 158
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.136.15
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 18686 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[10] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.13.36:5060;branch=z9hG4bK344A7
From: <sip:10.10.13.36>;tag=43B157C0-1EBE
To: <sip:45688@10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770623
Date: Wed, 25 Jan 2006 02:21:22 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
Timestamp: 1037429943
CSeq: 101 INVITE
```

```
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog
Remote-Party-ID: <sip:45688@10.10.136.15>;party=called;screen=yes;privacy=off
Contact: <sip:45688@10.10.136.15:5060>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 158
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.136.15
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 18686 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[11] ACK sip:45688@10.10.136.15:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.13.36:5060;branch=z9hG4bK355FE
From: <sip:10.10.13.36>;tag=43B157C0-1EBE
To: <sip:45688@10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770623
Date: Sat, 16 Nov 2002 06:59:03 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
Max-Forwards: 70
CSeq: 101 ACK
Content-Length: 0

[12] INVITE sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK19826
From: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
Date: Sun, 27 Jul 2003 20:07:09 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
Supported: 100rel,timer,resource-priority,replaces
Min-SE: 1800
Cisco-Guid: 2931679222-3215200727-2151796759-1618905505
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: 1059336429
Contact: <sip:45688@10.10.136.61:5060;transport=tcp>
Expires: 180
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Length: 399
v=0
o=CiscoSystemsSIP-GW-UserAgent 3244 4131 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=image 18686 udptl t38
c=IN IP4 10.10.136.61
a=T38FaxVersion:0
a=T38MaxBitRate:14400
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72
a=T38FaxUdpEC:t38UDPRedundancy
```

```
[13] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK19826
From: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
Date: Wed, 25 Jan 2006 02:21:46 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
CSeq: 101 INVITE
Allow-Events: presence, dialog
Content-Length: 0

[14] INVITE sip:10.10.13.36:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.136.15:5060; branch=z9hG4bK2cca1920
Remote-Party-ID: <sip:45688@10.10.136.15>;party=calling;screen=yes;privacy=off
From: <sip:45688@10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770623
To: <sip:10.10.13.36>;tag=43B157C0-1EBE
Date: Wed, 25 Jan 2006 02:21:46 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 3082768956-4167504342-2158489790-524492001
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:45688@10.10.136.15:5060>
Expires: 180
Allow-Events: presence, dialog
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 363
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 18686 udptl t38
c=IN IP4 10.10.136.61
a=T38FaxVersion:0
a=T38MaxBitRate:14400
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
a=T38FaxUdpEC:t38UDPRedundancy
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72

[15] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.136.15:5060;branch=z9hG4bK2cca1920
From: <sip:45688@10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770623
To: <sip:10.10.13.36>;tag=43B157C0-1EBE
Date: Sat, 16 Nov 2002 06:59:27 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0

[16] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.136.15:5060;branch=z9hG4bK2cca1920
From: <sip:45688@10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770623
```

```
To: <sip:10.10.13.36>;tag=43B157C0-1EBE
Date: Sat, 16 Nov 2002 06:59:27 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Session-Expires: 1800;refresher=uac
Require: timer
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO,
REGISTER
Allow-Events: telephone-event
Contact: <sip:45688@10.10.13.36:5060>
Content-Type: application/sdp
Content-Length: 157
v=0
o=CiscoSystemsSIP-GW-UserAgent 3187 7447 IN IP4 10.10.13.36
s=SIP Call
c=IN IP4 10.10.13.36
t=0 0
m=image 17046 udptl t38
c=IN IP4 10.10.13.36

[17] ACK sip:45688@10.10.13.36:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.136.15:5060;branch=z9hG4bK58959f4c
From: <sip:45688@10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770623
To: <sip:10.10.13.36>;tag=43B157C0-1EBE
Date: Wed, 25 Jan 2006 02:21:46 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, dialog
Content-Length: 0

[18] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK19826
From: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
Date: Wed, 25 Jan 2006 02:21:46 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog
Contact: <sip:10.10.136.15:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 225
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 17046 udptl t38
c=IN IP4 10.10.13.36
a=T38MaxBitRate:14400
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0

[19] ACK sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK1AF0F
From: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
Date: Sun, 27 Jul 2003 20:07:09 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
Max-Forwards: 70
```

```
CSeq: 101 ACK
Content-Length: 0

[20] INVITE sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK1B2AE
From: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
Date: Sun, 27 Jul 2003 20:07:35 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
Supported: 100rel,timer,resource-priority,replaces
Min-SE: 1800
Cisco-Guid: 2931679222-3215200727-2151796759-1618905505
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: 1059336455
Contact: <sip:45688@10.10.136.61:5060;transport=tcp>
Expires: 180
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Length: 230
v=0
o=CiscoSystemsSIP-GW-UserAgent 3244 4132 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 18686 RTP/AVP 0 8 19
c=IN IP4 10.10.136.61
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:19 CN/8000

[21] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK1B2AE
From: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
Date: Wed, 25 Jan 2006 02:22:12 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
CSeq: 102 INVITE
Allow-Events: presence, dialog
Content-Length: 0

[22] SIP/2.0 415 Unsupported Media Type

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK1B2AE
From: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
Date: Wed, 25 Jan 2006 02:22:12 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
CSeq: 102 INVITE
Allow-Events: presence, dialog
Content-Length: 0

[23] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK1B2AE
From: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
Date: Wed, 25 Jan 2006 02:22:12 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
CSeq: 102 INVITE
```

```
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog
Contact: <sip:10.10.136.15:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 225
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 17046 udptl t38
c=IN IP4 10.10.13.36
a=T38MaxBitRate:14400
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0

[24] UPDATE sip:45688@10.10.13.36:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.136.15:5060;branch=z9hG4bK6f755eae
From: <sip:45688@10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770623
To: <sip:10.10.13.36>;tag=43B157C0-1EBE
Date: Wed, 25 Jan 2006 02:21:46 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 102 UPDATE
Contact: <sip:45688@10.10.136.15:5060>
Remote-Party-ID: <sip:45688@10.10.136.15>;party=calling;screen=yes;privacy=off
Content-Length: 0

[25] BYE sip:45688@10.10.13.36:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.136.15:5060;branch=z9hG4bK4247a7af
From: <sip:45688@10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770623
To: <sip:10.10.13.36>;tag=43B157C0-1EBE
Date: Wed, 25 Jan 2006 02:21:46 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 103 BYE
Reason: Q.850;cause=47
Content-Length: 0

[26] BYE sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK10b6e42
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
To: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
Date: Wed, 25 Jan 2006 02:22:12 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 102 BYE
Reason: Q.850;cause=47
Content-Length: 0

[27] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.136.15:5060;branch=z9hG4bK6f755eae
From: <sip:45688@10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770623
To: <sip:10.10.13.36>;tag=43B157C0-1EBE
Date: Sat, 16 Nov 2002 06:59:53 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 UPDATE
```

```
Content-Length: 0

[28] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.136.15:5060;branch=z9hG4bK4247a7af
From: <sip:45688@10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770623
To: <sip:10.10.13.36>;tag=43B157C0-1EBE
Date: Sat, 16 Nov 2002 06:59:53 GMT
Call-ID: B9A0E2CD-F86711D6-80AAF0BE-1F431CE1@10.10.13.36
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 103 BYE
Reason: Q.850;cause=16
Content-Length: 0

[29] ACK sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK1B2AE
From: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
Date: Sun, 27 Jul 2003 20:07:35 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 102 ACK
Content-Length: 0

[30] ACK sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK1AF0F
From: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
Date: Sun, 27 Jul 2003 20:07:35 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 102 ACK
Content-Length: 0

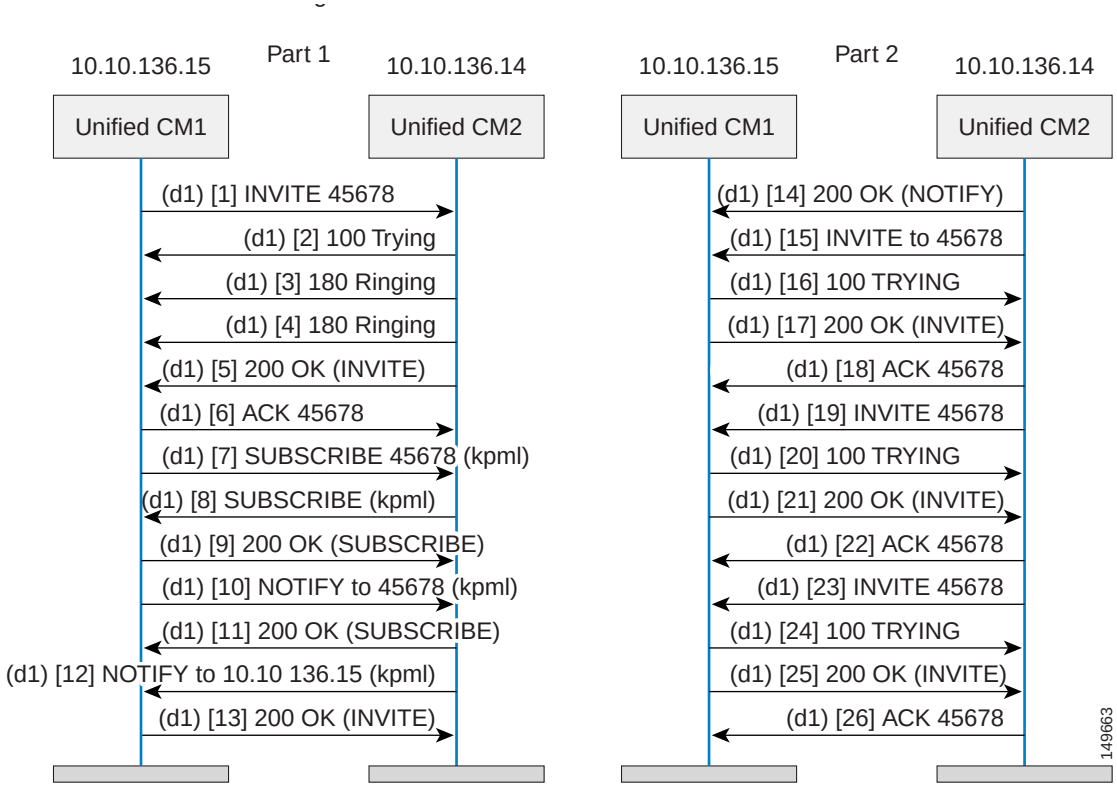
[31] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK10b6e42
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-22770624
To: <sip:45688@10.10.136.61>;tag=19E9E5EC-2678
Date: Sun, 27 Jul 2003 20:07:35 GMT
Call-ID: 45888280-3d61e0a2-4-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

SIP ICT Trunk Passes Through T38 Fax Call Between Two H323 Networks

Cisco Unified CallManager can pass through T38 fax calls using SIP trunks. This call flow shows how a SIP ICT trunk lets a fax call pass two Cisco Unified CallManagers between two H323 networks. For this scenario, there are two reINVITEs with t38 SDP sent between two Cisco Unified CallManagers. First reINVITE is used to test the caps(notice the c=0 line), and the second reINVITE is the one that gives out the real media IP and port.

- Configuration:
  - Node = Unified CM1, IP = 10.10.136.15
  - Node = Unified CM2, IP = 10.10.136.14




```
[1] INVITE sip:45678@10.10.136.14:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bKe53333c
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
To: <sip:45678@10.10.136.14>
Date: Wed, 25 Jan 2006 21:49:31 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:10.10.136.15:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog, kpml
Call-Info: <sip:10.10.136.15:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bKe53333c
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
To: <sip:45678@10.10.136.14>
Date: Wed, 25 Jan 2006 21:38:16 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 101 INVITE
Allow-Events: presence, dialog
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bKe53333c
```

```
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
To: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
Date: Wed, 25 Jan 2006 21:38:16 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog
Remote-Party-ID: <sip:45678@10.10.136.14>;party=called;screen=yes;privacy=off
Contact: <sip:45678@10.10.136.14:5060;transport=tcp>
Content-Length: 0

[4] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bKe53333c
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
To: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
Date: Wed, 25 Jan 2006 21:38:16 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog
Remote-Party-ID: <sip:45678@10.10.136.14>;party=called;screen=yes;privacy=off
Contact: <sip:45678@10.10.136.14:5060;transport=tcp>
Content-Length: 0

[5] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bKe53333c
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
To: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
Date: Wed, 25 Jan 2006 21:38:16 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Remote-Party-ID: <sip:45678@10.10.136.14>;party=called;screen=yes;privacy=off
Contact: <sip:45678@10.10.136.14:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 205
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.136.14
s=SIP Call
c=IN IP4 10.10.136.14
t=0 0
m=audio 4000 RTP/AVP 0 8
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=sendonly

[6] ACK sip:45678@10.10.136.14:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK59071788
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
To: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
Date: Wed, 25 Jan 2006 21:49:31 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, dialog, kpml
Content-Type: application/sdp
```

```
Content-Length: 169
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.136.15
s=SIP Call
c=IN IP4 10.10.13.36
t=0 0
m=audio 18850 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly

[7] SUBSCRIBE sip:45678@10.10.136.14:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK5198d426
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
To: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 102 SUBSCRIBE
Max-Forwards: 70
Date: Wed, 25 Jan 2006 21:49:34 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Expires: 7200
Contact: <sip:10.10.136.15:5060;transport=tcp>
Accept: application/kpml-response+xml
Content-Type: application/kpml-request+xml
Content-Length: 213
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<kpml-request version="1.0">
 <pattern interdigittimer="500000" persist="persist">
 <regex tag="dtmf">[x*#ABCD]</regex>
 </pattern>
</kpml-request>

[8] SUBSCRIBE sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK5cbe8f92
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 101 SUBSCRIBE
Max-Forwards: 70
Date: Wed, 25 Jan 2006 21:38:18 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Expires: 7200
Contact: <sip:10.10.136.14:5060;transport=tcp>
Accept: application/kpml-response+xml
Content-Type: application/kpml-request+xml
Content-Length: 213
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<kpml-request version="1.0">
 <pattern interdigittimer="500000" persist="persist">
 <regex tag="dtmf">[x*#ABCD]</regex>
 </pattern>
</kpml-request>

[9] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK5cbe8f92
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:49:34 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
```

```
CSeq: 101 SUBSCRIBE
Content-Length: 0
Contact: <sip:10.10.136.15:5060;transport=tcp>
Expires: 3600

[10] NOTIFY sip:10.10.136.14:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK1f4450c0
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
To: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Wed, 25 Jan 2006 21:49:34 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Subscription-State: active;expires=3600
Contact: <sip:10.10.136.15:5060;transport=tcp>
Content-Length: 0

[11] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK5198d426
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
To: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
Date: Wed, 25 Jan 2006 21:38:18 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 102 SUBSCRIBE
Content-Length: 0
Contact: <sip:10.10.136.14:5060;transport=tcp>
Expires: 3600

[12] NOTIFY sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK669940c9
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Wed, 25 Jan 2006 21:38:18 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Subscription-State: active;expires=3600
Contact: <sip:10.10.136.14:5060;transport=tcp>
Content-Length: 0

[13] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK669940c9
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:49:34 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 102 NOTIFY
Content-Length: 0

[14] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK1f4450c0
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
To: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
Date: Wed, 25 Jan 2006 21:38:18 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
```

```
CSeq: 103 NOTIFY
Content-Length: 0

[15] INVITE sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK5787688
Remote-Party-ID: <sip:45678@10.10.136.14>;party=calling;screen=yes;privacy=off
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:38:18 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 3816839552-1030877128-2-243798956
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:45678@10.10.136.14:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 158
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.136.14
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 18726 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[16] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK5787688
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:49:34 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 103 INVITE
Allow-Events: presence, dialog, kpml
Content-Length: 0

[17] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK5787688
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:49:34 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Contact: <sip:45678@10.10.136.15:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 157
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.136.15
s=SIP Call
c=IN IP4 10.10.13.36
t=0 0
m=audio 18850 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

```
[18] ACK sip:45678@10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK59f9616c
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:38:18 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence, dialog, kpml
Content-Length: 0

[19] INVITE sip:45678@10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK2163c8ab
Remote-Party-ID: <sip:45678@10.10.136.14>;party=calling;screen=yes;privacy=off
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:38:39 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 3816839552-1030877128-2-243798956
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:45678@10.10.136.14:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 357
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.136.14
s=SIP Call
t=0 0
m=image 18726 udptl t38
c=IN IP4 0.0.0.0
a=T38FaxVersion:0
a=T38MaxBitRate:14400
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
a=T38FaxUdpEC:t38UDPRedundancy
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72

[20] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK2163c8ab
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:49:54 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 104 INVITE
Allow-Events: presence, dialog, kpml
Content-Length: 0

[21] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK2163c8ab
```

```
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:49:54 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Contact: <sip:45678@10.10.136.15:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 123
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 18850 udptl t38
c=IN IP4 10.10.13.36

[22] ACK sip:45678@10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK2d26fe0
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:38:39 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence, dialog, kpml
Content-Length: 0

[23] INVITE sip:45678@10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK6554f7d9
Remote-Party-ID: <sip:45678@10.10.136.14>;party=calling;screen=yes;privacy=off
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:38:39 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 3816839552-1030877128-2-243798956
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 105 INVITE
Max-Forwards: 70
Contact: <sip:45678@10.10.136.14:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 363
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.136.14
s=SIP Call
t=0 0
m=image 18726 udptl t38
c=IN IP4 10.10.136.61
a=T38FaxVersion:0
a=T38MaxBitRate:14400
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
```

```
a=T38FaxUdpEC:t38UDPRedundancy
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72

[24] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK6554f7d9
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:49:55 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 105 INVITE
Allow-Events: presence, dialog, kpml
Content-Length: 0

[25] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK6554f7d9
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:49:55 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
CSeq: 105 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Contact: <sip:45678@10.10.136.15:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 123
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 18850 udptl t38
c=IN IP4 10.10.13.36

[26] ACK sip:45678@10.10.136.15:5060;transport=tcp SIP/2.0

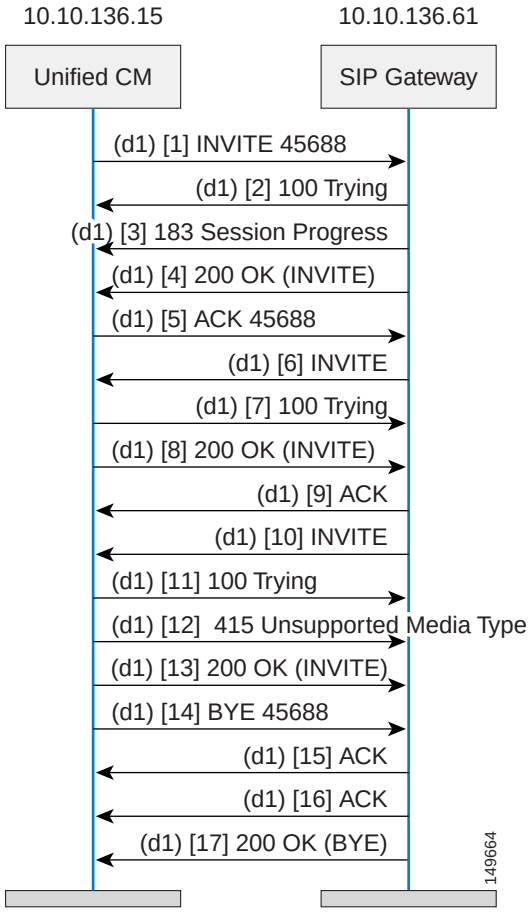
Via: SIP/2.0/TCP 10.10.136.14;branch=z9hG4bK5b520719
From: <sip:45678@10.10.136.14>;tag=05177b57-e0dc-426b-950c-cb110c3c966f-23050551
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23053340
Date: Wed, 25 Jan 2006 21:38:39 GMT
Call-ID: 75d52d00-3d71f26b-4-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 105 ACK
Allow-Events: presence, dialog, kpml
Content-Length: 0
```

SIP Trunk Passes Through T38 Fax Call Between SIP and H323 Networks

Cisco Unified CallManager can pass through T38 fax calls using SIP trunks. This call flow shows how a SIP trunk lets a fax call pass through a Cisco Unified CallManager between SIP and H323 networks. SIP gateway is the side that initiates the fax transition.

- Configuration:
  - Node = Unified CM, IP = 10.10.136.15
  - Node = SIP Gateway, IP = 10.10.136.61

SIP Trunk Passes through T38 Fax Call between SIP and H323 Networks




```
[1] INVITE sip:45688@10.10.136.61:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK48426491
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
To: <sip:45688@10.10.136.61>
Date: Sat, 28 Jan 2006 02:18:47 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:10.10.136.15:5060;transport=tcp>
```

```
Expires: 180
Allow-Events: presence, dialog, kpml
Call-Info: <sip:10.10.136.15:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK48426491
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
To: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
Date: Wed, 30 Jul 2003 20:04:16 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0

[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK48426491
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
To: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
Date: Wed, 30 Jul 2003 20:04:16 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
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:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 230
v=0
o=CiscoSystemsSIP-GW-UserAgent 7024 4914 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 17308 RTP/AVP 0 8 19
c=IN IP4 10.10.136.61
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:19 CN/8000

[4] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK48426491
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
To: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
Date: Wed, 30 Jul 2003 20:04:16 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
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:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 230
v=0
o=CiscoSystemsSIP-GW-UserAgent 7024 4914 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 17308 RTP/AVP 0 8 19
```

```
c=IN IP4 10.10.136.61
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:19 CN/8000
[5] ACK sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK293d6d6c
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
To: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
Date: Sat, 28 Jan 2006 02:18:47 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, dialog, kpml
Content-Type: application/sdp
Content-Length: 157
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.136.15
s=SIP Call
c=IN IP4 10.10.13.36
t=0 0
m=audio 17264 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[6] INVITE sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK2DFBA
From: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
Date: Wed, 30 Jul 2003 20:04:39 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
Supported: 100rel,timer,resource-priority,replaces
Min-SE: 1800
Cisco-Guid: 3572621395-3254718935-2153631767-1618905505
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: 1059595479
Contact: <sip:45688@10.10.136.61:5060;transport=tcp>
Expires: 180
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Length: 399
v=0
o=CiscoSystemsSIP-GW-UserAgent 7024 4916 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=image 17308 udptl t38
c=IN IP4 10.10.136.61
a=T38FaxVersion:0
a=T38MaxBitRate:14400
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72
a=T38FaxUdpEC:t38UDPRedundancy

[7] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK2DFBA
From: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
```

```
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
Date: Sat, 28 Jan 2006 02:19:10 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
CSeq: 101 INVITE
Allow-Events: presence, dialog, kpml
Content-Length: 0

[8] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK2DFBA
From: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
Date: Sat, 28 Jan 2006 02:19:10 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Contact: <sip:10.10.136.15:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 123
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 17264 udptl t38
c=IN IP4 10.10.13.36

[9] ACK sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK2E18E2
From: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
Date: Wed, 30 Jul 2003 20:04:39 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 101 ACK
Content-Length: 0

[10] INVITE sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK2F1D17
From: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
Date: Wed, 30 Jul 2003 20:05:05 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
Supported: 100rel,timer,resource-priority,replaces
Min-SE: 1800
Cisco-Guid: 3572621395-3254718935-2153631767-1618905505
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: 1059595505
Contact: <sip:45688@10.10.136.61:5060;transport=tcp>
Expires: 180
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Length: 230
v=0
o=CiscoSystemsSIP-GW-UserAgent 7024 4917 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 17308 RTP/AVP 0 8 19
c=IN IP4 10.10.136.61
a=rtpmap:0 PCMU/8000
```

```
a=rtpmap:8 PCMA/8000
a=rtpmap:19 CN/8000

[11] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK2F1D17
From: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
Date: Sat, 28 Jan 2006 02:19:36 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
CSeq: 102 INVITE
Allow-Events: presence, dialog, kpml
Content-Length: 0

[12] SIP/2.0 415 Unsupported Media Type

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK2F1D17
From: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
Date: Sat, 28 Jan 2006 02:19:36 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
CSeq: 102 INVITE
Allow-Events: presence, dialog, kpml
Content-Length: 0

[13] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK2F1D17
From: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
Date: Sat, 28 Jan 2006 02:19:36 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Contact: <sip:10.10.136.15:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 123
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 17264 udptl t38
c=IN IP4 10.10.13.36

[14] BYE sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK7ce13ea
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
To: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
Date: Sat, 28 Jan 2006 02:19:36 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 102 BYE
Reason: Q.850;cause=47
Content-Length: 0

[15] ACK sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK2F1D17
From: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
Date: Wed, 30 Jul 2003 20:05:05 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 102 ACK
```

```
Content-Length: 0

[16] ACK sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK2E18E2
From: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
Date: Wed, 30 Jul 2003 20:05:05 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 102 ACK
Content-Length: 0

[17] SIP/2.0 200 OK

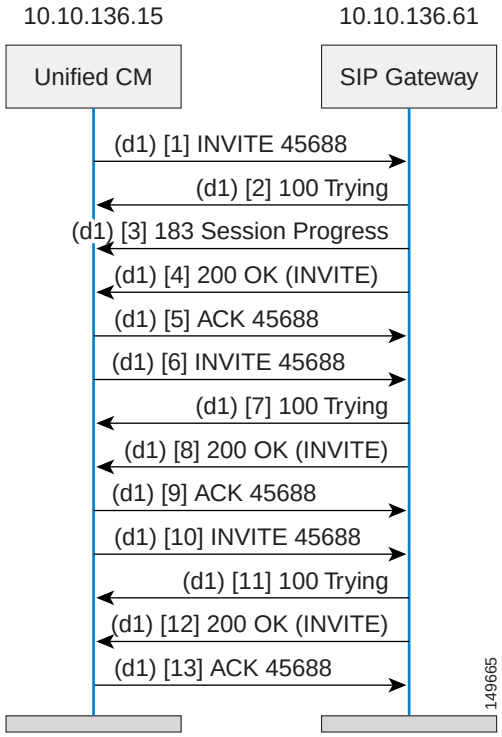
Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK7ce13ea
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767069
To: <sip:45688@10.10.136.61>;tag=295AB278-1B1B
Date: Wed, 30 Jul 2003 20:05:05 GMT
Call-ID: 6862a300-3da1d487-6-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

SIP Trunk Passes Through T38 Fax Call Between H323 and SIP Networks

Cisco Unified CallManager can pass through T38 fax calls using SIP trunks. This call flow shows how a SIP trunk lets a fax call pass through a Cisco Unified CallManager between H323 and SIP networks. SIP gateway is the side that receives the fax transition. For this scenario, there are two reINVITEs with t38 SDP sent to the sip gateway. First reINVITE is used to test the caps. (notice the c=0 line), and the second reINVITE is the one that gives out the real media IP and port.

- Configuration:
  - Node = Unified CM, IP = 10.10.136.15
  - Node = SIP Gateway, IP = 10.10.136.61

SIP ICT Trunk Passes through T38 Fax Call between H323 and SIP Networks




```
[1] INVITE sip:45688@10.10.136.61:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK362c45b8
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>
Date: Sat, 28 Jan 2006 02:21:47 GMT
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:10.10.136.15:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog, kpml
Call-Info: <sip:10.10.136.15:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK362c45b8
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>;tag=295D72F0-66F
Date: Wed, 30 Jul 2003 20:07:16 GMT
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0
```

```
[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK362c45b8
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>;tag=295D72F0-66F
Date: Wed, 30 Jul 2003 20:07:16 GMT
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
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:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 230
v=0
o=CiscoSystemsSIP-GW-UserAgent 6051 7637 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 19486 RTP/AVP 0 8 19
c=IN IP4 10.10.136.61
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:19 CN/8000

[4] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK362c45b8
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>;tag=295D72F0-66F
Date: Wed, 30 Jul 2003 20:07:16 GMT
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
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:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 230
v=0
o=CiscoSystemsSIP-GW-UserAgent 6051 7637 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 19486 RTP/AVP 0 8 19
c=IN IP4 10.10.136.61
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:19 CN/8000

[5] ACK sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK235407f1
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>;tag=295D72F0-66F
Date: Sat, 28 Jan 2006 02:21:47 GMT
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, dialog, kpml
Content-Type: application/sdp
Content-Length: 157
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.136.15
s=SIP Call
c=IN IP4 10.10.13.36
t=0 0
m=audio 18280 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[6] INVITE sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK524d5ac5
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>;tag=295D72F0-66F
Date: Sat, 28 Jan 2006 02:22:07 GMT
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:10.10.136.15:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog, kpml
Content-Type: application/sdp
Content-Length: 357
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 18280 udptl t38
c=IN IP4 0.0.0.0
a=T38FaxVersion:0
a=T38MaxBitRate:14400
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
a=T38FaxUdpEC:t38UDPRedundancy
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72

[7] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK524d5ac5
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>;tag=295D72F0-66F
Date: Wed, 30 Jul 2003 20:07:36 GMT
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 INVITE
Allow-Events: telephone-event
Content-Length: 0

[8] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK524d5ac5
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>;tag=295D72F0-66F
Date: Wed, 30 Jul 2003 20:07:36 GMT
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
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
Contact: <sip:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 160
v=0
o=CiscoSystemsSIP-GW-UserAgent 6051 7639 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=image 19486 udptl t38
c=IN IP4 10.10.136.61

[9] ACK sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK23e12e31
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>;tag=295D72F0-66F
Date: Sat, 28 Jan 2006 02:22:07 GMT
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, dialog, kpml
Content-Length: 0

[10] INVITE sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK58090301
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>;tag=295D72F0-66F
Date: Sat, 28 Jan 2006 02:22:07 GMT
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:10.10.136.15:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog, kpml
Content-Type: application/sdp
Content-Length: 362
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 18280 udptl t38
c=IN IP4 10.10.13.36
a=T38FaxVersion:0
a=T38MaxBitRate:14400
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
a=T38FaxUdpEC:t38UDPRedundancy
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72

[11] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK58090301
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>;tag=295D72F0-66F
Date: Wed, 30 Jul 2003 20:07:37 GMT
```

```
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 103 INVITE
Allow-Events: telephone-event
Content-Length: 0

[12] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK58090301
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>;tag=295D72F0-66F
Date: Wed, 30 Jul 2003 20:07:37 GMT
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO,
REGISTER
Allow-Events: telephone-event
Contact: <sip:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 160
v=0
o=CiscoSystemsSIP-GW-UserAgent 6051 7639 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=image 19486 udptl t38
c=IN IP4 10.10.136.61

[13] ACK sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

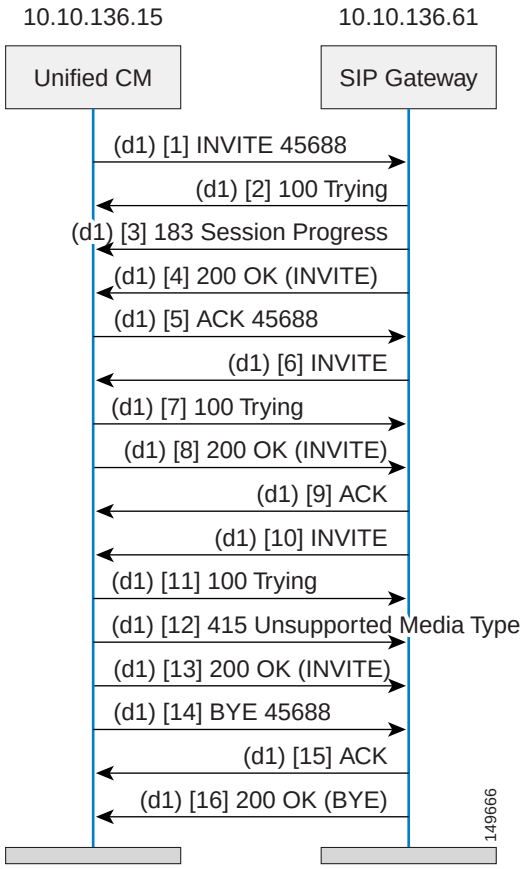
Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK4032457
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-23767071
To: <sip:45688@10.10.136.61>;tag=295D72F0-66F
Date: Sat, 28 Jan 2006 02:22:07 GMT
Call-ID: d3ac7500-3da1d53b-7-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence, dialog, kpml
Content-Length: 0
```

SIP Trunk Passes Through T38 Fax Call Between SIP and H323(MTP) Networks

Cisco Unified CallManager can pass through T38 fax calls using SIP trunks. This call flow shows how a SIP trunk lets a fax call pass through a Cisco Unified CallManager between H323 and SIP networks. SIP gateway is the side that initiates fax transition. There is only one reINVITE coming from the SIP gateway to setup the fax transition. MTP is enabled on the H323 side. The second reINVITE for switching back to audio is rejected by the Cisco Unified CallManager because it is not supported.

- Configuration:
  - Node = Unified CM, IP = 10.10.136.15
  - Node = SIP Gateway, IP = 10.10.136.6

SIP Trunk Passes through T38 Fax Call
between SIP and H323(MTP) Networks




```
[1] INVITE sip:45688@10.10.136.61:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK4b26f3df
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
To: <sip:45688@10.10.136.61>
Date: Mon, 30 Jan 2006 22:16:53 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
```

```
Contact: <sip:10.10.136.15:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog, kpml
Call-Info: <sip:10.10.136.15:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK4b26f3df
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
To: <sip:45688@10.10.136.61>;tag=37F06A24-2255
Date: Sat, 02 Aug 2003 16:02:29 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0

[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK4b26f3df
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
To: <sip:45688@10.10.136.61>;tag=37F06A24-2255
Date: Sat, 02 Aug 2003 16:02:29 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
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:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 230
v=0
o=CiscoSystemsSIP-GW-UserAgent 9590 1384 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 17744 RTP/AVP 18 19
c=IN IP4 10.10.136.61
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=yes
a=rtpmap:19 CN/8000

[4] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK4b26f3df
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
To: <sip:45688@10.10.136.61>;tag=37F06A24-2255
Date: Sat, 02 Aug 2003 16:02:29 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
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:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 230
v=0
o=CiscoSystemsSIP-GW-UserAgent 9590 1384 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
```

```
t=0 0
m=audio 17744 RTP/AVP 18 19
c=IN IP4 10.10.136.61
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=yes
a=rtpmap:19 CN/8000

[5] ACK sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK3d829cbd
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
To: <sip:45688@10.10.136.61>;tag=37F06A24-2255
Date: Mon, 30 Jan 2006 22:16:53 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, dialog, kpml
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.136.15
s=SIP Call
c=IN IP4 10.10.13.34
t=0 0
m=audio 17968 RTP/AVP 18
a=rtpmap:18 G729/8000
a=ptime:20

[6] INVITE sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK371613
From: <sip:45688@10.10.136.61>;tag=37F06A24-2255
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
Date: Sat, 02 Aug 2003 16:02:54 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
Supported: 100rel,timer,resource-priority,replaces
Min-SE: 1800
Cisco-Guid: 2370134041-3292074455-2154811415-1618905505
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: 1059840174
Contact: <sip:45688@10.10.136.61:5060;transport=tcp>
Expires: 180
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Length: 398
v=0
o=CiscoSystemsSIP-GW-UserAgent 9590 1386 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=image 17744 udptl t38
c=IN IP4 10.10.136.61
a=T38FaxVersion:0
a=T38MaxBitRate:7200
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72
a=T38FaxUdpEC:t38UDPRedundancy
```

```
[7] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK371613
From: <sip:45688@10.10.136.61>;tag=37F06A24-2255
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
Date: Mon, 30 Jan 2006 22:17:19 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
CSeq: 101 INVITE
Allow-Events: presence, dialog, kpml
Content-Length: 0

[8] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK371613
From: <sip:45688@10.10.136.61>;tag=37F06A24-2255
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
Date: Mon, 30 Jan 2006 22:17:19 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Contact: <sip:10.10.136.15:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 123
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 17506 udptl t38
c=IN IP4 10.10.13.34

[9] ACK sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK3836E
From: <sip:45688@10.10.136.61>;tag=37F06A24-2255
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
Date: Sat, 02 Aug 2003 16:02:54 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 101 ACK
Content-Length: 0

[10] INVITE sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK391402
From: <sip:45688@10.10.136.61>;tag=37F06A24-2255
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
Date: Sat, 02 Aug 2003 16:03:37 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
Supported: 100rel,timer,resource-priority,replaces
Min-SE: 1800
Cisco-Guid: 2370134041-3292074455-2154811415-1618905505
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: 1059840217
Contact: <sip:45688@10.10.136.61:5060;transport=tcp>
Expires: 180
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Length: 230
v=0
o=CiscoSystemsSIP-GW-UserAgent 9590 1387 IN IP4 10.10.136.61
s=SIP Call
```

```
c=IN IP4 10.10.136.61
t=0 0
m=audio 17744 RTP/AVP 18 19
c=IN IP4 10.10.136.61
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=yes
a=rtpmap:19 CN/8000

[11] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK391402
From: <sip:45688@10.10.136.61>;tag=37F06A24-2255
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
Date: Mon, 30 Jan 2006 22:18:02 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
CSeq: 102 INVITE
Allow-Events: presence, dialog, kpml
Content-Length: 0

[12] SIP/2.0 415 Unsupported Media Type

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK391402
From: <sip:45688@10.10.136.61>;tag=37F06A24-2255
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
Date: Mon, 30 Jan 2006 22:18:02 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
CSeq: 102 INVITE
Allow-Events: presence, dialog, kpml
Content-Length: 0

[13] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK391402
From: <sip:45688@10.10.136.61>;tag=37F06A24-2255
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
Date: Mon, 30 Jan 2006 22:18:02 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Contact: <sip:10.10.136.15:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 123
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 17506 udptl t38
c=IN IP4 10.10.13.34

[14] BYE sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK61ed709f
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
To: <sip:45688@10.10.136.61>;tag=37F06A24-2255
Date: Mon, 30 Jan 2006 22:18:02 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 102 BYE
Reason: Q.850;cause=47
Content-Length: 0

[15] ACK sip:10.10.136.15:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.61;branch=z9hG4bK391402
```

```
From: <sip:45688@10.10.136.61>;tag=37F06A24-2255
To: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
Date: Sat, 02 Aug 2003 16:03:37 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 102 ACK
Content-Length: 0

[16] SIP/2.0 200 OK

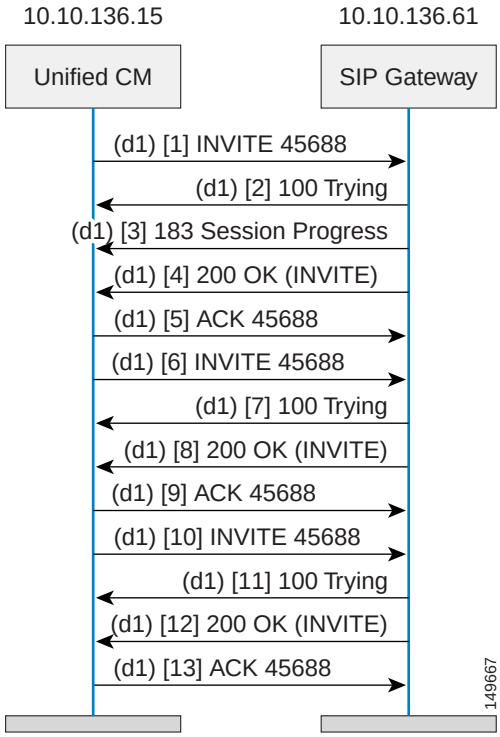
Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK61ed709f
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786587
To: <sip:45688@10.10.136.61>;tag=37F06A24-2255
Date: Sat, 02 Aug 2003 16:03:37 GMT
Call-ID: 1c9b3e00-3de19055-4-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

SIP Trunk Passes Through T38 Fax Call Between H323(MTP) and SIP Networks

Cisco Unified CallManager can pass through T38 fax calls using SIP trunks. This call flow shows how a SIP trunk lets a fax call pass through a Cisco Unified CallManager between H323 and SIP networks. SIP gateway is the side that receives the fax transition. For this scenario, there are two reINVITEs with t38 SDP sent to the sip gateway. First reINVITE is used to test the caps. (notice the c=0 line), and the second reINVITE is the one that gives out the real media IP and port. MTP is enabled on the H323 side.

- Configuration:
  - Node = Unified CM, IP = 10.10.136.15
  - Node = SIP Gateway, IP = 10.10.136.61

SIP Trunk Passes through T38 Fax Call
between H323(MTP) and SIP Networks




```
[1] INVITE sip:45688@10.10.136.61:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bKe40d58a
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>
Date: Mon, 30 Jan 2006 22:14:30 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:10.10.136.15:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog, kpml
Call-Info: <sip:10.10.136.15:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bKe40d58a
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>;tag=37EE3974-1F0E
Date: Sat, 02 Aug 2003 16:00:05 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0
```

```
[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bKe40d58a
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>;tag=37EE3974-1F0E
Date: Sat, 02 Aug 2003 16:00:05 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
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:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 230
v=0
o=CiscoSystemsSIP-GW-UserAgent 3181 4859 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 16590 RTP/AVP 18 19
c=IN IP4 10.10.136.61
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=yes
a=rtpmap:19 CN/8000

[4] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bKe40d58a
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>;tag=37EE3974-1F0E
Date: Sat, 02 Aug 2003 16:00:05 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
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:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 230
v=0
o=CiscoSystemsSIP-GW-UserAgent 3181 4859 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=audio 16590 RTP/AVP 18 19
c=IN IP4 10.10.136.61
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=yes
a=rtpmap:19 CN/8000

[5] ACK sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK5842cc90
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>;tag=37EE3974-1F0E
Date: Mon, 30 Jan 2006 22:14:30 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, dialog, kpml
```

```
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.136.15
s=SIP Call
c=IN IP4 10.10.13.34
t=0 0
m=audio 17176 RTP/AVP 18
a=rtpmap:18 G729/8000
a=ptime:20

[6] INVITE sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK10c4c601
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>;tag=37EE3974-1F0E
Date: Mon, 30 Jan 2006 22:14:56 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:10.10.136.15:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog, kpml
Content-Type: application/sdp
Content-Length: 356
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 4000 udptl t38
c=IN IP4 0.0.0.0
a=T38FaxVersion:0
a=T38MaxBitRate:14400
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
a=T38FaxUdpEC:t38UDPRedundancy
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72

[7] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK10c4c601
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>;tag=37EE3974-1F0E
Date: Sat, 02 Aug 2003 16:00:32 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 INVITE
Allow-Events: telephone-event
Content-Length: 0

[8] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK10c4c601
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>;tag=37EE3974-1F0E
Date: Sat, 02 Aug 2003 16:00:32 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
```

```
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
Contact: <sip:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 398
v=0
o=CiscoSystemsSIP-GW-UserAgent 3181 4861 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=image 16590 udptl t38
c=IN IP4 10.10.136.61
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

[9] ACK sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK6efb1cf2
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>;tag=37EE3974-1F0E
Date: Mon, 30 Jan 2006 22:14:56 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, dialog, kpml
Content-Length: 0

[10] INVITE sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK2867c812
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>;tag=37EE3974-1F0E
Date: Mon, 30 Jan 2006 22:14:57 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:10.10.136.15:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog, kpml
Content-Type: application/sdpContent-Length: 362
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.136.15
s=SIP Call
t=0 0
m=image 17852 udptl t38
c=IN IP4 10.10.13.34
a=T38FaxVersion:0
a=T38MaxBitRate:14400
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
```

```
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
a=T38FaxUdpEC:t38UDPRedundancy
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72

[11] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK2867c812
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>;tag=37EE3974-1F0E
Date: Sat, 02 Aug 2003 16:00:32 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 103 INVITE
Allow-Events: telephone-event
Content-Length: 0

[12] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK2867c812
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>;tag=37EE3974-1F0E
Date: Sat, 02 Aug 2003 16:00:32 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO,
REGISTER
Allow-Events: telephone-event
Contact: <sip:45688@10.10.136.61:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 160
v=0
o=CiscoSystemsSIP-GW-UserAgent 3181 4862 IN IP4 10.10.136.61
s=SIP Call
c=IN IP4 10.10.136.61
t=0 0
m=image 16590 udptl t38
c=IN IP4 10.10.136.61

[13] ACK sip:45688@10.10.136.61:5060;transport=tcp SIP/2.0

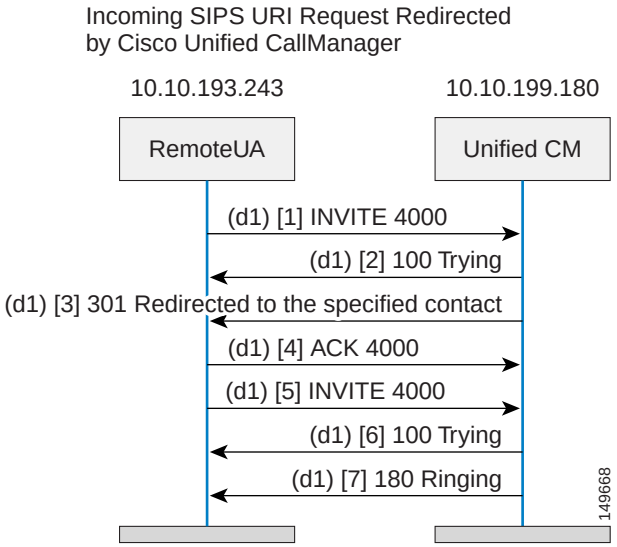
Via: SIP/2.0/TCP 10.10.136.15;branch=z9hG4bK6f0716c2
From: <sip:10.10.136.15>;tag=5ddbd6a3-63b3-4ec9-832f-f5e1c961600e-24786578
To: <sip:45688@10.10.136.61>;tag=37EE3974-1F0E
Date: Mon, 30 Jan 2006 22:14:57 GMT
Call-ID: c75f2c80-3de18fc6-1-f8813ac@10.10.136.15
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence, dialog, kpml
Content-Length: 0
```

SIPS URI

Incoming SIPS URI Request Redirected by Cisco Unified CallManager

Incoming SIPS URI request is redirected to the same address but with SIP URI as directed by the SIPS URI service parameter.

- Configuration:
  - Node = Unified CM, IP = 10.10.199.180
  - Node = Remote UA, IP = 10.10.193.243




```
[1] INVITE sips:4000@10.10.199.180:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.193.243:5060
From: <sips:5551212@10.10.193.243:5060>;tag=1
To: <sips:4000@10.10.199.180:5060>
Call-ID: 1-31765@10.10.193.243
Cseq: 1 INVITE
Contact: sips:5551212@10.10.193.243:5060
Max-Forwards: 70
Content-Type: application/sdp
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.193.243:5060
From: <sips:5551212@10.10.193.243:5060>;tag=1
To: <sips:4000@10.10.199.180:5060>
Date: Fri, 17 Feb 2006 17:24:52 GMT
Call-ID: 1-31765@10.10.193.243
CSeq: 1 INVITE
Allow-Events: presence
Content-Length: 0
```

```
[3] SIP/2.0 301 Redirect to the specified contact

Via: SIP/2.0/TCP 10.10.193.243:5060
From: <sips:5551212@10.10.193.243:5060>;tag=1
To: <sips:4000@10.10.199.180:5060>;tag=1941816362
Date: Fri, 17 Feb 2006 17:24:52 GMT
Call-ID: 1-31765@10.10.193.243
CSeq: 1 INVITE
Allow-Events: presence
Contact: <sip:4000@10.10.199.180:5060;transport=tcp>
Diversion: sips:4000@10.10.199.180:5060
Content-Length: 0

[4] ACK sips:4000@10.10.199.180:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.193.243:5060
From: <sips:5551212@10.10.193.243:5060>;tag=1
To: <sips:4000@10.10.199.180:5060>;tag=1941816362
Call-ID: 1-31765@10.10.193.243
Cseq: 1 ACK
Contact: sip:5551212@10.10.193.243:5060
Max-Forwards: 70
Content-Length: 0

[5] INVITE sip:4000@10.10.199.180:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.193.243:5060
From: <sip:5551212@10.10.193.243:5060>;tag=1
To: <sip:4000@10.10.199.180:5060>
Call-ID: 1-31765@10.10.193.243
Cseq: 1 INVITE
Contact: sip:5551212@10.10.193.243:5060
Max-Forwards: 70
Content-Type: application/sdp
Content-Length: 0

[6] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.193.243:5060
From: <sip:5551212@10.10.193.243:5060>;tag=1
To: <sip:4000@10.10.199.180:5060>
Date: Fri, 17 Feb 2006 17:24:52 GMT
Call-ID: 1-31765@10.10.193.243
CSeq: 1 INVITE
Allow-Events: presence
Content-Length: 0

[7] SIP/2.0 180 Ringing

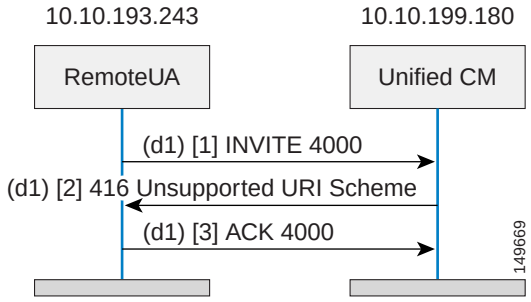
Via: SIP/2.0/TCP 10.10.193.243:5060
From: <sip:5551212@10.10.193.243:5060>;tag=1
To: <sip:4000@10.10.199.180:5060>;tag=6e221d4c-5aaa-4e26-8e46-992a9f62da2d-30909089
Date: Fri, 17 Feb 2006 17:24:52 GMT
Call-ID: 1-31765@10.10.193.243
CSeq: 1 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:4000@10.10.199.180>;party=called;screen=yes;privacy=off
Contact: <sip:4000@10.10.199.180:5060>
Content-Length: 0
```

Incoming SIPS URI Request Rejected by Cisco Unified CallManager

Incoming SIPS URI request is rejected as directed by the SIPS URI service parameter.

- Configuration:
  - Node = Unified CM, IP = 10.10.199.180
  - Node = Remote UA, IP = 10.10.193.243

Incoming SIPS URI Request Rejected
by Cisco Unified CallManager




```
[1] INVITE sips:4000@10.10.199.180:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.193.243:5060
From: <sips:5551212@10.10.193.243:5060>;tag=1
To: <sips:4000@10.10.199.180:5060>
Call-ID: 1-31796@10.10.193.243
Cseq: 1 INVITE
Contact: sips:5551212@10.10.193.243:5060
Max-Forwards: 70
Content-Type: application/sdp
Content-Length: 0

[2] SIP/2.0 416 Unsupported URI scheme

Via: SIP/2.0/TCP 10.10.193.243:5060
From: <sips:5551212@10.10.193.243:5060>;tag=1
To: <sips:4000@10.10.199.180:5060>;tag=1097108326
Call-ID: 1-31796@10.10.193.243
CSeq: 1 INVITE
Content-Length: 0

[3] ACK sip:4000@10.10.199.180:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.193.243:5060
From: sipp <sip:sipp@10.10.193.243:5060>;tag=1
To: sut <sip:4000@10.10.199.180:5060>;tag=1097108326
Call-ID: 1-31796@10.10.193.243
CSeq: 1 ACK
Contact: sip:sipp@10.10.193.243:5060
Max-Forwards: 70
Subject: Performance Test
Content-Length: 0
```

INFO Method

SIP Video Call Using INFO Method

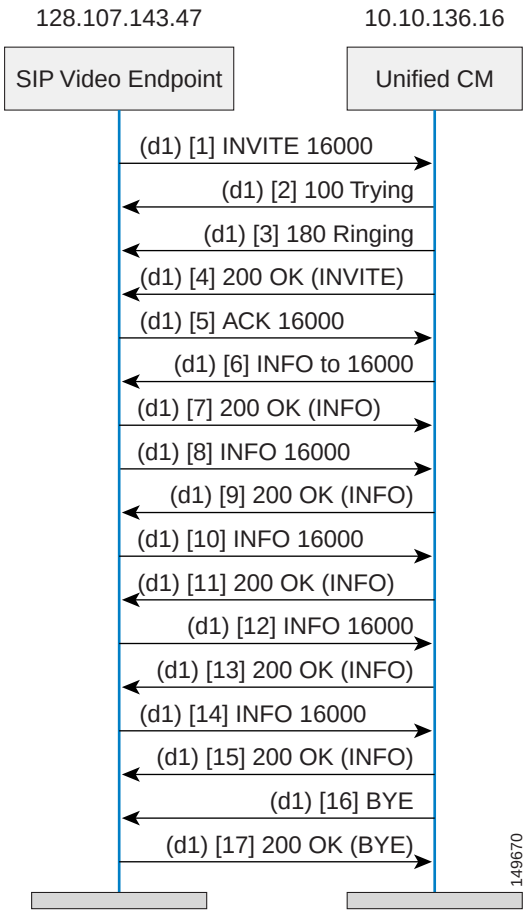
- Configuration:
  - Node = Unified CM, IP = 10.10.136.16
  - Node = SIP Video Endpoint, IP = 128.107.143.47
- Scenario:

  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 is sounds like. If an endpoint wishes to stop updating a picture it sends this command to indicate the current buffer should be maintained.

SIP Video Call Using INFO Method



```
[1] INVITE sip:16000@10.10.136.16 SIP/2.0

Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2555805456-19040529
Max-Forwards: 70
Allow:
INVITE,BYE,CANCEL,ACK,INFO,PRACK,COMET,OPTIONS,SUBSCRIBE,NOTIFY,REFER,REGISTER,UPDATE
Supported: timer,replaces,100rel
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>
Call-ID: 2555804456-19040528
CSeq: 1 INVITE
Session-Expires: 90
Contact: <sip:128.107.143.47:5060;transport=udp>
User-Agent: Polycom VSX 7000 SIP Beta 7.5.1 - 16Apr2005 09:30
Content-Type: application/sdp
Content-Length: 1003
v=0
o=Media 1757559626 0 IN IP4 128.107.143.47
s=-
c=IN IP4 128.107.143.47
b=AS:384
t=0 0
m=audio 49160 RTP/AVP 99 98 97 102 101 103 9 15 0 8 18
a=rtpmap:99 G7221/32000
a=fmtp:99 bitrate=48000
a=rtpmap:98 G7221/32000
a=fmtp:98 bitrate=32000
a=rtpmap:97 G7221/32000
a=fmtp:97 bitrate=24000
a=rtpmap:102 G7221/16000
a=fmtp:102 bitrate=32000
a=rtpmap:101 G7221/16000
a=fmtp:101 bitrate=24000
a=rtpmap:103 G7221/16000
a=fmtp:103 bitrate=16000
a=rtpmap:9 G722/8000
a=rtpmap:15 G728/8000
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729A/8000
a=fmtp:18 annexb=no
a=sendrecv
m=video 49162 RTP/AVP 109 34 96 31
b=TIAS:384000
a=rtpmap:109 H264/90000
a=fmtp:109 profile-level-id=42800c; max-mbps=10000; max-fs=1792
a=rtpmap:34 H263/90000
a=rtpmap:96 H263-1998/90000
a=fmtp:96 CIF4=2;CIF=1;SQCIF=1;QCIF=1;CUSTOM=352,240,1;CUSTOM=704,480,2;F;J;T
a=rtpmap:31 H261/90000
a=fmtp:31 CIF=1;QCIF=1
a=sendrecv
m=application 49164 RTP/AVP 100
a=rtpmap:100 H224/0
a=sendrecv

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2555805456-19040529
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>
Date: Fri, 3 Jun 2005 20:49:36 GMT
Call-ID: 2555804456-19040528
CSeq: 1 INVITE
```

```
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2555805456-19040529
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
Date: Fri, 3 Jun 2005 20:49:36 GMT
Call-ID: 2555804456-19040528
CSeq: 1 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Remote-Party-ID: <sip:16000@10.10.136.16>;party=called;screen=yes;privacy=off
Contact: <sip:16000@10.10.136.16:5060>
Content-Length: 0

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2555805456-19040529
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
Date: Fri, 3 Jun 2005 20:49:36 GMT
Call-ID: 2555804456-19040528
CSeq: 1 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Allow-Events: kpml
Remote-Party-ID: <sip:16000@10.10.136.16>;party=called;screen=yes;privacy=off
Contact: <sip:16000@10.10.136.16:5060>
Session-Expires: 90;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 286
v=0
o=CiscoSystemsCCM-SIP 2000 1000 IN IP4 10.10.136.16
s=SIP Call
t=0 0
m=audio 24068 RTP/AVP 0
c=IN IP4 10.22.76.39
a=rtpmap:0 PCMU/8000
a=ptime:20
m=video 5445 RTP/AVP 34
c=IN IP4 128.107.141.99
a=rtpmap:34 H263/90000
a=fmtp:34 MAXBR=3840
m=application 0 RTP/AVP 100

[5] ACK sip:16000@10.10.136.16:5060 SIP/2.0

Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2561338456-19040531
Max-Forwards: 70
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
Call-ID: 2555804456-19040528
CSeq: 1 ACK
Contact: <sip:128.107.143.47:5060;transport=udp>
User-Agent: Polycom VSX 7000 SIP Beta 7.5.1 - 16Apr2005 09:30
Content-Length: 0

[6] INFO sip:128.107.143.47:5060;transport=udp SIP/2.0

Via: SIP/2.0/UDP 10.10.136.16:5060;branch=z9hG4bKed6e72b
From: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
To: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
Date: Fri, 3 Jun 2005 20:49:42 GMT
Call-ID: 2555804456-19040528
```

```
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 101 INFO
Contact: <sip:16000@10.10.136.16:5060>
Remote-Party-ID: <sip:16000@10.10.136.16>;party=called;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>

[7] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.136.16:5060;branch=z9hG4bKed6e72b
From: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
To: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
Call-ID: 2555804456-19040528
CSeq: 101 INFO
Contact: <sip:128.107.143.47:5060;transport=udp>
Allow:
INVITE,BYE,CANCEL,ACK,INFO,PRACK,COMET,OPTIONS,SUBSCRIBE,NOTIFY,REFER,REGISTER,UPDATE
Supported: 100rel
User-Agent: Polycom VSX 7000 SIP Beta 7.5.1 - 16Apr2005 09:30
Content-Length: 0

[8] INFO sip:16000@10.10.136.16:5060 SIP/2.0

Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2561623456-19040532
Max-Forwards: 70
Allow:
INVITE,BYE,CANCEL,ACK,INFO,PRACK,COMET,OPTIONS,SUBSCRIBE,NOTIFY,REFER,REGISTER,UPDATE
Supported: replaces
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
Call-ID: 2555804456-19040528
CSeq: 2 INFO
Contact: <sip:128.107.143.47:5060;transport=udp>
User-Agent: Polycom VSX 7000 SIP Beta 7.5.1 - 16Apr2005 09:30
Content-Type: application/media_control+xml
Content-Length: 177
<?xml version="1.0" encoding="utf-8" ?>
<media_control>
<vc_primitive>
<to_encoder>
<picture_fast_update>
</picture_fast_update>
</to_encoder>
</vc_primitive>
</media_control>

[9] SIP/2.0 200 OK

Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2561623456-19040532
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
Date: Fri, 3 Jun 2005 20:49:42 GMT
Call-ID: 2555804456-19040528
CSeq: 2 INFO
Contact: <sip:16000@10.10.136.16:5060>
```

```
Content-Length: 0

[10] INFO sip:16000@10.10.136.16:5060 SIP/2.0

Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2562477456-19040533
Max-Forwards: 70
Allow:
INVITE,BYE,CANCEL,ACK,INFO,PRACK,COMET,OPTIONS,SUBSCRIBE,NOTIFY,REFER,REGISTER,UPDATE
Supported: replaces
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
Call-ID: 2555804456-19040528
CSeq: 3 INFO
Contact: <sip:128.107.143.47:5060;transport=udp>
User-Agent: Polycom VSX 7000 SIP Beta 7.5.1 - 16Apr2005 09:30
Content-Type: application/media_control+xml
Content-Length: 177
<?xml version="1.0" encoding="utf-8" ?>
<media_control>
<vc_primitive>
<to_encoder>
<picture_fast_update>
</picture_fast_update>
</to_encoder>
</vc_primitive>
</media_control>

[11] SIP/2.0 200 OK

Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2562477456-19040533
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
Date: Fri, 3 Jun 2005 20:49:43 GMT
Call-ID: 2555804456-19040528
CSeq: 3 INFO
Contact: <sip:16000@10.10.136.16:5060>
Content-Length: 0

[12] INFO sip:16000@10.10.136.16:5060 SIP/2.0

Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2565486456-19040534
Max-Forwards: 70
Allow:
INVITE,BYE,CANCEL,ACK,INFO,PRACK,COMET,OPTIONS,SUBSCRIBE,NOTIFY,REFER,REGISTER,UPDATE
Supported: replaces
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
Call-ID: 2555804456-19040528
CSeq: 4 INFO
Contact: <sip:128.107.143.47:5060;transport=udp>
User-Agent: Polycom VSX 7000 SIP Beta 7.5.1 - 16Apr2005 09:30
Content-Type: application/media_control+xml
Content-Length: 177
<?xml version="1.0" encoding="utf-8" ?>
<media_control>
<vc_primitive>
<to_encoder>
<picture_fast_update>
</picture_fast_update>
</to_encoder>
</vc_primitive>
</media_control>

[13] SIP/2.0 200 OK
```

```
Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2565486456-19040534
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
Date: Fri, 3 Jun 2005 20:49:46 GMT
Call-ID: 2555804456-19040528
CSeq: 4 INFO
Contact: <sip:16000@10.10.136.16:5060>
Content-Length: 0

[14] INFO sip:16000@10.10.136.16:5060 SIP/2.0

Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2568717456-19040535
Max-Forwards: 70
Allow:
INVITE,BYE,CANCEL,ACK,INFO,PRACK,COMET,OPTIONS,SUBSCRIBE,NOTIFY,REFER,REGISTER,UPDATE
Supported: replaces
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
Call-ID: 2555804456-19040528
CSeq: 5 INFO
Contact: <sip:128.107.143.47:5060;transport=udp>
User-Agent: Polycom VSX 7000 SIP Beta 7.5.1 - 16Apr2005 09:30
Content-Type: application/media_control+xml
Content-Length: 177
<?xml version="1.0" encoding="utf-8" ?>
<media_control>
<vc_primitive>
<to_encoder>
<picture_fast_update>
</picture_fast_update>
</to_encoder>
</vc_primitive>
</media_control>

[15] SIP/2.0 200 OK

Via: SIP/2.0/UDP 128.107.143.47:5060;branch=z9hG4bK2568717456-19040535
From: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
To: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
Date: Fri, 3 Jun 2005 20:49:49 GMT
Call-ID: 2555804456-19040528
CSeq: 5 INFO
Contact: <sip:16000@10.10.136.16:5060>
Content-Length: 0

[16] BYE sip:128.107.143.47:5060;transport=udp SIP/2.0

Via: SIP/2.0/UDP 10.10.136.16:5060;branch=z9hG4bK3cfe5688
From: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
To: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
Date: Fri, 3 Jun 2005 20:49:49 GMT
Call-ID: 2555804456-19040528
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0

[17] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.136.16:5060;branch=z9hG4bK3cfe5688
From: <sip:16000@10.10.136.16>;tag=StandAloneCluster-25026215
To: 5555<sip:5555@128.107.143.47>;epid=8203400243FEAK;tag=plcm_2555805456-19040530
Call-ID: 2555804456-19040528
```

```
CSeq: 102 BYE
Contact: <sip:128.107.143.47:5060;transport=udp>
Allow:
INVITE,BYE,CANCEL,ACK,INFO,PRACK,COMET,OPTIONS,SUBSCRIBE,NOTIFY,REFER,REGISTER,UPDATE
Supported: 100rel
User-Agent: Polycom VSX 7000 SIP Beta 7.5.1 - 16Apr2005 09:30
Content-Length: 0
```

Message Waiting Indicator

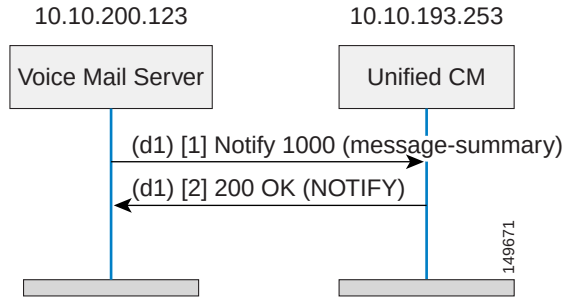
MWI Status via Unsolicited NOTIFY

- Configuration:
  - Node = Unified CM, IP = 10.10.193.253
  - Node = Voice Mail Server, IP = 10.10.200.123
- 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 Cisco Unified CallManager 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 Cisco Unified CallManager hosted device(s) assigned to directory number 1000.

MWI Status via Unsolicited NOTIFY Part 1




```
[1] NOTIFY sip:1000@10.10.193.253:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.200.123:5060
From: 1100 <sip:1100@10.10.200.123:5060>;tag=1
To: <sip:1000@10.10.193.253:5060>
Call-ID: 1-1805@10.10.200.123
Cseq: 1 NOTIFY
Contact: <sip:1100@10.10.200.123:5060>
Expires: 180
Allow: INVITE,ACK,BYE,CANCEL,OPTIONS,REGISTER,INFO,PRACK,SUBSCRIBE,NOTIFY,REFER,UPDATE
Max-Forwards: 70
Event: message-summary
Content-Type: text/plain
Content-Length: 23
Messages-Waiting: yes

[2] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.200.123:5060
From: 1100 <sip:1100@10.10.200.123:5060>;tag=1
To: <sip:1000@10.10.193.253:5060>;tag=93335754
Date: Mon, 13 Feb 2006 22:43:40 GMT
Call-ID: 1-1805@10.10.200.123
CSeq: 1 NOTIFY
```

```
Content-Length: 0
```

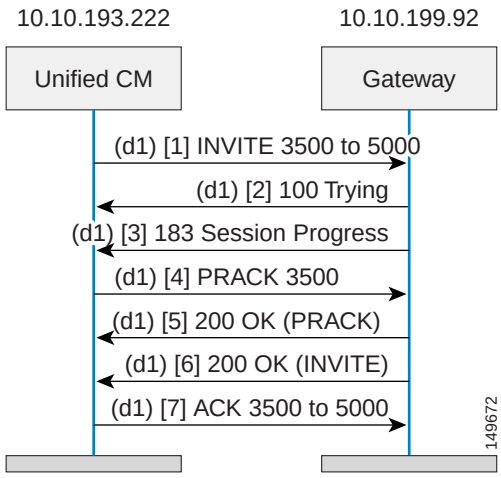
PRACK Method

Outbound Early Media Call with PRACK

This flow shows a basic delayed media call from an IP phone to SIP Trunk. Outgoing INVITE has SDP.

- Configuration:
  - Node = Unified CM, IP = 10.10.193.222
  - Node = Gateway, IP = 10.10.199.92

Outbound Early Media Call with PRACK




```
[1] INVITE sip:3500@10.10.199.92:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK62bf1d27
Remote-Party-ID: <sip:5000@10.10.193.222>;party=calling;screen=no;privacy=off
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159146
To: <sip:3500@10.10.199.92>
Date: Fri, 17 Jun 2005 18:17:07 GMT
Call-ID: 21c9900-2b3113a3-4-dec112ac@10.10.193.222
Supported: 100rel,timer
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:5000@10.10.193.222:5060>
Expires: 180
Allow-Events: kpml
Content-Type: application/sdp
Content-Length: 221
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 24634 RTP/AVP 0 101
```

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

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK62bf1d27
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159146
To: <sip:3500@10.10.199.92>
Date: Fri, 17 Jun 2005 18:18:03 GMT
Call-ID: 21c9900-2b3113a3-4-dec112ac@10.10.193.222
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: kpml, telephone-event
Content-Length: 0

[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK62bf1d27
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159146
To: <sip:3500@10.10.199.92>;tag=BE992B20-6F8
Date: Fri, 17 Jun 2005 18:18:03 GMT
Call-ID: 21c9900-2b3113a3-4-dec112ac@10.10.193.222
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO,
REGISTER, PUBLISH
Require: 100rel
RSeq: 4333
Allow-Events: kpml, telephone-event
Contact: <sip:3500@10.10.199.92:5060>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 194
v=0
o=CiscoSystemsSIP-GW-UserAgent 9563 1850 IN IP4 10.10.199.92
s=SIP Call
c=IN IP4 10.10.199.92
t=0 0
m=audio 18448 RTP/AVP 0
c=IN IP4 10.10.199.92
a=rtpmap:0 PCMU/8000
a=ptime:20

[4] PRACK sip:3500@10.10.199.92:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK31c2cea2
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159146
To: <sip:3500@10.10.199.92>;tag=BE992B20-6F8
Date: Fri, 17 Jun 2005 18:17:07 GMT
Call-ID: 21c9900-2b3113a3-4-dec112ac@10.10.193.222
CSeq: 102 PRACK
RAck: 4333 101 INVITE
Content-Length: 0

[5] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK31c2cea2
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159146
To: <sip:3500@10.10.199.92>;tag=BE992B20-6F8
Date: Fri, 17 Jun 2005 18:18:03 GMT
Call-ID: 21c9900-2b3113a3-4-dec112ac@10.10.193.222
Server: Cisco-SIPGateway/IOS-12.x
```

```
CSeq: 102 PRACK
Content-Length: 0

[6] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK62bf1d27
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159146
To: <sip:3500@10.10.199.92>;tag=BE992B20-6F8
Date: Fri, 17 Jun 2005 18:18:03 GMT
Call-ID: 21c9900-2b3113a3-4-dec112ac@10.10.193.222
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO,
REGISTER, PUBLISH
Allow-Events: kpml, telephone-event
Contact: <sip:3500@10.10.199.92:5060>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 194
v=0
o=CiscoSystemsSIP-GW-UserAgent 9563 1850 IN IP4 10.10.199.92
s=SIP Call
c=IN IP4 10.10.199.92
t=0 0
m=audio 18448 RTP/AVP 0
c=IN IP4 10.10.199.92
a=rtpmap:0 PCMU/8000
a=ptime:20

[7] ACK sip:3500@10.10.199.92:5060 SIP/2.0

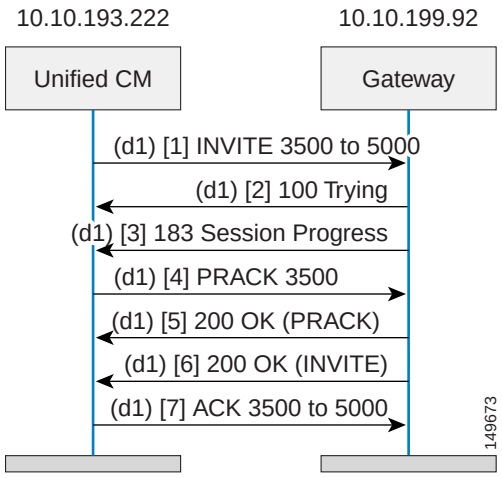
Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK7c341c63
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159146
To: <sip:3500@10.10.199.92>;tag=BE992B20-6F8
Date: Fri, 17 Jun 2005 18:17:07 GMT
Call-ID: 21c9900-2b3113a3-4-dec112ac@10.10.193.222
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: kpml
Content-Length: 0
```

Outbound Delayed Media Call with PRACK

This flow shows a basic delayed media call from an IP phone to SIP Trunk. Outgoing INVITE has no SDP.

- Configuration:
  - Node = Unified CM, IP = 10.10.193.222
  - Node = Gateway, IP = 10.10.199.92

Outbound Delayed Media Call with PRACK




```
[1] INVITE sip:3500@10.10.199.92:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK14fc4a8b
Remote-Party-ID: <sip:5000@10.10.193.222>;party=calling;screen=no;privacy=off
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159148
To: <sip:3500@10.10.199.92>
Date: Fri, 17 Jun 2005 18:32:37 GMT
Call-ID: 2c6f5600-2b311745-5-dec112ac@10.10.193.222
Supported: 100rel,timer
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:5000@10.10.193.222:5060>
Expires: 180
Allow-Events: kpml
Call-Info: <sip:10.10.193.222:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK14fc4a8b
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159148
To: <sip:3500@10.10.199.92>
Date: Fri, 17 Jun 2005 18:33:33 GMT
Call-ID: 2c6f5600-2b311745-5-dec112ac@10.10.193.222
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: kpml, telephone-event
Content-Length: 0

[3] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK14fc4a8b
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159148
To: <sip:3500@10.10.199.92>;tag=BEA75BF8-71A
Date: Fri, 17 Jun 2005 18:33:33 GMT
```

```
Call-ID: 2c6f5600-2b311745-5-dec112ac@10.10.193.222
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO,
REGISTER, PUBLISH
Require: 100rel
RSeq: 4060
Allow-Events: kpml, telephone-event
Contact: <sip:3500@10.10.199.92:5060>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 218
v=0
o=CiscoSystemsSIP-GW-UserAgent 6675 6658 IN IP4 10.10.199.92
s=SIP Call
c=IN IP4 10.10.199.92
t=0 0
m=audio 19082 RTP/AVP 0 19
c=IN IP4 10.10.199.92
a=rtpmap:0 PCMU/8000
a=rtpmap:19 CN/8000
a=ptime:20

[4] PRACK sip:3500@10.10.199.92:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK71dea4b0
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159148
To: <sip:3500@10.10.199.92>;tag=BEA75BF8-71A
Date: Fri, 17 Jun 2005 18:32:37 GMT
Call-ID: 2c6f5600-2b311745-5-dec112ac@10.10.193.222
CSeq: 102 PRACK
RAck: 4060 101 INVITE
Content-Type: application/sdp
Content-Length: 165
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.193.222
s=SIP Call
c=IN IP4 10.10.193.223
t=0 0
m=audio 30908 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[5] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK71dea4b0
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159148
To: <sip:3500@10.10.199.92>;tag=BEA75BF8-71A
Date: Fri, 17 Jun 2005 18:33:33 GMT
Call-ID: 2c6f5600-2b311745-5-dec112ac@10.10.193.222
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 PRACK
Content-Length: 0

[6] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK14fc4a8b
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159148
To: <sip:3500@10.10.199.92>;tag=BEA75BF8-71A
Date: Fri, 17 Jun 2005 18:33:33 GMT
Call-ID: 2c6f5600-2b311745-5-dec112ac@10.10.193.222
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO,
REGISTER, PUBLISH
```

```
Allow-Events: kpml, telephone-event
Contact: <sip:3500@10.10.199.92:5060>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 218
v=0
o=CiscoSystemsSIP-GW-UserAgent 6675 6658 IN IP4 10.10.199.92
s=SIP Call
c=IN IP4 10.10.199.92
t=0 0
m=audio 19082 RTP/AVP 0 19
c=IN IP4 10.10.199.92
a=rtpmap:0 PCMU/8000
a=rtpmap:19 CN/8000
a=ptime:20

[7] ACK sip:3500@10.10.199.92:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.193.222:5060;branch=z9hG4bK3bc9ea4e
From: <sip:5000@10.10.193.222>;tag=StandAloneCluster-30159148
To: <sip:3500@10.10.199.92>;tag=BEA75BF8-71A
Date: Fri, 17 Jun 2005 18:32:37 GMT
Call-ID: 2c6f5600-2b311745-5-dec112ac@10.10.193.222
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: kpml
Content-Type: application/sdp
Content-Length: 165
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.193.222
s=SIP Call
c=IN IP4 10.10.193.223
t=0 0
m=audio 30908 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

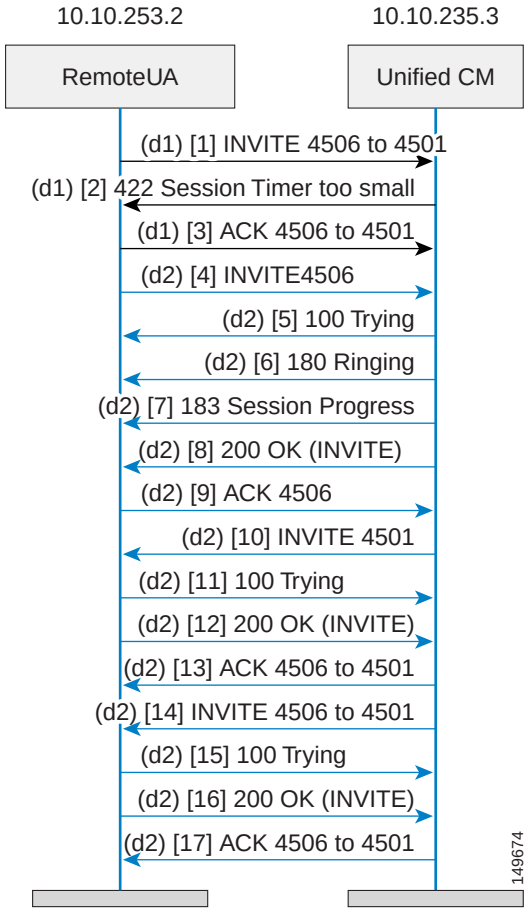
Call Preservation

Session Timers Negotiation and Refresh for the Incoming SIP Trunk Call on Cisco Unified CallManager

The scenario when an Invite with Session-Expires header is received by the Cisco Unified CallManager:

- However the proposed SE timeout value is less than the local configured Min-SE value, so 422 (SE Timer too small) is sent giving the required value in Min-SE header.
- Then RemoteUA sends another Invite with updated Session-Expires header, which is accepted by sending of 200 OK with negotiated Session-Expires header from Cisco Unified CallManager.
- The refresher="uas" is set because RemoteUA (uac) didn't specify the refresher and the uas (Cisco Unified CallManager) has the option to choose itself as the refresher.
- Also shown the session refresh transactions after period of 60 secs.
- Configuration:
  - Node = Unified CM, IP = 10.10.253.3
  - Node = RemoteUA, IP = 10.10.253.2

Session Timers Negotiation & Refresh for the
Incoming SIP Trunk Call on Cisco Unified CallManager




```
[1] INVITE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK3c8c9ed1
Remote-Party-ID: <sip:4501@10.10.253.2>;party=calling;screen=no;privacy=off
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
To: <sip:4506@10.10.253.3>
Date: Mon, 13 Jun 2005 11:56:38 GMT
Call-ID: 3150a480-2ad17476-1-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 60
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:4501@10.10.253.2:5060>
Expires: 180
Allow-Events: kpml
Call-Info: <sip:10.10.253.2:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires: 90
Content-Length: 0

[2] SIP/2.0 422 Session Timer too small

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK3c8c9ed1
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
```

```
To: <sip:4506@10.10.253.3>;tag=1238286894
Date: Mon, 13 Jun 2005 11:56:38 GMT
Call-ID: 3150a480-2ad17476-1-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Min-SE: 120
Reason: Q.850;cause=100
Content-Length: 0

[3] ACK sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK3c8c9ed1
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
To: <sip:4506@10.10.253.3>;tag=1238286894
Date: Mon, 13 Jun 2005 11:56:38 GMT
Call-ID: 3150a480-2ad17476-1-2fd4c0a@10.10.253.2
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: kpml
Content-Length: 0

[4] INVITE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK71a251e1
Remote-Party-ID: <sip:4501@10.10.253.2>;party=calling;screen=no;privacy=off
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
To: <sip:4506@10.10.253.3>
Date: Mon, 13 Jun 2005 11:56:38 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
Supported: timer
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:4501@10.10.253.2:5060>
Expires: 180
Allow-Events: kpml
Call-Info: <sip:10.10.253.2:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires: 120
Min-SE: 120
Content-Length: 0

[5] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK71a251e1
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
To: <sip:4506@10.10.253.3>
Date: Mon, 13 Jun 2005 11:56:38 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Content-Length: 0

[6] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK71a251e1
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28692853
Date: Mon, 13 Jun 2005 11:56:38 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Remote-Party-ID: <sip:4506@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4506@10.10.253.3:5060>
Content-Length: 0
```

```
[7] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK71a251e1
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28692853
Date: Mon, 13 Jun 2005 11:56:38 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Allow-Events: kpml
Contact: <sip:4506@10.10.253.3:5060>
Content-Type: application/sdp
Content-Length: 316
v=0
o=CiscoSystemsCCM-SIP 2000 1000 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.3
t=0 0
m=audio 4000 RTP/AVP 2 0 8 18
a=rtpmap:2 G726-32/8000
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 annexa=yes;annexb=yes
a=sendonly

[8] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK71a251e1
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28692853
Date: Mon, 13 Jun 2005 11:56:38 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Allow-Events: kpml
Remote-Party-ID: <sip:4506@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4506@10.10.253.3:5060>
Session-Expires: 120;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 316
v=0
o=CiscoSystemsCCM-SIP 2000 1000 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.3
t=0 0
m=audio 4000 RTP/AVP 2 0 8 18
a=rtpmap:2 G726-32/8000
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 annexa=yes;annexb=yes
a=sendonly

[9] ACK sip:4506@10.10.253.3:5060 SIP/2.0
```

```
Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK2e51b6d
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28692853
Date: Mon, 13 Jun 2005 11:56:38 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: kpml
Content-Type: application/sdp
Content-Length: 171
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.2
s=SIP Call
c=IN IP4 10.10.253.5
t=0 0
m=audio 31746 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly

[10] INVITE sip:4501@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK677a0496
Remote-Party-ID: <sip:4506@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28692853
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
Date: Mon, 13 Jun 2005 11:56:40 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 120
Cisco-Guid: 827368576-718369910-2-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:4506@10.10.253.3:5060>
Expires: 180
Allow-Events: kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 25212 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[11] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK677a0496
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28692853
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
Date: Mon, 13 Jun 2005 11:56:40 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
CSeq: 103 INVITE
Allow-Events: kpml
Content-Length: 0

[12] SIP/2.0 200 OK
```

```
Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK677a0496
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28692853
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
Date: Mon, 13 Jun 2005 11:56:40 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Allow-Events: kpml
Remote-Party-ID: <sip:4501@10.10.253.2>;party=called;screen=yes;privacy=off
Contact: <sip:4506@10.10.253.2:5060>
Session-Expires: 120;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1002 IN IP4 10.10.253.2
s=SIP Call
c=IN IP4 10.10.253.5
t=0 0
m=audio 31746 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[13] ACK sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK7e7b4396
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28692853
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
Date: Mon, 13 Jun 2005 11:56:40 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: kpml
Content-Length: 0

[14] INVITE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK5a355b9
Remote-Party-ID: <sip:4506@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28692853
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
Date: Mon, 13 Jun 2005 11:57:40 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 120
Cisco-Guid: 827368576-718369910-2-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:4506@10.10.253.3:5060>
Expires: 180
Allow-Events: kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 25212 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

```
[15] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK5a355b9
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28692853
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
Date: Mon, 13 Jun 2005 11:57:40 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
CSeq: 104 INVITE
Allow-Events: kpml
Content-Length: 0

[16] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK5a355b9
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28692853
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
Date: Mon, 13 Jun 2005 11:57:40 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Allow-Events: kpml
Remote-Party-ID: <sip:4501@10.10.253.2>;party=called;screen=yes;privacy=off
Contact: <sip:4506@10.10.253.2:5060>
Session-Expires: 120;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1002 IN IP4 10.10.253.2
s=SIP Call
c=IN IP4 10.10.253.5
t=0 0
m=audio 31746 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[17] ACK sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK508c05ab
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28692853
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28692894
Date: Mon, 13 Jun 2005 11:57:40 GMT
Call-ID: 3150a480-2ad17476-2-2fd4c0a@10.10.253.2
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: kpml
Content-Length: 0
```

Session Timers Negotiation and Refresh for the Outgoing SIP Trunk Call

SCCP---Cisco Unified CallManager1--siptrunk---Cisco Unified CallManager2---SCCP

The initial outgoing INVITE from Cisco Unified CallManager1, contains the Min-SE header with value 90 secs. The 200 OK response contains the negotiated value for the Session-Expires header with timeout 120 and refresher=uas. That means the remote Cisco Unified CallManager2 is the refresher.

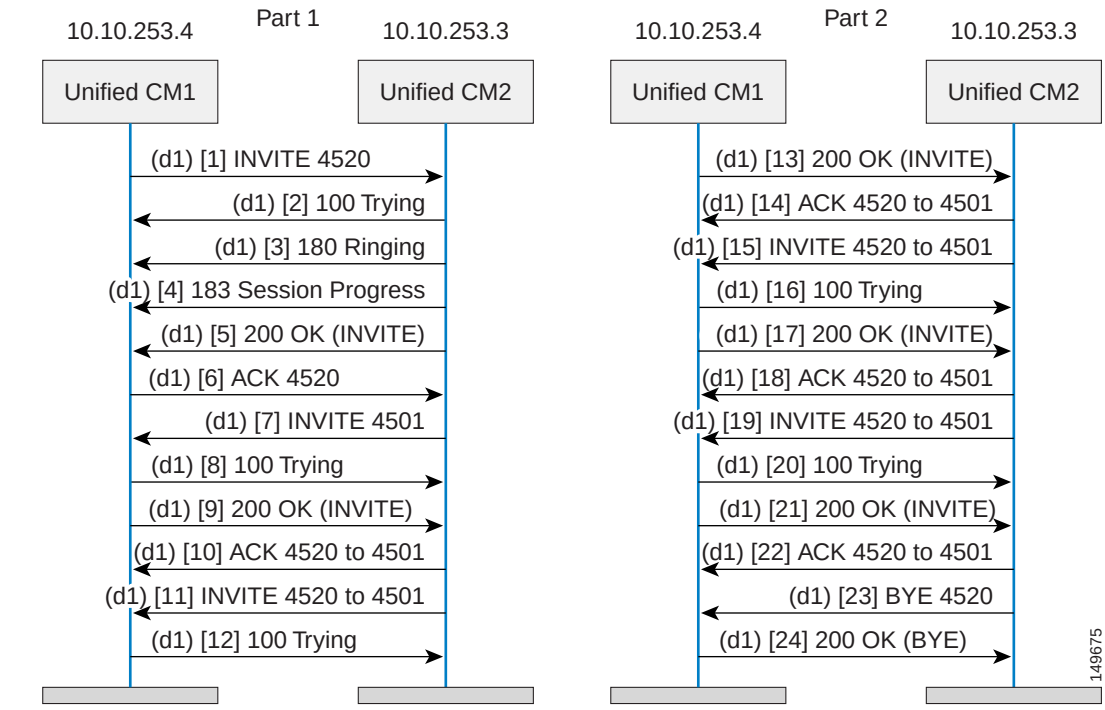
Later there is another session refresh INVITE request coming from the Cisco Unified CallManager2 after the period of 60 seconds.

Note There are two Service Parameters: SIP Min-SE Value and SIP Session Expires Timer with the following values configured:Cisco Unified CallManager1 (Min-SE 90, SE 90) Cisco Unified CallManager2 (Min-SE 120, SE 120).

The negiotiated Session-Expires timeout = 120 secs based on Min-SE configured value in Cisco Unified CallManager2.

- Configuration:
  - Node = Unified CM1, IP = 10.10.253.4
  - Node = Unified CM2, IP = 10.10.253.3

Session Timers Negotiation & Refresh for the Outgoing SIP Trunk Call



```
[1] INVITE sip:4520@10.10.253.3:5060 SIP/2.0
```

```
Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK4b995f60
Remote-Party-ID: <sip:4501@10.10.253.4>;party=calling;screen=yes;privacy=off
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
To: <sip:4520@10.10.253.3>
Date: Wed, 15 Feb 2006 10:30:01 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
Supported: timer,replaces
Min-SE: 90
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:4501@10.10.253.4:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.253.4:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK4b995f60
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
To: <sip:4520@10.10.253.3>
Date: Wed, 15 Feb 2006 10:30:01 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 101 INVITE
Allow-Events: presence, dialog
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK4b995f60
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
To: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
Date: Wed, 15 Feb 2006 10:30:01 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog
Remote-Party-ID: "Alert4520" <sip:4520@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4520@10.10.253.3:5060>
Content-Length: 0

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK4b995f60
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
To: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
Date: Wed, 15 Feb 2006 10:30:01 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Remote-Party-ID: "Alert4520" <sip:4520@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4520@10.10.253.3:5060>
Content-Type: application/sdp
Content-Length: 295
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.3
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

[5] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK4b995f60
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
To: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
Date: Wed, 15 Feb 2006 10:30:01 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Remote-Party-ID: "Caller4520" <sip:4520@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4520@10.10.253.3:5060>
Session-Expires: 120;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 295
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.3
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

[6] ACK sip:4520@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK1cb04d46
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
To: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
Date: Wed, 15 Feb 2006 10:30:01 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 222
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.253.4
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 32600 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

[7] INVITE sip:4501@10.10.253.4:5060 SIP/2.0
```

```
Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK48f45e1e
Remote-Party-ID: "Caller4520" <sip:4520@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:30:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
Supported: timer,replaces
Min-SE: 120
Cisco-Guid: 61972480-1060176553-28894-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:4520@10.10.253.3:5060>
Expires: 180
Allow-Events: presence, dialog, kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 211
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.11
t=0 0
m=audio 18302 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[8] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK48f45e1e
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:30:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 103 INVITE
Allow-Events: presence, kpml
Content-Length: 0

[9] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK48f45e1e
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:30:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:4501@10.10.253.4>;party=called;screen=yes;privacy=off
Contact: <sip:4520@10.10.253.4:5060>
Session-Expires: 120;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 210
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.253.4
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 32600 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
```

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

[10] ACK sip:4520@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK521de3af
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:30:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence, dialog, kpml
Content-Length: 0

[11] INVITE sip:4520@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK3043b024
Remote-Party-ID: "Caller4520" <sip:4520@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:31:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
Supported: timer,replaces
Min-SE: 120
Cisco-Guid: 61972480-1060176553-28894-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:4520@10.10.253.3:5060>
Expires: 180
Allow-Events: presence, dialog, kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 211
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.11
t=0 0
m=audio 18302 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[12] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK3043b024
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:31:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 104 INVITE
Allow-Events: presence, kpml
Content-Length: 0

[13] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK3043b024
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:31:04 GMT
```

```
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:4501@10.10.253.4>;party=called;screen=yes;privacy=off
Contact: <sip:4520@10.10.253.4:5060>
Session-Expires: 120;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 210
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.253.4
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 32600 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[14] ACK sip:4520@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK764335b3
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:31:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence, dialog, kpml
Content-Length: 0

[15] INVITE sip:4520@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK12829f7b
Remote-Party-ID: "Caller4520" <sip:4520@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:32:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
Supported: timer,replaces
Min-SE: 120
Cisco-Guid: 61972480-1060176553-28894-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 105 INVITE
Max-Forwards: 70
Contact: <sip:4520@10.10.253.3:5060>
Expires: 180
Allow-Events: presence, dialog, kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 211
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.11
t=0 0
m=audio 18302 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

```
[16] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK12829f7b
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:32:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 105 INVITE
Allow-Events: presence, kpml
Content-Length: 0

[17] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK12829f7b
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:32:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 105 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:4501@10.10.253.4>;party=called;screen=yes;privacy=off
Contact: <sip:4520@10.10.253.4:5060>
Session-Expires: 120;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 210
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.253.4
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 32600 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[18] ACK sip:4520@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK7a143e64
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:32:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
Max-Forwards: 70
CSeq: 105 ACK
Allow-Events: presence, dialog, kpml
Content-Length: 0

[19] INVITE sip:4520@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK41a19cfd
Remote-Party-ID: "Caller4520" <sip:4520@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:33:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
Supported: timer,replaces
Min-SE: 120
Cisco-Guid: 61972480-1060176553-28894-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
```

```
CSeq: 106 INVITE
Max-Forwards: 70
Contact: <sip:4520@10.10.253.3:5060>
Expires: 180
Allow-Events: presence, dialog, kpml
Session-Expires: 120;refresher=uac
Content-Type: application/sdp
Content-Length: 211
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.11
t=0 0
m=audio 18302 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[20] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK41a19cfd
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:33:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 106 INVITE
Allow-Events: presence, kpml
Content-Length: 0

[21] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK41a19cfd
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:33:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 106 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:4501@10.10.253.4>;party=called;screen=yes;privacy=off
Contact: <sip:4520@10.10.253.4:5060>
Session-Expires: 120;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 210
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.253.4
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 32600 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[22] ACK sip:4520@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK3a1adf43
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:33:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
```

```
Max-Forwards: 70
CSeq: 106 ACK
Allow-Events: presence, dialog, kpml
Content-Length: 0

[23] BYE sip:4520@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK63bb1f17
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:33:04 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 107 BYE
Content-Length: 0

[24] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK63bb1f17
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513592
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129258
Date: Wed, 15 Feb 2006 10:33:11 GMT
Call-ID: 3b1a000-3f3102a9-b1-4fd4c0a@10.10.253.4
CSeq: 107 BYE
Content-Length: 0
```

Periodic Refresh after Session Timer Negotiation Failure

The scenario when Session Timers negotiation fails and periodic ReInvite is attempted after configured interval.

SCCP--Cisco Unified CallManager----siptrunk---RemoteUA

Cisco Unified CallManager's configuration (SE 120)

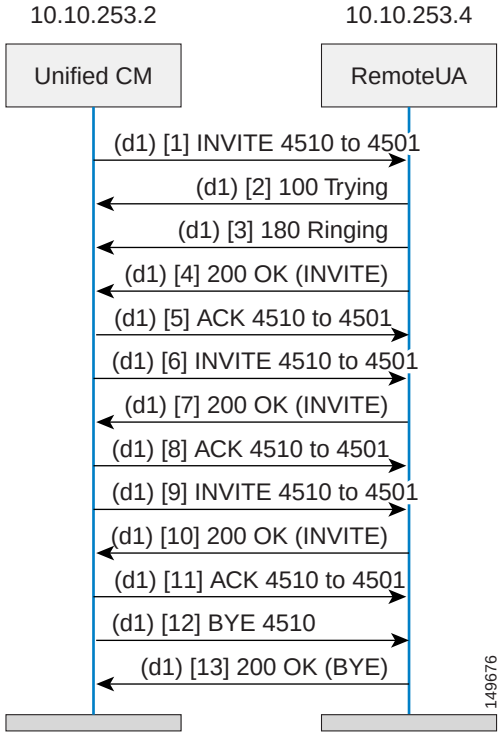
Cisco Unified CallManager sends the INVITE with w/o Session-Expires header.

The '200 OK' from the RemoteUA doesn't include the Session-Expires. This fails the standard session timers negotiation.

As per the implementation, the proprietary periodic INVITE refresh procedure is activated and offer is sent after every configured SE/2 i.e 60 secs.

- Configuration:
  - Node = Unified CM, IP = 10.10.253.2
  - Node = RemoteUA, IP = 10.10.253.4

Periodic Refresh after Session Timer Negotiation Failure




```
[1] INVITE sip:4510@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK276cb4af
Remote-Party-ID: <sip:4501@10.10.253.2>;party=calling;screen=no;privacy=off
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>
Date: Mon, 13 Jun 2005 07:52:47 GMT
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 180
```

```
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:4501@10.10.253.2:5060>
Expires: 180
Allow-Events: kpml
Call-Info: <sip:10.10.253.2:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK276cb4af
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Server: Cisco-CP7960/8.0
Contact: <sip:4510@10.10.253.4:5060>
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK276cb4af
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>;tag=000f24aa92ff00041b3b3e58-646eacea
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Server: Cisco-CP7960/8.0
Contact: <sip:4510@10.10.253.4:5060>
Content-Length: 0

[4] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK276cb4af
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>;tag=000f24aa92ff00041b3b3e58-646eacea
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Server: Cisco-CP7960/8.0
Contact: <sip:4510@10.10.253.4:5060>
Supported: replaces
Content-Length: 252
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 5729 0 IN IP4 10.10.253.4
s=SIP Call
c=IN IP4 10.10.253.4
t=0 0
m=audio 25276 RTP/AVP 0 8 18 101
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

[5] ACK sip:4510@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK198c746d
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>;tag=000f24aa92ff00041b3b3e58-646eacea
Date: Mon, 13 Jun 2005 07:52:47 GMT
```

```
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: kpml
Content-Type: application/sdp
Content-Length: 215
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.2
s=SIP Call
c=IN IP4 10.10.253.2
t=0 0
m=audio 24866 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[6] INVITE sip:4510@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK6d35fa70
Remote-Party-ID: <sip:4501@10.10.253.2>;party=calling;screen=yes;privacy=off
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>;tag=000f24aa92ff00041b3b3e58-646eacea
Date: Mon, 13 Jun 2005 07:53:49 GMT
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 180
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:4501@10.10.253.2:5060>
Expires: 180
Allow-Events: kpml
Content-Type: application/sdp
Content-Length: 215
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.2
s=SIP Call
c=IN IP4 10.10.253.2
t=0 0
m=audio 24866 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[7] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK6d35fa70
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>;tag=000f24aa92ff00041b3b3e58-646eacea
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
CSeq: 102 INVITE
Server: Cisco-CP7960/8.0
Contact: <sip:4510@10.10.253.4:5060>
Supported: replaces
Content-Length: 202
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 5729 1 IN IP4 10.10.253.4
s=SIP Call
c=IN IP4 10.10.253.4
```

```
t=0 0
m=audio 25276 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv

[8] ACK sip:4510@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK43ba7bfb
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>;tag=000f24aa92ff00041b3b3e58-646eacea
Date: Mon, 13 Jun 2005 07:53:49 GMT
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: kpml
Content-Length: 0

[9] INVITE sip:4510@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK54ac767b
Remote-Party-ID: <sip:4501@10.10.253.2>;party=calling;screen=yes;privacy=off
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>;tag=000f24aa92ff00041b3b3e58-646eacea
Date: Mon, 13 Jun 2005 07:54:50 GMT
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 180
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:4501@10.10.253.2:5060>
Expires: 180
Allow-Events: kpml
Content-Type: application/sdp
Content-Length: 215
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.2
s=SIP Call
c=IN IP4 10.10.253.2
t=0 0
m=audio 24866 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[10] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK54ac767b
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>;tag=000f24aa92ff00041b3b3e58-646eacea
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
CSeq: 103 INVITE
Server: Cisco-CP7960/8.0
Contact: <sip:4510@10.10.253.4:5060>
Supported: replaces
Content-Length: 202
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 5729 1 IN IP4 10.10.253.4
```

```
s=SIP Call
c=IN IP4 10.10.253.4
t=0 0
m=audio 25276 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv

[11] ACK sip:4510@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK761db7e6
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>;tag=000f24aa92ff00041b3b3e58-646eacea
Date: Mon, 13 Jun 2005 07:54:50 GMT
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: kpml
Content-Length: 0

[12] BYE sip:4510@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK53a2a3ba
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>;tag=000f24aa92ff00041b3b3e58-646eacea
Date: Mon, 13 Jun 2005 07:54:50 GMT
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 BYE
Content-Length: 0

[13] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK53a2a3ba
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28634294
To: <sip:4510@10.10.253.4>;tag=000f24aa92ff00041b3b3e58-646eacea
Call-ID: 208f3700-2ad13b4f-3-2fd4c0a@10.10.253.2
CSeq: 104 BYE
Server: Cisco-CP7960/8.0
Content-Length: 0
```

SIP Trunk Call Preservation when Cisco Unified CallManager is the Refresher

The scenario for SIP Trunk Call Preservation when Cisco Unified CallManager is the Refresher for the Session Timers and Network link to the remote is down.

The SIP Trunk tries to send the ReInvite for Session Refresh (retry times) and when no response is received back, it assumes that signalling link to remote is down, but not necessarily Media channel between calling & called phone.

The SIP Trunk takes an action to preserve the call towards the call control side (by sending the quietClear disconnect).

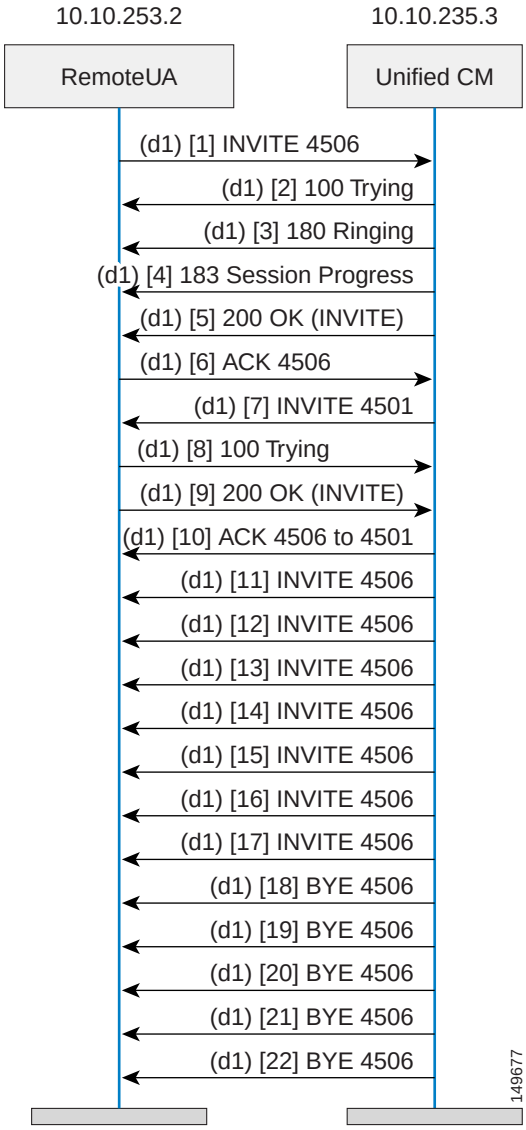
This results in phone maintaining the media for the call, but results in having the softkeys disabled so that feature requests may not be performed.

The sip trunk call instance clear itself.

- Configuration:

- Node = Unified CM, IP = 10.10.253.3
- Node = RemoteUA, IP = 10.10.253.2

SIP Trunk Call Preservation when
Cisco Unified CallManager is the refresher




```
[1] INVITE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK2691fcd
Remote-Party-ID: <sip:4501@10.10.253.2>;party=calling;screen=no;privacy=off
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
To: <sip:4506@10.10.253.3>
Date: Mon, 13 Jun 2005 09:37:45 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 60
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 101 INVITE
Max-Forwards: 70
```

```
Contact: <sip:4501@10.10.253.2:5060>
Expires: 180
Allow-Events: kpml
Call-Info: <sip:10.10.253.2:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK2691fcd
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
To: <sip:4506@10.10.253.3>
Date: Mon, 13 Jun 2005 09:37:45 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK2691fcd
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
Date: Mon, 13 Jun 2005 09:37:45 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Remote-Party-ID: <sip:4506@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4506@10.10.253.3:5060>
Content-Length: 0

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK2691fcd
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
Date: Mon, 13 Jun 2005 09:37:45 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Allow-Events: kpml
Contact: <sip:4506@10.10.253.3:5060>
Content-Type: application/sdp
Content-Length: 316
v=0
o=CiscoSystemsCCM-SIP 2000 1000 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.3
t=0 0
m=audio 4000 RTP/AVP 2 0 8 18
a=rtpmap:2 G726-32/8000
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 annexa=yes;annexb=yes
a=sendonly

[5] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK2691fcd
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
```

```
Date: Mon, 13 Jun 2005 09:37:45 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Allow-Events: kpml
Remote-Party-ID: <sip:4506@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4506@10.10.253.3:5060>
Session-Expires: 90;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 316
v=0
o=CiscoSystemsCCM-SIP 2000 1000 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.3
t=0 0
m=audio 4000 RTP/AVP 2 0 8 18
a=rtpmap:2 G726-32/8000
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 annexa=yes;annexb=yes
a=sendonly

[6] ACK sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK2939da3b
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
Date: Mon, 13 Jun 2005 09:37:45 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: kpml
Content-Type: application/sdp
Content-Length: 171
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.2
s=SIP Call
c=IN IP4 10.10.253.5
t=0 0
m=audio 17624 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly

[7] INVITE sip:4501@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK606b25c2
Remote-Party-ID: <sip:4506@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:37:47 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 90
Cisco-Guid: 3396714496-718361577-1-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 103 INVITE
```

```
Max-Forwards: 70
Contact: <sip:4506@10.10.253.3:5060>
Expires: 180
Allow-Events: kpml
Session-Expires: 90;refresher=uac
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 27444 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[8] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK606b25c2
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:37:47 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
CSeq: 103 INVITE
Allow-Events: kpml
Content-Length: 0

[9] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK606b25c2
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:37:47 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Allow-Events: kpml
Remote-Party-ID: <sip:4501@10.10.253.2>;party=called;screen=yes;privacy=off
Contact: <sip:4506@10.10.253.2:5060>
Session-Expires: 90;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1002 IN IP4 10.10.253.2
s=SIP Call
c=IN IP4 10.10.253.5
t=0 0
m=audio 17624 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[10] ACK sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK22ca107
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:37:47 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: kpml
Content-Length: 0
```

```
[11] INVITE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK1c59546b
Remote-Party-ID: <sip:4506@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:38:32 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 90
Cisco-Guid: 3396714496-718361577-1-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:4506@10.10.253.3:5060>
Expires: 180
Allow-Events: kpml
Session-Expires: 90;refresher=uac
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 27444 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[12] INVITE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK1c59546b
Remote-Party-ID: <sip:4506@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:38:32 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 90
Cisco-Guid: 3396714496-718361577-1-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:4506@10.10.253.3:5060>
Expires: 180
Allow-Events: kpml
Session-Expires: 90;refresher=uac
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 27444 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[13] INVITE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK1c59546b
Remote-Party-ID: <sip:4506@10.10.253.3>;party=calling;screen=yes;privacy=off
```

```
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:38:33 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 90
Cisco-Guid: 3396714496-718361577-1-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:4506@10.10.253.3:5060>
Expires: 180
Allow-Events: kpml
Session-Expires: 90;refresher=uac
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 27444 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[14] INVITE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK1c59546b
Remote-Party-ID: <sip:4506@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:38:35 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 90
Cisco-Guid: 3396714496-718361577-1-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:4506@10.10.253.3:5060>
Expires: 180
Allow-Events: kpml
Session-Expires: 90;refresher=uac
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 27444 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[15] INVITE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK1c59546b
Remote-Party-ID: <sip:4506@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:38:39 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
```

```
Supported: timer
Min-SE: 90
Cisco-Guid: 3396714496-718361577-1-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:4506@10.10.253.3:5060>
Expires: 180
Allow-Events: kpml
Session-Expires: 90;refresher=uac
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 27444 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[16] INVITE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK1c59546b
Remote-Party-ID: <sip:4506@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:38:47 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 90
Cisco-Guid: 3396714496-718361577-1-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:4506@10.10.253.3:5060>
Expires: 180
Allow-Events: kpml
Session-Expires: 90;refresher=uac
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 27444 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[17] INVITE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK1c59546b
Remote-Party-ID: <sip:4506@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:39:03 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 90
Cisco-Guid: 3396714496-718361577-1-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 104 INVITE
```

```
Max-Forwards: 70
Contact: <sip:4506@10.10.253.3:5060>
Expires: 180
Allow-Events: kpml
Session-Expires: 90;refresher=uac
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 27444 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[18] BYE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK69900588
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:39:03 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 105 BYE
Reason: Q.850;cause=86
Content-Length: 0

[19] BYE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK69900588
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:39:03 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 105 BYE
Reason: Q.850;cause=86
Content-Length: 0

[20] BYE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK69900588
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:39:03 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 105 BYE
Reason: Q.850;cause=86
Content-Length: 0

[21] BYE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK69900588
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:39:03 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
```

```
CSeq: 105 BYE
Reason: Q.850;cause=86
Content-Length: 0

[22] BYE sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK69900588
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659449
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28659442
Date: Mon, 13 Jun 2005 09:39:03 GMT
Call-ID: ca75c000-2ad153e9-1-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 105 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

SIP Trunk Call Preservation when Cisco Unified CallManager is not the Refresher

The scenario for SIP Trunk Call Preservation when Cisco Unified CallManager is the non refresher for the Session Timers and Network link to the remote is 'detected' down.

As the SIP Trunk detects that expected Session Refresh isn't received in the negotiated time period, it assumes that signalling link to remote is down, but not necessarily Media channel between calling & called phone.

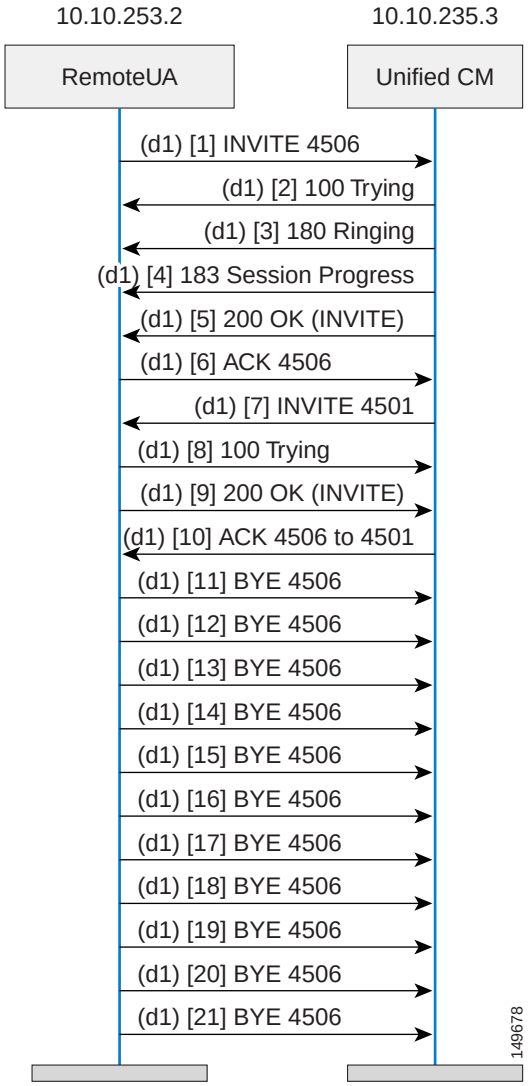
The SIP Trunk takes an action to send the BYE to remote (so that intermediate proxies which can still receive the BYE can clear the transaction) and preserves the call towards the call control side (by sending the quietClear disconnect).

This results in phone maintaining the media for the call, but results in having the softkeys disabled so that feature requests may not be performed.

The sip trunk call instance clear itself.

- Configuration:
  - Node = Unified CM, IP = 10.10.253.3
  - Node = RemoteUA, IP = 10.10.253.2

SIP Trunk Call Preservation when
Cisco Unified CallManager is not the refresher




```
[1] INVITE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK1e5b9509
Remote-Party-ID: <sip:4501@10.10.253.2>;party=calling;screen=no;privacy=off
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>
Date: Mon, 13 Jun 2005 10:00:11 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 60
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:4501@10.10.253.2:5060>
Expires: 180
Allow-Events: kpml
Call-Info: <sip:10.10.253.2:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Length: 0
```

```
[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK1e5b9509
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>
Date: Mon, 13 Jun 2005 10:00:11 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK1e5b9509
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:11 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Remote-Party-ID: <sip:4506@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4506@10.10.253.3:5060>
Content-Length: 0

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK1e5b9509
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:11 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Allow-Events: kpml
Contact: <sip:4506@10.10.253.3:5060>
Content-Type: application/sdp
Content-Length: 316
v=0
o=CiscoSystemsCCM-SIP 2000 1000 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.3
t=0 0
m=audio 4000 RTP/AVP 2 0 8 18
a=rtpmap:2 G726-32/8000
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 annexa=yes;annexb=yes
a=sendonly

[5] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK1e5b9509
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:11 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Allow-Events: kpml
Remote-Party-ID: <sip:4506@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4506@10.10.253.3:5060>
```

```
Session-Expires: 90;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 316
v=0
o=CiscoSystemsCCM-SIP 2000 1000 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.3
t=0 0
m=audio 4000 RTP/AVP 2 0 8 18
a=rtpmap:2 G726-32/8000
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 annexa=yes;annexb=yes
a=sendonly

[6] ACK sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bK1f594bf7
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:11 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: kpml
Content-Type: application/sdp
Content-Length: 171
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.2
s=SIP Call
c=IN IP4 10.10.253.5
t=0 0
m=audio 21146 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly

[7] INVITE sip:4501@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK9e0d229
Remote-Party-ID: <sip:4506@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
Supported: timer
Min-SE: 90
Cisco-Guid: 3971812608-718362923-3-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:4506@10.10.253.3:5060>
Expires: 180
Allow-Events: kpml
Session-Expires: 90;refresher=uac
Content-Type: application/sdp
Content-Length: 159
```

```
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.6
t=0 0
m=audio 30964 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[8] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK9e0d229
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
CSeq: 103 INVITE
Allow-Events: kpml
Content-Length: 0

[9] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK9e0d229
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
Allow-Events: kpml
Remote-Party-ID: <sip:4501@10.10.253.2>;party=called;screen=yes;privacy=off
Contact: <sip:4506@10.10.253.2:5060>
Session-Expires: 90;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 159
v=0
o=CiscoSystemsCCM-SIP 2000 1002 IN IP4 10.10.253.2
s=SIP Call
c=IN IP4 10.10.253.5
t=0 0
m=audio 21146 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[10] ACK sip:4506@10.10.253.2:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK7ea0e854
From: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
To: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: kpml
Content-Length: 0

[11] BYE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bKbdf9d9e
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
```

```
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=41
Content-Length: 0

[12] BYE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bKbdf9d9e
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=41
Content-Length: 0

[13] BYE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bKbdf9d9e
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=41
Content-Length: 0

[14] BYE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bKbdf9d9e
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=41
Content-Length: 0

[15] BYE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bKbdf9d9e
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=41
Content-Length: 0

[16] BYE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bKbdf9d9e
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
```

```
CSeq: 104 BYE
Reason: Q.850;cause=41
Content-Length: 0

[17] BYE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bKbdf9d9e
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=41
Content-Length: 0

[18] BYE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bKbdf9d9e
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=41
Content-Length: 0

[19] BYE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bKbdf9d9e
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=41
Content-Length: 0

[20] BYE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bKbdf9d9e
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=41
Content-Length: 0

[21] BYE sip:4506@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.2:5060;branch=z9hG4bKbdf9d9e
From: <sip:4501@10.10.253.2>;tag=StandAloneCluster-28664834
To: <sip:4506@10.10.253.3>;tag=StandAloneCluster-28659453
Date: Mon, 13 Jun 2005 10:00:12 GMT
Call-ID: ecbd0d00-2ad1592b-3-2fd4c0a@10.10.253.2
User-Agent: Cisco-CCM5.0
```

```
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=41
Content-Length: 0
```

3xx Redirection

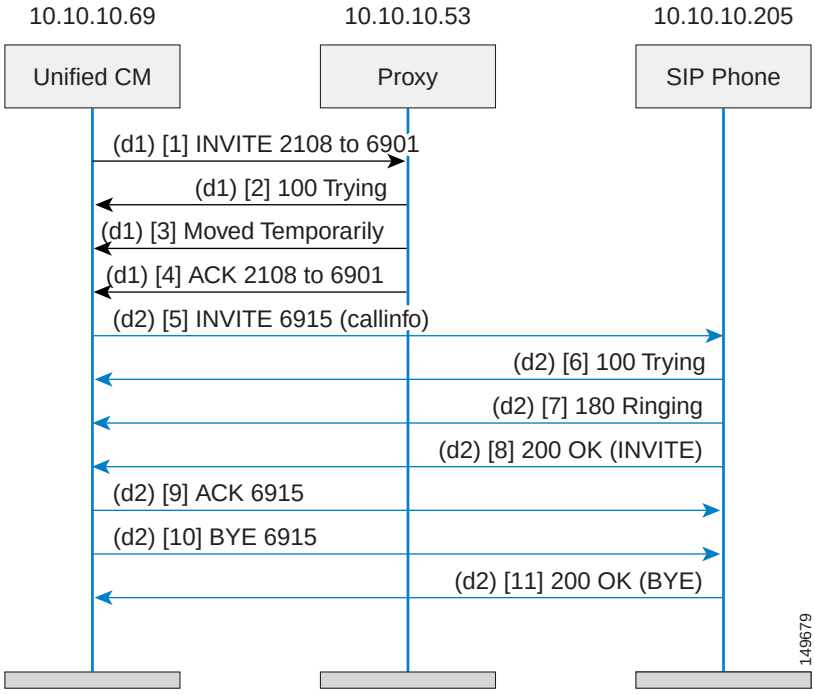
Incoming 3xx Redirection

Cisco Unified CallManager SIP trunk processes the incoming 3xx response by sending out new INVITE specified in the contact headers of the 3xx response.

1. Cisco IP SCCP phone 6901 dials SIP Proxy phone 2108 (2108 has call forwarded to 6915)
2. SIP Proxy phone 2108 has call forward to 6915@10.10.10.69:5060
3. (302 will be sent to Cisco Unified CallManager)
4. Cisco Unified CallManager IP phone 6915 rings
5. Cisco Unified CallManager IP phone 6915 answers the call
6. Cisco Unified CallManager IP phone 6915 and Cisco Unified CallManager phone 6901 are talking
7. Cisco Unified CallManager IP phone 6901 hangs up

- Configuration:
  - Node = Cisco Unified CallManager, IP = 10.10.10.69
  - Node = Proxy, IP = 10.10.10.53
  - Node = SIP Phone, IP = 10.10.10.205

Incoming 3xx Redirection



```
[1] INVITE sip:2108@10.10.10.53:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK79a2409d
Remote-Party-ID: "6901" <sip:6901@10.10.10.69>;party=calling;screen=no;privacy=full
From: "Anonymous " <sip:anonymous@10.10.10.69>;tag=StandAloneCluster-30187138
To: <sip:2108@10.10.10.53>
Date: Fri, 17 Jun 2005 19:54:50 GMT
Call-ID: a8bb6680-2b312a8a-10-45c712ac@10.10.10.69
Supported: timer
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:anonymous@10.10.10.69:5060>
Expires: 180
Allow-Events: kpml
Call-Info: <sip:10.10.10.69:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK79a2409d
Call-ID: a8bb6680-2b312a8a-10-45c712ac@10.10.10.69
From: "Anonymous " <sip:anonymous@10.10.10.69>;tag=StandAloneCluster-30187138
To: <sip:2108@10.10.10.53>
CSeq: 101 INVITE
Content-Length: 0

[3] SIP/2.0 302 Moved Temporarily

Via: SIP/2.0/UDP 10.10.10.69:5060;received=10.10.10.69;branch=z9hG4bK79a2409d
From: "Anonymous " <sip:anonymous@10.10.10.69>;tag=StandAloneCluster-30187138
To: <sip:2108@10.10.10.53>;tag=000c30d4c30601c669a0fcdb-7332c693
Call-ID: a8bb6680-2b312a8a-10-45c712ac@10.10.10.69
Date: Fri, 17 Jun 2005 17:54:59 GMT
CSeq: 101 INVITE
Server: CSCO/7
Contact: <sip:6915@10.10.10.69:5060>
Record-Route:
<sip:anonymous.dcffea13-a8751dc0-219acbf1-bab3c16d@10.10.10.69:5060;maddr=10.10.10.53>
Content-Length: 0

[4] ACK sip:2108@10.10.10.53:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK79a2409d
From: "Anonymous " <sip:anonymous@10.10.10.69>;tag=StandAloneCluster-30187138
To: <sip:2108@10.10.10.53>;tag=000c30d4c30601c669a0fcdb-7332c693
Date: Fri, 17 Jun 2005 19:54:50 GMT
Call-ID: a8bb6680-2b312a8a-10-45c712ac@10.10.10.69
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: kpml
Content-Length: 0

[5] INVITE sip:6915@10.10.10.205:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK52fbcf15
Remote-Party-ID: "6901" <sip:6901@10.10.10.69>;party=calling;screen=no;privacy=off
From: "6901" <sip:6901@10.10.10.69>;tag=StandAloneCluster-30187140
To: <sip:6915@10.10.10.205>
Date: Fri, 17 Jun 2005 19:54:50 GMT
Call-ID: a8bb6680-2b312a8a-11-45c712ac@10.10.10.69
Supported: timer
```

```
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:6901@10.10.10.69:5060>
Diversion: <sip:2108@10.10.10.69>;privacy=off;reason=unknown;screen=no
Expires: 180
Allow-Events: kpml
Call-Info: <urn:x-cisco-remotecc:callinfo>; orientation= from; call-instance= 1
Alert-Info: <file://Bellcore-dr1/>
Content-Length: 0

[6] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK52fbcf15
From: "6901" <sip:6901@10.10.10.69>;tag=StandAloneCluster-30187140
To: <sip:6915@10.10.10.205>
Call-ID: a8bb6680-2b312a8a-11-45c712ac@10.10.10.69
Date: Sun, 00 Jan 1900 GMT
CSeq: 101 INVITE
Server: CSCO/8.0
Contact: <sip:6915@10.10.10.205:5060;transport=udp>
Content-Length: 0
Remote-Party-ID: "IPCC"
<sip:6915@10.10.10.205>;party=called;id-type=subscriber;privacy=off;screen=yes

[7] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK52fbcf15
From: "6901" <sip:6901@10.10.10.69>;tag=StandAloneCluster-30187140
To: <sip:6915@10.10.10.205>;tag=00078592d0fb000400006952-000072ae
Call-ID: a8bb6680-2b312a8a-11-45c712ac@10.10.10.69
Date: Sun, 00 Jan 1900 GMT
CSeq: 101 INVITE
Server: CSCO/8.0
Contact: <sip:6915@10.10.10.205:5060;transport=udp>
Content-Length: 0
Remote-Party-ID: "IPCC"
<sip:6915@10.10.10.205>;party=called;id-type=subscriber;privacy=off;screen=yes

[8] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK52fbcf15
From: "6901" <sip:6901@10.10.10.69>;tag=StandAloneCluster-30187140
To: <sip:6915@10.10.10.205>;tag=00078592d0fb000400006952-000072ae
Call-ID: a8bb6680-2b312a8a-11-45c712ac@10.10.10.69
Date: Sun, 00 Jan 1900 GMT
CSeq: 101 INVITE
Server: CSCO/8.0
Contact: <sip:6915@10.10.10.205:5060;transport=udp>
Remote-Party-ID: "IPCC"
<sip:6915@10.10.10.205>;party=called;id-type=subscriber;privacy=off;screen=yes
Supported: replaces,join,norefersub
Content-Length: 256
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 41 0 IN IP4 10.10.10.205
s=SIP Call
c=IN IP4 10.10.10.205
t=0 0
m=audio 23666 RTP/AVP 8 0 18 101
a=rtpmap:8 PCMA/8000
```

```
a=rtpmap:0 PCMU/8000
a=rtpmap:18 G729/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv

[9] ACK sip:6915@10.10.10.205:5060;transport=udp SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK77fa63c7
From: "6901" <sip:6901@10.10.10.69>;tag=StandAloneCluster-30187140
To: <sip:6915@10.10.10.205>;tag=00078592d0fb000400006952-000072ae
Date: Fri, 17 Jun 2005 19:54:50 GMT
Call-ID: a8bb6680-2b312a8a-11-45c712ac@10.10.10.69
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: kpml
Content-Type: application/sdp
Content-Length: 219
v=0
o=CiscoSystemsCCM-SIP 2000 1001 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.10.69
t=0 0
m=audio 24614 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[10] BYE sip:6915@10.10.10.205:5060;transport=udp SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK287a14fd
From: "6901" <sip:6901@10.10.10.69>;tag=StandAloneCluster-30187140
To: <sip:6915@10.10.10.205>;tag=00078592d0fb000400006952-000072ae
Date: Fri, 17 Jun 2005 19:54:50 GMT
Call-ID: a8bb6680-2b312a8a-11-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0

[11] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK287a14fd
From: "6901" <sip:6901@10.10.10.69>;tag=StandAloneCluster-30187140
To: <sip:6915@10.10.10.205>;tag=00078592d0fb000400006952-000072ae
Call-ID: a8bb6680-2b312a8a-11-45c712ac@10.10.10.69
Date: Sun, 00 Jan 1900 GMT
CSeq: 102 BYE
Server: CSCO/8.0
Content-Length: 0
RTP-RxStat: Dur=20,Pkt=254,Oct=43688,LatePkt=0,LostPkt=0,AvgJit=0
RTP-TxStat: Dur=20,Pkt=71,Oct=11258
```

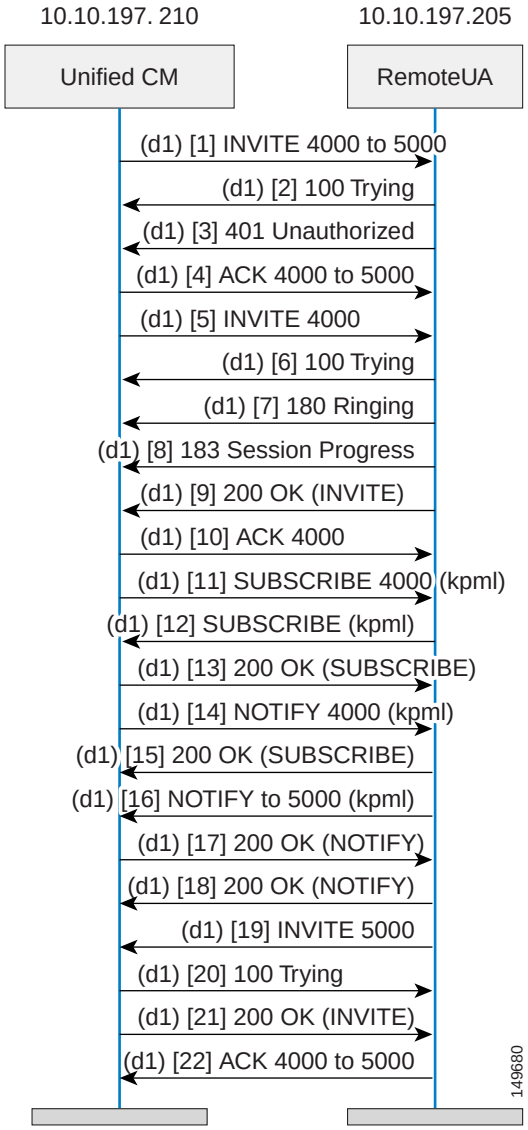
Authentication and Authorization

Cisco Unified CallManager Gets Authenticated as UAC

When Cisco Unified CallManager 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 = 10.10.197.210
  - Node = RemoteUA, IP = 10.10.197.205
- Scenario:
  - Unified CM phone 5000 calls a remote phone 4000 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

CM Gets Authenticated as UAC




```
[1] INVITE sip:4000@10.10.197.205:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK3046b45d
Remote-Party-ID: <sip:5000@10.10.197.210>;party=calling;screen=yes;privacy=off
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>
Date: Wed, 15 Feb 2006 16:52:54 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:5000@10.10.197.210:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.197.210:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
```

```
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK3046b45d
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>
Date: Wed, 15 Feb 2006 16:52:54 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[3] SIP/2.0 401 Unauthorized

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK3046b45d
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>;tag=1767786581
Date: Wed, 15 Feb 2006 16:52:54 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 101 INVITE
Allow-Events: presence
WWW-Authenticate: DIGEST realm="siptrunk4", nonce="1hiiLaZV3I9Ow0LXu+0JZVHNZEacpYZ1",
algorithm=MD5
Content-Length: 0

[4] ACK sip:4000@10.10.197.205:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK3046b45d
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>;tag=1767786581
Date: Wed, 15 Feb 2006 16:52:54 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0

[5] INVITE sip:4000@10.10.197.205:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK76f2ee81
Remote-Party-ID: <sip:5000@10.10.197.210>;party=calling;screen=yes;privacy=off
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>
Date: Wed, 15 Feb 2006 16:52:54 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Contact: <sip:5000@10.10.197.210:5060>
Expires: 180
Allow-Events: presence, kpml
Authorization: Digest
username="sipuser4",realm="siptrunk4",uri="sip:4000@10.10.197.205:5060",response="f54ba863
cf7a289859ecc5edb1
dd579f",nonce="1hiiLaZV3I9Ow0LXu+0JZVHNZEacpYZ1",algorithm=MD5
Call-Info: <sip:10.10.197.210:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[6] SIP/2.0 100 Trying
```

```
Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK76f2ee81
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>
Date: Wed, 15 Feb 2006 16:52:54 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0

[7] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK76f2ee81
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
Date: Wed, 15 Feb 2006 16:52:54 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:4000@10.10.197.205>;party=called;screen=yes;privacy=off
Contact: <sip:4000@10.10.197.205:5060>
Content-Length: 0

[8] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK76f2ee81
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
Date: Wed, 15 Feb 2006 16:52:54 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:4000@10.10.197.205>;party=called;screen=yes;privacy=off
Contact: <sip:4000@10.10.197.205:5060>
Content-Type: application/sdp
Content-Length: 301
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.197.205
s=SIP Call
c=IN IP4 10.10.197.205
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

[9] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK76f2ee81
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
Date: Wed, 15 Feb 2006 16:52:54 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:4000@10.10.197.205>;party=called;screen=yes;privacy=off
```

```
Contact: <sip:4000@10.10.197.205:5060>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 301
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.197.205
s=SIP Call
c=IN IP4 10.10.197.205
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

[10] ACK sip:4000@10.10.197.205:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK52890b91
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
Date: Wed, 15 Feb 2006 16:52:54 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
Max-Forwards: 70
CSeq: 102 ACK
Authorization: Digest
username="sipuser4",realm="siptrunk4",uri="sip:4000@10.10.197.205:5060",response="f54ba863
cf7a289859ecc5edb1
dd579f",nonce="1hiiLaZV3I9Ow0LXu+0JZVHNZEacpYZ1",algorithm=MD5
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.197.210
s=SIP Call
c=IN IP4 10.10.193.223
t=0 0
m=audio 25166 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

[11] SUBSCRIBE sip:4000@10.10.197.205:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK7ff13965
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 103 SUBSCRIBE
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:52:57 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Expires: 7200
Contact: <sip:10.10.197.210:5060>
Authorization: Digest
```

```
username="sipuser4",realm="siptrunk4",uri="sip:4000@10.10.197.205:5060",response="240b5194
db28aaaf091f97717e
316582",nonce="1hiiLaZV3I9Ow0LXu+0JZVHNZEacpYZ1",algorithm=MD5
Accept: application/kpml-response+xml
Content-Type: application/kpml-request+xml
Content-Length: 213
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<kpml-request version="1.0">
 <pattern interdigittimer="500000" persist="persist">
 <regex tag="dtmf">[x*#ABCD]</regex>
 </pattern>
</kpml-request>

[12] SUBSCRIBE sip:10.10.197.210:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK40e9aadc
From: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
To: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 101 SUBSCRIBE
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:52:57 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Expires: 7200
Contact: <sip:4000@10.10.197.205:5060>
Accept: application/kpml-response+xml
Content-Type: application/kpml-request+xml
Content-Length: 213
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<kpml-request version="1.0">
 <pattern interdigittimer="500000" persist="persist">
 <regex tag="dtmf">[x*#ABCD]</regex>
 </pattern>
</kpml-request>

[13] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK40e9aadc
From: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
To: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
Date: Wed, 15 Feb 2006 16:52:57 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 101 SUBSCRIBE
Content-Length: 0
Contact: <sip:10.10.197.210:5060>
Expires: 3600

[14] NOTIFY sip:4000@10.10.197.205:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK77e764ec
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 104 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:52:57 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Subscription-State: active;expires=3600
Contact: <sip:10.10.197.210:5060>
Authorization: Digest
username="sipuser4",realm="siptrunk4",uri="sip:4000@10.10.197.205:5060",response="be2e3bef
add030463e385484be
```

```
c11f1f",nonce="1hiiLaZV3I9Ow0LXu+0JZVHNZEacpYZ1",algorithm=MD5
Content-Length: 0

[15] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK7ff13965
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
Date: Wed, 15 Feb 2006 16:52:57 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 103 SUBSCRIBE
Content-Length: 0
Contact: <sip:4000@10.10.197.205:5060>
Expires: 3600

[16] NOTIFY sip:10.10.197.210:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK636e6b20
From: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
To: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Wed, 15 Feb 2006 16:52:57 GMT
User-Agent: Cisco-CCM5.0
Event: kpml
Subscription-State: active;expires=3600
Contact: <sip:4000@10.10.197.205:5060>
Content-Length: 0

[17] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK636e6b20
From: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
To: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
Date: Wed, 15 Feb 2006 16:52:57 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 102 NOTIFY
Content-Length: 0

[18] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.197.210:5060;branch=z9hG4bK77e764ec
From: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
To: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
Date: Wed, 15 Feb 2006 16:52:57 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 104 NOTIFY
Content-Length: 0

[19] INVITE sip:5000@10.10.197.210:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK396208b8
Remote-Party-ID: <sip:4000@10.10.197.205>;party=calling;screen=yes;privacy=off
From: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
To: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
Date: Wed, 15 Feb 2006 16:52:57 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 2158705792-1060199526-4-3452244652
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:4000@10.10.197.205:5060>
```

```
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 10.10.197.205
s=SIP Call
c=IN IP4 10.10.197.211
t=0 0
m=audio 17668 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[20] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK396208b8
From: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
To: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
Date: Wed, 15 Feb 2006 16:52:57 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 103 INVITE
Allow-Events: presence, kpml
Content-Length: 0

[21] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK396208b8
From: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
To: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
Date: Wed, 15 Feb 2006 16:52:57 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:5000@10.10.197.210>;party=called;screen=yes;privacy=off
Contact: <sip:4000@10.10.197.210:5060>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 216
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.197.210
s=SIP Call
c=IN IP4 10.10.193.223
t=0 0
m=audio 25166 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[22] ACK sip:4000@10.10.197.210:5060 SIP/2.0

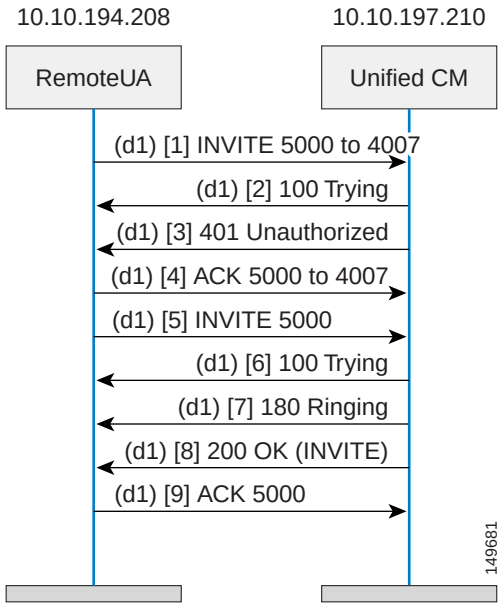
Via: SIP/2.0/UDP 10.10.197.205:5060;branch=z9hG4bK77895232
From: <sip:4000@10.10.197.205>;tag=eaa25bae-4088-4f5d-9b63-cba351127844-30240727
To: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30239410
Date: Wed, 15 Feb 2006 16:52:57 GMT
Call-ID: 80ab3c80-3f315c66-3-d2c512ac@10.10.197.210
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

Cisco Unified CallManager Authenticates Incoming Request

When a SIP trunk receives an incoming request, if authentication is enabled for this trunk, Cisco Unified CallManager 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 priviledges against the username. Unified CM will return 403 if authorization fails.

- Configuration:
  - Node = Unified CM, IP = 10.10.197.210
  - Node = RemoteUA, IP = 10.10.194.208
- Scenario:
  - Remote phone 4007 calls a Unified CM phone 5000 through SIP trunk
  - Unified CM sends back 401
  - Since the INVITE does not have the Authorization header, 4007 sends new INVITE with Authorization header
  - Unified CM checks the Authorization header with its configured user credentials
  - Authentication passes, call moves on

CM Authenticates Incoming Request




```
[1] INVITE sip:5000@10.10.197.210 SIP/2.0

Via: SIP/2.0/UDP 10.10.194.208:5060;branch=z9hG4bK4ddfa5a4
From: "4007" <sip:4007@10.10.197.210>;tag=000f24c6a16f003b4500f93c-3123f0ca
To: <sip:5000@10.10.197.210>
Call-ID: 000f24c6-a16f0015-26cbd150-74bd46de@10.10.194.208
CSeq: 101 INVITE
User-Agent: CSCO/7
Contact: <sip:4007@10.10.194.208:5060>
Expires: 180
```

```
Content-Type: application/sdp
Content-Length: 251
Accept: application/sdp
Remote-Party-ID: "4007"
<sip:4007@10.10.194.208>;party=calling;id-type=subscriber;privacy=off;screen=no
v=0
o=Cisco-SIPUA 10809 11902 IN IP4 10.10.194.208
s=SIP Call
c=IN IP4 10.10.194.208
t=0 0
m=audio 32130 RTP/AVP 0 8 18 101
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

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.194.208:5060;branch=z9hG4bK4ddfa5a4
From: "4007" <sip:4007@10.10.197.210>;tag=000f24c6a16f003b4500f93c-3123f0ca
To: <sip:5000@10.10.197.210>
Date: Wed, 15 Feb 2006 16:16:39 GMT
Call-ID: 000f24c6-a16f0015-26cbd150-74bd46de@10.10.194.208
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[3] SIP/2.0 401 Unauthorized

Via: SIP/2.0/UDP 10.10.194.208:5060;branch=z9hG4bK4ddfa5a4
From: "4007" <sip:4007@10.10.197.210>;tag=000f24c6a16f003b4500f93c-3123f0ca
To: <sip:5000@10.10.197.210>;tag=1849098254
Date: Wed, 15 Feb 2006 16:16:39 GMT
Call-ID: 000f24c6-a16f0015-26cbd150-74bd46de@10.10.194.208
CSeq: 101 INVITE
Allow-Events: presence
WWW-Authenticate: DIGEST realm="siptrunk4ch", nonce="ixQM6XDLJ9l/Vgp6hwkaVVYtMvGC+tww",
algorithm=MD5
Content-Length: 0

[4] ACK sip:5000@10.10.197.210 SIP/2.0

Via: SIP/2.0/UDP 10.10.194.208:5060;branch=z9hG4bK4ddfa5a4
From: "4007" <sip:4007@10.10.197.210>;tag=000f24c6a16f003b4500f93c-3123f0ca
To: <sip:5000@10.10.197.210>;tag=1849098254
Call-ID: 000f24c6-a16f0015-26cbd150-74bd46de@10.10.194.208
CSeq: 101 ACK
Content-Length: 0

[5] INVITE sip:5000@10.10.197.210 SIP/2.0

Via: SIP/2.0/UDP 10.10.194.208:5060;branch=z9hG4bK5b91c555
From: "4007" <sip:4007@10.10.197.210>;tag=000f24c6a16f003b4500f93c-3123f0ca
To: <sip:5000@10.10.197.210>
Call-ID: 000f24c6-a16f0015-26cbd150-74bd46de@10.10.194.208
CSeq: 102 INVITE
User-Agent: CSCO/7
Contact: <sip:4007@10.10.194.208:5060>
Authorization: Digest
username="2222",realm="siptrunk4ch",uri="sip:10.10.197.210",response="71c79689dffe66046527
21ffdd238dbc",nonc
e="ixQM6XDLJ9l/Vgp6hwkaVVYtMvGC+tww",algorithm=MD5
Expires: 180
```

```
Content-Type: application/sdp
Content-Length: 251
Remote-Party-ID: "4007"
<sip:4007@10.10.194.208>;party=calling;id-type=subscriber;privacy=off;screen=no
v=0
o=Cisco-SIPUA 10809 11902 IN IP4 10.10.194.208
s=SIP Call
c=IN IP4 10.10.194.208
t=0 0
m=audio 32130 RTP/AVP 0 8 18 101
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

[6] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.194.208:5060;branch=z9hG4bK5b91c555
From: "4007" <sip:4007@10.10.197.210>;tag=000f24c6a16f003b4500f93c-3123f0ca
To: <sip:5000@10.10.197.210>
Date: Wed, 15 Feb 2006 16:16:40 GMT
Call-ID: 000f24c6-a16f0015-26cbd150-74bd46de@10.10.194.208
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0

[7] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.194.208:5060;branch=z9hG4bK5b91c555
From: "4007" <sip:4007@10.10.197.210>;tag=000f24c6a16f003b4500f93c-3123f0ca
To: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30232141
Date: Wed, 15 Feb 2006 16:16:40 GMT
Call-ID: 000f24c6-a16f0015-26cbd150-74bd46de@10.10.194.208
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:5000@10.10.197.210>;party=called;screen=yes;privacy=off
Contact: <sip:5000@10.10.197.210:5060>
Content-Length: 0

[8] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.194.208:5060;branch=z9hG4bK5b91c555
From: "4007" <sip:4007@10.10.197.210>;tag=000f24c6a16f003b4500f93c-3123f0ca
To: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30232141
Date: Wed, 15 Feb 2006 16:16:40 GMT
Call-ID: 000f24c6-a16f0015-26cbd150-74bd46de@10.10.194.208
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:5000@10.10.197.210>;party=called;screen=yes;privacy=off
Contact: <sip:5000@10.10.197.210:5060>
Content-Type: application/sdp
Content-Length: 216
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.197.210
s=SIP Call
c=IN IP4 10.10.193.223
t=0 0
m=audio 20664 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
```

```
a=fmtp:101 0-15

[9] ACK sip:5000@10.10.197.210:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.194.208:5060;branch=z9hG4bK03cfec82
From: "4007" <sip:4007@10.10.197.210>;tag=000f24c6a16f003b4500f93c-3123f0ca
To: <sip:5000@10.10.197.210>;tag=ed4bc845-43dd-4fa9-8368-75d52321e0c0-30232141
Call-ID: 000f24c6-a16f0015-26cbd150-74bd46de@10.10.194.208
CSeq: 102 ACK
User-Agent: CSCO/7
Authorization: Digest
username="2222",realm="siptrunk4ch",uri="sip:10.10.197.210",response="71c79689dffe66046527
21ffdd238dbc",nonc
e="ixQM6XDLJ9l/Vgp6hwkaVVYtMvGC+tww",algorithm=MD5
Content-Length: 0
```

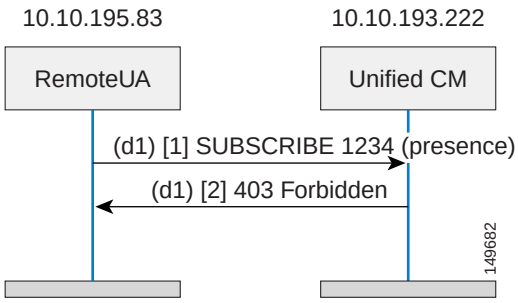
Access Control List

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 = 10.10.193.222
  - Node = RemoteUA, IP = 10.10.195.83

Access Control List, Deny Presence Subscription




```
[1] SUBSCRIBE sip:1234@10.10.193.222:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.195.83:5060
To: <sip:1234@10.10.193.222:5060>
From: <sip:5678@10.10.195.83:5060>;tag=1
Call-ID: 1-21686@10.10.195.83
CSeq: 17766 SUBSCRIBE
Max-Forwards: 70
Event: presence
Accept: application/cpim-pidf+xml
Contact: sip:5678@10.10.195.83:5060
Expires: 600
Content-Length: 0

[2] SIP/2.0 403 Forbidden

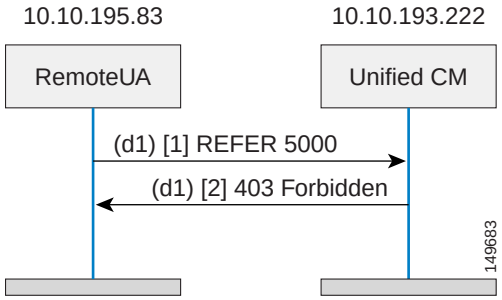
Via: SIP/2.0/UDP 10.10.195.83:5060
From: <sip:5678@10.10.195.83:5060>;tag=1
To: <sip:1234@10.10.193.222:5060>;tag=2049042051
Call-ID: 1-21686@10.10.195.83
CSeq: 17766 SUBSCRIBE
Content-Length: 0
```

Access Control List, Deny Out of Dialog REFER

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 = 10.10.193.222
  - Node = RemoteUA, IP = 10.10.195.83

Access Control List, Deny Out of Dialog REFER




```
[1] REFER sip:5000@10.10.193.222:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.195.83:5060
From: 1100 <sip:1100@10.10.195.83:5060>;tag=1
To: <sip:5000@10.10.193.222:5060>
Call-ID: 1-21604@10.10.195.83
Cseq: 103 REFER
Contact: <sip:1100@10.10.195.83:5060>
Refer-To: <sip:3100802@10.10.193.100>
Referred-By: <sip:1234@whatever.com>
Max-Forwards: 70
Subject: Performance Test
Content-Length: 0

[2] SIP/2.0 403 Forbidden

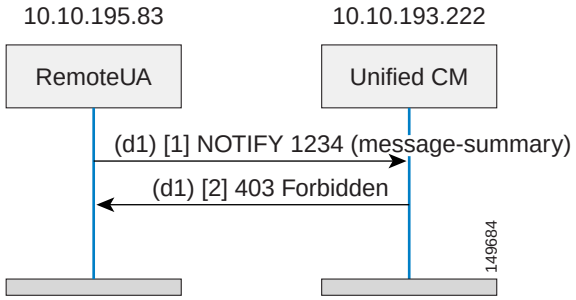
Via: SIP/2.0/UDP 10.10.195.83:5060
From: 1100 <sip:1100@10.10.195.83:5060>;tag=1
To: <sip:5000@10.10.193.222:5060>;tag=1470042773
Date: Tue, 5 Jul 2005 18:31:23 GMT
Call-ID: 1-21604@10.10.195.83
CSeq: 103 REFER
Content-Length: 0
Contact: <sip:5000@10.10.193.222:5060>
```

Access Control List, Deny Unsolicited NOTIFY

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 = 10.10.193.222
  - Node = RemoteUA, IP = 10.10.195.83

Access Control List, Deny Unsolicited NOTIFY




```
[1] NOTIFY sip:1234@10.10.193.222:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.195.83:5060
To: <sip:1234@10.10.193.222:5060>
From: "Voicemail" <sip:5678@10.10.195.83:5060>;tag=1
Call-ID: 1-21741@10.10.195.83
Max-Forwards: 70
CSeq: 101 NOTIFY
Contact: sip:5678@10.10.195.83:5060
Event: message-summary
Content-Type: text/plain
Content-Length: 23
Messages-Waiting: yes

[2] SIP/2.0 403 Forbidden

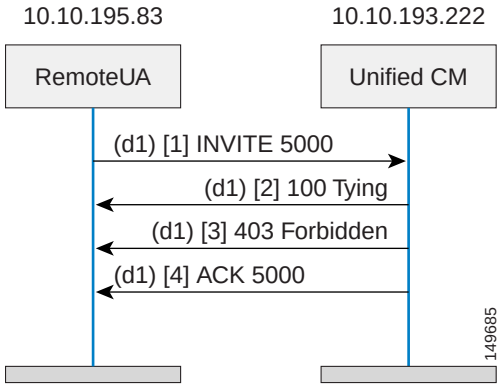
Via: SIP/2.0/UDP 10.10.195.83:5060
From: "Voicemail" <sip:5678@10.10.195.83:5060>;tag=1
To: <sip:1234@10.10.193.222:5060>;tag=757766921
Call-ID: 1-21741@10.10.195.83
CSeq: 101 NOTIFY
Content-Length: 0
```

Access Control List, Deny INVITE with Replaces Header

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 = 10.10.193.222
  - Node = RemoteUA, IP = 10.10.195.83

Access Control List, Deny INVITE with Replaces Header




```
[1] INVITE sip:5000@10.10.193.222:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.195.83:5060
From: <sip:4000@10.10.195.83:5060>;tag=1
To: <sip:5000@10.10.193.222:5060>
Call-ID: 1-21473@10.10.195.83
Cseq: 1 INVITE
Contact: sip:4000@10.10.195.83:5060
Max-Forwards: 70
Subject: Performance Test
Content-Type: application/sdp
Replaces: 425928@bobster.example.org;to-tag=7743;from-tag=6472
Content-Length: 320
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

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.195.83:5060
From: <sip:4000@10.10.195.83:5060>;tag=1
To: sut <sip:5000@10.10.193.222:5060>
Date: Tue, 5 Jul 2005 18:25:02 GMT
```

```
Call-ID: 1-21473@10.10.195.83
CSeq: 1 INVITE
Content-Length: 0

[3] SIP/2.0 403 Forbidden

Via: SIP/2.0/UDP 10.10.195.83:5060
From: <sip:4000@10.10.195.83:5060>;tag=1
To: sut <sip:5000@10.10.193.222:5060>;tag=673966968
Date: Tue, 5 Jul 2005 18:25:02 GMT
Call-ID: 1-21473@10.10.195.83
CSeq: 1 INVITE
Content-Length: 0

[4] ACK sip:5000@10.10.193.222:5060 SIP/2.0

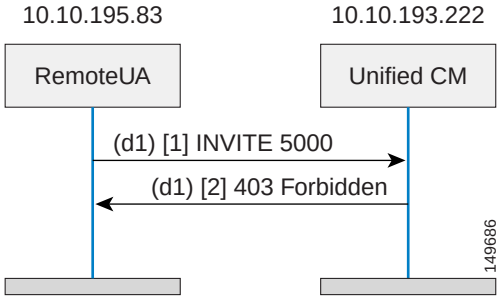
Via: SIP/2.0/UDP 10.10.195.83:5060
From: <sip:4000@10.10.195.83:5060>;tag=1
To: sut <sip:5000@10.10.193.222:5060>;tag=673966968
Call-ID: 1-21473@10.10.195.83
CSeq: 1 ACK
Contact: sip:4000@10.10.195.83:5060
Max-Forwards: 70
Subject: Performance Test
Content-Length: 0
```

Access Control List, Deny REFER with Replaces Header

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 = 10.10.193.222
  - Node = RemoteUA, IP = 10.10.195.83

Access Control List, Deny REFER with Replaces Header




```
[1] REFER sip:5000@10.10.193.222:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.195.83:5060
From: 1100 <sip:1100@10.10.195.83:5060>;tag=1
To: <sip:5000@10.10.193.222:5060>
Call-ID: 1-21634@10.10.195.83
Cseq: 103 REFER
Contact: <sip:1100@10.10.195.83:5060>
Refer-To: <sip:3100802@10.10.193.100?Replaces=2ab9200-1e518c9d-3-17c712ac@10.10.199.23;
to-tag=000c30d4c306004f5d0be4b0-3ff79b67;from-tag=StandAloneCluster-16777220>
Referred-By: <sip:1234@whatever.com>
Max-Forwards: 70
Subject: Performance Test
```

```
Content-Length: 0

[2] SIP/2.0 403 Forbidden

Via: SIP/2.0/UDP 10.10.195.83:5060
From: 1100 <sip:1100@10.10.195.83:5060>;tag=1
To: <sip:5000@10.10.193.222:5060>;tag=1882428986
Date: Tue, 5 Jul 2005 18:33:19 GMT
Call-ID: 1-21634@10.10.195.83
CSeq: 103 REFER
Content-Length: 0
Contact: <sip:5000@10.10.193.222:5060>
```

Resource Reservation Protocol

Outgoing RSVP Call through SIP Trunk

The scenario for an outgoing call on Cisco Unified CallManager's SIP Trunk from the SCCP phone (DN:4501).

The SCCP phone and the SIPTrunk device are in different locations and having RSVP policy=Mandatory between them.

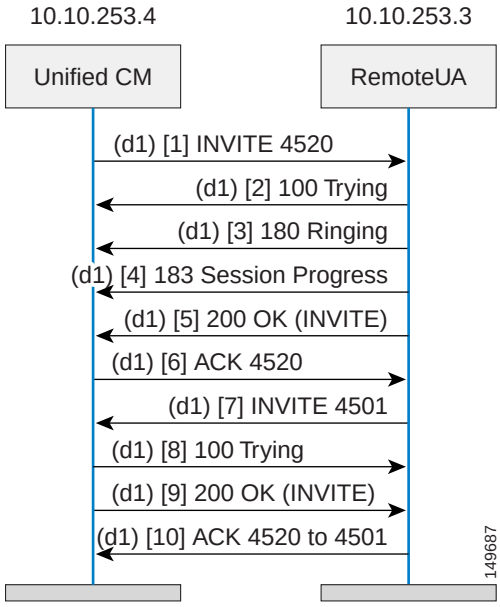
A pair of RSVP agents shall be allocated which would provide RSVP media path as following:

SCCP<--unreserved media->RSVPAgenttrunk(10.10.195.249)<--reserved media path--->RSVPAgentsccp(10.10.195.250)<--unreserved media->remoteUA

The RSVP reservation is relevant only between the caller SCCP & outgoing SIPTrunk device. The remote is not made aware of the reservation.

- Configuration:
  - Node = Unified CM, IP = 10.10.253.4
  - Node = RemoteUA, IP = 10.10.253.3

Outgoing RSVP Call through SIP Trunk




```
[1] INVITE sip:4520@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK59f140f7
Remote-Party-ID: <sip:4501@10.10.253.4>;party=calling;screen=yes;privacy=off
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129245
To: <sip:4520@10.10.253.3>
Date: Wed, 15 Feb 2006 10:00:55 GMT
Call-ID: f2ff2b00-3f21fbd7-81-4fd4c0a@10.10.253.4
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:4501@10.10.253.4:5060>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.253.4:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK59f140f7
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129245
To: <sip:4520@10.10.253.3>
Date: Wed, 15 Feb 2006 10:00:55 GMT
Call-ID: f2ff2b00-3f21fbd7-81-4fd4c0a@10.10.253.4
CSeq: 101 INVITE
Allow-Events: presence, dialog
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK59f140f7
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129245
To: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513586
Date: Wed, 15 Feb 2006 10:00:55 GMT
```

```
Call-ID: f2ff2b00-3f21fbd7-81-4fd4c0a@10.10.253.4
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog
Remote-Party-ID: "Alert4520" <sip:4520@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4520@10.10.253.3:5060>
Content-Length: 0

[4] SIP/2.0 183 Session Progress

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK59f140f7
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129245
To: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513586
Date: Wed, 15 Feb 2006 10:00:55 GMT
Call-ID: f2ff2b00-3f21fbd7-81-4fd4c0a@10.10.253.4
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Remote-Party-ID: "Alert4520" <sip:4520@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4520@10.10.253.3:5060>
Content-Type: application/sdp
Content-Length: 295
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.3
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

[5] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK59f140f7
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129245
To: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513586
Date: Wed, 15 Feb 2006 10:00:55 GMT
Call-ID: f2ff2b00-3f21fbd7-81-4fd4c0a@10.10.253.4
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Remote-Party-ID: "Caller4520" <sip:4520@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4520@10.10.253.3:5060>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 295
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.3
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

[6] ACK sip:4520@10.10.253.3:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.4:5060;branch=z9hG4bK5694d66a
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129245
To: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513586
Date: Wed, 15 Feb 2006 10:00:55 GMT
Call-ID: f2ff2b00-3f21fbd7-81-4fd4c0a@10.10.253.4
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 225
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.253.4
s=SIP Call
c=IN IP4 10.10.195.250
t=0 0
m=audio 16768 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

[7] INVITE sip:4501@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK8964d39
Remote-Party-ID: "Caller4520" <sip:4520@10.10.253.3>;party=calling;screen=yes;privacy=off
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513586
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129245
Date: Wed, 15 Feb 2006 10:00:56 GMT
Call-ID: f2ff2b00-3f21fbd7-81-4fd4c0a@10.10.253.4
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 4076808960-1059191767-28861-66931722
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:4520@10.10.253.3:5060>
Expires: 180
Allow-Events: presence, dialog, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 211
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.11
t=0 0
m=audio 23698 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[8] SIP/2.0 100 Trying
```

```
Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK8964d39
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513586
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129245
Date: Wed, 15 Feb 2006 10:00:56 GMT
Call-ID: f2ff2b00-3f21fbd7-81-4fd4c0a@10.10.253.4
CSeq: 103 INVITE
Allow-Events: presence, kpml
Content-Length: 0

[9] SIP/2.0 200 OK

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK8964d39
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513586
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129245
Date: Wed, 15 Feb 2006 10:00:56 GMT
Call-ID: f2ff2b00-3f21fbd7-81-4fd4c0a@10.10.253.4
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:4501@10.10.253.4>;party=called;screen=yes;privacy=off
Contact: <sip:4520@10.10.253.4:5060>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 213
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.253.4
s=SIP Call
c=IN IP4 10.10.195.250
t=0 0
m=audio 16768 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[10] ACK sip:4520@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/UDP 10.10.253.3:5060;branch=z9hG4bK291c7d95
From: <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513586
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129245
Date: Wed, 15 Feb 2006 10:00:56 GMT
Call-ID: f2ff2b00-3f21fbd7-81-4fd4c0a@10.10.253.4
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence, dialog, kpml
Content-Length: 0
```

Incoming RSVP SIP Trunk Call

The scenario for an incoming call on Cisco Unified CallManager's SIP Trunk for the SCCP phone (DN:4501).

The SCCP phone and the SIPTrunk device are in different locations and having RSVP policy=Mandatory between them.

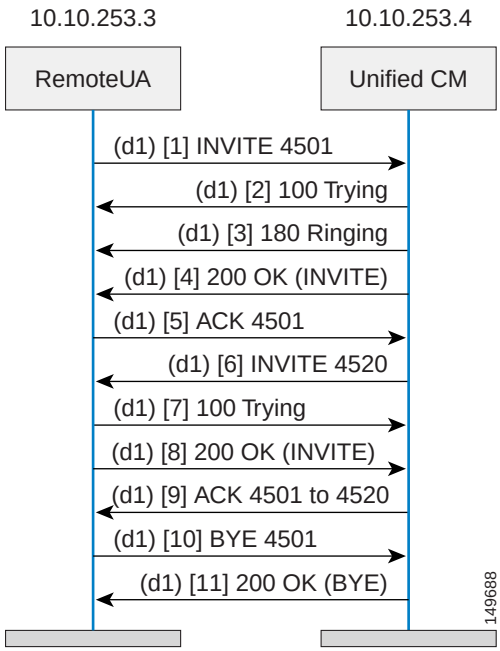
A pair of RSVP agents shall be allocated which would provide RSVP media path as following:

remoteUA <--unreserved media--> RSVPAgenttrunk(10.10.195.250) <--reserved media path --> RSVPAgentsccp(10.10.195.249) <-unreserved media--> SCCP

The RSVP reservation is relevant only between the SIPTrunk device leg & SCCP phone. The remoteis not involved or made aware of the reservation.

- Configuration:
  - Node = Unified CM, IP = 10.10.253.4
  - Node = RemoteUA, IP = 10.10.253.3

Incoming RSVP SIP Trunk Call




```
[1] INVITE sip:4501@10.10.253.4:5060 SIP/2.0

Via: SIP/2.0/TCP 10.10.253.3;branch=z9hG4bK4ee2ad6e
Remote-Party-ID: "Caller4520" <sip:4520@10.10.253.3>;party=calling;screen=yes;privacy=off
From: "Caller4520"
<sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513589
To: <sip:4501@10.10.253.4>
Date: Wed, 15 Feb 2006 10:03:10 GMT
Call-ID: 43768880-3f21fc5e-70c0-3fd4c0a@10.10.253.3
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
```

```
Contact: <sip:4520@10.10.253.3:5060;transport=tcp>
Expires: 180
Allow-Events: presence, dialog, kpml
Call-Info: <sip:10.10.253.3:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Max-Forwards: 70
Content-Length: 0

[2] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.253.3;branch=z9hG4bK4ee2ad6e
From: "Caller4520"
<sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513589
To: <sip:4501@10.10.253.4>
Date: Wed, 15 Feb 2006 10:03:10 GMT
Call-ID: 43768880-3f21fc5e-70c0-3fd4c0a@10.10.253.3
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[3] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.253.3;branch=z9hG4bK4ee2ad6e
From: "Caller4520"
<sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513589
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129248
Date: Wed, 15 Feb 2006 10:03:10 GMT
Call-ID: 43768880-3f21fc5e-70c0-3fd4c0a@10.10.253.3
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Remote-Party-ID: <sip:4501@10.10.253.4>;party=called;screen=yes;privacy=off
Contact: <sip:4501@10.10.253.4:5060;transport=tcp>
Content-Length: 0

[4] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.253.3;branch=z9hG4bK4ee2ad6e
From: "Caller4520"
<sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513589
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129248
Date: Wed, 15 Feb 2006 10:03:10 GMT
Call-ID: 43768880-3f21fc5e-70c0-3fd4c0a@10.10.253.3
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Remote-Party-ID: <sip:4501@10.10.253.4>;party=called;screen=yes;privacy=off
Contact: <sip:4501@10.10.253.4:5060;transport=tcp>
Session-Expires: 1800;refresher=uas
Require: timer
Content-Type: application/sdp
Content-Length: 295
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.253.4
s=SIP Call
c=IN IP4 10.10.253.4
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
```

```
[5] ACK sip:4501@10.10.253.4:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.253.3;branch=z9hG4bK7695d507
From: "Caller4520"
<sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513589
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129248
Date: Wed, 15 Feb 2006 10:03:10 GMT
Call-ID: 43768880-3f21fc5e-70c0-3fd4c0a@10.10.253.3
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, dialog, kpml
Content-Type: application/sdp
Content-Length: 223
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.11
t=0 0
m=audio 20968 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

[6] INVITE sip:4520@10.10.253.3:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.253.4;branch=z9hG4bK1b28ae87
Remote-Party-ID: <sip:4501@10.10.253.4>;party=calling;screen=yes;privacy=off
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129248
To: "Caller4520" <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513589
Date: Wed, 15 Feb 2006 10:03:13 GMT
Call-ID: 43768880-3f21fc5e-70c0-3fd4c0a@10.10.253.3
Supported: timer,replaces
Min-SE: 1800
Cisco-Guid: 1131841664-1059191902-133-83708938
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:4501@10.10.253.4:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires: 1800;refresher=uac
Content-Type: application/sdp
Content-Length: 213
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.253.4
s=SIP Call
c=IN IP4 10.10.195.250
t=0 0
m=audio 18940 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[7] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.253.4;branch=z9hG4bK1b28ae87
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129248
To: "Caller4520" <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513589
Date: Wed, 15 Feb 2006 10:03:13 GMT
Call-ID: 43768880-3f21fc5e-70c0-3fd4c0a@10.10.253.3
CSeq: 103 INVITE
```

```
Allow-Events: presence, dialog, kpml
Content-Length: 0

[8] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.253.4;branch=z9hG4bK1b28ae87
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129248
To: "Caller4520" <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513589
Date: Wed, 15 Feb 2006 10:03:13 GMT
Call-ID: 43768880-3f21fc5e-70c0-3fd4c0a@10.10.253.3
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, dialog, kpml
Remote-Party-ID: "Caller4520" <sip:4520@10.10.253.3>;party=called;screen=yes;privacy=off
Contact: <sip:4501@10.10.253.3:5060;transport=tcp>
Session-Expires: 1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 211
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.253.3
s=SIP Call
c=IN IP4 10.10.253.11
t=0 0
m=audio 20968 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[9] ACK sip:4501@10.10.253.3:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.253.4;branch=z9hG4bK11bb6326
From: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129248
To: "Caller4520" <sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513589
Date: Wed, 15 Feb 2006 10:03:13 GMT
Call-ID: 43768880-3f21fc5e-70c0-3fd4c0a@10.10.253.3
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence, kpml
Content-Length: 0

[10] BYE sip:4501@10.10.253.4:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.253.3;branch=z9hG4bK70d7cb29
From: "Caller4520"
<sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513589
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129248
Date: Wed, 15 Feb 2006 10:03:13 GMT
Call-ID: 43768880-3f21fc5e-70c0-3fd4c0a@10.10.253.3
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 104 BYE
Content-Length: 0

[11] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.253.3;branch=z9hG4bK70d7cb29
From: "Caller4520"
<sip:4520@10.10.253.3>;tag=7b42a936-ba2d-4980-b674-fb7d79cc9280-23513589
To: <sip:4501@10.10.253.4>;tag=1b15671c-e6a2-4e16-bb03-7cd50862f491-30129248
Date: Wed, 15 Feb 2006 10:04:56 GMT
Call-ID: 43768880-3f21fc5e-70c0-3fd4c0a@10.10.253.3
CSeq: 104 BYE
```

```
Content-Length: 0
```

Click2Dial

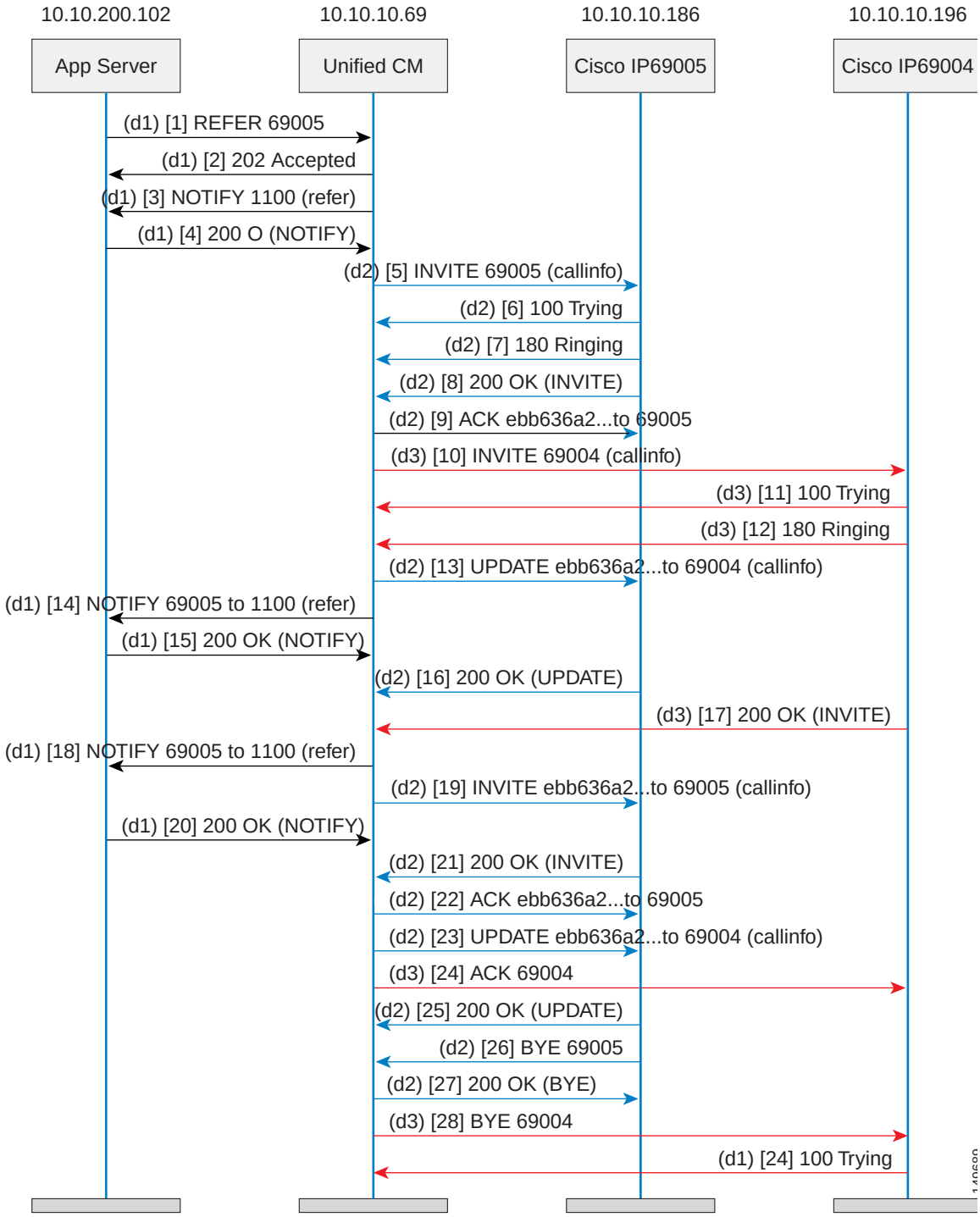
Click2Dial from SIP APP Server to Cisco IP SIP Phones

The following call flow illustrates the SIP messaging that takes place between a SIP APP Server with a click 2 dial that uses the out of dialog Refer to two Cisco Unified CallManager IP SIP phones registered with a Cisco Unified CallManager.

1. SIP APP Server click2dial feature sends Out Of Dailog Refer to connect Cisco Unified CallManager IP SIP phone 69005 with Cisco Unified CallManager IP SIP phone 69004 over the Cisco Unified CallManager SIP Trunk
2. Cisco IP SCCP phone 69005 Rings first and answers the call
3. Cisco IP SCCP phone 69004 Rings first and answers the call
4. SIP APP Server gets notification of the call progress
5. Cisco IP SCCP phone 69005 and Cisco IP SCCP phone 69004 talking
6. Cisco IP SCCP phone 69005 ends the call

- Configuration:
  - Node = Unified CM, IP = 10.10.10.69
  - Node = App Server, IP = 10.10.200.102
  - Node = Cisco IP 69005, IP = 10.10.10.186
  - Node = Cisco IP 69004, IP = 10.10.10.196

Click2Dial from SIP APP Server to Cisco IP SIP Phones



```
[1] REFER sip:69005@10.10.10.69:5060 SIP/2.0
```

```
Via: SIP/2.0/UDP 10.10.200.102:5886
From: 1100 <sip:1100@10.10.200.102:5886>;tag=1
To: <sip:69005@10.10.10.69:5060>
Call-ID: 1.18048.10.10.200.102@sipp.call.id
Cseq: 103 REFER
Contact: <sip:1100@10.10.200.102:5886>
Refer-To: <sip:69004@10.10.10.69:5060>
Referred-By: <sip:1100@whatever.com>
Max-Forwards: 70
Subject: Performance Test
Content-Length: 0

[2] SIP/2.0 202 Accepted

Via: SIP/2.0/UDP 10.10.200.102:5886
From: 1100 <sip:1100@10.10.200.102:5886>;tag=1
To: <sip:69005@10.10.10.69:5060>;tag=325004773
Date: Fri, 10 Feb 2006 18:45:48 GMT
Call-ID: 1.18048.10.10.200.102@sipp.call.id
CSeq: 103 REFER
Content-Length: 0
Contact: <sip:69005@10.10.10.69:5060>

[3] NOTIFY sip:1100@10.10.200.102:5886 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK38c30b10
From: <sip:69005@10.10.10.69:5060>;tag=325004773
To: 1100 <sip:1100@10.10.200.102:5886>;tag=1
Call-ID: 1.18048.10.10.200.102@sipp.call.id
CSeq: 101 NOTIFY
Max-Forwards: 70
Date: Fri, 10 Feb 2006 18:45:48 GMT
User-Agent: Cisco-CCM5.0
Event: refer
Subscription-State: active;expires=60
Contact: <sip:69005@10.10.10.69:5060>
Content-Type: message/sipfrag;version=2.0
Content-Length: 20
SIP/2.0 100 Trying

[4] SIP/2.0 200 Ok

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK38c30b10
From: <sip:69005@10.10.10.69:5060>;tag=325004773
To: 1100 <sip:1100@10.10.200.102:5886>;tag=1
Call-ID: 1.18048.10.10.200.102@sipp.call.id
CSeq: 101 NOTIFY
User-Agent: CSCO/5
Contact: <sip:69005@10.10.200.102:5886>
Content-Length: 0

[5] INVITE sip:69005@10.10.10.186:51985 SIP/2.0

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK71eff40e
Remote-Party-ID: "1100 " <sip:1100@10.10.10.69>;party=calling;screen=yes;privacy=off
From: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
To: <sip:69005@10.10.10.186>
Date: Fri, 10 Feb 2006 18:45:48 GMT
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Expires: 180
Allow-Events: presence
```

```
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= from;
call-instance= 1
Alert-Info: <file://Bellcore-dr1/>
Contact: <sip:ebb636a2-a9b0-4ccc-9e9d-117c835bbbf1@10.10.10.69:5060>
Max-Forwards: 70
Content-Length: 0

[6] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK71eff40e
From: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
To: <sip:69005@10.10.10.186>
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
Date: Fri, 10 Feb 2006 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.0
Contact: <sip:ebb636a2-a9b0-4ccc-9e9d-117c835bbbf1@10.10.10.186:51985;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "69005"
<sip:69005@10.10.10.186>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 0

[7] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK71eff40e
From: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
To: <sip:69005@10.10.10.186>;tag=0015f9270fc0000f5f600d6b-bbd940d9
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
Date: Fri, 10 Feb 2006 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.0
Contact: <sip:ebb636a2-a9b0-4ccc-9e9d-117c835bbbf1@10.10.10.186:51985;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "69005"
<sip:69005@10.10.10.186>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 0

[8] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK71eff40e
From: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
To: <sip:69005@10.10.10.186>;tag=0015f9270fc0000f5f600d6b-bbd940d9
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
Date: Fri, 10 Feb 2006 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.0
Contact: <sip:ebb636a2-a9b0-4ccc-9e9d-117c835bbbf1@10.10.10.186:51985;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "69005"
<sip:69005@10.10.10.186>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 277
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 17918 0 IN IP4 10.10.10.186
s=SIP Call
t=0 0
m=audio 22750 RTP/AVP 0 8 18 101
c=IN IP4 10.10.10.186
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
```

```
a=rtpmap:18 G729/0
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv

[9] ACK sip:ebb636a2-a9b0-4ccc-9e9d-117c835bbbf1@10.10.10.186:51985;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK14085068
From: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
To: <sip:69005@10.10.10.186>;tag=0015f9270fc0000f5f600d6b-bbd940d9
Date: Fri, 10 Feb 2006 18:45:48 GMT
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 169
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.10.69
t=0 0
m=audio 4000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive

[10] INVITE sip:69004@10.10.10.196:2821 SIP/2.0

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK6f1dcf4b
Remote-Party-ID: <sip:69005@10.10.10.69>;party=calling;screen=yes;privacy=off
From: <sip:69005@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538869
To: <sip:69004@10.10.10.196>
Date: Fri, 10 Feb 2006 18:45:51 GMT
Call-ID: 74029f00-3ec1df5f-1e-45c712ac@10.10.10.69
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Expires: 180
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= from;
call-instance= 1
Alert-Info: <file://Bellcore-dr1/>
Contact: <sip:721fa430-dd94-4909-99eb-19c520584a7a@10.10.10.69:5060>
Max-Forwards: 70
Content-Length: 0

[11] SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK6f1dcf4b
From: <sip:69005@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538869
To: <sip:69004@10.10.10.196>
Call-ID: 74029f00-3ec1df5f-1e-45c712ac@10.10.10.69
Date: Sun, 00 Jan 1900 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G-#30006/8.0
Contact: <sip:69004@10.10.10.196:2821;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "69004"
<sip:69004@10.10.10.196>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog,refer
```

```
Content-Length: 0

[12] SIP/2.0 180 Ringing

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK6f1dcf4b
From: <sip:69005@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538869
To: <sip:69004@10.10.10.196>;tag=000e9bb6525b000c00004d9e-00005c75
Call-ID: 74029f00-3ec1df5f-1e-45c712ac@10.10.10.69
Date: Sun, 00 Jan 1900 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G-#30006/8.0
Contact: <sip:69004@10.10.10.196:2821;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "69004"
<sip:69004@10.10.10.196>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog,refer
Content-Length: 0

[13] UPDATE sip:ebb636a2-a9b0-4ccc-9e9d-117c835bbbf1@10.10.10.186:51985;transport=tcp
SIP/2.0

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK425741c2
From: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
To: <sip:69005@10.10.10.186>;tag=0015f9270fc0000f5f600d6b-bbd940d9
Date: Fri, 10 Feb 2006 18:45:48 GMT
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 103 UPDATE
Contact: <sip:69005@10.10.10.69:5060;transport=tcp>
Remote-Party-ID: <sip:69004@10.10.10.69>;party=calling;screen=yes;privacy=off
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= to;
ui-state= ringout;
call-instance= 1
Content-Length: 0

[14] NOTIFY sip:69005@10.10.200.102:5886 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK1f715112
From: <sip:69005@10.10.10.69:5060>;tag=325004773
To: 1100 <sip:1100@10.10.200.102:5886>;tag=1
Call-ID: 1.18048.10.10.200.102@sipp.call.id
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Fri, 10 Feb 2006 18:45:51 GMT
User-Agent: Cisco-CCM5.0
Event: refer
Subscription-State: active;expires=57
Contact: <sip:69005@10.10.10.69:5060>
Content-Type: message/sipfrag;version=2.0
Content-Length: 21
SIP/2.0 180 Ringing

[15] SIP/2.0 200 Ok

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK1f715112
From: <sip:69005@10.10.10.69:5060>;tag=325004773
To: 1100 <sip:1100@10.10.200.102:5886>;tag=1
Call-ID: 1.18048.10.10.200.102@sipp.call.id
CSeq: 102 NOTIFY
User-Agent: CSCO/5
Contact: <sip:69005@10.10.200.102:5886>
Content-Length: 0

[16] SIP/2.0 200 OK
```

```
Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK425741c2
From: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
To: <sip:69005@10.10.10.186>;tag=0015f9270fc0000f5f600d6b-bbd940d9
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
Date: Fri, 10 Feb 2006 GMT
CSeq: 103 UPDATE
Server: Cisco-CP7970G/8.0
Contact: <sip:ebb636a2-a9b0-4ccc-9e9d-117c835bbbf1@10.10.10.186:51985;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Content-Length: 0

[17] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK6f1dcf4b
From: <sip:69005@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538869
To: <sip:69004@10.10.10.196>;tag=000e9bb6525b000c00004d9e-00005c75
Call-ID: 74029f00-3ec1df5f-1e-45c712ac@10.10.10.69
Date: Sun, 00 Jan 1900 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G-#30006/8.0
Contact: <sip:69004@10.10.10.196:2821;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "69004"
<sip:69004@10.10.10.196>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog,refer
Content-Length: 258
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 8391 0 IN IP4 10.10.10.196
s=SIP Call
t=0 0
m=audio 30046 RTP/AVP 0 8 18 101
c=IN IP4 10.10.10.196
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

[18] NOTIFY sip:69005@10.10.200.102:5886 SIP/2.0

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK74509922
From: <sip:69005@10.10.10.69:5060>;tag=325004773
To: 1100 <sip:1100@10.10.200.102:5886>;tag=1
Call-ID: 1.18048.10.10.200.102@sipp.call.id
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Fri, 10 Feb 2006 18:45:54 GMT
User-Agent: Cisco-CCM5.0
Event: refer
Subscription-State: terminated;reason=noresource
Contact: <sip:69005@10.10.10.69:5060>
Content-Type: message/sipfrag;version=2.0
Content-Length: 16
SIP/2.0 200 OK

[19] INVITE sip:ebb636a2-a9b0-4ccc-9e9d-117c835bbbf1@10.10.10.186:51985;transport=tcp
SIP/2.0

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK3f2b2c53
Remote-Party-ID: <sip:69004@10.10.10.69>;party=calling;screen=yes;privacy=off
```

```
From: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
To: <sip:69005@10.10.10.186>;tag=0015f9270fc0000f5f600d6b-bbd940d9
Date: Fri, 10 Feb 2006 18:45:54 GMT
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
Supported: timer,replaces
Min-SE: 1800
User-Agent: Cisco-CCM5.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:69005@10.10.10.69:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= to;
ui-state= ringout;
call-instance= 1
Content-Length: 0

[20] SIP/2.0 200 Ok

Via: SIP/2.0/UDP 10.10.10.69:5060;branch=z9hG4bK74509922
From: <sip:69005@10.10.10.69:5060>;tag=325004773
To: 1100 <sip:1100@10.10.200.102:5886>;tag=1
Call-ID: 1.18048.10.10.200.102@sipp.call.id
CSeq: 103 NOTIFY
User-Agent: CSCO/5
Contact: <sip:69005@10.10.200.102:5886>
Content-Length: 0

[21] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK3f2b2c53
From: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
To: <sip:69005@10.10.10.186>;tag=0015f9270fc0000f5f600d6b-bbd940d9
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
Date: Fri, 10 Feb 2006 GMT
CSeq: 104 INVITE
Server: Cisco-CP7970G/8.0
Contact: <sip:ebb636a2-a9b0-4ccc-9e9d-117c835bbbf1@10.10.10.186:51985;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "69005"
<sip:69005@10.10.10.186>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 277
Content-Type: application/sdp
Content-Disposition: session;handling=optional
v=0
o=Cisco-SIPUA 17918 1 IN IP4 10.10.10.186
s=SIP Call
t=0 0
m=audio 22750 RTP/AVP 0 8 18 101
c=IN IP4 10.10.10.186
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/0
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv

[22] ACK sip:ebb636a2-a9b0-4ccc-9e9d-117c835bbbf1@10.10.10.186:51985;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK238a637b
From: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
```

```
To: <sip:69005@10.10.10.186>;tag=0015f9270fc0000f5f600d6b-bbd940d9
Date: Fri, 10 Feb 2006 18:45:54 GMT
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 215
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.10.196
t=0 0
m=audio 30046 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[23] UPDATE sip:ebb636a2-a9b0-4ccc-9e9d-117c835bbbf1@10.10.10.186:51985;transport=tcp
SIP/2.0

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK53dc872
From: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
To: <sip:69005@10.10.10.186>;tag=0015f9270fc0000f5f600d6b-bbd940d9
Date: Fri, 10 Feb 2006 18:45:54 GMT
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 105 UPDATE
Contact: <sip:69005@10.10.10.69:5060;transport=tcp>
Remote-Party-ID: <sip:69004@10.10.10.69>;party=calling;screen=yes;privacy=off
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= to;
call-instance= 1
Content-Length: 0

[24] ACK sip:69004@10.10.10.196:2821;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK2fb92320
From: <sip:69005@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538869
To: <sip:69004@10.10.10.196>;tag=000e9bb6525b000c00004d9e-00005c75
Date: Fri, 10 Feb 2006 18:45:51 GMT
Call-ID: 74029f00-3ec1df5f-1e-45c712ac@10.10.10.69
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 215
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.69
s=SIP Call
c=IN IP4 10.10.10.186
t=0 0
m=audio 22750 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[25] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK53dc872
From: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
To: <sip:69005@10.10.10.186>;tag=0015f9270fc0000f5f600d6b-bbd940d9
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
```

```
Date: Fri, 10 Feb 2006 GMT
CSeq: 105 UPDATE
Server: Cisco-CP7970G/8.0
Contact: <sip:ebb636a2-a9b0-4ccc-9e9d-117c835bbbf1@10.10.10.186:51985;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Content-Length: 0

[26] BYE sip:69005@10.10.10.69:5060;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.10.186:51985;branch=z9hG4bKca65367d
From: <sip:69005@10.10.10.186>;tag=0015f9270fc0000f5f600d6b-bbd940d9
To: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
Max-Forwards: 70
Date: Fri, 10 Feb 2006 GMT
CSeq: 102 BYE
User-Agent: Cisco-CP7970G/8.0
Content-Length: 0

[27] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.10.186:51985;branch=z9hG4bKca65367d
From: <sip:69005@10.10.10.186>;tag=0015f9270fc0000f5f600d6b-bbd940d9
To: "1100 " <sip:1100@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538868
Date: Fri, 10 Feb 2006 18:45:59 GMT
Call-ID: 7238db80-3ec1df5c-1c-45c712ac@10.10.10.69
CSeq: 102 BYE
Content-Length: 0

[28] BYE sip:69004@10.10.10.196:2821;transport=tcp SIP/2.0

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK3da2f60e
From: <sip:69005@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538869
To: <sip:69004@10.10.10.196>;tag=000e9bb6525b000c00004d9e-00005c75
Date: Fri, 10 Feb 2006 18:45:51 GMT
Call-ID: 74029f00-3ec1df5f-1e-45c712ac@10.10.10.69
User-Agent: Cisco-CCM5.0
Max-Forwards: 70
CSeq: 103 BYE
Content-Length: 0

[29] SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.10.10.69;branch=z9hG4bK3da2f60e
From: <sip:69005@10.10.10.69>;tag=2cce6bb8-ea3b-4041-b8b4-7e85f98322c0-28538869
To: <sip:69004@10.10.10.196>;tag=000e9bb6525b000c00004d9e-00005c75
Call-ID: 74029f00-3ec1df5f-1e-45c712ac@10.10.10.69
Date: Sun, 00 Jan 1900 GMT
CSeq: 103 BYE
Server: Cisco-CP7970G-#30006/8.0
Content-Length: 0
```



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