CISCO CONFIDENTIAL

Cisco Unified Communications Manager SIP Trunk Messaging Guide (Standard)

For Cisco Unified Communications Manager Release 8.0(1)

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
http://www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Text Part Number: OL-20951-01

CISCO CONFIDENTIAL

These materials are made available by Cisco as a courtesy to provide certain Session Initiation Protocol (SIP) interoperability information. All information is provided "as is" and Cisco disclaims all express or implied warranties regarding these materials. Cisco is not liable for the accuracy or completeness of these materials.

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

CCDE, CCENT, CCSI, Cisco Eos, Cisco Explorer, Cisco HealthPresence, Cisco IronPort, the Cisco logo, Cisco Nurse Connect, Cisco Pulse, Cisco SensorBase, Cisco StackPower, Cisco StadiumVision, Cisco TelePresence, Cisco TrustSec, Cisco Unified Computing System, Cisco WebEx, DCE, Flip Channels, Flip for Good, Flip Mino, Flipshare (Design), Flip Ultra, Flip Video, Flip Video (Design), Instant Broadband, and Welcome to the Human Network are trademarks; Changing the Way We Work, Live, Play, and Learn, Cisco Capital, Cisco Capital (Design), Cisco:Financed (Stylized), Cisco Store, Flip Gift Card, and One Million Acts of Green are service marks; and Access Registrar, Aironet, AllTouch, AsyncOS, Bringing the Meeting To You, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, CCVP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Lumin, Cisco Nexus, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Collaboration Without Limitation, Continuum, EtherFast, EtherSwitch, Event Center, Explorer, Follow Me Browsing, GainMaker, iLYNX, IOS, iPhone, IronPort, the IronPort logo, Laser Link, LightStream, Linksys, MeetingPlace, MeetingPlace Chime Sound, MGX, Networkers, Networking Academy, PCNow, PIX, PowerKEY, PowerPanels, PowerTV, PowerTV (Design), PowerVu, Prisma, ProConnect, ROSA, SenderBase, SMARTnet, Spectrum Expert, StackWise, WebEx, and the WebEx logo are registered trademarks of Cisco and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1002R)

Any Internet Protocol (IP) addresses used in this document are not intended to be actual addresses. Any examples, command display output, and figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses in illustrative content is unintentional and coincidental.

Cisco Unified Communications Manager SIP Trunk Messaging Guide (Standard), Release 8.0(1)
Copyright © 2010, Cisco Systems, Inc. All rights reserved.

CISCO CONFIDENTIAL

CONTENTS

Preface v

Audience v

Organization v

Conventions vi

Obtaining Documentation, Support, and Security Guidelines vi

CHAPTER 1

SIP Standard Trunk Interface 1-1

New and Changed Information 1-1

Backward Compatibility 1-1

Interface Compliance Summary 1-1

SIP Message Fields 1-11

Request Messages 1-11

INVITE 1-11

ACK 1-15

BYE 1-16

CANCEL 1-17

PRACK 1-18

UPDATE 1-19

SUBSCRIBE 1-21

NOTIFY 1-22

PUBLISH 1-23

Response Messages 1-25

18x 1-25

2xx 1-26

3xx 1-26

4xx 1-27

5xx 1-28

6xx 1-29

Message Timers 1-30

Message Retry Counts 1-31

SIP Status Code to Q.850 Cause Code Mapping 1-31

SIP Trunk Supported Features 1-35

Identification Services 1-36

Using Remote-Party-ID Header 1-36

CISCO CONFIDENTIAL

Using P-Asserted-Identity/P-Preferred-Identity and Privacy Header 1-38
Outbound PUBLISH 1-42
G.729 with MTP 1-43
MLPP 1-43
Resource Priority Header Overview 1-44
Preemption Reason Header Overview 1-44
V.150.1 MOIP 1-44
SIP T.38 Interoperability with Microsoft Exchange 1-45
Multicast MOH over H.323/SIP Trunk 1-46
IPv6 1-46
Support for Alternative Network Address Types (ANAT) over SIP Trunk 1-47
Inbound SIP Trunk Call Rules 1-48
Outgoing SIP Trunk Calls Rules 1-48
Calling Party Number Transformations 1-48
Connected Party Number Transformation 1-50
Q.735 MLPP over SIP Trunk 1-50
Troubleshooting 1-51

CHAPTER 2 **SIP Trunk Call Flows** 2-1
BasicCall
DTMF
Presence
Transfer
Update
TLS
T38
SipsUri
Info
MWI
Prack
CallPreservation
3xx
Authentication-Authorization
ACL
RSVP
Publish
G.729
PAI
MLPP
V.150.1

CISCO CONFIDENTIAL

T38Fax-interop-with-MSExchange
MMoH
IPv6
CallingPartyTransformations
MLPP Q735
ConnectedPartyTransformations

CISCO CONFIDENTIAL

Preface

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

The preface covers these topics:

- Audience
- Organization
- Conventions
- Obtaining Documentation, Support, and Security Guidelines

Audience

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

Organization

This document consists of the following chapters.

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

CISCO CONFIDENTIAL

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*.

Obtaining Documentation, Support, and Security Guidelines

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

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

CISCO CONFIDENTIAL

CHAPTER 1

SIP Standard Trunk Interface

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

This chapter includes the following sections:

- New and Changed Information
- Backward Compatibility
- Interface Compliance Summary
- SIP Message Fields
- SIP Trunk Supported Features
- Troubleshooting

New and Changed Information

The new features in this release are as follows:

- Connected Party Number Transformation, page 1-49
- Q.735 MLPP over SIP Trunk, page 1-49

Backward Compatibility

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

Interface Compliance Summary

Cisco Unified CM SIP compliance on the SIP trunk depends on the portable SIP stack itself, which is based on the RFC3261 standard.

The current stack supports the following items in RFC3261:

- Can process UPDATE method.
- Support for generating branch and sent-by parameters in Via header used to identify transactions.

CISCO CONFIDENTIAL

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

Call Manager uses the portable SIP stack from IOS Gateway SunnyD project (EDCS-292452).

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

Table 1-1 SIP Trunk RFC Compliance

RFC	Call Manager Supported	Comments
RFC2976 SIP INFO Method	Supported	Info method is used for video media channels; 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	Packages supported: KPML, Presence.
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.

CISCO CONFIDENTIAL

Table 1-1 SIP Trunk RFC Compliance (continued)

RFC	Call Manager Supported	Comments
RFC3842 SIP MWI Package	Partially supported	SIP Trunk supports unsolicited NOTIFY events. It does not Subscribe for MWI events notification.
RFC3856 SIP PRESENCE Event Package	Supported	
RFC3859 Common Profile for Presence	Supported	
RFC3863 Presence Information Data Format	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 the support via Supported header. For incoming Invite's it accepts the Supported and Session-Expires headers.
RFC 3903 SIP PUBLISH Method	Partially supported	SIP Trunk only supports outbound PUBLISH. Inbound PUBLISH is rejected with 405.
RFC 4480 RPID	Supported	RPID information is carried in the outbound messages if selected via SIP Trunk configuration.
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.
RFC 3323	Supported	A Privacy Mechanism for SIP.
RFC 3324	Supported	Short Term Requirements for Network Asserted Identity.
RFC 3325	Supported	Private Extensions to the Session Initiation Protocol (SIP) for Asserted Identity within Trusted Networks.
RFC4411	Supported	SIP Trunk supports extending Reason header for Preemption Events.

CISCO CONFIDENTIAL

Table 1-1 SIP Trunk RFC Compliance (continued)

RFC	Call Manager Supported	Comments
RFC4412	Partially supported	SIP Trunk only supports outbound Resource-Priority header. A Resource-Priority header is added and will show up in "Require" header field when used.
RFC4040	Supported	A clear channel codec negotiation for SIP Trunk.
RFC4091	Supported	Alternative Network Address Types for advertising both IPv4 and IPv6 media in the SDP.
RFC 4092	Supported	Usage of the Session Description Protocol (SDP) Alternative Network Address Types (ANAT) Semantics in the Session Initiation Protocol (SIP).
RFC 3388	Partially supported	SIP Trunk only supports sections pertaining to grouping of M Lines for ANAT.
RFC 3693	Partially supported	As part of Logical Partitioning feature, CUCM supports Geopriv Location Object specification described in this RFC.
RFC 4119	Partially supported	Extension to RFC3693. CUCM supports PIDF-LO specification as described in RFC 4119.
draft-ietf-sip-location-conveyance-10	Partially supported	CUCM supports Location Conveyance specification described in this ietf draft.
RFC 3312	Partially supported	End to End qos is supported but Segmented qos is not supported.
RFC 4032	Partially supported	Extension to RFC3312, CUCM supports changing precondition strength based on target changes.

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

CISCO CONFIDENTIAL

Table 1-2 Compliance to SIP Requests

SIP Message	Cisco Unified CM Supported	Comments
INVITE	Yes	The system also supports re-INIVTE.
ACK	Yes	
OPTIONS	No	Cisco Unified CM SIP trunk does not support the OPTIONS method.
INFO	Yes	INFO method gets used for video support.
BYE	Yes	
CANCEL	Yes	
SUBSCRIBE	Yes	Supported events: kpml, presence
NOTIFY	Yes	Supported events: kpml, presence In addition, Cisco Unified CM supports unsolicited NOTIFY for DTMF and MWI.
REFER	Yes	Cisco Unified CM SIP trunk supports inbound REFER only, both in dialog and out of dialog.
REGISTER	No	The system sends 405 Method Not Allowed for Cisco Unified CM SIP trunk.
PRACK	Yes	The system provides three options: • To send PRACK for Only 180 w/sdp, or • for all 18x messages, or • To disable PRACK entirely via CCM Service Parameter
UPDATE	Yes	Cisco Unified CM supports receiving and generating UPDATE.
PUBLISH	Yes	Cisco Unified CM supports only generating PUBLISH.

Table 1-3 Compliance to SIP Responses

SIP Message	Cisco Unified CM Supported	Comment
1xx Response	Yes	
100 Trying	Yes	
180 Ringing	Yes	The system supports early media.
181 Call Forward	No	Cisco Unified CM sends 181 Call forwarded response when the call forward feature is invoked.
182 Queued	No	Stack drops this message.
183 Progress	Yes	The system supports early media.
2xx Response	Yes	
200 OK	Yes	

CISCO CONFIDENTIAL

Table 1-3 Compliance to SIP Responses (continued)

SIP Message	Cisco Unified CM Supported	Comment
202 OK	Yes	For REFER
3xx Response	Yes	
300–302, 305, 380, 385	Yes	The system does not generate these messages, but contacts the new address in Contact header upon receiving.
4xx Response	Yes	Upon receiving, the system initiates a graceful call disconnect.
401	Yes	Cisco Unified CM SIP trunk sends out 401 (Unauthorized) if authentication and authorization is enabled. Cisco Unified CM SIP trunk also responds to inbound 401 challenges.
403	Yes	Cisco Unified CM SIP trunk sends a 403 (Forbidden) message if a SIP method is on the Access Control List.
405	Yes	Cisco Unified CM SIP trunk sends a 405 message if the incoming SIP message is not supported.
407	Yes	Cisco Unified CM SIP trunk responds to inbound 407 (Proxy Authentication Required) message challenges.
412	Yes	Cisco Unified CM SIP trunk processes 412 response for PUBLISH.
415	Yes	Cisco Unified CM SIP Trunk sends out 415 (Unsupported Media Type) message when it does not support the media type received in incoming request's SDP.
420	Yes	Cisco Unified CM SIP Trunk sends out 420 (Bad Extension) message when it receives sdp-anat tag in the Require/Supported header and it is not configured for ANAT.
424	Yes	Cisco Unified CM SIP Trunk sends out 424 (Bad Location Information) message when it receives INVITE requests carrying Location Conveyance info with errors against SIP compliance like: • Geolocation Headers indicate inclusion of PIDF-LO, but message body doesn't carry it. • Geolocation header has a cid header referring to a URI for which there is no corresponding Content-ID header with the same URI. • Geolocation header having URI other than cid header e.g SIP or SIPS URI for LbyR.
5xx Response	Yes	Upon receiving, the system sends a new request if additional address is present. Otherwise, it initiates a graceful disconnect.

CISCO CONFIDENTIAL

Table 1-3 Compliance to SIP Responses (continued)

SIP Message	Cisco Unified CM Supported	Comment
580	Yes	CUCM get INVITE with precondition and its local RSVP layer sends reject because the bandwidth is not available, then CUCM responds with 580 Precondition Failed. Upon receiving the 580 response, CUCM will either continue the call with no RSVP involved or call fails based on local RSVP policy configuration.
6xx Response	Yes	The system does not generate this response; upon receiving, the system initiates a graceful disconnect.

Table 1-4 SIP Header Fields

SIP Header	Cisco Unified CM 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-Info is used to transmit the overall security level of the trunk call. For example: Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated Call-Info header is also used for figuring out the IP address of the originating device for SIP trunk identification, if it contains the tag, purpose=x-cisco-origIP. For example: Call-Info: <sip:172.18.200.127>; PURPOSE=x-cisco-origIP
Call-ID	Yes	
Contact	Yes	
Content-Disposition	No	
Content-Encoding	No	
Content-Language	No	
Content-Length	Yes	

CISCO CONFIDENTIAL

Table 1-4 SIP Header Fields (continued)

SIP Header	Cisco Unified CM Supported	Comments
Content-Type	Yes	Supported as: “sdp”, “kpml-request+xml”, “media_control+xml”, “text/plain”, "pidf+xml", and "simple-message-summary" The system does not support “multipart.”
CSeq	Yes	
Date	Yes	
Diversion	Yes	The system uses this header for RDNIS information. If it is present, it is always the Original Called Party information. The receiving side of this header always assumes that it is the Original Called Party information if present. In case of chained-forwarding to a voice messing system, the system leaves the message to the Original Called Party.
Encryption	No	
Error-Info	No	
Expires	Yes	
Event	Yes	
From	Yes	Cisco Unified CM adds x-nearend, x-farend, x-refCI and x-devicename parameters for Monitoring and Recording INVITEs.
Geolocation	Yes	Cisco Unified CM supports this header as part of Logical Partitioning feature.
Geolocation-Error	Yes	Cisco Unified CM supports this header as part of Logical Partitioning feature. This is an informatory header which is sent in SIP response messages.
Hide	No	
In-Reply-To	No	
Max-Forwards	Yes	Cisco Unified CM 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 CM SIP trunk supports receiving this header in 407 responses.
Proxy-Authorization	Yes	Cisco Unified CM SIP trunk supports sending new request with this header after receiving 407 responses.
Proxy-Require	No	
P-Asserted-Identity	Yes	

CISCO CONFIDENTIAL

Table 1-4 SIP Header Fields (continued)

SIP Header	Cisco Unified CM Supported	Comments
P-Preferred-Identity	Yes	
RAck	Yes	
Record-Route	Yes	
Remote-Party-ID	Yes	The system uses this header for ID services including Connected Name and ID. This is a non-standard header from a draft specification.
Replaces	Yes	For INIVTE and REFER.
Require	Yes	
Response-Key	No	
Retry-After	Yes	The system sends it but ignores receiving it.
Resource-Priority	Yes	
Route	Yes	
RSeq	Yes	
Server	Yes	
SIP-If-Match	Yes	For PUBLISH
SIP-Etag	Yes	For PUBLISH
Subject	No	
Supported	Yes	
Subscription-State	Yes	
Timestamp	Yes	
To	Yes	
Unsupported	Yes	
User-Agent	Yes	
Via	Yes	
Warning	Yes	
WWW-Authenticate	Yes	

CISCO CONFIDENTIAL

Table 1-5 Supported Audio Media Types

Type	Encoding Name	Payload Type	Comments
G.711 u-law	PCMU	0	
GSM Full-rate	GSM	3	
G.723.1	G723	4	
G.711 A-law	PCMA	8	
G.722	G722	9	
G.728	G728	15	
G.729	G729	18	The system supports all combinations of annex A and B.
AAC	mpeg4-generic	Dynamically Assigned	Acceptable range is 96–127.
ILBC	iLBC	Dynamically Assigned	Acceptable range is 96–127.
RFC2833 DTMF	Telephony-event	Dynamically Assigned	Acceptable range is 96–127.
G.Clear	G.Clear	Dynamically Assigned	Acceptable range is 96–127. Cisco Unified CM default is 125.
iSAC	iSAC	Dynamically Assigned	Acceptable range is 96–127.

Table 1-6 Supported Video Media Types

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

Table 1-7 Supported Application Media Type

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

Table 1-8 Supported T38fax Payload Type

Types	Encoding Name	Payload Type
T38fax	Not applied	Not applied

CISCO CONFIDENTIAL

SIP Message Fields

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

Request Messages

INVITE

Table 1-9 INVITE Message Fields

Field	Example	Notes
Request-Line	`INVITE sip:cdpn@destIP:destPort; phone-context=cisco.com; tgrp=ccdata;user=phone SIP/2.0`	destIP=resolved IP address of configured DestAddr under SIPTrunk; it also could be FQDN SRV instead of destIP. If the address is an IPv6 address then it will be specified within [ ] square brackets. destPort=configured destPort or resolved port from DNS SRV. cgpn for outgoing INVITE, and cdpn for incoming INVITE. "phone-context=cisco.com; tgrp=ccdata;"= When MTP is not enabled and the G.Clear feature is enabled, these tags are added to the Request URI. Both of these values are user provisionable.
From	`From: "callerName" <sip:cgpn@CCM_IP_addr>; x-nearend; x-farend; x-refCI=CI_NUMBER; x-devicename=SEP_NAME`	callerName = caller display i.e. IP phone Cgpn = calling party number CCM_IP_addr = CCM IP address (Depending on if this is a IPv4 or an IPv6 call, the appropriate Cisco Unified CM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets. x-nearend = Recorded party is the near-end. x-farend = Recorded party is the far-end x-refCI = Cisco Unified CM call identifier for recorded party x-devicename = Device name of recorded party.
To	`To: "calledName" <sip:cdpn@destIP;user=phone>`	The system includes calledName if available. destIP=resolved IP address of configured DestAddr/DestV6Addr under SIPTrunk; it could also be FQDN SRV instead of destIP.

CISCO CONFIDENTIAL

Table 1-9 INVITE Message Fields (continued)

Field	Example	Notes
Via	`Via:SIP/2.0 IP addr:Port;Branch=number`	IP addr = Cisco Unified CM IP (Depending on if this is a IPv4 or an IPv6 call, the appropriate CCM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets. Port = CCM Port Branch = Unique number
Call-ID	`Call-ID: number@CCM_IP_addr`	Cisco Unified CM generates the number internally.
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 = 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 by sip proxy. CCM sets it 6 for outgoing INVITE.

Remote-Party-Id	**IPv4 Example**
	`Remote-Party-ID:"Alice Smith" <sip:9728135111@161.44.147.67;user=phone>; party=calling;screen=no;privacy=off`
	IPv6 Example
	`Remote-Party-ID:"Alice Smith" <sip:97281351111@[2001:db8:1:101::12];user=phone>; party=calling;screen=no;privacy=off`
		Cisco Unified CM 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	**IPv4 Example**
	`Diversion: <sip:23222@172.18.193.123>;reason=no-answer`
	IPv6 Example
	`Diversion:<sip:23222@[2001:db8:1:101::12]>; reason=no-answer`
		Cisco Unified CM uses Diversion header to carry RDNIS. In this case, 23222 will be carried as the Original Called Party ID.

Call-Info	**IPv4 Example**
	`Call-Info: <sip:172.18.199.211>;purpose=x-cisco-origIP`
	IPv6 Example
	`Call-Info: <sip:[2001:db8:1:101::12]>;purpose=x-cisco-origIP`
		If this header is present in an incoming INVITE with the tag, purpose=x-cisco-origIP, and the trunk is configured to route the call based on the end device's IP Address, then this header will be used to route the call to the Trunk pointing to the IP Address in the Call-Info header.

CISCO CONFIDENTIAL

Table 1-9 INVITE Message Fields (continued)

Field	Example	Notes

P-Asserted-Identity	**IPv4 Example**
	
	`P-Asserted-Identity: "Alice" <sip:4762424@172.18.199.211>`
	
	IPv6 Example
	
	`P-Asserted-Identity: "Alice" <sip:47624424@[2001:db8:1:101::12]>`
		Cisco Unified CM uses this header to convey caller name/number information.
		
		In the re-Invite message, it is used to convey the connected name/number.
		
		Cisco Unified CM adds the PAI header if the SIP trunk is configured with Asserted-Type=PAI or Asserted-Type=Default and the call control in Cisco Unified CM provides the screening indication of UserProvided "VerifiedAndPassed" or NetworkProvided.
		
		PAI header values are displayed per the user configuration.

P-Preferred-Identity	**IPv4 Example**
	
	`P-Preferred-Identity: "Alice" <sip: 4762424@172.18.199.211>`
	
	IPv6 Example
	
	`P-Preferred-Identity: "Alice" <sip: 4762424@[2001:db8:1:101::12]>`
		Cisco Unified CM uses this header to convey caller name/number information.
		
		In the re-Invite message, it is used to convey the connected name/number.
		
		Cisco Unified CM adds the PAI header if the SIP trunk is configured with Asserted-Type=PPI or Asserted-Type=Default and when the call control in Cisco Unified CM provides the screening indication of "Not Screened" or "VerifiedAndFailed" values.
		
		PPI header values are displayed as per the user configuration.

Resource-Priority	`Resource-Priority: DRSN.9`	If the MLPP feature is enabled, the Resource-Priority header is added to the initial INVITE.

Supported	`Supported: option-tag`
	
	`Example:`
	`Supported:`
	`100rel,timer,resource-priority,replaces`
		Cisco Unified CM adds Supported header in outgoing INVITE request when additional options like PRACK, Presence, Resource-Priority etc. are configured to indicate other side about Cisco Unified CM's capability.

Geolocation	`Geolocation: cid-url;inserted-by=hostport`
	
	`Example:`
	`Geolocation:`
	`<cid:4900@10.10.10.10>;inserted-by="10.10.10.10`
		SIP Trunk only supports sending and processing of cid-url in Geolocation header, though specification allows SIP, SIPS & pres URI's.

CISCO CONFIDENTIAL

Table 1-9 INVITE Message Fields (continued)

Field	Example	Notes
SDP	**IPv4 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 m=audio 16604 RTP/AVP 125 a=rtpmap:125 CLEARMODE/8000 **IPv6 SDP** v=0 o=CiscoSystemsCCM-SIP 2000 1000 IN IP6 2001:db8:c18:1:21c:58ff:fe2a:23f8 s=SIP Call c=IN IP6 2001:db8:c18:1:21c:58ff:fe2a:23f3 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 **ANAT SDP with both IPv4 and IPv6 addresses** v=0 o=CiscoSystemsCCM-SIP 2000 1 IN IP4 172.18.199.129 s=SIP Call t=0 0 a=group:ANAT 1 2 m=audio 18484 RTP/AVP 0 101 c=IN IP6 2001:db8:c18:1:21c:58ff:fe2a:23f8 a=rtpmap:0 PCMU/8000 a=ptime:20 a=rtpmap:101 telephone-event/8000 a=fmtp:101 0-15 a=mid:1 m=audio 18282 RTP/AVP 0 101 c=IN IP4 172.18.199.55 a=rtpmap:0 PCMU/8000 a=ptime:20 a=rtpmap:101 telephone-event/8000 a=fmtp:101 0-15 a=mid:2	If MTP is not enabled for the SIP trunk, SDP is not in the initial INVITE. If MTP is enabled, Cisco Unified CM always include telephone-event for RFC2833 DTMF in the SDP. This dynamic payload type is configurable under Cisco Unified CM Service Parameter with default value as 101. For a SIP Trunk in IPv4 only mode, the SDP will contain the IPv4 address of the MTP device For a SIP Trunk in IPv6 only mode, the SDP will contain the IPv6 address of the MTP device For a Dual Mode SIP Trunk, if ANAT is enabled then, the SDP will contain both the IPv4 address, and the IPv6 address using the ANAT format. If MTP is enabled and G.Clear feature is enabled, CCM sends G.Clear mode information in the SDP in the initial INVITE.

CISCO CONFIDENTIAL

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/DestAddrIPv6 under SIPTrunk, it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets. 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=CCM IP address (Depending on if this is a IPv4 or an IPv6 call, the appropriate CCM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets.
To	`To: "calledName"<sip:cdpn@destIP;user=phone>`	calledName is included if available destIP=resolved IP address of configured DestAddr/DestAddrIPv6 under SIPTrunk; it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets.
Via	`Via:SIP/2.0 IP addr:Port;Branch=number`	IP addr=CCM IP (Depending on if this is a IPv4 or an IPv6 call, the appropriate CCM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets. Port=CCM Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Cisco Unified CM generates this number internally.
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 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.

CISCO CONFIDENTIAL

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/DestAddrIPv6 under SIPTrunk, it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets. 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 CM IP address (Depending on if this is a IPv4 or an IPv6 call, the appropriate Cisco Unified CM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets.
To	`To: "calledName"<sip:cdpn@destIP;user=phone>`	calledName is included if available destIP=resolved IP address of configured DestAddr/DestAddrIPv6 under SIPTrunk; it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets.
Via	`Via:SIP/2.0 IP addr:Port;Branch=number`	IP addr=Cisco Unified CM IP (Depending on if this is a IPv4 or an IPv6 call, the appropriate Cisco Unified CM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets. Port=CCM Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Cisco Unified CM generates the number internally.
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 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

CISCO CONFIDENTIAL

Table 1-11 BYE Message Fields (continued)

Field	Example	Notes
Reason	`Reason: preemption;cause=<cause value>;text=<text string>`	Reason header is included when MLPP feature is enabled. Cause value and test string are defined as per RFC4411.

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/DestAddrV6 under SIPTrunk, it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets. 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 CM IP address (Depending on if this is a IPv4 or an IPv6 call, the appropriate Cisco Unified CM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets.
To	`To: "calledName"<sip:cdpn@destIP;user=phone>`	calledName is included if available destIP=resolved IP address of configured DestAddr/DestAddrIPv6 under SIPTrunk; it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets.
Via	`Via:SIP/2.0 IP addr:Port;Branch=number`	IP addr=Cisco Unified CM IP (Depending on if this is a IPv4 or an IPv6 call, the appropriate CCM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets. Port=Cisco Unified CM Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Cisco Unified CM generates the number internally.

CISCO CONFIDENTIAL

Table 1-12 CANCEL 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=CANCEL
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

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/DestAddrIPv6 under SIPTrunk, it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets. 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=CCM IP address (Depending on if this is a IPv4 or an IPv6 call, the appropriate CCM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets.
To	`To: "calledName"<sip:cdpn@destIP;user=phone>`	calledName is included if available destIP=resolved IP address of configured DestAddr/DestAddrIPv6 under SIPTrunk; it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets.
Via	`Via:SIP/2.0 IP addr:Port;Branch=number`	IP addr=CCM IP (Depending on if this is a IPv4 or an IPv6 call, the appropriate CCM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets. Port=CCM Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Cisco Unified CM generates the number internally.

CISCO CONFIDENTIAL

Table 1-13 PRACK Message Fields (continued)

Field	Example	Notes
CSeq	`Cseq: number PRACK`	Number=a traditional sequence number that is incremented for each new request within a dialog Method=Method Name
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/DestAddrIPv6 under SIPTrunk, it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets. 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=CCM IP address (Depending on if this is a IPv4 or an IPv6 call, the appropriate CCM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets.
To	`To: "calledName"<sip:cdpn@destIP;user=phone>`	calledName is included if available destIP=resolved IP address of configured DestAddr/DestAddrIPv6 under SIPTrunk; it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets.
Via	`Via:SIP/2.0 IP addr:Port;Branch=number`	IP addr=CCM IP (Depending on if this is a IPv4 or an IPv6 call, the appropriate CCM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets. Port=CCM Port Branch=Unique number

CISCO CONFIDENTIAL

Table 1-14 UPDATE Message Fields (continued)

Field	Example	Notes
Call-ID	`Call-ID: number@CCM IP addr`	Cisco Unified CM generates the number internally.
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=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	IPv4 Example
	`Remote-Party-ID:"Alice Smith" <sip:9728135111@161.44.147.67;user=phone>; party=calling;screen=no;privacy=off`
	IPv6 Example
	`Remote-Party-ID:"Alice Smith" <sip:97281351111@[2001:db8:1:101::12];user=phone>; party=calling;screen=no;privacy=off`
		Cisco Unified CM uses this SIP extension for more detailed description of Caller Identify and Privacy. It is also used to convey Connected Name & ID in a re-Invite message.

P-Asserted-Identity	IPv4 Example
	`P-Asserted-Identity: "Alice" <sip:4762424@172.18.199.211>`
	IPv6 Example
	`P-Asserted-Identity: "Alice" <sip:4762424@[2001:db8:1:101::12]>`
		Cisco Unified CM uses this header for conveying the Connected Name/Number.
		Cisco Unified CM adds the PAI header, if SIP Trunk is configured with Asserted-Type=PAI or Asserted-Type=Default and when the call control in Cisco Unified CM provides the screening indication of UserProvided "VerifiedAndPassed" or NetworkProvided..

P-Preferred-Identity	IPv4 Example
	`P-Preferred-Identity: "Alice" <sip:4762424@172.18.199.211>`
	IPv6 Example
	`P-Preferred-Identity: "Alice" <sip:4762424@[2001:db8:1:101::12]>`
		Cisco Unified CM uses this header for conveying the Connected Name/Number.
		Cisco Unified CM adds the PPI header, if SIP Trunk is configured with Asserted-Type=PPI or Asserted-Type=Default and when the call control in Cisco Unified CM provides the screening indication of "Not Screened" or "VerifiedAndFailed" values.
		PPI header values are displayed as per the user configuration.

Resource-Priority	`Resource-Priority: DRSN.9`	If the MLPP feature is enabled, Resource-Priority header is added to the UPDATE message.

CISCO CONFIDENTIAL

Table 1-14 UPDATE Message Fields (continued)

Field	Example	Notes

Geolocation	`Geolocation: cid-url;inserted-by=hostport`
	
	`Example:`
	`Geolocation:`
	`<cid:4900@10.10.10.10>;inserted-by="10.10.10.10`
		SIP Trunk only supports sending and processing of cid-url in Geolocation header, though specification allows SIP, SIPS & pres URI's.

SUBSCRIBE

Table 1-15 SUBSCRIBE Message Fields

Field	Example	Notes
Request-Line	`SUBSCRIBE sip:subscribee@destIP:destPort SIP/2.0`	destIP = resolved IP address of configured DestAddr/DestAddrIPv6 under SIPTrunk, it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets. 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=CCM IP address (Depending on if this is a IPv4 or an IPv6 call, the appropriate CCM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets.
To	`To: "calledName"<sip:cdpn@destIP>`	calledName is included if available destIP=resolved IP address of configured DestAddr/DestAddrIPv6 under SIPTrunk; it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets.
Via	`Via:SIP/2.0 IP addr:Port;Branch=number`	IP addr=CCM IP (Depending on if this is a IPv4 or an IPv6 call, the appropriate CCM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets. Port=CCM Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Cisco Unified CM generates the number internally.
Contact	`Contact: <sip:cgpn@CCM_IP_addr:localPort>`	localPort = configured "Incoming port" of the indicated SIPTrunk

CISCO CONFIDENTIAL

Table 1-15 SUBSCRIBE Message Fields (continued)

Cseq	`Cseq:number method`	Number=a traditional sequence number that is incremented for each new request within a dialog Method=SUBSCRIBE
Expires	`Expires: number`	Number = The duration of the subscription, in seconds.
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 by sip proxy.
Event:	`kpml, presence`	The Event Type that the Subscribe if for. Unified CM supports kpml and presence event packages.
Content-Type:	`application/kpml-request+xml or message/sipfrag;version=2.0`	Unified CM SIP Trunk supports message/sipfrag;version=2.0, application/kpml-request+xml and application/pidf+xml

NOTIFY

Table 1-16 NOTIFY Message Fields

Field	Example	Notes
Request-Line	`NOTIFY sip:subscriber@destIP:destPort SIP/2.0`	destIP = resolved IP address of configured DestAddr/DestAddrIPv6 under SIPTrunk, it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets. 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=CCM IP address (Depending on if this is a IPv4 or an IPv6 call, the appropriate CCM IP Address will be used). If the address is an IPv6 address then it will be specified within [ ] square brackets.
To	`To: "calledName"<sip:cdpn@destIP>`	calledName is included if available destIP=resolved IP address of configured DestAddr/DestAddrIPv6 under SIPTrunk; it could also be FQDN SRV instead of destIP. If the address is an IPv6 address then it will be specified within [ ] square brackets.

CISCO CONFIDENTIAL

Table 1-16 NOTIFY Message Fields (continued)

Field	Example	Notes
Via	`Via:SIP/2.0 IP addr:Port;Branch=number`	IP addr=CCM IP (Depending on if this is a IPv4 or an IPv6 call, the appropriate CCM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets. Port=CCM Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Number is generated internally by Cisco Unified CM.
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.
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 by SIP proxy.
Event	`kpml, presence`	The Event Type that the Subscribe if for. Cisco Unified CM supports kpml and presence event packages.
Content-Type:	`application/kpml-request+xml or message/sipfrag;version=2.0`	Cisco Unified CM SIP Trunk supports message/sipfrag;version=2.0, application/kpml-request+xml and application/pidf+xml

PUBLISH

Table 1-17 PUBLISH Message Fields

Field	Example	Notes
Request-Line	`PUBLISH sip:user@destIP:destPort SIP/2.0`	user=end user name associated with a line appearance; destIP = resolved IP address of configured DestAddr/DestAddrIPv6 under SIPTrunk, it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets. destPort=configured destPort or resolved port from DNS SRV;

CISCO CONFIDENTIAL

Table 1-17 PUBLISH Message Fields (continued)

Field	Example	Notes
From	`From: <sip:user@CCM_IP_addr>`	user=end user name associated with a line appearance; CCM_IP_addr=Cisco Unified CM IP address (Depending on if this is a IPv4 or an IPv6 call, the appropriate Cisco Unified CM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets.
To	`To: <sip:user@destIP>`	user=end user name associated with a line appearance; destIP=resolved IP address of configured DestAddr/DestAddrIPv6 under SIPTrunk; it could also be FQDN SRV instead of destIP; If the address is an IPv6 address then it will be specified within [ ] square brackets.
Via	`Via:SIP/2.0 IP addr:Port;Branch=number`	IP addr=Cisco Unified CM IP (Depending on if this is a IPv4 or an IPv6 call, the appropriate Cisco Unified CM IP Address will be used) If the address is an IPv6 address then it will be specified within [ ] square brackets. Port=Cisco Unified CM Port Branch=Unique number
Call-ID	`Call-ID: number@CCM IP addr`	Cisco Unified CM generates the number internally.
Cseq	`Cseq:number method`	Number=a traditional sequence number that is incremented for each new request within a dialog Method=PUBLISH
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 by sip proxy.
Event	`presence`	Cisco Unified CM supports presence event for PUBLISH.
Expires	`Expires: number`	number=suggested expiration time for PUBLISH in seconds. Default is 3600.
Content-Type:	`application/pidf+xml`	

CISCO CONFIDENTIAL

Response Messages

18x

Table 1-18 18X Message Fields

Field	Example	Notes
Remote-Party-Id	IPv4 Example Remote-Party-ID:"Bob Jones" <sip:9728135111@161.44.147.67;user=phone>; party=called;screen=no;privacy=off IPv6 Example Remote-Party-ID:"Bob Jones" <sip:9728135111@[2001:db8:1:101::12];user=phone>; party=called;screen=no;privacy=off	Cisco Unified CM uses this SIP extension to convey Connected Name and ID information.
P-Asserted-Identity	IPv4 Example P-Asserted-Identity: "Alice" <sip:4762424@172.18.199.211> IPv6 Example P-Asserted-Identity: "Alice" <sip:4762424@[2001:db8:1:101::12]>	Cisco Unified CM uses this header for conveying the Alerting Name/Number. Cisco Unified CM adds the PAI header, if SIP Trunk is configured with Asserted-Type=PAI or Asserted-Type=Default and when the call control in Cisco Unified CM provides the screening indication of UserProvided "VerifiedAndPassed" or NetworkProvided. PAI header values are displayed as per the user configuration.
P-Preferred-Identity	IPv4 Example P-Preferred-Identity: "Alice" <sip:4762424@172.18.199.211> IPv6 Example P-Preferred-Identity: "Alice" <sip:4762424@[2001:db8:1:101::12]>	Cisco Unified CM uses this header for conveying the Alerting Name/Number. Cisco Unified CM adds the PPI header, if SIP Trunk is configured with Asserted-Type=PPI or Asserted-Type=Default and when the call control in Cisco Unified CM provides the screening indication of "Not Screened" or "VerifiedAndFailed" values. PPI header values are displayed as per the user configuration.
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 resulted in early media setup (that is, a SIP to MGCP PRI call), Cisco Unified CM includes SDP answer in 183 message.

CISCO CONFIDENTIAL

2xx

Table 1-19 2XX Message Fields

Field	Example	Notes
Remote-Party-Id	IPv4 Example Remote-Party-ID:"Bob Jones" <sip:9728135111@161.44.147.67;user=phone>; party=called;screen=no;privacy=off IPv6 Example Remote-Party-ID:"Bob Jones" <sip:97281351111@[2001:db8:1:101::12];user=phone>; party=called;screen=no;privacy=off	Cisco Unified CM uses this SIP extension to convey Connected Name and ID information.
P-Asserted-Identity	IPv4 Example P-Asserted-Identity: "Alice" <sip:4762424@172.18.199.211> IPv6 Example P-Asserted-Identity: "Alice" <sip:4762424@[2001:db8:1:101::12]>	Cisco Unified CM uses this header for conveying the Connected Name/Number. Cisco Unified CM adds the PAI header, if SIP Trunk is configured with Asserted-Type=PAI or Asserted-Type=Default and when the call control in Cisco Unified CM provides the screening indication of UserProvided "VerifiedAndPassed" or NetworkProvided. PAI header values are displayed as per the user configuration.
P-Preferred-Identity	IPv4 Example P-Preferred-Identity: "Alice" <sip:4762424@172.18.199.211> IPv6 Example P-Preferred-Identity: "Alice" <sip:4762424@[2001:db8:1:101::12]>	Cisco Unified CM uses this header for conveying the Connected Name/Number. Cisco Unified CM adds the PPI header, if SIP Trunk is configured with Asserted-Type=PPI or Asserted-Type=Default and when the call control in Cisco Unified CM provides the screening indication of "Not Screened" or "VerifiedAndFailed" values. PPI header values are displayed as per the user configuration.

3xx

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

Table 1-20 3XX Message Fields

Field	Example	Notes
Status Code	SIP/2.0 302 Moved Temporarily	The requesting client SHOULD retry the request at the new address(es) given by the Contact header field.

CISCO CONFIDENTIAL

Table 1-20 3XX Message Fields (continued)

Field	Example	Notes
From	IPv4 Example From: <sip: 1101@10.89.79.203>;tag=16777234 IPv6 Example From: <sip: 1101@[2001:db8:1:101::12]>;tag=16777234	10.89.79.203 is CCM IPv4 address 2001:db8:1:101::12 is CCM IPv6 Address 16777234 is the Call Id
To	IPv4 Example To: <sip:30000@10.89.73.75>;tag=0002fd06e930010 8228d58c1-614f99be IPv6 Example To: <sip:30000@ [2001:db8:1:2::12]>;tag=0002fd06e9300108228 d58c1-614f99be	3000 is the Calling Party Number
Via	IPv4 Example Via: SIP/2.0/TCP 10.89.79.203:5060;received=10.89.79.203;bra nch=z9hG4bKfe8d27ec IPv6 Example Via: SIP/2.0/TCP [2001:db8:1:101::12]:5060;branch=z9hG4bKfe8 d27ec	10.89.79.203=CCM IPv4 Address 2001:db8:1:101::12 is CCM IPv6 Address 5060=CCM Port Branch=Unique number
Contact	IPv4 Example Contact: <sip:30000@10.8.69.115:5060> IPv6 Example Contact: <sip:30000@[2001:db8:1:101::12]:5060>	localPort = configured "Incoming port" of the indicated SIPTrunk

4xx

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

Table 1-21 4XX Message Fields

Field	Example	Notes
Status Code	SIP/2.0 487 Request Cancelled	The request was terminated by a BYE or CANCEL request.
From	IPv4 Example From: <sip: 1101@10.89.79.203>;tag=16777234 IPv6 Example From: <sip: 1101@[2001:db8:1:101::12]>;tag=16777234	10.89.79.203 is CCM IPv4 address 2001:db8:1:101::12 is CCM IPv6 Address 16777234 is the Call Id

CISCO CONFIDENTIAL

Table 1-21 4XX Message Fields (continued)

Field	Example	Notes
To	IPv4 Example To: <sip:30000@10.89.73.75>;tag=0002fd06e9300108228d58c1-614f99be IPv6 Example To: <sip:30000@[2001:db8:1:2::12]>;tag=0002fd06e9300108228d58c1-614f99be	3000 is the Calling Party Number.
Via	IPv4 Example Via: SIP/2.0/TCP 10.89.79.203:5060;received=10.89.79.203;branch=z9hG4bKfe8d27ec IPv6 Example Via: SIP/2.0/TCP [2001:db8:1:101::12]:5060;branch=z9hG4bKfe8d27ec	10.89.79.203=CCM IPv4 Address 2001:db8:1:101::12 is CCM IPv6 Address 5060=CCM Port Branch=Unique number
Contact	IPv4 Example Contact: <sip:30000@10.8.69.115:5060> IPv6 Example Contact: <sip:30000@[2001:db8:1:101::12]:5060>	localPort = configured "Incoming port" of the indicated SIPTrunk

5xx

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

Table 1-22 5XX Message Fields

Field	Example	Notes
Status Code	SIP/2.0 501 Not Implemented	This is the appropriate response when a UAS does not recognize the request method
From	IPv4 Example From: <sip: 1101@10.89.79.203>;tag=16777234 IPv6 Example From: <sip:1101@[2001:db8:1:101::12]>;tag=16777234	10.89.79.203 is CCM IPv4 address 2001:db8:1:101::12 is CCM IPv6 Address 16777234 is the Call Id

CISCO CONFIDENTIAL

Table 1-22 5XX Message Fields (continued)

Field	Example	Notes
To	IPv4 Example To: <sip:30000@10.89.73.75>;tag=0002fd06e9300108228d58c1-614f99be IPv6 Example To: <sip:30000@ [2001:db8:1:2::12]>;tag=0002fd06e9300108228d58c1-614f99be	3000 is the Calling Party Number
Via	IPv4 Example Via: SIP/2.0/TCP 10.89.79.203:5060;received=10.89.79.203;branch=z9hG4bKfe8d27ec IPv6 Example Via: SIP/2.0/TCP [2001:db8:1:101::12]:5060;branch=z9hG4bKfe8d27ec	10.89.79.203=CCM IPv4 Address 2001:db8:1:101::12 is CCM IPv6 Address 5060=CCM Port Branch=Unique number
Contact	IPv4 Example Contact: <sip:30000@10.8.69.115:5060> IPv6 Example Contact: <sip:30000@[2001:db8:1:101::12]:5060>	localPort = configured "Incoming port" of the indicated SIPTrunk

6xx

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

Table 1-23 6XX Message Fields

Field	Example	Notes
Status Code	SIP/2.0 600 Busy Everywhere	The callee end system was contacted successfully, but the callee is busy and does not want to take the call at this time.
From	IPv4 Example From: <sip: 1101@10.89.79.203>;tag=16777234 IPv6 Example From: <sip: 1101@[2001:db8:1:101::12]>;tag=16777234	10.89.79.203 is CCM IPv4 address 2001:db8:1:101::12 is CCM IPv6 Address 16777234 is the Call Id

CISCO CONFIDENTIAL

Table 1-23 6XX Message Fields (continued)

Field	Example	Notes
To	IPv4 Example To: <sip:30000@10.89.73.75>;tag=0002fd06e9300108228d58c1-614f99be IPv6 Example To: <sip:30000@[2001:db8:1:2::12]>;tag=0002fd06e9300108228d58c1-614f99be	3000 is the Calling Party Number
Via	IPv4 Example Via: SIP/2.0/TCP 10.89.79.203:5060;received=10.89.79.203;branch=z9hG4bKfe8d27ec IPv6 Example Via: SIP/2.0/TCP [2001:db8:1:101::12]:5060;branch=z9hG4bKfe8d27ec	10.89.79.203=CCM IPv4 Address 2001:db8:1:101::12 is CCM IPv6 Address 5060=CCM Port Branch=Unique number
Contact	IPv4 Example Contact: <sip:30000@10.8.69.115:5060> IPv6 Example Contact: <sip:30000@[2001:db8:1:101::12]:5060>	localPort=configured “Incoming port” of the indicated SIPTrunk

Message Timers

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

Table 1-24 Message Timers

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

CISCO CONFIDENTIAL

Table 1-24 Message Timers (continued)

Timer	Value(Default/range)	Definition
notify	500 ms / 100–1000 ms	The time that Cisco Unified CM should wait before retransmitting the Notify message.
publish	500 ms / 100–1000 ms	The time that Cisco Unified CM should wait before retransmitting the Publish message.

Message Retry Counts

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

Table 1-25 Message Retry Counts

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

SIP Status Code to Q.850 Cause Code Mapping

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

Table 1-26 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 CM (due to internal errors)
404 Not Found 485 Ambiguous 604 Does not exist anywhere	1 Unallocated (unassigned) number	Indicates that the destination requested by theuser which the calling 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.

CISCO CONFIDENTIAL

Table 1-26 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 CM (due to internal errors)
486 Busy here 491 Request pending 493 Undecipherable 600 Busy everywhere	17 User busy	Indicates that the called party cannot accept another call because the user busy condition has been encountered. Either the called user or the network can generate this cause value. In the case of a user-determined user busy, be aware that the user equipment is compatible with the call.	User is already using the telephone.
480 Temporarily unavailable	18 No user responding	Used when the called party does not respond to a call establishment message with either an alerting or connect indication within the time allotted. The number that is being dialed has an active D-channel, but the far end chooses not to answer.	The user does not answer the telephone.
401 Unauthorized 402 Payment Required 403 Forbidden 407 Proxy Authentication Required 600 Decline	21 Call rejected	Indicates that the equipment sending this cause code does not want to accept this call, although it could accept the call because the equipment sending the cause is neither busy nor incompatible. The network might also generate this code to indicate that the call was cleared because of a supplementary service constraint. The diagnostic field might contain additional information about the supplementary service and reason for rejection.	A subscriber has a service constraint that does not accept this call.
410 Gone	22 Number changed	Returned to a calling party when the called number that is indicated by the calling party is no longer assigned. This diagnostic field might optionally contain the new called party number.	A subscriber changed their number.
482 Loop detected 483 Too many hoops	25 Exchange routing error	Indicates that the destination indicated by the user cannot be reached because an intermediate exchange released the call due to reaching a limit in executing the hop counter procedure.	The network is overloaded.
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 calls out by using a network type number (enterprise) rather instead of Unknown or National.

CISCO CONFIDENTIAL

Table 1-26 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 CM (due to internal errors)
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 time .	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 as a not available event only when no other cause in the service or option not available class applies.	Service not available
406 Not acceptable 415 Unsupported media type 501 Not implemented	79 Service or option not implemented, unspecified	Reports a service or option as a not implemented event only when no other cause in the service or option not implemented class applies.	Service not implemented
408 Request timeout 504 Server timeout	102 Recovery on timer expiry	Indicates that the expiration of a timer in association with error handling procedures initiated the procedure.	•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 that are allowed.

CISCO CONFIDENTIAL

Table 1-26 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 CM (due to internal errors)
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 interworking occurred with a network that does not provide causes for actions that it takes. The precise cause cannot be ascertained.	Failed to send message to Public Switched Telephone Network (PSTN).

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
- Enhanced Click-to-Dial
- Conference
- Call Forwarding
- Message Waiting Indication
- Endpoint 302 Redirect
- Park and Retrieve
- Video
- T38 Fax
- Presence (Busy Lamp Field)
- Out-of-band DTMF using KPML
- SIP Over TLS Connection
- Call Preservation
- Outbound PUBLISH
- Click-to-Call
- Monitoring and Recording
- SIP Trunk Device Identification

CISCO CONFIDENTIAL

- Click-to-conference
- G.729 with MTP
- PAI/PPI
- SRTP
- G.Clear
- MLPP
- V.150.1
- SIP T38 Fax Interoperability with Microsoft Exchange
- MMoH
- Location based CAC
- IPv6
- Calling Party Number Transformations
- Logical Partitioning
- Early Offer G.Clear
- SRTP over non-secure SIP Trunks
- End to End Preconditions
- Connected Party Number Transformation
- Secure Monitoring and Recording
- End to end call tracing
- Q.735 MLPP over SIP Trunk

Identification Services

This section describes the SIP Identification Services in Cisco Unified CM. These services include 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.

The following sections describe the options that Cisco Unified CM 6.1 and later provide for communication of identity and presentation information. The selection of these options is controllable through a SIP trunk configuration. You can use either or both options. If you select both, Asserted-Identity takes precedence over RPID.

- Using Remote-Party-ID Header, page 1-35
- Using P-Asserted-Identity/P-Preferred-Identity and Privacy Header, page 1-37

Using Remote-Party-ID Header

Cisco Unified CM 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 CM conveys these ID services in SIP by using the Remote-Party-ID header. Table 1-27 captures the support levels for the various parameters:

CISCO CONFIDENTIAL

Table 1-27 Support Levels for Various Parameters

Parameter	Values	Notes
party	calling called	Ignored if received by Cisco Unified CM. Set to called for outgoing INVITE or UPDATE from Cisco Unified CM. Set to calling for outgoing responses from Cisco Unified CM.
id-type	subscriber user term	Ignored if received by Cisco Unified CM. Set to subscriber for outgoing requests and responses.
privacy	full name uri off	Supported if received by Cisco Unified CM. Cisco Unified CM 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 CM. Cisco Unified CM always sends yes when generating an Remote-Party-ID header.

The following sections provide additional details:

- Calling Line and Name Identification Presentation, page 1-36
- Calling Line and Name Identification Restriction, page 1-36
- Connected Line and Name Identification Presentation, page 1-37
- Connected Line and Name Identification Restriction, page 1-37

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

Calling Line and Name Identification Presentation

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

Calling Line and Name Identification Restriction

- **Name**—When name is restricted, the display field (calling Name) in “From” header is set to a configurable string (that is, “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
```

- **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
```

CISCO CONFIDENTIAL

- **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
```

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

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

Connected Line and Name Identification Presentation

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

Cisco Unified CM 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.

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

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

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

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

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

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

- **None**—Both name and number are allowed.

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

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

Using P-Asserted-Identity/P-Preferred-Identity and Privacy Header

Cisco Unified CM provides a flexible configuration options to provide these services based on a static configuration for each SIP Trunk. This section provides an overview of these configuration options and of how Cisco Unified CM conveys ID services in SIP protocol using the P-Asserted-Identity/P-Preferred-Identity and Privacy headers.

CISCO CONFIDENTIAL

Table 1-28 shows information about the Cisco Unified CM SIP trunk use and relevance of the various values for a “Privacy” header.

Table 1-28 Values for Various Parameters

Value	Notes
Header doesn’t exist	The absence of Privacy header in an INVITE, UPDATE, 180, 183 or 200 message means that the presentation is allowed for name and number. In case of initial INVITE, the presentation information applies to calling party information. In the case of reINVITE, UPDATE, 180, 183, or 200 it applies to connected party information.
id	For outgoing INVITE: Used for specifying presentation restriction for Calling Party name/number. For outgoing re-INVITE, UPDATE, 180, 183, or 200: Used for specifying presentation restriction for Connected Party name/number. For incoming INVITE, UPDATE, 180, 183, or 200: Interpreted as presentation restriction for Connected Party name/number.
header	If present in an incoming SIP request (INVITE or UPDATE), interpreted as presentation restriction for Connected Party name/number. If present in an incoming SIP response, ignored (interpreted as presentation allowed).
user	If present in an coming SIP request (INVITE or UPDATE), interpreted as presentation restriction for Connected Party name/number. If present in an incoming SIP response, ignored (interpreted as presentation allowed).
none	For outgoing INVITE: Used for specifying presentation allowed for Calling Party name/number. For outgoing re-INVITE, UPDATE, 180, 183, or 200: Used for specifying presentation allowed for Connected Party name/number. For incoming INVITE, UPDATE, 180, 183, or 200: Interpreted as presentation allowed for Connected Party's name/number.

CISCO CONFIDENTIAL

Table 1-28 Values for Various Parameters (continued)

Value	Notes
critical	For outgoing INVITE/UPDATE, implies that privacy services requested for this message are critical and therefore, if these privacy services cannot be provided by the network, this request should be rejected. Additionally, the request should carry a Proxy-Require header containing the new option-tag “privacy.” Per rfc3323, the “critical” value is not set in outgoing responses. For incoming SIP messages (requests or Responses), Cisco Unified CM performs no specific handling for “critical” other than syntax verification.

Table 1-29 provides information about P-Asserted-Identity/P-Preferred-Identity.

Table 1-29 P-Asserted-Identity/P-Preferred-Identity Headers

Headers with value formats	Notes
P-Asserted-Identity: “name” SIPURI, tel:+DN	Comma separated headers. One SIP URI and one tel URI.
P-Asserted-Identity: “name” SIPSURI, tel:+DN	Comma separated headers. One SIPS URI and one tel URI.
P-Asserted-Identity: “name” SIPURI P-Asserted-Identity: tel:+DN	Multiple PAI headers.

The P-Asserted-Identity/P-Preferred-Identity headers are validated for syntactical correctness. If the format is not expected as per rfc3325, a “400 Bad Request” response is sent to the UAC and the request is dropped.

The format of P-Preferred-Identity header the same as that of P-Asserted-Identity header, so this section does not explicitly cover P-Preferred-Identity.

The identity information is communicated by using P-Asserted-Identity or P-Preferred-Identity headers. The presentation information is communicated by using Privacy header.

Various pages in Cisco Unified CM Administration (such as the route pattern and the translation pattern configuration pages) allow the configuration of calling number or name restrictions. The SIP trunk screen provides configuration options for the type of Identity (either Asserted or RPID). For Asserted-Identity, there is no option for allowing or restricting name/number separately (as RFC 3323 & RFC 3325 does not provide separate option for this configuration). Therefore, the SIP Privacy option applies to name and number (calling and connected). When SIP Privacy selection box set to Default, the presentation information that is received from the upper layer (call control) is used by the SIP trunk for setting the presentation of name/number in outgoing SIP request and response messages.

CISCO CONFIDENTIAL

The following sections provide additional details:

- Calling Line and Name Identification Presentation, page 1-40
- Connected Line and Name Identification Presentation, page 1-40

Calling Line and Name Identification Presentation

- **Both name and number are allowed**—The Cisco Unified CM SIP trunk does not include a Privacy header when privacy for calling name an number is allowed. For example:

```
From: "Bob Jones" <sip:9728135001@ipAddr1>
P-Asserted-Identity: "Bob Jones"<sip:9728135001@ipAddr1>
```

Note The Privacy: none header also results in the same behavior: name and number are allowed.

- **Name is restricted**—When calling name is restricted and Privacy:id header must be sent, the From header with specific values for Display Name and SIP URI must be used. The P-Asserted-Identity header still includes the actual name. For example:

```
From: "Anonymous" <sip:anonymous@anonymous.invalid>
P-Asserted-Identity: "Bob Jones"<sip:9728135001@ipAddr1>
Privacy: id
```

Note When Name is restricted, the inclusion of Privacy: id also results in a restriction for number.

- **Number is restricted**—When calling number is restricted and Privacy:id header must be sent, it the From header with specific values for Display Name and SIP URI must be used. The P-Asserted-Identity header still includes the actual user part in the SIP URI. For example:

```
From: "Anonymous" <sip:anonymous@anonymous.invalid>
P-Asserted-Identity: "Bob Jones"<sip:9728135001@ipAddr1>
Privacy: id
```

Note When Number is restricted, the inclusion of Privacy: id also results in restriction for display name.

- **Both name and number are restricted**—When calling name and number are restricted, the same principle applies. For example:

```
From: "Anonymous" <sip:anonymous@anonymous.invalid>
P-Asserted-Identity: "Bob Jones"<sip:9728135001@ipAddr1>
Privacy: id
```

Connected Line and Name Identification Presentation

- **Both name and number are allowed**—The Cisco Unified CM SIP trunk does not include a Privacy header when privacy for connected name and number is allowed. For example:

```
P-Asserted-Identity: "alice"<sip:9193929001@ipAddr2>
```

CISCO CONFIDENTIAL

Note **Name is restricted**—When connected name is restricted, a Privacy:id header must be sent. The P-Asserted-Identity header still includes the actual connected name. For example:

```
P-Asserted-Identity: "alice"<sip:9193929001@ipAddr2>
Privacy: id
```

- **Number is restricted**—When connected number is restricted, a Privacy:id header must be sent. The P-Asserted-Identity header still includes the actual connected number. For example:

```
P-Asserted-Identity: "alice"<sip:9193929001@ipAddr2>
Privacy: id
```

- **Both name and number are restricted**—When name and number are restricted, the same principle applies: the P-Asserted-Identity header still includes the actual connected name and number. For example:

```
P-Asserted-Identity: "alice"<sip:9193929001@ipAddr2>
Privacy: id
```

Outbound PUBLISH

Cisco Unified CM uses the PUBLISH method as the preferred mechanism to send IP phone presence information over a SIP trunk.. The main reason for using the PUBLISH method is the performance improvement over the SUBSCRIBE/NOTIFY mechanism used in previous releases.

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

CISCO CONFIDENTIAL

G.729 with MTP

In Cisco Unified CM 7.0, the SIP trunk allows early-offer calls (calls with pre-allocated MTP) to be initiated with low bandwidth codecs such as G.729. In previous releases, the SIP trunk supports only G711.a/ulaw with pre-allocated MTP. This feature is required for endpoints that do not support delayed media calls and that do not want to use the high bandwidth G.711 codec. This feature is turned off by default.

Software MTP on Cisco Unified CM does not support the G.729 codec. Therefore, this feature requires an external MTP/Xcoder device that supports the G29 coded to be configured.

G.729 has four variants. However, because there is no difference from the signaling perspective between G.729 and G.729a and between G.729b and G.729ab, the configuration menu for the preferred originating codec provides only show two options.

The two variants are not compatible with each other on the IOS MTP devices. Interworking with each other requires the presence of a transcoder that supports G.729 (annexb=no) to G.729 (annexb=yes) transcoding.

Cisco Unified CM treats an incoming call with G.729 with annexb=yes as an indication of all the 4 G.729 codec variants.

If MTP required is configured. The initial INVITE only contains an offer, if the trunk is able to reserve MTP/Xcoder resource. Otherwise the call is initiated as a Delayed Media call.

If the terminating side does not support the codec that is offered, the call is torn down and not tried as a delayed media call.

T38 Fax is supported with G.729 codec. However, the call will not switch back to an audio call after the fax transmission completes. This functionality is consistent with T38 Fax support with other codecs.

Mid-call codec switching from the UAS is supported if there is an Xcoder/MTP device that supports both the original codec and the new codec that is offered.

MLPP

The Multilevel Precedence and Preemption (MLPP) feature implementation is based on RFC4411 (Reason Header for Preemption Events) and RFC4412 (Resource Priority for SIP). MLPP supplementary services over SIP trunk are:

- Precedence Call Waiting
- Call Hold
- Call Transfer
- Call Forwarding
- Three-way Calling
- Call Pickup
- Hunt List

CISCO CONFIDENTIAL

Resource Priority Header Overview

- Resource priority (RP) headers can be used in the following SIP messages: INVITE, UPDATE, REFER (in-dialogue only)
- Messages that contain RP header must mark message with the resource priority required tag:

  Require: resource-priority
- RP headers use either of the following formats:
  - Resource-Priority:<network-domain>.<priority-value>
  - Resource-Priority:<network-domain>-<precedence-domain>.<priority-value>
- RP Header precedence domain originates from the MLPP domain of the call. AMLPP domain of 000000 may or may not be present as it is the default MLPP domain and optional.

Preemption Reason Header Overview

Preemption reason headers are included in SIP messages that terminate existing dialogues.

The following text shows the format of the preemption reason header:

```
Reason: preemption;cause=<cause value>;text=<text string>
```

The following cause values are defined by RFC4411.

1. UA Preemption
2. Reserved Resources Preempted
3. Generic Preemption
4. Non-IP Preemption
5. Network Preemption

V.150.1 MOIP

ITU V.150.1 specifies the transport of modem communications, including modem relay and voice band data, over IP networks. For the SIP, this information is transmitted in the SDP by using the media capability sequence that is specified by RFC3407. The following example shows an SDP with MOIP data:

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 172.18.152.50
s=SIP Call
c=IN IP4 172.18.154.236
t=0 0
m=audio 4000 RTP/AVP 0 8 18 118
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=rtpmap:118 v150fw/8000
a=sqn:0
a=cdsc: 1 audio udpsprt 120
a=cpar: a=sprtmap:120 v150mr/8000
a=sendonly
```

CISCO CONFIDENTIAL

In this example, the dynamic payload type 118 is mapped to v150 modem relay using sprt channel 120. The MOIP SDP information is internally generated based on device type and is not configurable. The following values are always used and systems that need to interconnect must use these values:

- SPRT channel: 120
- Modem relay payload type: 118
- Voice band data payload type: 100

Note There is no Cisco Unified CM configuration to enable this feature or change the information that is signaled. When a V.150.1 capable device is registered with Cisco Unified CM, the V.150.1 capabilities are automatically signaled in the SDP when communicating over a SIP trunk.

SIP T.38 Interoperability with Microsoft Exchange

The feature provides Cisco Unified CM with an alternate way to signal the call party switching over to T.38 in SIP.

Cisco Unified CM and gateways use a consistent way to initiate T.38 over audio calls in H.323, SIP, MGCP. The current way of representation in protocol signaling indicates to switch the existing audio channel to an image channel for a T.38 facsimile, and the existing ports are normally reused. The signal also implies that the audio transmission is be terminated before establishing image channels for a facsimile.

Some third-party products such as Microsoft Exchange Server prefer switching an established audio call to T.38 by explicitly indicating that the existing voice channel is terminated/not wanted and another new channel is needed to transmit T.38 facsimile. Both ways of representation for T.38 fax relay in SIP conform to the standards suggested by ITU T.38 and RFC3264. However, Cisco Unified CM does not handle the Microsoft negotiation method so that the call fails to switch over to fax.

Cisco Unified CM continues to behave the same so that when an audio call is established and a call party sends out T.38 call request, Cisco Unified CM terminates the existing audio channels and re-establishes an image channel for facsimile. Therefore, the existing functionality/mechanisms for T.38 will not be changed. The change supports incoming SIP signal that is supported by Microsoft and provides a configurable option in Cisco Unified CM to initiate fax request in the new signaling context.

Cisco Unified CM accepts the context of SIP signaling suggested by Microsoft to switch an audio call to a T.38 facsimile. Specifically, the SIP mid-call INVITE signal specifies that the current audio channel will be terminated by setting the audio port number as 0. In the same signal, another SIP media line syntax will be included to indicate detailed capability of T.38 and its receiving channel. Cisco Unified CM interprets this message as request of T.38 request.

If a SIP INVITE signal indicates active audio and image channels, it is continuously treated as an audio call request and Cisco Unified CM ignores the fax capability. Cisco Unified CM does not support Audio + Image call.

However, the limitation does not affect MS interoperability request as MS also intends to terminate audio session before establishing image channel for T.38.

Besides accepting multiple m=line (audio+image line) syntax in SIP signal to switch a call to T.38, Microsoft provides a configurable parameter in the SIP profile to initiate outgoing SIP signal in multiple m=line with audio port as 0 to negotiate T.38 calls. This parameter is offered to the SIP trunk only. Therefore, when an Exchange server (a server from another vendor) has been registered as SIP trunk in Microsoft and the parameter is checked, the server receives SIP T.38 in multiple m=lines.

CISCO CONFIDENTIAL

This interoperability support is in Cisco Unified CM only and Cisco Unified CM should continue to interact with Cisco SIP gateways with a signal image m=line for a T.38 request. Therefore, the configurable parameter should not be checked to any SIP trunk that is associated with Cisco gateways.

Although the new parameter can be checked in a SIP profile that is associated with a SIP ICT, you should avoid doing so as it does not offer any benefit for the call.

This interoperability support for MS Exchange should not change any existing behavior of T.38 calls in any VoIP protocols. In addition, this support should not affect any VoIP protocol interoperability. But the current T.38 limitations stated will remain.

Multicast MOH over H.323/SIP Trunk

Currently, multicast MoH does not work fully as expected over SIP ICT trunk. Due to this, extra bandwidth used for each unicast MoH over the same ICT is wasted. This feature is to make multicast MoH work completely over SIP and H.323 ICT.

If the holding side is configured to use MMoH, multicast address is sent in SIP SDP message. If the other side supports MMoH, only then will it work. The new service parameter "Send Multicast MOH in H.245 OLC Message" does not apply for SIP ICT. MMoH works on tandem SIP/SIP and H.323/H.323 cases but not for SIP/H.323 interop scenarios.

IPv6

Cisco Unified CM has been enhanced to operate in both IPv4 only mode, or Dual Mode, i.e. IPv4_IPv6 mode. If IPv6 is enabled on Cisco Unified CM, then it behaves in Dual Mode, otherwise it behaves in IPv4 only mode.

SIP Trunk was one of the components on Cisco Unified CM that added support for IPv6. SIP Trunk via configuration can behave in IPv4 only mode, IPv6 only mode, or Dual Mode IPv4_IPv6.

The mode a trunk behaves is configured under the Common Device Configuration via setting the IP Addressing Mode. The default mode for a SIP Trunk is Dual Mode.

The IP Addressing Mode has three settings

- IPv4 only – The SIP Trunk uses the Cisco Unified CM IPv4 server address as its source address for SIP signaling and either, an MTP's, or Phone's IPv4 address for media.
- IPv6 only – The SIP Trunk uses the Cisco Unified CM IPv6 server address as its source address for SIP signaling and either, an MTP's, or Phone's IPv6 address for media.
- IPv4 and IPv6 – The SIP Trunk uses either the Cisco Unified CM IPv4 server address, or the Cisco Unified CM server IPv6 address as its source address for signaling and either, an MTP's IPv4 and/or IPv6 address, or the Phone's IPv4 and/or IPv6 address for media. If the trunk is configured in Dual Mode, then Cisco Unified CM will listen for SIP Traffic on both the IPv4 and IPv6 Interface.

For an IPv4 only trunk, the destination address will be populated with the remote peer's IPv4 address.

For an IPv6 only trunk, the destination IPv6 address field will be populated with the remote peer's IPv6 address.

For a dual mode trunk, both the Destination Address and the Destination v6 address fields are populated. If for some reason only one of the fields is populated, then the trunk will behave in only that mode. For a dual mode SIP Trunk, with both IP Addresses configured on the SIP Trunk device page, the enterprise parameter *IP addressing mode Preference Control* will dictate whether to use IPv4 or the IPv6 address for signaling.

CISCO CONFIDENTIAL

For an IPv6 call, all the SIP URI's will use the following IPv6 address format (address enclosed in [ ] square brackets) as defined by RFC 3261

```
SIP-URI          =  "sip:" [ userinfo ] hostport
                            uri-parameters [ headers ]hostport
hostport        =  host [ ":" port ]
host             =  hostname / IPv4address / IPv6reference
IPv6reference  =  "[" IPv6address "]"
```

Example:

```
INVITE sip:25421@[2001:db8:1:2::12]:5083 SIP/2.0
```

Support for Alternative Network Address Types (ANAT) over SIP Trunk

Cisco Unified CM supports ANAT over dual mode (IPv4_IPv6) SIP Trunks. ANAT allows for SIP devices to send both IPv4 and IPv6 addresses in the SDP body of a SIP Offer, and to return in the SDP body of the SIP Answer a preferred IP address (IPv4 or IPv6) with which to establish a media connection. ANAT is only supported over dual mode SIP Trunk and must be supported by both ends of the SIP Trunk.

Example ANAT Offer SDP

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 172.18.199.129
s=SIP Call
t=0 0
a=group:ANAT 1 2
m=audio 18484 RTP/AVP 0 101
c=IN IP6 2001:db8:c18:1:21c:58ff:fe2a:23f8
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:1
m=audio 18282 RTP/AVP 0 101
c=IN IP4 172.18.199.55
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:2
```

ANAT is enabled by checking the "Enable ANAT" checkbox on the SIP Profile associated with the SIP Trunk. ANAT can be used with both Early Offer and Delayed Offer calls. ANAT should only be enabled on SIP Trunks with an IP Addressing Mode setting of IPv4 and IPv6.

The use of ANAT on a Dual Mode SIP Trunk is indicated in the header of the SIP Invite

- The field "Require: sdp-anat" is used by Cisco Unified CM SIP Trunks using Early Offer.
- The field "Supported: sdp-anat" is used by Cisco Unified CM SIP Trunks using Delayed Offer.
- The "require" sdp-anat value indicates to the far end of the SIP Trunk connection that an ANAT based response "must" be supported.
- The "supported" sdp-anat value indicates to the far end of the SIP Trunk connection that that an ANAT based response "should" be supported.

If ANAT is enabled it should be configured on both ends of the SIP Trunk, (If "require: sdp-anat" is sent in the SIP Invite and the receiving SIP Trunk does not support ANAT all calls will be rejected).

CISCO CONFIDENTIAL

Inbound SIP Trunk Call Rules

- If IPv6 is not enabled on Cisco Unified CM and a call comes into Cisco Unified CM on IPv6 signaling, call is dropped with no response being sent to caller. The reason for this is that when IPv6 is disabled, Cisco Unified CM does not have any ports listening for IPv6 connections. The caller hears dead air.
- If IPv6 is enabled on Cisco Unified CM and a call comes into Cisco Unified CM with invalid mode, the call is rejected with an error being sent from Cisco Unified CM to caller.
  For example, in case IPv6_only trunk receives a call w/v4 signaling in INVITE, Cisco Unified CM sends a 503 response for that INVITE request. The caller hears fast busy tone.

Outgoing SIP Trunk Calls Rules

- If IP addressing mode for SIP Trunk is set to IPv4_only and no IPv4 address is specified on the SIP Trunk configuration page, no call can be made from that sip trunk. Same is true for IPv6_only.
- If IP addressing mode for SIP Trunk is set to IPv6_only, IPv6 is chosen for signaling to send out INVITE. Same is true for IPv4_only.
- If IP addressing mode for SIP Trunk is IPv4_v6, signaling mode is chosen based on 'IP addressing mode preference for Signaling' and specified IP address on trunk configuration page. If preferred IP is not configured on trunk page then whatever is configured on SIP trunk is chosen.
- If IP addressing mode of SIP Trunk is set to IPv4_only and MTP Required is checked, IPv4 media is sent out in SDP if MTP is allocated. If no MTP is available, INVITE without SDP is sent.
- If IP addressing mode of SIP Trunk is set to IPv6_only and MTP Required is checked, IPv6 media is sent out in SDP If dual stack MTP is allocated. If no IPv4\IPv6 MTP is available, INVITE without SDP is sent.
- If IP addressing mode of SIP Trunk is set to IPv4_v6, and MTP Required is checked, a dual stack MTP is allocated if media preference is IPv6; Otherwise IPv4 MTP is allocated. If no MTP is available, the call is tried as a delayed media call.
- If IP addressing mode of SIP Trunk is set to IPv4_v6, and MTP Required is checked and a dual stack is allocated, SIP Trunk decides whether to send both IPv4 and IPv6 SDP or only IPv4 or only IPv6 SDP based on "ANAT Configuration" parameter.
- If ANAT is enabled both IPv4 and IPv6 SDP is sent with ANAT parameters set. Peer device can select one and that one is used for media for that call.
- If ANAT is disabled, SDP sent is based on media preference configured under Enterprise parameters.

Calling Party Number Transformations

The current design in Cisco Unified CM for globalizing on ingress and localizing on egress leaves very few holes that remain to be addressed.

The current design allows for prefixing digits to inbound calls based on ISDN number type. There is no way to manipulate the digits other than prefixing or stripping a fixed number of digits.

A problem that has come up in some of the early Alpha testing is that service providers are not consistently delivering numbering plan information correctly, leading to incorrect number manipulation because the calls are presented as unknown when they should be coming in as national or international. Unknown calls need to be transformed conditionally based on the digits presented and the current prefix/strip field does not offer a way to modify digits conditionally.

CISCO CONFIDENTIAL

Also, SIP only has unknown numbering type, making it almost impossible to prefix anything that will apply to all the different numbers that may come in. This will be problematic for customers subscribing to SIP trunking services. Some of this problem can possibly be addressed if there is an SBC in the picture or the call is going to a SIP gateway by doing the manipulation on the SBC/Gateway, but the capabilities of the SBCs are questionable.

As part of this feature the prefix digits field is modified to allow stripping as well with a special notation (prefix:strip digits). However this is not very user friendly for an administrator.

To address these limitations, the following enhancements are being made:

- For all the current Incoming Calling Party Settings configuration sections on Gateway and Trunk configuration pages as well as Device Pool and Service Parameters, adding an option to configure Number of Digits to Strip in addition to the already available Prefix fields. This would replace the colon (:) notation that was added in Cisco Unified CM 7.0.
- Add the ability to configure a Transformation CSS on each of the above mentioned configuration pages as well. There will be a transformation CSS for each calling party number type to allow the ability to conditionally transform the calling party number based on number type.

For Globalization with this feature, three operations are possible to the Incoming Calling Party Number

- Strip - valid entries 0-24
- Prefix - maximum length is 16 digits
- Incoming Calling Party Transformation CSS which uses Calling Party Transformation patterns

It is recommended to use Strip & Prefix together as per the customer requirements. If conditional modifications are required then instead CSS can be used. There are not many cases where all 3 should be used together.

If all three are configured then the order in which these are applied are:

1. Strip
2. Prefix
3. CSS match and transformations applied

After the above feature changes, administrator is able to configure Prefix and Strip Digits at different levels and there was no sync at device, device pool and service parameter levels. In Cisco Unified CM 7.0, this issue was non-existant, as both the Prefix and Strip Digits, were configure in the Prefix field, using (Prefix: Strip digits) notation.

In addition to this, the Strip Digits and Transformation CSS field, by default had the NULL and <None> configuration.

In initial feature implementation, it was assumed that these default configuration for both Strip Digits and CGPN Transformation CSS, indicates that the call processing will use the values configured at the next level (Device Pool). Whereas, the Prefix field has the "Default" option, which implies that the call processing will use Prefix Digits, at the next level setting (Device Pool/Service Parameter).

So, ideally there's no way to indicate the call processing that, the user does not want to apply Strip Digits and CGPN Transformation CSS. Call processing will always go to the next level (Device Pool) and if nothing is configured at the next level, then no Strip Digits and CGPN Transformation CSS, will be applied.

Extra changes for this feature addressed these limitations in Cisco Unified CM 7.1(2) by:

- Adding "Use Device Pool Calling Party Transformation CSS" checkbox, associated with Incoming Calling Party Transformation CSS for National, International, Subscriber and Unknown number types.
- Database shouldn't allow Strip Digits to be configured, when the Prefix field is set to "Default".

CISCO CONFIDENTIAL

Connected Party Number Transformation

The Cisco Unified CM's 6.0 & 7.0 releases added transformations support for the calling party and called party numbers by introducing the concept of "Calling Party Transformation Pattern" and "Called Party Transformation Pattern". Depending upon UCM deployments, routing requirements, number presentation requirements & CDR requirements, these existing transformations allow the calling/called numbers to be transformed to globalized, localized etc formats.

For the incoming SIP Trunk calls on UCM, in the backwards direction signaling for ringing or connect messages, the UCM communicates the display number information of target destination's Directory Number or Route Pattern number. Currently, if required there is no provision on UCM for transforming the number, which is sent in backward direction of signaling.

- In IME (ViPR) UCM deployments, the requirement is for terminating cluster to communicate E164 number of the called or connected party in IME SIP Trunk communication. The internal numbers of the called enterprise may not be useful for communication across the enterprise.
- In Tandem/Leaf UCM cluster solutions which use Softswitch for PSTN Trunking, the requirement is for UCM to communicate DID number of the called or connected party in SIP Trunk communication. This is required for billing purpose etc.

To address these requirements, the proposal is to support mechanism to transform connected party number by performing transformations on the called/connected number before sending the display number in identity headers (PAI or RemotePartyId) of SIP messages on SIP Trunk.

This feature is going be useful for Cisco Unified CM deployments involving SIP Trunk and needing capability to communicate transformed number in identity headers of 180 Ringing, 200 OK and mid-call UPDATE/reINVITE messages. This would allow the calling endpoint in other Cisco Unified CM cluster, Voice Gateway or 3rd Party [IP]PBX to be able to display the alerting or connected number in format such as DID or E164 number.

For connected party transformations support, the SIP Trunk (all Service Types) is enhanced by adding following configurations:-

1. On SIP Trunk device configuration pages:-

```
--Inbound Calls------------------------
--Connected Party Settings-------------------------
-Connected Party Transformation CSS  [DropDown]
- [] Use Device Pool Connected Party Transformation CSS
```

2. On Device Pool configuration pages, new configuration for:-

```
--Call Routing Information-------------------------
--Connected Party Settings-------------------------
- Connected Party Transformation CSS  [DropDown]
```

Q.735 MLPP over SIP Trunk

CUCM currently provides MLPP capability over the SIP Trunk for DSN/DRSN namespaces as defined by RFC4412; however it is geared to DoD requirements. The German Army uses MLPP based on I.255.3/Q.735.3 and Q.955.3. With this feature we will support the registered namespace Q735. As done for DSN/DSRN, CUCM will continue using the "Resource-Priority" header as specified in RFC4412 to signal the call precedence using the values defined in the RFC. This has been covered in MLPP, page 1-42 of this document.

Call preemption will continue to be signaled using the preemption values for the SIP Reason header as specified by RFC4411 and as covered in MLPP, page 1-42. No changes are made in this area.

CISCO CONFIDENTIAL

Troubleshooting

Table 1-30 highlights some of the common problems that might be encountered when you are configuring a SIP trunk.

Table 1-30 Troubleshooting SIP Trunk Configuration

Symptom	Possible Cause	Recommended Action

Cannot receive or make calls through a SIP trunk.	The SIP trunks are not initialized because the Cisco Unified CM process is not part of a Cisco Unified CM Group.	Associate the Cisco Unified CM to a Cisco Unified CM Group.
		1. In Cisco Unified CM Administration, choose **System > Cisco Unified CM Group**.
		2. Click **Find** and choose a group name (such as Default).
		3. Make sure that the Cisco Unified CM appears under the "Selected Cisco Unified CMs" section.
		The following example SDL logs illustrate how a SIP trunk fails initialization because the Cisco Unified CM node is not a member of a Cisco Unified CM 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`

The UAS may reject all outbound calls associated with a SIP trunk with a 4xx response, or signaling may go through, but no audio path gets detected.	Unusual third-party SIP UA might not support delayed media INVITE.	The SIP trunk default configuration results in sending INVITE (without SDP). This definition prevents the use of an MTP resource. Cisco recommends that you leave the "MTP Required" checkbox on the SIP trunk configuration page unchecked; however, if third-party devices do not support delayed media INVITE requests, you can check this box. You must reset the SIP trunk for the change to take effect.

CISCO CONFIDENTIAL

Table 1-30 Troubleshooting SIP Trunk Configuration (continued)

Symptom	Possible Cause	Recommended Action
DTMF digits do not get sent to the remote SIP device such as a Unity Voice Messaging server.	This could represent an interoperability issue. The SIP trunk supports RFC2833 and Out-of-Band methods when sending DTMF tones across the network. - Most SIP devices support RFC2833. - The supported OOB methods are KPML and Unsolicited Notify. KPML is not widely used in the marketplace at this time. Currently, the only known products supporting KPML are the Cisco TNP phones, Cisco Unified CM, and Cisco IOS Gateway (12.4 and later). Unsolicited Notify is a Cisco proprietary method that is used only on Cisco IOS Gateways (12.2 and later?). Unity does not support either one at this time but might support KPML in the future. If you are connecting Unity to Cisco Unified CM via SCCP, OOB is assumed.	Check whether an MTP resource is allocated for the call: • If both parties have at least one common DTMF method, an MTP is *not* required. • If one party only supports the Out-of-Band method, but the other party only supports RFC2833, an MTP is required. For RFC23833 DTMF events, verify that the media stream (via Sniffer) contains packets with the DTMF Payload Type value. For OOB, incoming or outgoing NOTIFY messages get captured in the Cisco Unified CM trace file. the following example shows 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-9ca2-3b1506ab9e94-24577005 Call-ID: 47b5f280-2de1b302-3fc-3dc712ac@172.18.199.61 CSeq: 101 SUBSCRIBE Max-Forwards: 70 Date: Wed, 20 Jul 2005 20:24:36 GMT User-Agent: Cisco-SIPGateway/IOS-12.x Event: kpml Expires: 7200 Contact: <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-9ca2-3b1506ab9e94-24577005 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

CISCO CONFIDENTIAL

Table 1-30 Troubleshooting SIP Trunk Configuration (continued)

Symptom	Possible Cause	Recommended Action
DTMF digits do not get sent to the remote SIP device (continued)		The following example shows 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"/> The following example shows 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" The following example shows 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

CISCO CONFIDENTIAL

Table 1-30 Troubleshooting SIP Trunk Configuration (continued)

Symptom	Possible Cause	Recommended Action

UAS responds to an INVITE request with a 401 (Unauthorized) message.	Authentication or Authorization is failing	If authentication or authorization are not needed, make sure the appropriate check boxes on the SIP Trunk Security Profile window are unchecked.
		or
		Configure the application user on Cisco Unified CM with proper authorization.
		Configure the UAC to match credentials on Cisco Unified CM.
		`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) message.	In the System->Security Profile->SIP Security Profile window, 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 check boxes on the SIP Trunk Security Profile window are unchecked.
		or
		Configure the application user on Cisco Unified CM with proper authorization.
		Configure the UAC to match credentials on Cisco Unified CM.
		`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`

CISCO CONFIDENTIAL

Table 1-30 Troubleshooting SIP Trunk Configuration (continued)

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

CISCO CONFIDENTIAL

Table 1-30 Troubleshooting SIP Trunk Configuration (continued)

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

Troubleshooting Calling Party Number Transformations feature	Troubleshooting Calling Party Number Transformations feature	There are a few detailed level SDI trace line that will help us find the number Prefixed and the number of digits striped, and the CSS applied.
		Example Stripping/Prefixing Digits, CSS:
		`12/17/2008 00:43:18.826 CCM|//SIP/SIPCdpc(0,0,0)/ci=0/ccbId=0/scbId=0/globalize: Performing stripAndPrependDigits --- Prefix data = +1, Strip Data = 1|<CLID::StandAloneCluster><NID::rtp-galaxy><LVL::Detailed><MASK::20000>`
		`12/17/2008 00:43:18.826 CCM|SPROC :: stripAndPrependDigits- The number 4089023019 is prepended with prefix +1, updated number=+14089023019|<CLID::StandAloneCluster><NID::rtp-galaxy><LVL::Detailed><MASK::ffffff>`
		`12/17/2008 00:43:18.826 CCM|//SIP/SIPCdpc(0,0,0)/ci=0/ccbId=0/scbId=0/globalize: CallingNumber after stripAndPrependDigits +14089023019`
		`12/17/2008 00:58:54.923 CCM|//SIP/SIPCdpc(0,0,0)/ci=0/ccbId=0/scbId=0/globalize: Using Calling CSS 57803b7e-1bcc-b0d7-da08-f023c78dd179|<CLID::StandAloneCluster><NID::rtp-galaxy><LVL::Detailed><MASK::20000>`

Calls using SRTP over non secure trunk don't behave correctly.	Cisco Unified CM down grades to RTP (i.e. AVP)	Check if endpoint on the far end of the trunk indicates support for SAVP in the SDP.
Calls using SRTP over non secure trunk don't behave correctly.	Cisco Unified CM down grades to RTP (i.e. AVP)	Check if other call leg (e.g. perhaps a line side endpoint) on Cisco Unified CM supports SRTP.
Calls using SRTP over non secure trunk don't behave correctly.	Cisco Unified CM down grades to RTP (i.e. AVP)	Check if Cisco Unified CM had to insert an MTP (e.g. due to codec mismatch for example).
Calls using SRTP over non secure trunk don't behave correctly.	Cisco Unified CM disconnects call during setup.	Check if endpoint on the other side of the trunk indicates support for X-cisco-srtp-fallback but the call requires RTP for other reasons (see problems above).
G.Clear calls not working for SIP line/trunk to MGCP GW T1/E1 PRI	Call drops due to media mismatch.	Check if G.Clear codec was offered by SIP leg.

CISCO CONFIDENTIAL

Table 1-30 Troubleshooting SIP Trunk Configuration (continued)

Symptom	Possible Cause	Recommended Action
G.Clear calls not working for SIP line/trunk to MGCP GW T1/E1 PRI	Call drops due to media mismatch.	Check if "Enable G.Clear" checkbox is checked on the MGCP PRI.
G.Clear calls not working for SIP line/trunk to MGCP GW T1/E1 PRI	Call rejected by PSTN/PBX with incompatible destination (88).	Check if ISDN setup from MGCP GW to PBX/PSTN has bearer cap set to 0x8890.
G.Clear calls not working for SIP line to SIP line/trunk	INVITE without G.Clear SDP going out.	Check if G.Clear codec was offered by SIP leg.
G.Clear calls not working for SIP line to SIP line/trunk	INVITE without G.Clear SDP going out	Check if SIP Profile for both the legs have "Enable Early Offer for G.Clear" enabled.
G.Clear calls not working for SIP line to SIP line/trunk	G.Clear call rejected with 488 Incompatible Media	Check if the terminating device supports G.Clear codec / data calls. Cisco IP Phones do not support G.Clear codec.
Logical Partitioning feature not working	Logical Partitioning feature not working	• Check if Enterprise Param "Enable Logical Partitioning" is True. • Check that the device is associated with a valid Geolocation at device or device pool level. • Check that the device is associated with a valid Geolocation filter, having selection of some of the Geolocation fields, at device or device pool level. • When Enterprise Param "Logical Partitioning Default Policy" is DENY, check if ALLOW LP policies between GeolocationPolicy of a Gateway & VoIP site configured. • Make sure case is correct for fields of the LP GeolocationPolicy records and match with that configured for Geolocation records. • There is no LP Policy check for VoIP to VoIP device call or feature with only VoIP participants. • The Cisco Unified CM Admin will allow configuring policies between Interior:geolocpolicyX to Interior:geolocpolicyY but it will not be used during LP checks. • Hierarchy is important for fields of Geolocation 1. Say searching for policy between Border:IN:KA and Interior:IN:KA 2. The following possible policies will match in order • The possible policies that lack some of the fields in hierarchy, such as following will not match: – Border:KA – Interior:KA – Border:BLR

CISCO CONFIDENTIAL

Table 1-30 Troubleshooting SIP Trunk Configuration (continued)

Symptom	Possible Cause	Recommended Action
		– Interior:BLR – Border:KA:BLR – Interior:KA:BLR – Note: Country=IN is missing
IPv6 calls not working	IPv6_only phones are not able to register with Cisco Unified CM	• Verify that IPv6 has been enabled on the Cisco Unified CM server using platform CLI. • Verify that "Enable IPv6" enterprise parameter is set to True. • Verify Server IPv6 Name has been configured with either the hostname or the IPv6 address. If configured for hostname, verify that phone has been configured with a DNS address to resolve hostname to an IPv6 address. • Verify that Cisco Unified CM host only has 1 non link-local IPv6 address. • If the phone will get an IPv6 address via RA, verify that "Allow Auto Configuration for Phone" enterprise parameter is set to ON. • Verify Cisco Unified CM and Cisco TFTP services are running.
IPv6 calls not working	Incoming calls on V6_only SIP Trunk are not answered	• Verify that IPv6 has been enabled on the Cisco Unified CM server using CLI. • Verify that "Enable IPv6" enterprise parameter is set to True. • Verify that the INVITE does not contains IPv4 signaling.
IPv6 calls not working	Outgoing calls on V6_only SIP Trunk are not answered	• Verify that IPv6 has been enabled on the Cisco Unified CM server using CLI. • Verify that "Enable IPv6" enterprise parameter is set to True. • Verify that an IPv6 address is configured on the SIP Trunk configuration page.
IPv6 calls not working	Calls between two endpoint fails	Verify the addressing modes of the endpoints. If one is configured for IPv4_only and the other is configured for IPv6_only, ensure that a dual stack MTP is available to do the media translation.
IPv6 call no MOH is heard	No MOH is heard	• Verify the addressing modes of the endpoint to which MOH is played. If the addressing mode is IPv6_only and MOH is configured for unicast, ensure that a dual stack MTP is available. • If MOH is configured for multicast, the expected behavior is that no MOH will be heard on the IPv6_only phones.
Fax works but no midcall INVITE with T.38 SDP is seen.	T38fax configuration issue.	T.38 fax relay is not being used for fax transmission. • For SIP and H.323 gateways, verify that the T.38 fax is enabled under VOIP dial-peer. • For MGCP gateway, verify fxr-package is enabled. Verify that “mgcp fax t38 inhibit” is not enabled.

CISCO CONFIDENTIAL

Table 1-30 Troubleshooting SIP Trunk Configuration (continued)

Symptom	Possible Cause	Recommended Action
Fax call fails as the initial INVITE transaction is rejected with 580 or 488.	T38fax configuration issue.	Check the locations page on both clusters and verify that the qos is enabled between the SIP trunk and endpoint. Verify that the media resources like MTP(enabled for RSVP) are configured on the endpoint's media resource group. Verify that the devices are registered with CUCM.
Initial INVITE is rejected with 420 Bad extension	End to end RSVP is not configured correctly.	If the unsupported: preconditions is seen in 420, verify that the SIP trunk is configured for E2E RSVP and PRACK is enabled on the cluster that is rejecting the call attempt.
Mid call INVITE with T.38 SDP is rejected with 488.	T38fax problem	Verify that the endpoint supports fax i.e. not an IP Phone. Verify that the endpoint is configured to support fax. See the CLI commands for the gateways.
After tandem/remote transfer, the final call is no longer E2E RSVP call.	End to end RSVP is not configured correctly.	In the transferring node, make sure the RSVP policy is activated for locations the inbound and outbound SIP Trunks assigned to.
When the call is put on hold, no E2E RSVP between the MOH server and held party.	End to end RSVP is not configured correctly.	In the holding cluster, make sure the MOH's device pool has MRGL that has the RSVP agents assigned. Also make sure RSVP policy is activated for locations the MOH server and SIP Trunks assigned to.
When the device in campus (Hub_none location) is making a call, no E2E RSVP.	End to end RSVP is not configured correctly.	Make sure RSVP policy is activated between Hub_none location and location that the SIP Trunk assigned to.
When the conference call is invoked, no E2E RSVP between the Conference Bridge and remote conference participants.	End to end RSVP is not configured correctly.	In the Conference invoked cluster, make sure the Conference Bridge's device pool has MRGL that has the RSVP agents assigned. Also make sure RSVP policy is activated for locations the Conference Bridge and SIP Trunks assigned to.
When a call is blind transferred to a remote system, no E2E RSVP between the Announciator and calling phone.	End to end RSVP is not configured correctly.	In the Transferring cluster, make sure the Announciator's device pool has MRGL that has the RSVP agents assigned. Also make sure RSVP policy is activated for locations the Announciator and SIP Trunks assigned to.
The original call between agent and customer is non secure. However, the non secure supervisor received reorder when trying to monitor the agent	Agent security is not configured correctly.	Check the secure capability of the agent. If the agent is encrypted, this scenario works as designed. The supervisor needs to meet or exceed the agent's secure capability in order for the monitoring call to be successful.

CISCO CONFIDENTIAL

Table 1-30 Troubleshooting SIP Trunk Configuration (continued)

Symptom	Possible Cause	Recommended Action
When conference is started during secure monitoring, the secure icon display is incorrect	Hardware problem	Check if using hardware conference bridge or default (SW) conference bridge. SW conference bridge does not support security.
While using 7970/71 phones, if auto recording is enabled on these, we are unable to start a conference call	Codec negotiation problem	7970/71 phones offer/negotiate G.722 codec by default unless it is disabled. During recording, the codec is locked to be the same as the original call between the customer and agent. If using SW conference bridge with limited codec support, a transcoder maybe needed to complete the conference call. As alternative options, G.722 codec can be disabled on the agent phone or HW conference bridge which supports G.722 codec can be used.
The agent is secure and the recorder is secure. Auto recording is enabled on the agent. However, the CUCM does not send invite to the recorder	Network topology issue.	The SIP Trunk connected to the recorder needs to be secure as well for CUCM to send INVITE to the recorder. No MTP should be inserted on the SIP Trunk between agent and recorder (since MTP does not support security).
The agent is authenticated. Recording does not start on this agent	Configuration issue.	CUCM does not support recording on authenticated phones.

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL

CHAPTER 2

SIP Trunk Call Flows

This chapter describes the new and modified SIP trunk call flows for OL-20951-01 Release 8.0(1). It shows the interfaces and interactions between OL-20951-01 and SIP networks for basic calls and supplementary services. The new features and enhancements that are introduced in this release do not impose any backward compatibility implications on previous versions of the SIP trunk.

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

CISCO CONFIDENTIAL

This document captures the callflows introduced/modified in 8.0 involving the SIP Trunk.

This document contains a number of SIP call flows. Each one has the same format:

1. A description for the scenario that describes what is happening from the various phone user's perspective.
2. The Message Sequence Charts (MSCs) including phones and Unified CM nodes involved in the various SIP transactions. Each MSC uses the following conventions:
   a. Each message is preceded by a dialog identifier and message number relative to the scenario. For example "(d2) [3] INVITE..." indicates that the INVITE is the third message in the sequence and is in the second dialog. Other messages in the same dialog will also have (d2) at the beginning. Also, the message link color is the same for all messages within a dialog.
   b. Phones are named with letters. For example, Phone A.
   c. Nodes in the MSC presenting phones will be labled with the phone letter and the line number. For example, A 1100 represents line 1100 on phone A.
3. The detailed SIP messages associated with the MSC.

Each message arrow is clickable. Clicking a message arrow will cause the document to jump to the detailed message. Clicking [diagram] above the message will cause the document to jump back to the page with MSC that contains that message.

Note All the callflows captured in this document are just for understanding purposes. Message flows might be different in real deployment due to other configuration changes. These message callflows cannot be considered AS IS for interop with 3rd party servers.

List of Scenarios:

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

2. DTMF
   - 2.1 Call between Cisco Unified CM SCCP Phone and SIP Gateway using OOB Notify
   - 2.2 Call between Cisco Unified CM SCCP Phone and SIP Gateway using KPML
   - 2.3 Call between Cisco Unified CM SCCP Phone and SIP Gateway using RFC2833

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

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

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

6. TLS
   - 6.1 TLS Rejection with X509 Subject Name Mismatch
   - 6.2 TLS Basic Incoming Call

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

8. SipsUri

8.1 Incoming SIPS URI Request Redirected by Cisco Unified CM
8.2 Incoming SIPS URI Request Rejected by Cisco Unified CM

9. Info
   9.1 SIP Video Call Using INFO Method

10. MWI
   10.1 MWI Status via Unsolicited NOTIFY

11. Prack
   11.1 Outbound Early Media Call with PRACK
   11.2 Outbound Delayed Media Call with PRACK

12. CallPreservation
   12.1 Session Timers Negotiation & Refresh for the Sip Trunk Call on "Cisco Unified CM"
   12.2 Periodic Refresh after Session Timer Negotiation Failure
   12.3 Sip Trunk Call Preservation when "Cisco Unified CM" is the "Refresher"
   12.4 Sip Trunk Call Preservation when "Cisco Unified CM" is the "Non-Refresher"

13. 3xx
   13.1 Incoming 3xx Redirection

14. Authentication-Authorization
   14.1 Unified CM gets Authenticated as UAC
   14.2 Unified CM Authenticates Incoming Request

15. ACL
   15.1 Access Control List, Deny Presence Subscription
   15.2 Access Control List, Deny Out of Dialog REFER
   15.3 Access Control List, Deny Unsolicited NOTIFY
   15.4 Access Control List, Deny INVITE with Replaces Header
   15.5 Access Control List, Deny REFER with Replaces Header

16. RSVP
   16.1 Outgoing RSVP Call through SIP Trunk

17. Publish
   17.1 Basic PUBLISH Operations
   17.2 PUBLISH with Shared Line, A Holds and B Resumes
   17.3 PUBLISH with Shared Line, A Holds and B Selects
   17.4 PUBLISH Support for Mobility
   17.5 PUBlISH Support for DND

18. G.729

18.1 Establish G.729a with No MTP
18.2 Establish G.729 with MTP
18.3 Delayed Media Call with No MTP
18.4 Delayed Media Call No Support

19. PAI
    19.1 Basic Outgoing Call with default identity configurations on SIP Trunk
    19.2 Basic Outgoing Call with identity in only From header
    19.3 Basic Outgoing Call with only Remote-Party-Id
    19.4 Basic Outgoing Call with identity in P-Preferred-Identity header.
    19.5 Basic Incoming SIP TrunkCall, sending 180/200 with Asserted-Identity & Privacy:id
    19.6 Incoming SIP TrunkCall, sending identity in Asserted-Identity with Privacy:none
    19.7 Basic Incoming SIP TrunkCall
    19.8 Incoming SIP TrunkCall, sending 180, 200 without any identity headers
    19.9 Basic Incoming SIP TrunkCall, sending PPI in outgoing 180/200
    19.10 Mid-Call UPDATE for Display identity change using Asserted-Identity.
    19.11 Mid-Call UPDATE for Display identity change with P-Preferred-Identity
    19.12 Incoming OOB REFER request for performing a click to call scenario.
    19.13 Basic Outgoing Call with Asserted-Identity & Privacy:id headers.
    19.14 Basic Outgoing Call with an identity in Asserted-Identity header & Privacy: id;critical
    19.15 Basic Outgoing Call with identity in Asserted-Identity & Privacy:none

20. MLPP
    20.1 MLPP Basic Call

21. V.150.1
    21.1 Basic Call with V.150.1 virtual codec

22. T38Fax-interop-with-MSExchange
    22.1 T38 Interop with MS Exchange

23. MMoH
    23.1 Basic Hold-resume Call via an SIP ICT with MMOH enabled

24. IPv6
    24.1 Outbound Delayed media call using Dual Mode SIP Trunk with signaling preference IPv4
    24.2 Outbound Delayed media call using Dual Mode SIP Trunk with signaling preference IPv6
    24.3 Outbound Delayed media call using Dual Mode SIP Trunk with signaling preference IPv6, media IPv4
    24.4 Inbound Delayed media call using IPv6 only SIP Trunk
    24.5 Outbound early offer call using IPv6 only SIP Trunk
    24.6 Outbound delayed offer call using ANAT over Dual Mode SIP Trunk with
    24.7 Outbound delayed offer call using ANAT over Dual Mode SIP Trunk with
    24.8 Outbound early offer call using ANAT over Dual Mode SIP Trunk with

24.9 Outbound IPv4 call to an IPv6 trunk results in a 503
24.10 Outbound IPv6 call to an IPv4 trunk results in a 503

25. CallingPartyTransformations
    25.1 Define number of digits to be prefixed, stripped for Unknown Number Type on Service Parameter page
    25.2 Define number of digits to be prefixed, stripped for Unknown Number Type on trunk device page
    25.3 Define Calling Party Transformation CSS for Unknown Number on Trunk Device Page
    25.4 Define both Stripping/Prefixing and Calling Party Transformation CSS for Unknown Number on Device Pool Page

26. MLPP Q735
    26.1 MLPP Q735 Namespace Call

27. ConnectedPartyTransformations
    27.1 Connected Party number trasformation

CISCO CONFIDENTIAL

1. BasicCall

1.1 Basic Incoming Call

Title: Basic Incoming Call

Description:

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

Unified CM1 received an INVITE via the SIP Trunk.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM2 & Unified CM1 has route pattern 1.XXXX

Scenario:

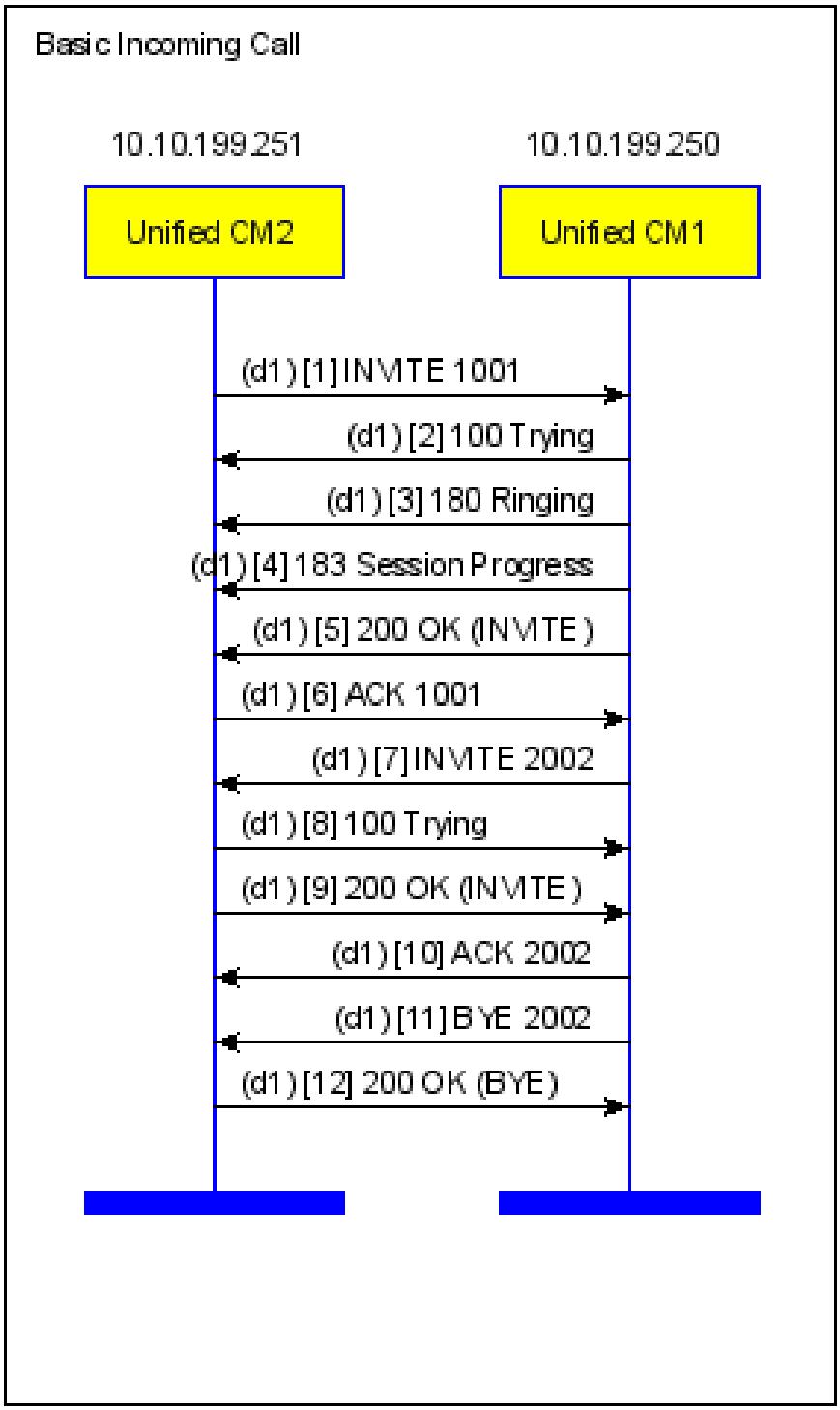
Phone B DN 2002 calls Phone A DN 1001 over the SIP Trunk by dialing 11001

Phone A DN 1001 Answers

Phone A DN 1001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

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

[1] INVITE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK3395a5cdb
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552697
To: <sip:1001@10.10.199.250>
Date: Wed, 17 Feb 2010 18:37:57 GMT
Call-ID: 8fe4f600-b7c13785-3-fbc712ac@10.10.199.251
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2414147072-3082893189-0000000002-4224127660
Session-Expires:  1800
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

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

[2] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK3395a5cdb
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552697
To: <sip:1001@10.10.199.250>
Date: Wed, 17 Feb 2010 18:25:39 GMT
Call-ID: 8fe4f600-b7c13785-3-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[3] SIP/2.0 180 Ringing

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK3395a5cdb
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552697
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557664
Date: Wed, 17 Feb 2010 18:25:39 GMT
Call-ID: 8fe4f600-b7c13785-3-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 0
```

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

[4] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK3395a5cdb
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552697
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557664
Date: Wed, 17 Feb 2010 18:25:39 GMT
Call-ID: 8fe4f600-b7c13785-3-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK3395a5cdb
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552697
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557664
Date: Wed, 17 Feb 2010 18:25:39 GMT
Call-ID: 8fe4f600-b7c13785-3-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK43b84ee7d
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552697
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557664
Date: Wed, 17 Feb 2010 18:37:57 GMT
Call-ID: 8fe4f600-b7c13785-3-fbc712ac@10.10.199.251
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 28668 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK42480b93e
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557664
```

CISCO CONFIDENTIAL

```
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552697
Date: Wed, 17 Feb 2010 18:25:42 GMT
Call-ID: 8fe4f600-b7c13785-3-fbc712ac@10.10.199.251
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 2414147072-3082893189-0000000002-4224127660
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 30978 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[8] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK42480b93e
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557664
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552697
Date: Wed, 17 Feb 2010 18:38:00 GMT
Call-ID: 8fe4f600-b7c13785-3-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

```
[9] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK42480b93e
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557664
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552697
Date: Wed, 17 Feb 2010 18:38:00 GMT
Call-ID: 8fe4f600-b7c13785-3-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 28668 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[10] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK57b8229d9
```

CISCO CONFIDENTIAL

```
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557664
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552697
Date: Wed, 17 Feb 2010 18:25:42 GMT
Call-ID: 8fe4f600-b7c13785-3-fbc712ac@10.10.199.251
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK677589475
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557664
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552697
Date: Wed, 17 Feb 2010 18:25:42 GMT
Call-ID: 8fe4f600-b7c13785-3-fbc712ac@10.10.199.251
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK677589475
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557664
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552697
Date: Wed, 17 Feb 2010 18:38:07 GMT
Call-ID: 8fe4f600-b7c13785-3-fbc712ac@10.10.199.251
CSeq: 102 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

1.2 Basic Outgoing Call

Title: Basic Outgoing Call

Description:

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

Cisco Unified CM1 sent out the initial INVITE.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

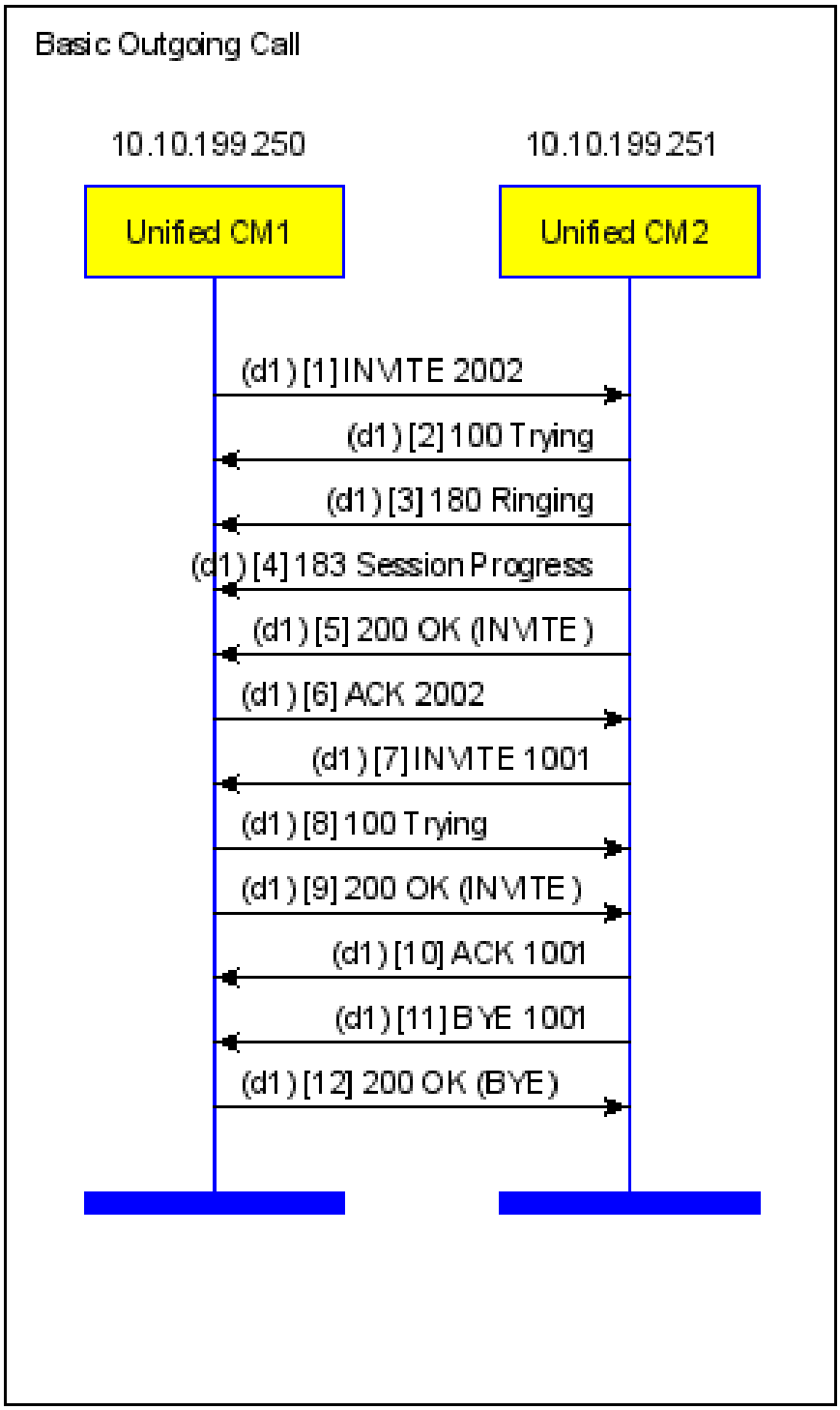
Phone A DN 1003 calls Phone B DN 2002 over the SIP Trunk by dialing 22002

Phone B DN 2002 Answers

Phone A DN 1003 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK73431a3a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557667
To: <sip:2002@10.10.199.251>
Date: Wed, 17 Feb 2010 18:27:56 GMT
Call-ID: 29aba380-b7c1352c-2-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 0699114368-3082892588-0000000001-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK73431a3a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557667
To: <sip:2002@10.10.199.251>
Date: Wed, 17 Feb 2010 18:40:14 GMT
Call-ID: 29aba380-b7c1352c-2-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK73431a3a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557667
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552698
Date: Wed, 17 Feb 2010 18:40:14 GMT
Call-ID: 29aba380-b7c1352c-2-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK73431a3a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557667
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552698
Date: Wed, 17 Feb 2010 18:40:14 GMT
Call-ID: 29aba380-b7c1352c-2-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK73431a3a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557667
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552698
Date: Wed, 17 Feb 2010 18:40:14 GMT
Call-ID: 29aba380-b7c1352c-2-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK814dcda3a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557667
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552698
Date: Wed, 17 Feb 2010 18:27:56 GMT
Call-ID: 29aba380-b7c1352c-2-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 28296 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK54476908a
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552698
```

CISCO CONFIDENTIAL

```
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557667
Date: Wed, 17 Feb 2010 18:40:17 GMT
Call-ID: 29aba380-b7c1352c-2-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 0699114368-3082892588-0000000001-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 26002 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK54476908a
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552698
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557667
Date: Wed, 17 Feb 2010 18:27:59 GMT
Call-ID: 29aba380-b7c1352c-2-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK54476908a
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552698
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557667
Date: Wed, 17 Feb 2010 18:27:59 GMT
Call-ID: 29aba380-b7c1352c-2-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 28296 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK63b0077ca
```

CISCO CONFIDENTIAL

```
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552698
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557667
Date: Wed, 17 Feb 2010 18:40:17 GMT
Call-ID: 29aba380-b7c1352c-2-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK73a96d592
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552698
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557667
Date: Wed, 17 Feb 2010 18:40:17 GMT
Call-ID: 29aba380-b7c1352c-2-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK73a96d592
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552698
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557667
Date: Wed, 17 Feb 2010 18:28:04 GMT
Call-ID: 29aba380-b7c1352c-2-fac712ac@10.10.199.250
CSeq: 102 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

1.3 Basic Early Offer Call via an Inter Cluster SIP Trunk

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

Description:

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

Cisco Unified CM1 received an INVITE with SDP.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

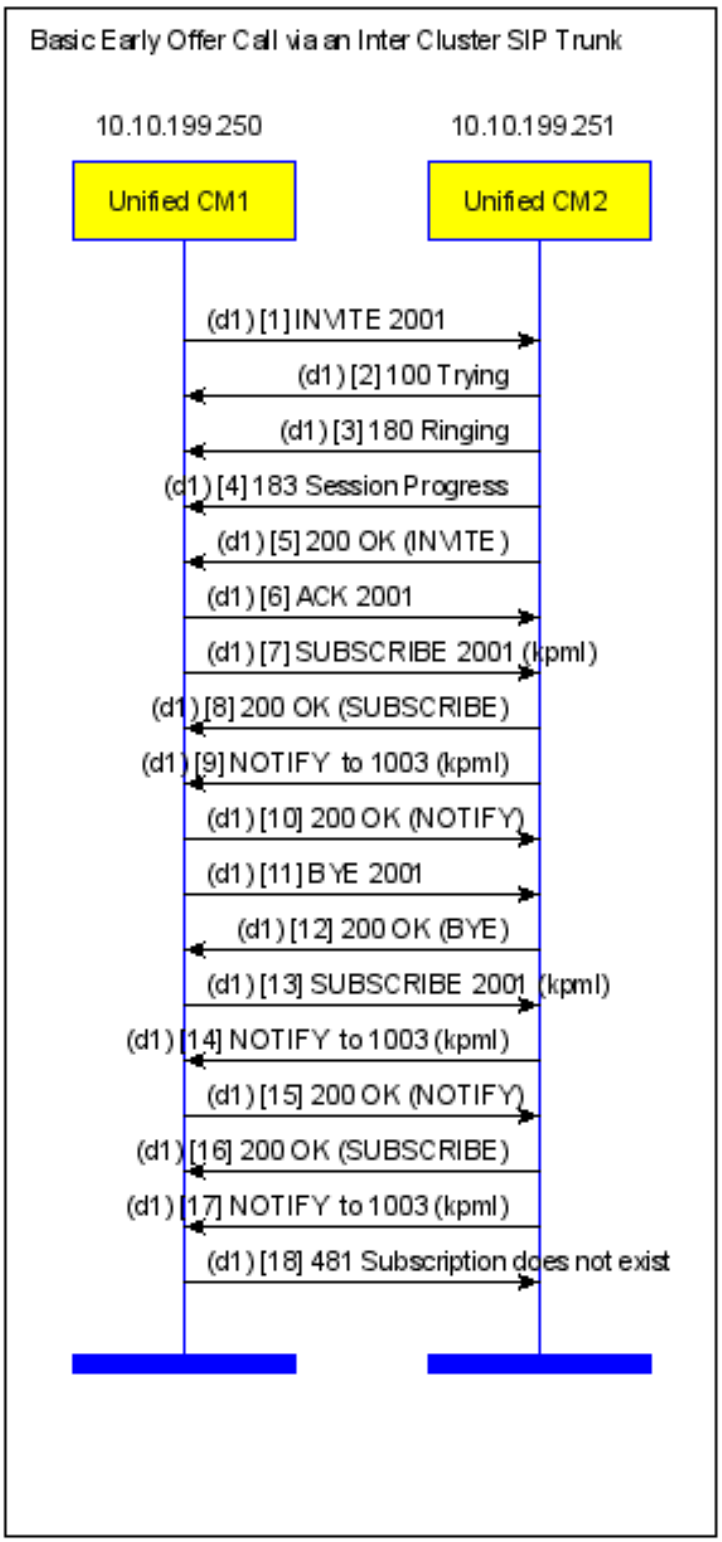
Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = B, Line = 2001, IP = 10.10.199.171, Model = SIP TNP

SIP Trunk between Unified CM1 & Unified CM2 has
a) route pattern 2.XXXX
b) Media Termination Point Required checked.

Scenario:

Phone A DN 1003 calls Phone B DN 2001 over the SIP Trunk by dialing 22001
Phone B DN 2001 Answers
Phone A DN 1003 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2001@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1a6b808279
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
To: <sip:2001@10.10.199.251>
Date: Wed, 17 Feb 2010 19:21:22 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2694343296-3082895794-0000000005-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.250
t=0 0
m=audio 24576 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1a6b808279
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
To: <sip:2001@10.10.199.251>
Date: Wed, 17 Feb 2010 19:33:40 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1a6b808279
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
Date: Wed, 17 Feb 2010 19:33:40 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1a6b808279
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
Date: Wed, 17 Feb 2010 19:33:40 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
```

CISCO CONFIDENTIAL

```
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 25354 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1a6b808279
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
Date: Wed, 17 Feb 2010 19:33:40 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 25354 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1b1400460f
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
Date: Wed, 17 Feb 2010 19:21:22 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

[7] SUBSCRIBE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1c51dbea5f
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 102 SUBSCRIBE
Date: Wed, 17 Feb 2010 19:21:25 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Expires: 7200
Contact: <sip:10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1003@10.10.199.250>
Accept: application/kpml-response+xml
Max-Forwards: 70
Content-Type: application/kpml-request+xml
Content-Length: 370

<?xml version="1.0" encoding="UTF-8" ?>
```

CISCO CONFIDENTIAL

```
<kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-request kpml-request.xsd" version="1.0">

  <pattern interdigittimer="7260000" persist="persist">
    <regex tag="dtmf">[x*#ABCD]</regex>
  </pattern>

</kpml-request>
```

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1c51dbea5f
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
Date: Wed, 17 Feb 2010 19:33:43 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 102 SUBSCRIBE
Content-Length: 0
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Expires: 7200
```

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

[9] NOTIFY sip:10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK26725bd112
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 101 NOTIFY
Max-Forwards: 70
Date: Wed, 17 Feb 2010 19:33:43 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: active;expires=7200
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Content-Length: 0
```

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

[10] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK26725bd112
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
Date: Wed, 17 Feb 2010 19:21:25 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 101 NOTIFY
Content-Length: 0
```

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

[11] BYE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1d30e2d7c5
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
Date: Wed, 17 Feb 2010 19:21:22 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1003@10.10.199.250>
CSeq: 103 BYE
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1d30e2d7c5
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
Date: Wed, 17 Feb 2010 19:33:48 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 103 BYE
Content-Length: 0
```

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

[13] SUBSCRIBE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1e38731158
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 104 SUBSCRIBE
Date: Wed, 17 Feb 2010 19:21:30 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Expires: 0
```

CISCO CONFIDENTIAL

```
Contact: <sip:10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1003@10.10.199.250>
Max-Forwards: 70
Content-Length: 0
```

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

[14] NOTIFY sip:10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK28f9960d
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Wed, 17 Feb 2010 19:33:48 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: terminated
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Content-Length: 0
```

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

[15] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK28f9960d
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
Date: Wed, 17 Feb 2010 19:21:30 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 102 NOTIFY
Content-Length: 0
```

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

[16] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1e38731158
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
Date: Wed, 17 Feb 2010 19:33:48 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 104 SUBSCRIBE
Content-Length: 0
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Expires: 0
```

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

[17] NOTIFY sip:10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK2955ba6c03
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Wed, 17 Feb 2010 19:33:48 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: terminated;reason=timeout
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Content-Type: application/kpml-response+xml
Content-Length: 348

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-response kpml-response.xsd" code="487" digits=""
forced_flush="false" suppressed="false" tag="dtmf" text="Subscription Expired" version="1.0"/>
```

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

[18] SIP/2.0 481 Subscription does not exist

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK2955ba6c03
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552709
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557684
Date: Wed, 17 Feb 2010 19:21:30 GMT
Call-ID: a0986a80-b7c141b2-6-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Content-Length: 0
```

CISCO CONFIDENTIAL

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

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

Description:

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

Cisco Unified CM1 sent out the initial INVITE.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

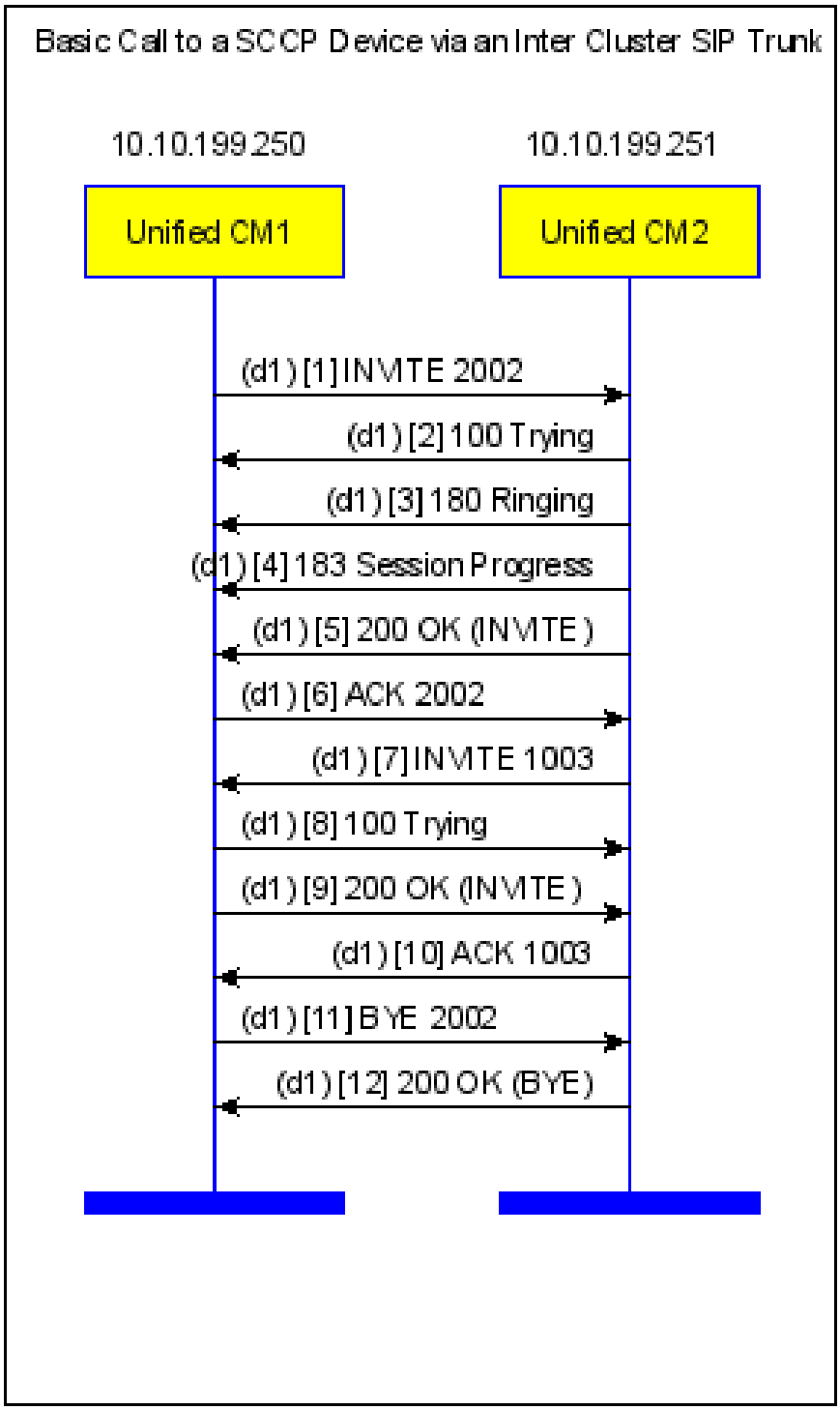
Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

Phone A DN 1003 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers
Phone A DN 1003 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1f6492e632
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557687
To: <sip:2002@10.10.199.251>
Date: Wed, 17 Feb 2010 19:33:16 GMT
Call-ID: 4a2c2b80-b7c1447c-7-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 1244408704-3082896508-0000000006-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1f6492e632
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557687
To: <sip:2002@10.10.199.251>
Date: Wed, 17 Feb 2010 19:45:34 GMT
Call-ID: 4a2c2b80-b7c1447c-7-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1f6492e632
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557687
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552712
Date: Wed, 17 Feb 2010 19:45:34 GMT
Call-ID: 4a2c2b80-b7c1447c-7-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1f6492e632
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557687
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552712
Date: Wed, 17 Feb 2010 19:45:34 GMT
Call-ID: 4a2c2b80-b7c1447c-7-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1f6492e632
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557687
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552712
Date: Wed, 17 Feb 2010 19:45:34 GMT
Call-ID: 4a2c2b80-b7c1447c-7-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2050bdb928
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557687
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552712
Date: Wed, 17 Feb 2010 19:33:16 GMT
Call-ID: 4a2c2b80-b7c1447c-7-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 227

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 24544 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK2bc50ca2a
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552712
```

CISCO CONFIDENTIAL

```
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557687
Date: Wed, 17 Feb 2010 19:45:38 GMT
Call-ID: 4a2c2b80-b7c1447c-7-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 1244408704-3082896508-0000000006-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 24876 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK2bc50ca2a
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552712
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557687
Date: Wed, 17 Feb 2010 19:33:20 GMT
Call-ID: 4a2c2b80-b7c1447c-7-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK2bc50ca2a
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552712
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557687
Date: Wed, 17 Feb 2010 19:33:20 GMT
Call-ID: 4a2c2b80-b7c1447c-7-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 215

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 24544 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK2c1b0d8a52
```

CISCO CONFIDENTIAL

```
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552712
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557687
Date: Wed, 17 Feb 2010 19:45:38 GMT
Call-ID: 4a2c2b80-b7c1447c-7-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK217e56cc59
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557687
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552712
Date: Wed, 17 Feb 2010 19:33:20 GMT
Call-ID: 4a2c2b80-b7c1447c-7-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1003@10.10.199.250>
CSeq: 102 BYE
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK217e56cc59
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557687
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552712
Date: Wed, 17 Feb 2010 19:45:46 GMT
Call-ID: 4a2c2b80-b7c1447c-7-fac712ac@10.10.199.250
CSeq: 102 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

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

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

Description:

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

Cisco Unified CM1 sent out the initial INVITE.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

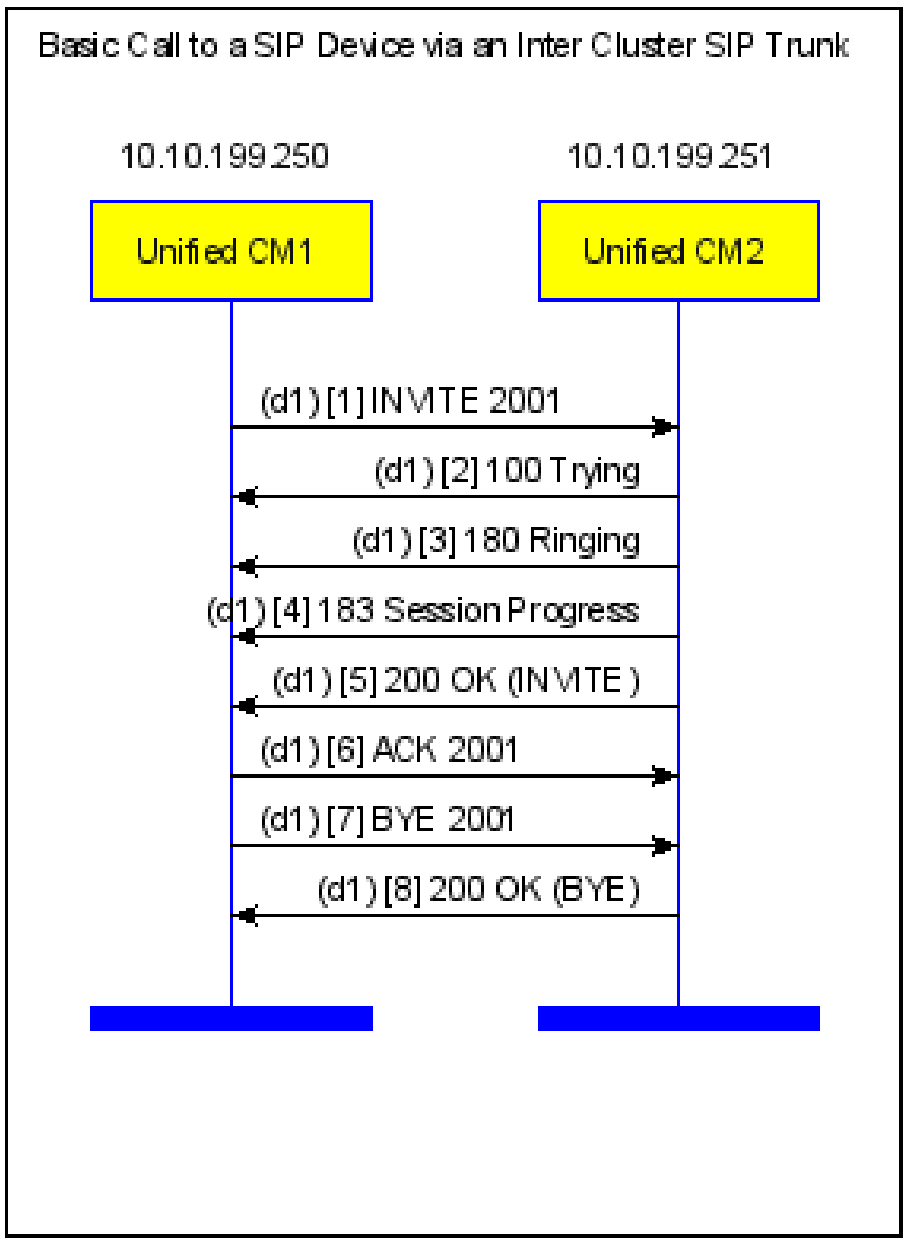
Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = B, Line = 2001, IP = 10.10.199.171, Model = SIP TNP

SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

Phone A DN 1003 calls Phone B DN 2001 over the SIP Trunk by dialing 22001
Phone B DN 2001 Answers
Phone A DN 1003 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2001@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK222dedd73c
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557689
To: <sip:2001@10.10.199.251>
Date: Wed, 17 Feb 2010 19:45:01 GMT
Call-ID: ee62a200-b7c1473d-8-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 3999441408-3082897213-0000000007-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK222dedd73c
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557689
To: <sip:2001@10.10.199.251>
Date: Wed, 17 Feb 2010 19:57:19 GMT
Call-ID: ee62a200-b7c1473d-8-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK222dedd73c
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557689
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552714
Date: Wed, 17 Feb 2010 19:57:19 GMT
Call-ID: ee62a200-b7c1473d-8-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK222dedd73c
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557689
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552714
Date: Wed, 17 Feb 2010 19:57:19 GMT
Call-ID: ee62a200-b7c1473d-8-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 26020 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK222dedd73c
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557689
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552714
Date: Wed, 17 Feb 2010 19:57:19 GMT
Call-ID: ee62a200-b7c1473d-8-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 26020 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2315d1117e
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557689
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552714
Date: Wed, 17 Feb 2010 19:45:01 GMT
Call-ID: ee62a200-b7c1473d-8-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 215

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 29324 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] BYE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2415f537
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557689
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552714
```

CISCO CONFIDENTIAL

```
Date: Wed, 17 Feb 2010 19:45:01 GMT
Call-ID: ee62a200-b7c1473d-8-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1003@10.10.199.250>
CSeq: 102 BYE
Content-Length: 0
```

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2415f537
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557689
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552714
Date: Wed, 17 Feb 2010 19:57:26 GMT
Call-ID: ee62a200-b7c1473d-8-fac712ac@10.10.199.250
CSeq: 102 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

1.6 Basic Call to a SCCP Device via an Inter Cluster SIP Trunk Using a FQDN as the

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

Description:

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

Cisco Unified CM1 sent out the initial INVITE.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

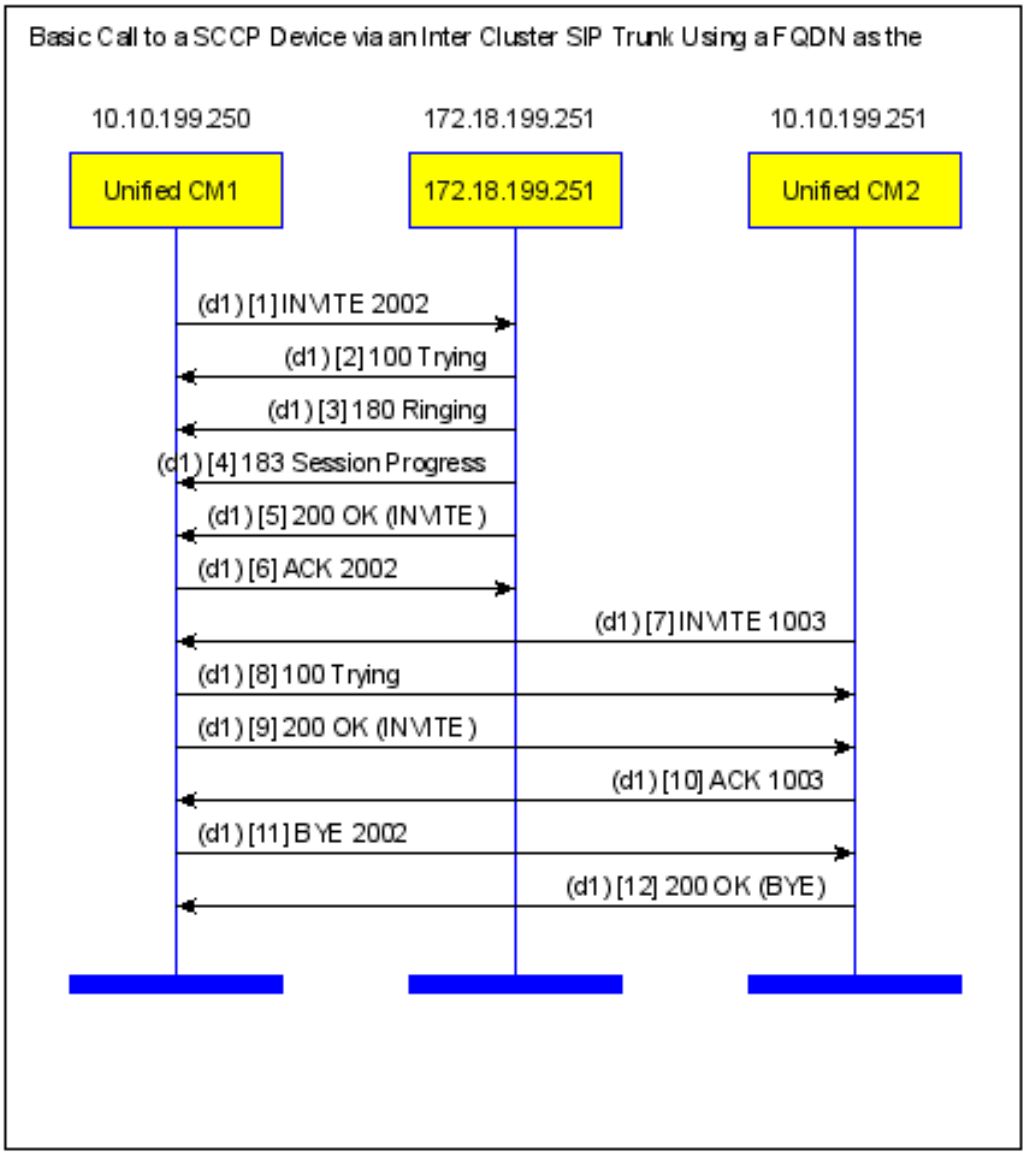
SIP Trunk between Unified CM1 & Unified CM2 has
a) route pattern 2.XXXX pattern
b) Destination Address as the FQDN of the Unified CM2

Scenario:

Phone A DN 1003 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers
Phone A DN 1003 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@siptrunk17.cisco.com:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2537a9299
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557691
To: <sip:2002@siptrunk17.cisco.com>
Date: Wed, 17 Feb 2010 19:51:28 GMT
Call-ID: d50e2580-b7c148c0-9-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 3574474112-3082897600-0000000008-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2537a9299
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557691
To: <sip:2002@siptrunk17.cisco.com>
Date: Wed, 17 Feb 2010 20:03:46 GMT
Call-ID: d50e2580-b7c148c0-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2537a9299
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557691
To: <sip:2002@siptrunk17.cisco.com>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552716
Date: Wed, 17 Feb 2010 20:03:46 GMT
Call-ID: d50e2580-b7c148c0-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2537a9299
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557691
To: <sip:2002@siptrunk17.cisco.com>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552716
Date: Wed, 17 Feb 2010 20:03:46 GMT
Call-ID: d50e2580-b7c148c0-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2537a9299
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557691
To: <sip:2002@siptrunk17.cisco.com>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552716
Date: Wed, 17 Feb 2010 20:03:46 GMT
Call-ID: d50e2580-b7c148c0-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK263dd22cae
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557691
To: <sip:2002@siptrunk17.cisco.com>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552716
Date: Wed, 17 Feb 2010 19:51:28 GMT
Call-ID: d50e2580-b7c148c0-9-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 227

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 18952 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK32be51d13
From: <sip:2002@siptrunk17.cisco.com>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552716
```

CISCO CONFIDENTIAL

```
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557691
Date: Wed, 17 Feb 2010 20:03:49 GMT
Call-ID: d50e2580-b7c148c0-9-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 3574474112-3082897600-0000000008-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 19284 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK32be51d13
From: <sip:2002@siptrunk17.cisco.com>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552716
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557691
Date: Wed, 17 Feb 2010 19:51:31 GMT
Call-ID: d50e2580-b7c148c0-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK32be51d13
From: <sip:2002@siptrunk17.cisco.com>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552716
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557691
Date: Wed, 17 Feb 2010 19:51:31 GMT
Call-ID: d50e2580-b7c148c0-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 215

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 18952 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK3373a6199
```

CISCO CONFIDENTIAL

```
From: <sip:2002@siptrunk17.cisco.com>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552716
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557691
Date: Wed, 17 Feb 2010 20:03:49 GMT
Call-ID: d50e2580-b7c148c0-9-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK274ad9e1d3
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557691
To: <sip:2002@siptrunk17.cisco.com>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552716
Date: Wed, 17 Feb 2010 19:51:31 GMT
Call-ID: d50e2580-b7c148c0-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1003@10.10.199.250>
CSeq: 102 BYE
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK274ad9e1d3
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557691
To: <sip:2002@siptrunk17.cisco.com>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552716
Date: Wed, 17 Feb 2010 20:03:53 GMT
Call-ID: d50e2580-b7c148c0-9-fac712ac@10.10.199.250
CSeq: 102 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

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

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

Description:

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

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

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.193.253

Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

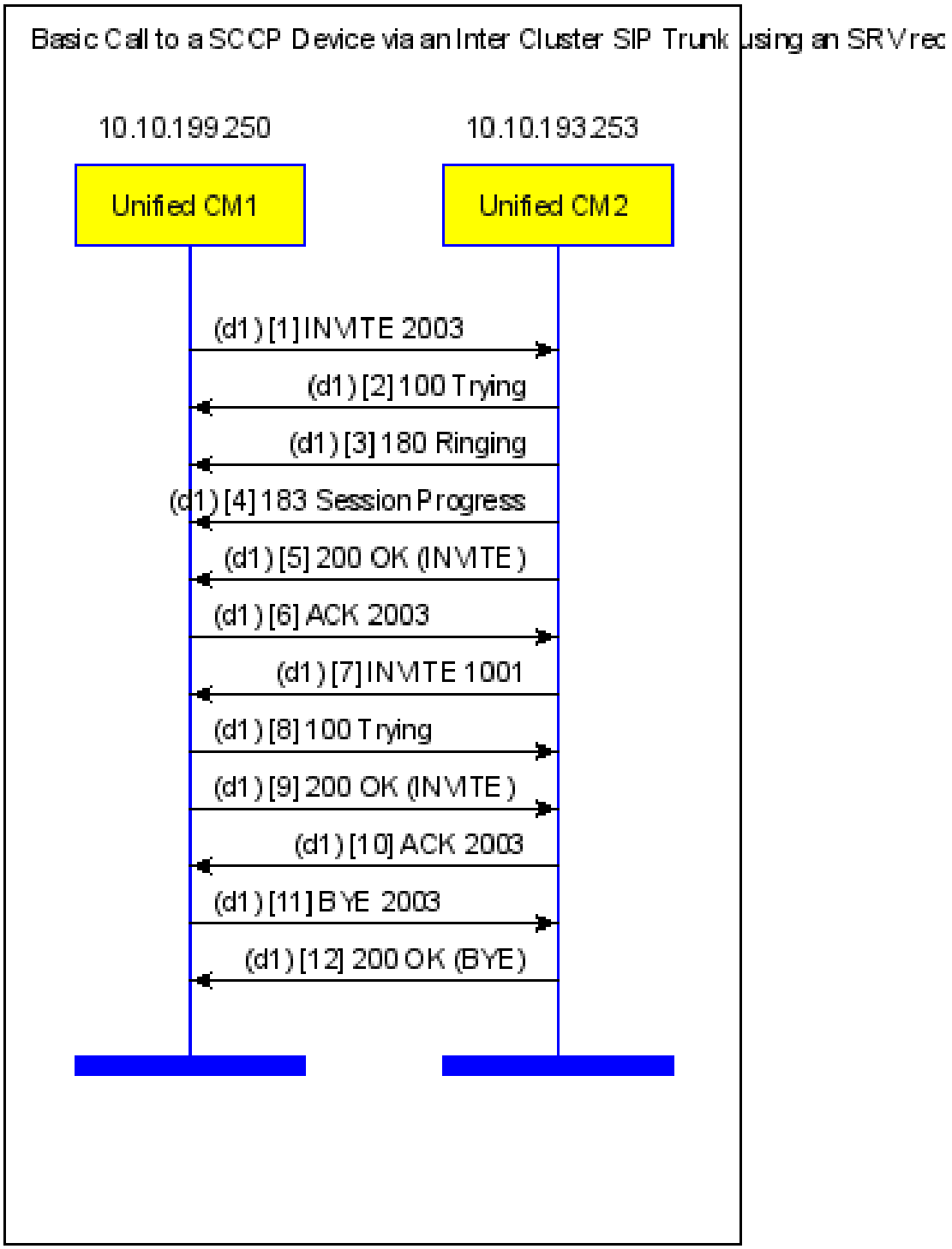
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

Phone A DN 1003 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers
Phone A DN 1003 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2003@siptrunk17.sip.com:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f5e2d3ecd
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
To: <sip:2003@siptrunk17.sip.com>
Date: Mon, 22 Feb 2010 17:19:15 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 102 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f5e2d3ecd
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
To: <sip:2003@siptrunk17.sip.com>
Date: Mon, 22 Feb 2010 17:19:15 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f5e2d3ecd
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
To: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
Date: Mon, 22 Feb 2010 17:19:15 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f5e2d3ecd
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
To: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
Date: Mon, 22 Feb 2010 17:19:15 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Content-Type: application/sdp
Content-Length: 301

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

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f5e2d3ecd
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
To: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
```

CISCO CONFIDENTIAL

```
Date: Mon, 22 Feb 2010 17:19:15 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Supported: replaces
Session-Expires:  1800;refresher=uas
Require:  timer
Content-Type: application/sdp
Content-Length: 301

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

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

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

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK306805814b
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
To: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
Date: Mon, 22 Feb 2010 17:19:15 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 228

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

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

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

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK03ff46e6b
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
Date: Mon, 22 Feb 2010 17:19:17 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE:  120
Cisco-Guid: 3574591744-1782702867-2-4257288876
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires:  1800;refresher=uac
Content-Type: application/sdp
Content-Length: 216

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

CISCO CONFIDENTIAL

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

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

[8] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK03ff46e6b
From: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
Date: Mon, 22 Feb 2010 17:19:17 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK03ff46e6b
From: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
Date: Mon, 22 Feb 2010 17:19:17 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Content-Type: application/sdp
Content-Length: 216

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

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

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

```
Via: SIP/2.0/TCP 10.10.193.253:5060;branch=z9hG4bK13cb0facc
From: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
Date: Mon, 22 Feb 2010 17:19:17 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK31507f6bd1
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
To: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
Date: Mon, 22 Feb 2010 17:19:17 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 BYE
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK31507f6bd1
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-23784868
To: <sip:2003@siptrunk17.sip.com>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-26446603
Date: Mon, 22 Feb 2010 17:19:22 GMT
Call-ID: d2150080-6a41e30e-16a9-fac712ac@10.10.199.250
CSeq: 103 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

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

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

Description:

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

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

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = SIP Proxy, IP = 10.10.199.32
Node = SIP Endpoint, IP = 10.10.199.42

Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = B, Line = 3001, IP = 10.10.199.42, Model = SIP TNP

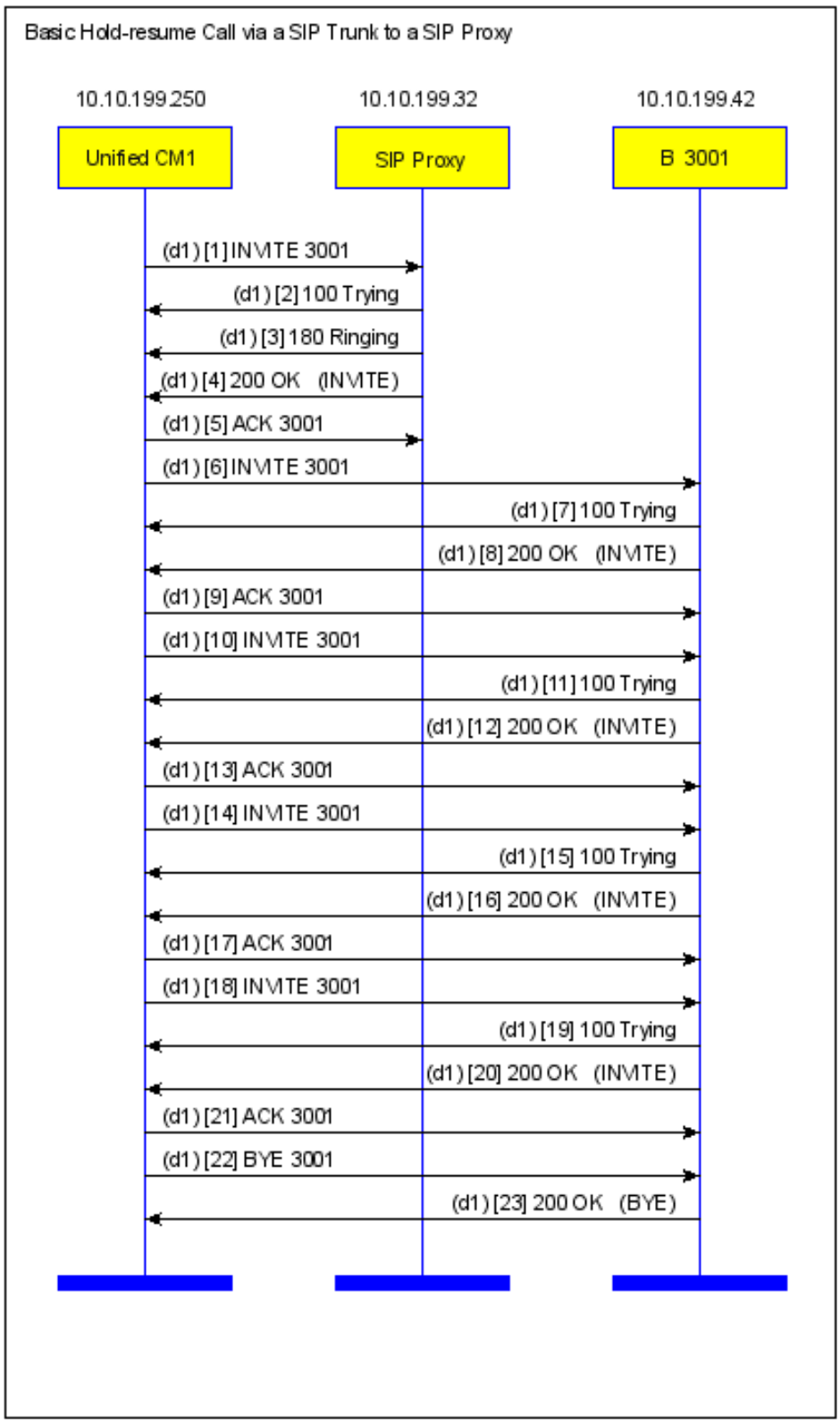
SIP Trunk on Unified CM1 pointing to the SIP Proxy with route pattern 4.XXXX

Scenario:

Phone A DN 1003 calls Phone B DN 3001 over the SIP Trunk by dialing 43001
Phone B DN 3001 Answers
Phone A DN 1003 presses hold softkey
Phone B DN 3001 hears music on hold (MOH)
Duration short
Phone A DN 1003 presses resume softkey
Phone A DN 1003 and Phone B DN 3001 have two-way speech
Phone A DN 1003 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:3001@10.10.199.32:5060 SIP/2.0
```
Date: Mon, 22 Feb 2010 18:32:04 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
Allow-Events: presence
P-Asserted-Identity: <sip:1003@10.10.199.250>
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:3001@10.10.199.32>
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK35cc97937
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK35cc97937
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
To: <sip:3001@10.10.199.32>
CSeq: 101 INVITE
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK35cc97937
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Date: Mon, 22 Feb 2010 15:33:43 GMT
CSeq: 101 INVITE
Server: CSCO/7
Contact: <sip:3001@10.10.199.42:5060>
Record-Route: <sip:3001@10.10.199.32:5060;maddr=10.10.199.32;transport=tcp;lr>
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK35cc97937
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Date: Mon, 22 Feb 2010 15:33:45 GMT
CSeq: 101 INVITE
Server: CSCO/7
Contact: <sip:3001@10.10.199.42:5060>
Record-Route: <sip:3001@10.10.199.32:5060;maddr=10.10.199.32;transport=tcp;lr>
Content-Type: application/sdp
Content-Length: 249

v=0
o=Cisco-SIPUA 17532 16996 IN IP4 10.10.199.42
s=SIP Call
c=IN IP4 10.10.199.42
t=0 0
m=audio 23352 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
```

[diagram] Call-ID:[prev][next]
[5] ACK sip:3001@10.10.199.42:5060 SIP/2.0
```
Route: <sip:3001@10.10.199.32:5060;maddr=10.10.199.32;transport=tcp;lr>
Date: Mon, 22 Feb 2010 18:32:04 GMT
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
Allow-Events: presence
Content-Length: 215
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Content-Type: application/sdp
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3652deffad
```

CISCO CONFIDENTIAL

```
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 30236 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] INVITE sip:3001@10.10.199.42:5060 SIP/2.0

```
Route: <sip:3001@10.10.199.32:5060;maddr=10.10.199.32;transport=tcp;lr>
Date: Mon, 22 Feb 2010 18:32:12 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
Allow-Events: presence
P-Asserted-Identity: <sip:1003@10.10.199.250>
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 221
User-Agent: Cisco-CUCM8.0
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3772749f51
CSeq: 102 INVITE
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 30236 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK3772749f51
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
CSeq: 102 INVITE
Content-Length: 0
```

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK3772749f51
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Date: Mon, 22 Feb 2010 15:33:51 GMT
CSeq: 102 INVITE
Server: CSCO/7
Contact: <sip:3001@10.10.199.42:5060>
Record-Route: <sip:3001@10.10.199.42:5060;maddr=10.10.199.32;transport=tcp;lr>
Content-Type: application/sdp
Content-Length: 242

v=0
o=Cisco-SIPUA 8345 12880 IN IP4 10.10.199.42
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 23352 RTP/AVP 0 8 18 101
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
```

CISCO CONFIDENTIAL

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

[diagram]   Call-ID:[prev][next]
[9] ACK sip:3001@10.10.199.42:5060 SIP/2.0
Route: <sip:3001@10.10.199.32:5060;maddr=10.10.199.32;transport=tcp;lr>
Date: Mon, 22 Feb 2010 18:32:12 GMT
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
Allow-Events: presence
Content-Length: 0
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3845336c77
CSeq: 102 ACK
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[10] INVITE sip:3001@10.10.199.42:5060 SIP/2.0
Route: <sip:3001@10.10.199.32:5060;maddr=10.10.199.32;transport=tcp;lr>
Date: Mon, 22 Feb 2010 18:32:12 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
Allow-Events: presence
P-Asserted-Identity: <sip:1003@10.10.199.250>
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3945ba9f1e
CSeq: 103 INVITE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[11] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK3945ba9f1e
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
CSeq: 103 INVITE
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK3945ba9f1e
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Date: Mon, 22 Feb 2010 15:33:51 GMT
CSeq: 103 INVITE
Server: CSCO/7
Contact: <sip:3001@10.10.199.42:5060>
Record-Route: <sip:3001@10.10.199.42:5060;maddr=10.10.199.32;transport=tcp;lr>
Content-Type: application/sdp
Content-Length: 247

v=0
o=Cisco-SIPUA 2032 1470 IN IP4 10.10.199.42
s=SIP Call
c=IN IP4 10.10.199.42
t=0 0
m=audio 23352 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

[diagram]   Call-ID:[prev][next]
[13] ACK sip:3001@10.10.199.42:5060 SIP/2.0
Route: <sip:3001@10.10.199.32:5060;maddr=10.10.199.32;transport=tcp;lr>
Date: Mon, 22 Feb 2010 18:32:12 GMT
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
Allow-Events: presence
Content-Length: 227
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
```

CISCO CONFIDENTIAL

```
Content-Type: application/sdp
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3a410bf712
CSeq: 103 ACK
Max-Forwards: 70

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

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

[14] INVITE sip:3001@10.10.199.42:5060 SIP/2.0

```
Route: <sip:3001@10.10.199.32:5060;maddr=10.10.199.32;transport=tcp;lr>
Date: Mon, 22 Feb 2010 18:32:24 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
Allow-Events: presence
P-Asserted-Identity: <sip:1003@10.10.199.250>
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 220
User-Agent: Cisco-CUCM8.0
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3ba4e7f5a
CSeq: 104 INVITE
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 4000 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[15] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK3ba4e7f5a
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
CSeq: 104 INVITE
Content-Length: 0
```

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

[16] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK3ba4e7f5a
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Date: Mon, 22 Feb 2010 15:34:03 GMT
CSeq: 104 INVITE
Server: CSCO/7
Contact: <sip:3001@10.10.199.42:5060>
Record-Route: <sip:3001@10.10.199.42:5060;maddr=10.10.199.32;transport=tcp;lr>
Content-Type: application/sdp
Content-Length: 242

v=0
o=Cisco-SIPUA 24888 3627 IN IP4 10.10.199.42
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
```

CISCO CONFIDENTIAL

```
m=audio 23352 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
```

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

[17] ACK sip:3001@10.10.199.42:5060 SIP/2.0

```
Route: <sip:3001@10.10.199.32:5060;maddr=10.10.199.32;transport=tcp;lr>
Date: Mon, 22 Feb 2010 18:32:24 GMT
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
Allow-Events: presence
Content-Length: 0
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3c11cba77
CSeq: 104 ACK
Max-Forwards: 70
```

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

[18] INVITE sip:3001@10.10.199.42:5060 SIP/2.0

```
Route: <sip:3001@10.10.199.32:5060;maddr=10.10.199.32;transport=tcp;lr>
Date: Mon, 22 Feb 2010 18:32:24 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
Allow-Events: presence
P-Asserted-Identity: <sip:1003@10.10.199.250>
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3d616c2662
CSeq: 105 INVITE
Max-Forwards: 70
```

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

[19] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK3d616c2662
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
CSeq: 105 INVITE
Content-Length: 0
```

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

[20] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK3d616c2662
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Date: Mon, 22 Feb 2010 15:34:03 GMT
CSeq: 105 INVITE
Server: CSCO/7
Contact: <sip:3001@10.10.199.42:5060>
Record-Route: <sip:3001@10.10.199.42:5060;maddr=10.10.199.32;transport=tcp;lr>
Content-Type: application/sdp
Content-Length: 248

v=0
o=Cisco-SIPUA 26013 1273 IN IP4 10.10.199.42
s=SIP Call
c=IN IP4 10.10.199.42
t=0 0
m=audio 23352 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
```

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

[21] ACK sip:3001@10.10.199.42:5060 SIP/2.0

```
Route: <sip:3001@10.10.199.32:5060;maddr=10.10.199.32;transport=tcp;lr>
Date: Mon, 22 Feb 2010 18:32:24 GMT
```

CISCO CONFIDENTIAL

```
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
Allow-Events: presence
Content-Length: 215
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Content-Type: application/sdp
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3e740245ce
CSeq: 105 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 32030 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[22] BYE sip:3001@10.10.199.42:5060 SIP/2.0
Route: <sip:3001@10.10.199.32:5060;maddr=10.10.199.32;transport=tcp;lr>
Date: Mon, 22 Feb 2010 18:32:24 GMT
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
P-Asserted-Identity: <sip:1003@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3f46897ce0
CSeq: 106 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[23] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK3f46897ce0
From: <sip:1003@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20447329
To: <sip:3001@10.10.199.32>;tag=000f24aa92b9000319685e29-768f1a4e
Call-ID: 7871af80-88e110a4-46-fac712ac@10.10.199.250
Date: Mon, 22 Feb 2010 15:34:08 GMT
CSeq: 106 BYE
Server: CSCO/7
Content-Length: 0
```

CISCO CONFIDENTIAL

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

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

Description:

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

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

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = B, Line = 2001, IP = 10.10.199.171, Model = SIP TNP

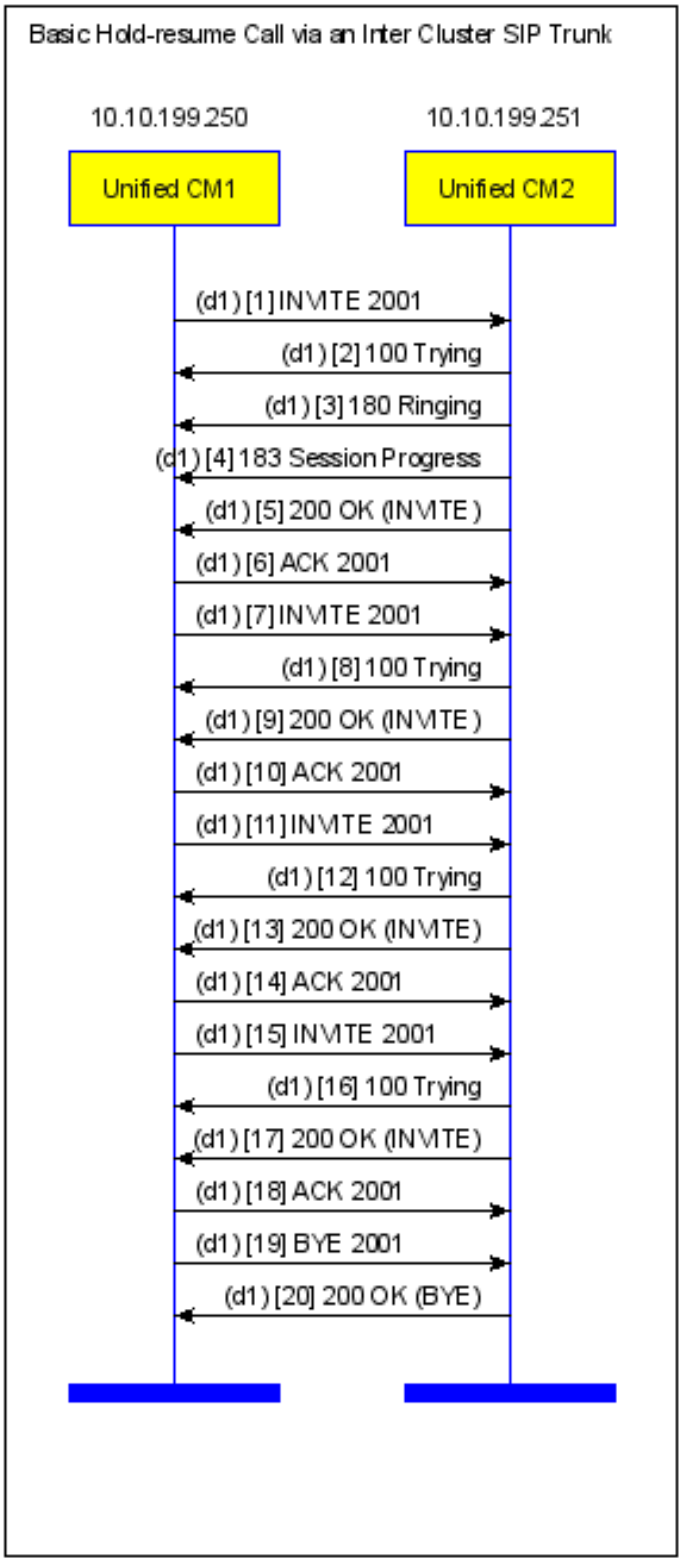
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

Phone A DN 1003 calls Phone B DN 2001 over the SIP Trunk by dialing 22001
Phone B DN 2001 Answers
Phone A DN 1003 presses hold softkey
Phone B DN 2001 hears music on hold (MOH)
Duration short
Phone A DN 1003 presses resume softkey
Phone A DN 1003 and Phone B DN 2001 have two-way speech
Phone A DN 1003 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2001@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2911d553da
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>
Date: Thu, 18 Feb 2010 18:31:57 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 3820687872-3083962269-0000000013-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2911d553da
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>
Date: Thu, 18 Feb 2010 18:44:18 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2911d553da
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:44:18 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2911d553da
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:44:18 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 28146 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2911d553da
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:44:18 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 28146 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2af9282b0
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:31:57 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 215

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 22294 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] INVITE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2b55b7c482
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
```

CISCO CONFIDENTIAL

```
Date: Thu, 18 Feb 2010 18:32:11 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 221

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 22294 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2b55b7c482
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:44:31 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2b55b7c482
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:44:31 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 28146 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2c1b7bad1d
```

CISCO CONFIDENTIAL

```
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:32:11 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

[11] INVITE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2d3a250cf5
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:32:11 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

[12] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2d3a250cf5
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:44:32 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[13] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2d3a250cf5
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:44:32 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 28146 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
```

CISCO CONFIDENTIAL

```
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[14] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2e74c2e51e
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:32:11 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
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 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.250
t=0 0
m=audio 4000 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[15] INVITE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f27848d00
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:32:25 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  1800;refresher=uas
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[16] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f27848d00
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:44:46 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow-Events: presence, kpml
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[17] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f27848d00
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:44:46 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347
```

CISCO CONFIDENTIAL

```
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 28146 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[18] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3053f64ab8
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:32:25 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Type: application/sdp
Content-Length: 215

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 24738 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[19] BYE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3119e30cd0
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:32:25 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1003@10.10.199.250>
CSeq: 105 BYE
Content-Length: 0
```

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

[20] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3119e30cd0
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557701
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552723
Date: Thu, 18 Feb 2010 18:44:52 GMT
Call-ID: e3bb1200-b7d1879d-e-fac712ac@10.10.199.250
CSeq: 105 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

1.10 Basic Conference Call via an Inter Cluster SIP Trunk

Title: Basic Conference Call via an Inter Cluster SIP Trunk

Description:

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

Cisco Unified IP Phone 1001 (registered with CM1) calls Cisco Unified IP Phone 2001 (registered with CM2). Then Cisco Unified IP Phone 2001 conferences with Cisco Unified IP Phone 1003 (registered with CM1)

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2001, IP = 10.10.199.171, Model = SIP TNP
Phone = C, Line = 1003, IP = 10.10.199.66, Model = SCCP

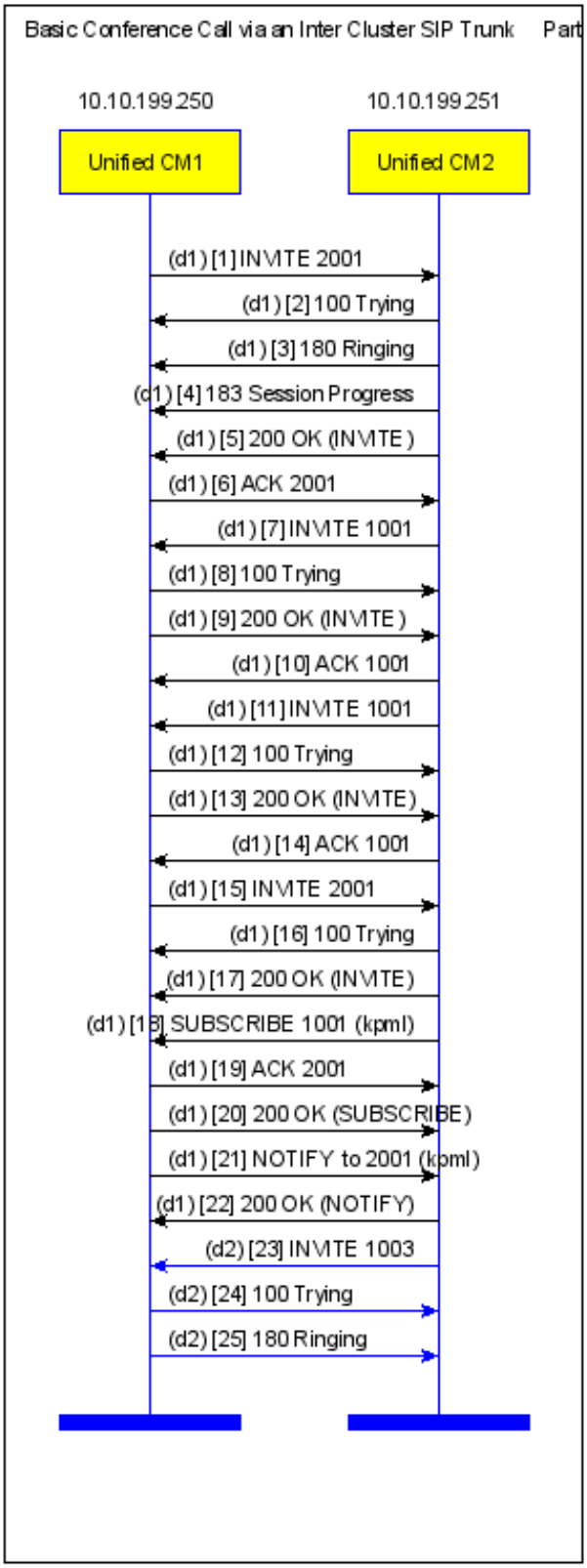
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

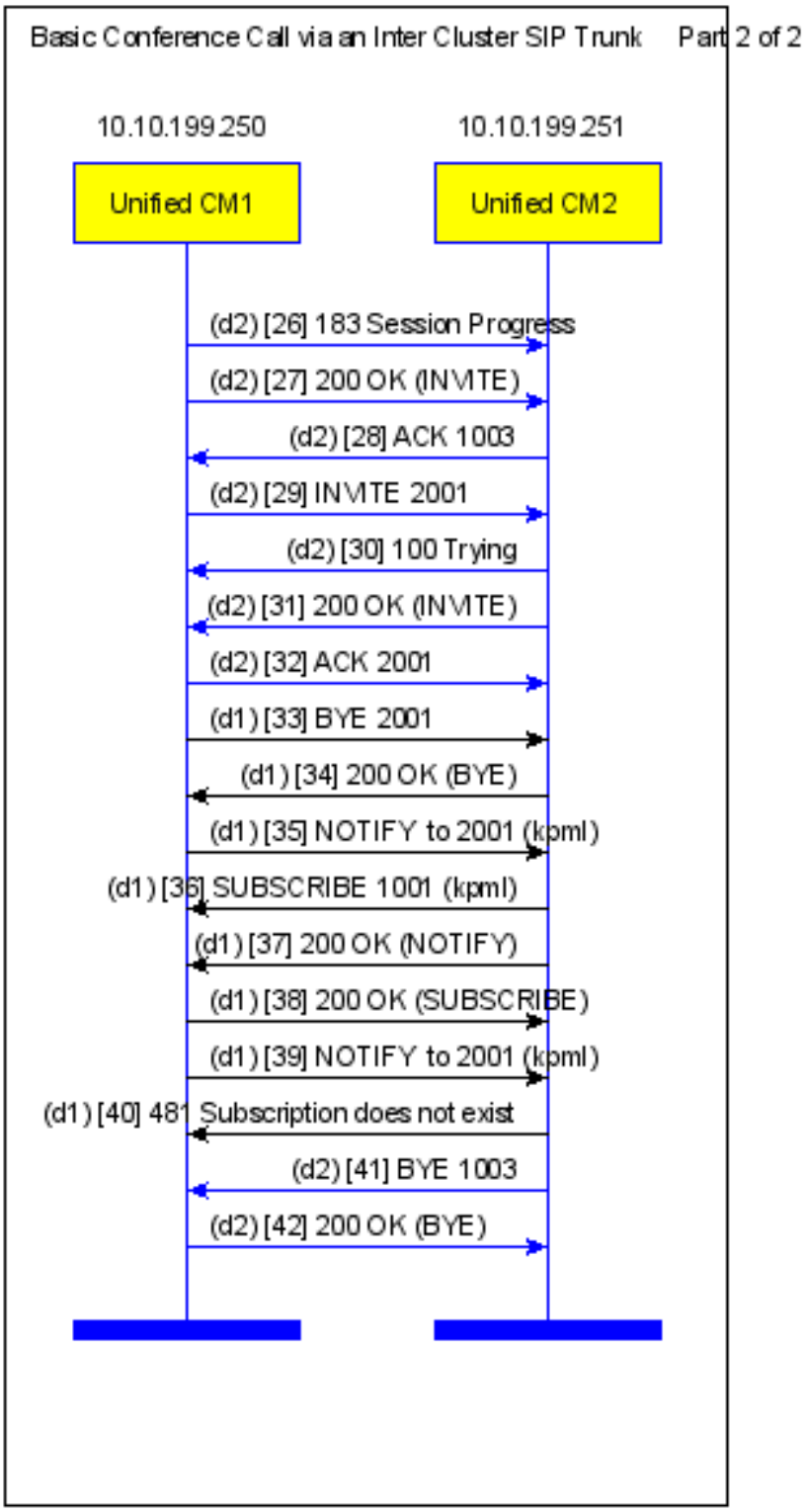
Phone A DN 1001 calls Phone B DN 2001 over the SIP Trunk by dialing 22001
Phone B DN 2001 Answers
Phone B DN 2001 presses Confrn softkey
Phone B DN 2001 calls Phone C DN 1003 over the SIP Trunk by dialing 11003
Phone C DN 1003 Answers
Phone B DN 2001 presses Confrn softkey to complete the conference
Phone A DN 1001, Phone B DN 2001 and Phone C DN 1003 are in conference call
Phone A DN 1001 goes onHook
Phone B DN 2001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2001@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3245ec461c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>
Date: Thu, 18 Feb 2010 18:47:04 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 0005785984-3083963176-0000000014-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3245ec461c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>
Date: Thu, 18 Feb 2010 18:59:24 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3245ec461c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:59:24 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3245ec461c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:59:24 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 23280 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3245ec461c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:59:24 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 23280 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3341ce573d
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:47:04 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 17214 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK48544e25ec
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
```

CISCO CONFIDENTIAL

```
Date: Thu, 18 Feb 2010 18:59:33 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 0005785984-3083963176-0000000014-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 352

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 23280 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK48544e25ec
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
Date: Thu, 18 Feb 2010 18:47:13 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK48544e25ec
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
Date: Thu, 18 Feb 2010 18:47:13 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 17214 RTP/AVP 9 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

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

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK491a2bea67
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
Date: Thu, 18 Feb 2010 18:59:33 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK4a5ac27a81
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
Date: Thu, 18 Feb 2010 18:59:33 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 0005785984-3083963176-0000000014-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

[12] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK4a5ac27a81
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
Date: Thu, 18 Feb 2010 18:47:13 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[13] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK4a5ac27a81
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
Date: Thu, 18 Feb 2010 18:47:13 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[14] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK4b7766c24a
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
Date: Thu, 18 Feb 2010 18:59:33 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 227

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 4000 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[15] INVITE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK344f5d2d02
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:47:13 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 17812 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[16] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK344f5d2d02
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:59:33 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 102 INVITE
```

CISCO CONFIDENTIAL

```
Allow-Events: presence, kpml
Content-Length: 0
```

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

[17] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK344f5d2d02
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:59:33 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 17812 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[18] SUBSCRIBE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK4c18798338
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 103 SUBSCRIBE
Date: Thu, 18 Feb 2010 18:59:33 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Expires: 7200
Contact: <sip:10.10.199.251:5060;transport=tcp>
Accept: application/kpml-response+xml
Max-Forwards: 70
Content-Type: application/kpml-request+xml
Content-Length: 370

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-request kpml-request.xsd" version="1.0">

  <pattern interdigittimer="7260000" persist="persist">
    <regex tag="dtmf">[x*#ABCD]</regex>
  </pattern>

</kpml-request>
```

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

[19] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3513f30b1a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:47:13 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

[20] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK4c18798338
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
```

CISCO CONFIDENTIAL

```
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
Date: Thu, 18 Feb 2010 18:47:13 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 103 SUBSCRIBE
Content-Length: 0
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 7200
```

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

[21] NOTIFY sip:10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3665fee3d4
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 18:47:13 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: active;expires=7200
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
```

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

[22] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3665fee3d4
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:59:34 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Content-Length: 0
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK51549dba19
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552730
To: <sip:1003@10.10.199.250>
Date: Thu, 18 Feb 2010 18:59:40 GMT
Call-ID: c2f4bb80-b7d18e1c-13-fbc712ac@10.10.199.251
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 3270818688-3083963932-0000000004-4224127660
Session-Expires:  1800
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=calling;screen=yes;privacy=off
Max-Forwards: 69
Content-Length: 0
```

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

[24] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK51549dba19
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552730
To: <sip:1003@10.10.199.250>
Date: Thu, 18 Feb 2010 18:47:20 GMT
Call-ID: c2f4bb80-b7d18e1c-13-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[25] SIP/2.0 180 Ringing

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK51549dba19
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552730
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557706
Date: Thu, 18 Feb 2010 18:47:20 GMT
Call-ID: c2f4bb80-b7d18e1c-13-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
```

CISCO CONFIDENTIAL

```
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 0
```

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

[26] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK51549dba19
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552730
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557706
Date: Thu, 18 Feb 2010 18:47:20 GMT
Call-ID: c2f4bb80-b7d18e1c-13-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 336

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[27] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK51549dba19
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552730
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557706
Date: Thu, 18 Feb 2010 18:47:20 GMT
Call-ID: c2f4bb80-b7d18e1c-13-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 336

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
```

CISCO CONFIDENTIAL

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

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK522b9c4d
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552730
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557706
Date: Thu, 18 Feb 2010 18:59:40 GMT
Call-ID: c2f4bb80-b7d18e1c-13-fbc712ac@10.10.199.251
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 20614 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[29] INVITE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3740cd0ad
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557706
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552730
Date: Thu, 18 Feb 2010 18:47:25 GMT
Call-ID: c2f4bb80-b7d18e1c-13-fbc712ac@10.10.199.251
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 3270818688-3083963932-0000000004-4224127660
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 215

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 16410 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[30] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3740cd0ad
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557706
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552730
Date: Thu, 18 Feb 2010 18:59:45 GMT
Call-ID: c2f4bb80-b7d18e1c-13-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[31] SIP/2.0 200 OK

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3740cd0ad
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557706
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552730
Date: Thu, 18 Feb 2010 18:59:45 GMT
Call-ID: c2f4bb80-b7d18e1c-13-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 20614 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[32] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK387ba63e55
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557706
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552730
Date: Thu, 18 Feb 2010 18:47:25 GMT
Call-ID: c2f4bb80-b7d18e1c-13-fbc712ac@10.10.199.251
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

[33] BYE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3971b81927
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:47:13 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 104 BYE
Content-Length: 0
```

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

[34] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3971b81927
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:59:53 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 104 BYE
Content-Length: 0
```

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

[35] NOTIFY sip:10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3a3fd12543
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 105 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 18:47:33 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: terminated
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
```

CISCO CONFIDENTIAL

```
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[36] SUBSCRIBE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK5847d70211
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 104 SUBSCRIBE
Date: Thu, 18 Feb 2010 18:59:53 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Expires: 0
Contact: <sip:10.10.199.251:5060;transport=tcp>
Max-Forwards: 70
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[37] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3a3fd12543
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:59:53 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 105 NOTIFY
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[38] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK5847d70211
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
Date: Thu, 18 Feb 2010 18:47:33 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 104 SUBSCRIBE
Content-Length: 0
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 0

[diagram]   Call-ID:[prev][next]
[39] NOTIFY sip:10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3b57c0c382
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 106 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 18:47:33 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: terminated;reason=timeout
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Type: application/kpml-response+xml
Content-Length: 348

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-response kpml-response.xsd" code="487" digits=""
forced_flush="false" suppressed="false" tag="dtmf" text="Subscription Expired" version="1.0"/>

[diagram]   Call-ID:[prev][next]
[40] SIP/2.0 481 Subscription does not exist
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3b57c0c382
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557705
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552725
Date: Thu, 18 Feb 2010 18:59:54 GMT
Call-ID: 584980-b7d18b28-f-fac712ac@10.10.199.250
CSeq: 106 NOTIFY
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[41] BYE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK5a4d5565a6
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552730
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557706
Date: Thu, 18 Feb 2010 18:59:46 GMT
Call-ID: c2f4bb80-b7d18e1c-13-fbc712ac@10.10.199.251
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
P-Asserted-Identity: <sip:2001@10.10.199.251>
CSeq: 102 BYE
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[42] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK5a4d5565a6
From: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552730
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557706
Date: Thu, 18 Feb 2010 18:47:36 GMT
Call-ID: c2f4bb80-b7d18e1c-13-fbc712ac@10.10.199.251
CSeq: 102 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

2. DTMF

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

Title: Call between Cisco Unified CM SCCP Phone and SIP Gateway using OOB Notify

Description:

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

Use of OOB Notify messages to pass DTMF digits is negotiated using the Call-Info header.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Gateway, IP = 10.10.199.93

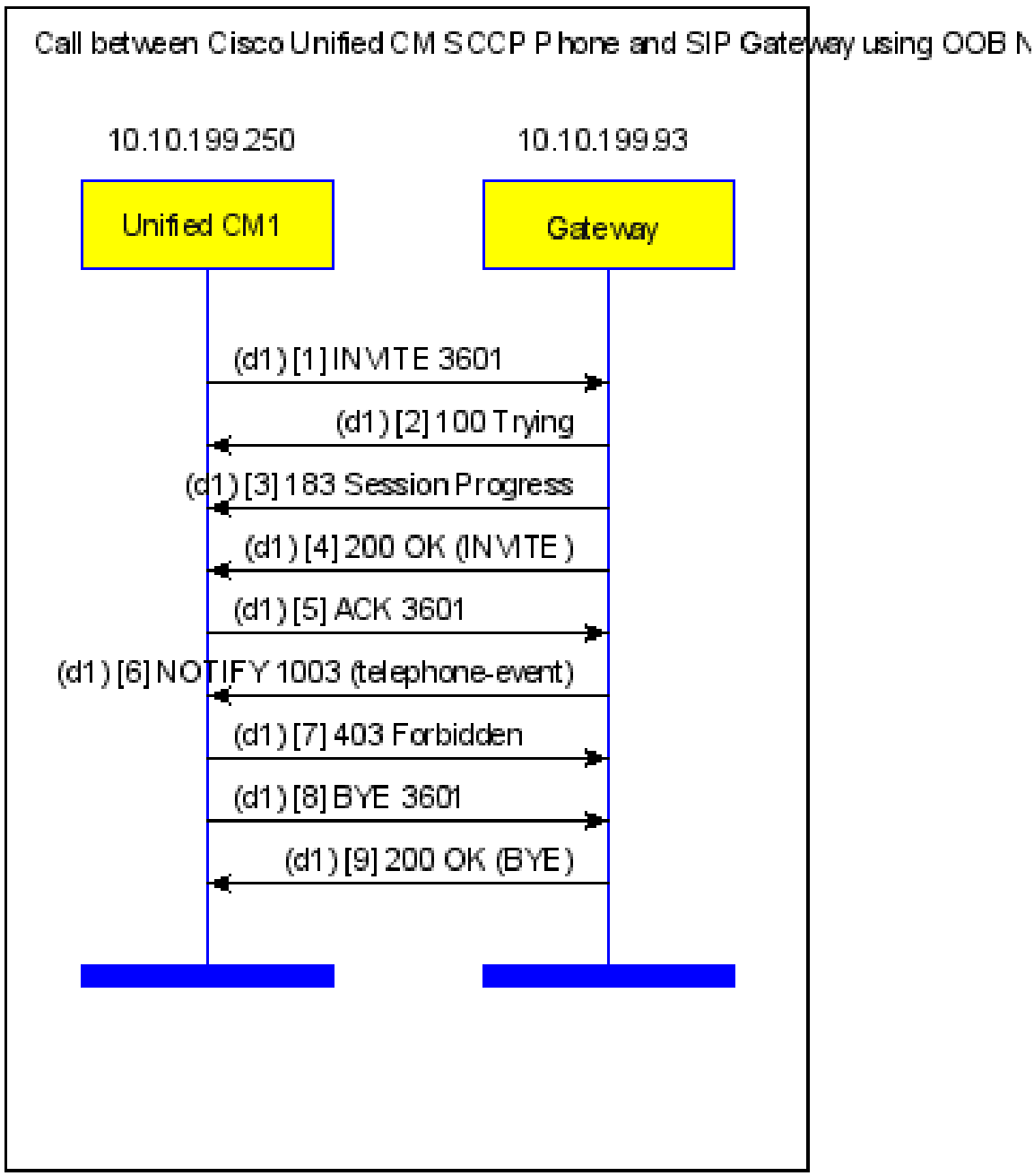
Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = B, Line = 3601, Model = FXPS

SIP Trunk between Unified CM1 & Gateway has
a) route pattern 3.XXXX
b) DTMF Signaling "No preference"
"dtmf-relay" on the SIP Gateway is configured to "sip-notify"

Scenario:

Phone A DN 1003 calls Phone B DN 3601 over the SIP Trunk by dialing 33601
Phone B DN 3601 Answers
Phone A DN 1003 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:3601@10.10.199.93:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3f6f821195
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557713
To: <sip:3601@10.10.199.93>
Date: Thu, 18 Feb 2010 19:20:36 GMT
Call-ID: af971f80-b7d19304-11-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2945916800-3083965188-0000000016-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3f6f821195
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557713
To: <sip:3601@10.10.199.93>;tag=AAA95E9C-2033
Date: Thu, 18 Feb 2010 18:28:40 GMT
Call-ID: af971f80-b7d19304-11-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3f6f821195
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557713
To: <sip:3601@10.10.199.93>;tag=AAA95E9C-2033
Date: Thu, 18 Feb 2010 18:28:40 GMT
Call-ID: af971f80-b7d19304-11-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
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: 276

v=0
o=CiscoSystemsSIP-GW-UserAgent 536 7828 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 16458 RTP/AVP 0 8 18 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3f6f821195
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557713
To: <sip:3601@10.10.199.93>;tag=AAA95E9C-2033
Date: Thu, 18 Feb 2010 18:28:40 GMT
Call-ID: af971f80-b7d19304-11-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
Call-Info: <sip:10.10.199.93:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
```

CISCO CONFIDENTIAL

```
Session-Expires:  1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 276

v=0
o=CiscoSystemsSIP-GW-UserAgent 536 7828 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 16458 RTP/AVP 0 8 18 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
```

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

[5] ACK sip:3601@10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK403cf52515
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557713
To: <sip:3601@10.10.199.93>;tag=AAA95E9C-2033
Date: Thu, 18 Feb 2010 19:20:36 GMT
Call-ID: af971f80-b7d19304-11-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 159

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 19592 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

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

[6] NOTIFY sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK02508
From: <sip:3601@10.10.199.93>;tag=AAA95E9C-2033
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557713
Call-ID: af971f80-b7d19304-11-fac712ac@10.10.199.250
CSeq: 101 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 18:28:48 GMT
User-Agent: Cisco-SIPGateway/IOS-12.x
Event: telephone-event
Subscription-State: active
Contact: <sip:10.10.199.93:5060;transport=tcp>
Content-Type: audio/telephone-event
Content-Length: 4

{binary content not shown}
```

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

[7] SIP/2.0 403 Forbidden

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK02508
From: <sip:3601@10.10.199.93>;tag=AAA95E9C-2033
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557713
Date: Thu, 18 Feb 2010 19:20:44 GMT
Call-ID: af971f80-b7d19304-11-fac712ac@10.10.199.250
CSeq: 101 NOTIFY
Content-Length: 0
```

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

[8] BYE sip:3601@10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK417e9cc348
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557713
To: <sip:3601@10.10.199.93>;tag=AAA95E9C-2033
Date: Thu, 18 Feb 2010 19:20:36 GMT
Call-ID: af971f80-b7d19304-11-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1003@10.10.199.250>
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

```
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[9] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK417e9cc348
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557713
To: <sip:3601@10.10.199.93>;tag=AAA95E9C-2033
Date: Thu, 18 Feb 2010 18:29:00 GMT
Call-ID: af971f80-b7d19304-11-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

CISCO CONFIDENTIAL

2.2 Call between Cisco Unified CM SCCP Phone and SIP Gateway using KPML

Title: Call between Cisco Unified CM SCCP Phone and SIP Gateway using KPML

Description:

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

Traces to note are the bi-directional subscriptions for DTMF notification between the Cisco Unified CM and the Gateway and the NOTIFY methods exchanged when the digit 1 is pressed from the called and calling party phones. Note that once the call is released the Cisco Unified CM and the SIP GW will terminate both local and remote KPML subscriptions. Therefore, it is normal to see the Cisco Unified CM either send or receive a 489 Bad Event. This signifies that the subscription has already been removed.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Gateway, IP = 10.10.199.93

Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = B, Line = 3601, Model = FXPS

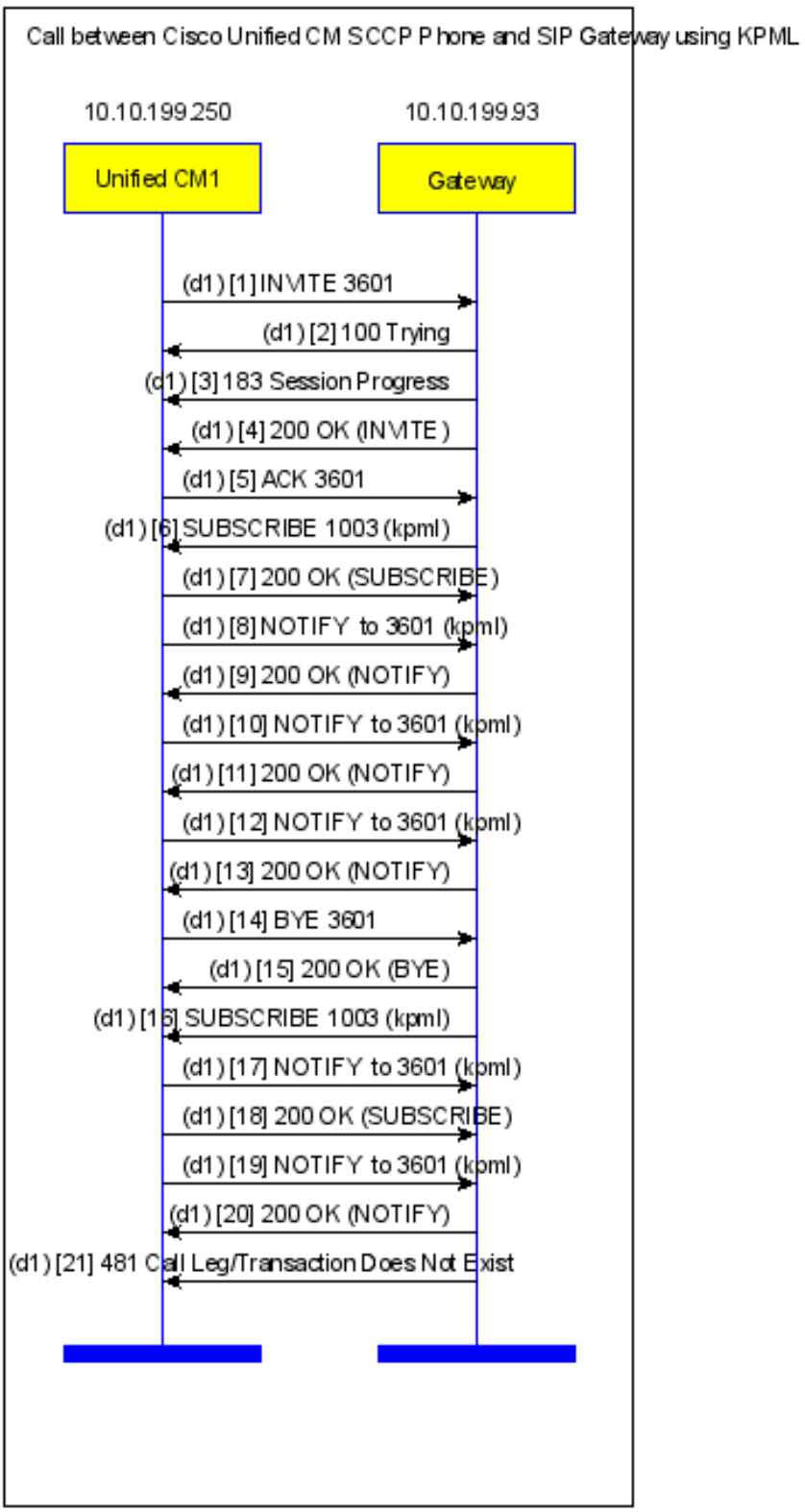
SIP Trunk between Unified CM1 & Gateway has
a) route pattern 3.XXXX
b) DTMF Signaling "No preference"
"dtmf-relay" on the SIP Gateway is configured to "sip-kpml"

Scenario:

Phone A DN 1003 calls Phone B DN 3601 over the SIP Trunk by dialing 33601
Phone B DN 3601 Answers
Phone A DN 1003 goes onHook
End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:3601@10.10.199.93:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4220182e92
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>
Date: Thu, 18 Feb 2010 19:51:26 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 4266047616-3083967038-0000000017-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4220182e92
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Date: Thu, 18 Feb 2010 18:59:31 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: kpml, telephone-event
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4220182e92
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Date: Thu, 18 Feb 2010 18:59:31 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: kpml, telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 277

v=0
o=CiscoSystemsSIP-GW-UserAgent 3758 9702 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 17948 RTP/AVP 0 8 18 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4220182e92
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Date: Thu, 18 Feb 2010 18:59:31 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: kpml, telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
Session-Expires:  1800;refresher=uac
Require: timer
```

CISCO CONFIDENTIAL

```
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 277

v=0
o=CiscoSystemsSIP-GW-UserAgent 3758 9702 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 17948 RTP/AVP 0 8 18 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
```

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

[5] ACK sip:3601@10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK435457347
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Date: Thu, 18 Feb 2010 19:51:26 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 159

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 24380 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

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

[6] SUBSCRIBE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK1E84
From: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 101 SUBSCRIBE
Max-Forwards: 70
Date: Thu, 18 Feb 2010 18:59:38 GMT
User-Agent: Cisco-SIPGateway/IOS-12.x
Event: kpml
Expires: 7200
Contact: <sip:10.10.199.93:5060;transport=tcp>
Content-Type: application/kpml-request+xml
Content-Length: 327

<?xml version="1.0" encoding="UTF-8"?><kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-
request kpml-request.xsd" version="1.0"><pattern persist="persist"><regex
tag="dtmf">[x*#ABCD]</regex></pattern></kpml-request>
```

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

[7] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK1E84
From: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
Date: Thu, 18 Feb 2010 19:51:33 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 101 SUBSCRIBE
Content-Length: 0
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 7200
```

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

[8] NOTIFY sip:10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4464568f9f
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 102 NOTIFY
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
Date: Thu, 18 Feb 2010 19:51:33 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: active;expires=7200
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1003@10.10.199.250>
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4464568f9f
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Date: Thu, 18 Feb 2010 18:59:38 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 102 NOTIFY
Content-Length: 0
```

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

[10] NOTIFY sip:10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4579c24836
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 19:51:45 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: active;expires=7188
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1003@10.10.199.250>
Content-Type: application/kpml-response+xml
Content-Length: 336

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-response kpml-response.xsd" code="200" digits="3"
forced_flush="false" suppressed="false" tag="dtmf" text="Success" version="1.0"/>
```

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

[11] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4579c24836
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Date: Thu, 18 Feb 2010 18:59:49 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Content-Length: 0
```

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

[12] NOTIFY sip:10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK46749a5c1a
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 104 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 19:51:45 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: active;expires=7188
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1003@10.10.199.250>
Content-Type: application/kpml-response+xml
Content-Length: 336

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-response kpml-response.xsd" code="200" digits="3"
forced_flush="false" suppressed="false" tag="dtmf" text="Success" version="1.0"/>
```

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

[13] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK46749a5c1a
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Date: Thu, 18 Feb 2010 18:59:50 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 104 NOTIFY
```

CISCO CONFIDENTIAL

```
Content-Length: 0
```

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

[14] BYE sip:3601@10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4729200e10
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Date: Thu, 18 Feb 2010 19:51:26 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1003@10.10.199.250>
CSeq: 105 BYE
Content-Length: 0
```

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

[15] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4729200e10
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Date: Thu, 18 Feb 2010 19:00:04 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 105 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

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

[16] SUBSCRIBE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK21C34
From: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 102 SUBSCRIBE
Max-Forwards: 70
Date: Thu, 18 Feb 2010 19:00:04 GMT
User-Agent: Cisco-SIPGateway/IOS-12.x
Event: kpml
Expires: 0
Contact: <sip:10.10.199.93:5060;transport=tcp>
Content-Length: 0
```

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

[17] NOTIFY sip:10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK482173efad
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 106 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 19:52:00 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: terminated
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1003@10.10.199.250>
Content-Length: 0
```

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

[18] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK21C34
From: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
Date: Thu, 18 Feb 2010 19:52:00 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 102 SUBSCRIBE
Content-Length: 0
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 0
```

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

[19] NOTIFY sip:10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK496045c097
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 107 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 19:52:00 GMT
User-Agent: Cisco-CUCM8.0
```

CISCO CONFIDENTIAL

```
Event: kpml
Subscription-State: terminated;reason=timeout
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1003@10.10.199.250>
Content-Type: application/kpml-response+xml
Content-Length: 348

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-response kpml-response.xsd" code="487" digits=""
forced_flush="false" suppressed="false" tag="dtmf" text="Subscription Expired" version="1.0"/>
```

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

[20] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK482173efad
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Date: Thu, 18 Feb 2010 19:00:04 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 106 NOTIFY
Content-Length: 0
```

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

[21] SIP/2.0 481 Call Leg/Transaction Does Not Exist

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK496045c097
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557715
To: <sip:3601@10.10.199.93>;tag=AAC59A7C-E86
Date: Thu, 18 Feb 2010 19:00:04 GMT
Call-ID: fe46b880-b7d19a3e-12-fac712ac@10.10.199.250
CSeq: 107 NOTIFY
Content-Length: 0
```

CISCO CONFIDENTIAL

2.3 Call between Cisco Unified CM SCCP Phone and SIP Gateway using RFC2833

Title: Call between Cisco Unified CM SCCP Phone and SIP Gateway using RFC2833

Description:

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

Because both SCCP phone and SIP Gateway support RFC2833 style DTMF signaling no out-of-band DTMF signaling takes place. The DTMF will be strictly negotiated in SDP and signaled via media. In this example DTMF tones are sent in the media stream using a Payload Type of 101 (as shown in the SDP).

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Gateway, IP = 10.10.199.93

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 3600, Model = FXPS

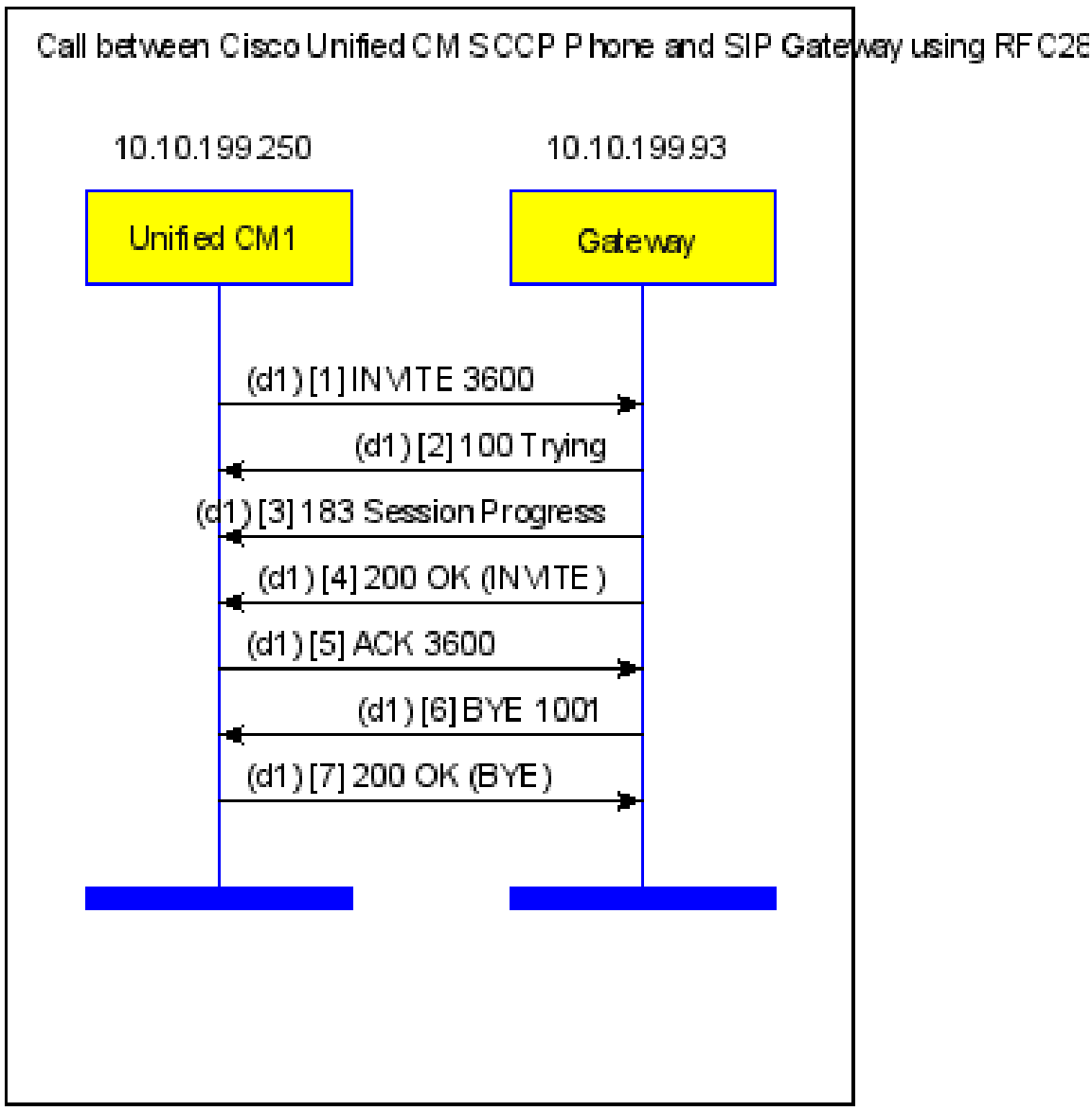
SIP Trunk between Unified CM1 & Gateway has
a) route pattern 3.XXXX
b) DTMF Signaling "No preference"
"dtmf-relay" on the SIP Gateway is configured to "rtp-nte"

Scenario:

Phone A DN 1001 calls Phone B DN 3600 over the SIP Trunk by dialing 33600
Phone B DN 3600 Answers
Phone A DN 1001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] INVITE sip:3600@10.10.199.93:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4b4721a31a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557719
To: <sip:3600@10.10.199.93>
Date: Thu, 18 Feb 2010 20:17:04 GMT
Call-ID: 92fee580-b7d1a040-14-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2466178432-3083968576-0000000019-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4b4721a31a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557719
To: <sip:3600@10.10.199.93>;tag=AADD1340-F4E
Date: Thu, 18 Feb 2010 19:25:09 GMT
Call-ID: 92fee580-b7d1a040-14-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[3] SIP/2.0 183 Session Progress
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4b4721a31a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557719
To: <sip:3600@10.10.199.93>;tag=AADD1340-F4E
Date: Thu, 18 Feb 2010 19:25:09 GMT
Call-ID: 92fee580-b7d1a040-14-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:3600@10.10.199.93:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 333

v=0
o=CiscoSystemsSIP-GW-UserAgent 1537 7588 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 17650 RTP/AVP 0 8 18 101 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=rtpmap:19 CN/8000

[diagram]   Call-ID:[prev][next]
[4] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4b4721a31a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557719
To: <sip:3600@10.10.199.93>;tag=AADD1340-F4E
Date: Thu, 18 Feb 2010 19:25:09 GMT
Call-ID: 92fee580-b7d1a040-14-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:3600@10.10.199.93:5060;transport=tcp>
```

CISCO CONFIDENTIAL

```
Session-Expires:  1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 333

v=0
o=CiscoSystemsSIP-GW-UserAgent 1537 7588 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 17650 RTP/AVP 0 8 18 101 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=rtpmap:19 CN/8000
```

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

[5] ACK sip:3600@10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK4c35d530d3
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557719
To: <sip:3600@10.10.199.93>;tag=AADD1340-F4E
Date: Thu, 18 Feb 2010 20:17:04 GMT
Call-ID: 92fee580-b7d1a040-14-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 16956 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK31009
From: <sip:3600@10.10.199.93>;tag=AADD1340-F4E
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557719
Date: Thu, 18 Feb 2010 19:25:16 GMT
Call-ID: 92fee580-b7d1a040-14-fac712ac@10.10.199.250
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 70
Timestamp: 1266521156
CSeq: 101 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

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

[7] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK31009
From: <sip:3600@10.10.199.93>;tag=AADD1340-F4E
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557719
Date: Thu, 18 Feb 2010 20:17:52 GMT
Call-ID: 92fee580-b7d1a040-14-fac712ac@10.10.199.250
CSeq: 101 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

3. Presence

3.1 Outgoing Presence Subscription

Title: Outgoing Presence Subscription

Description:

The scenario showing the outgoing BLF subscription for Presence from SCCP phone (1001) on "Cisco Unified CM1" through SIP Trunk t "Cisco Unified CM2" for remote party (DN 2002).

1) The "Cisco Unified CM2" sends the 200 OK for Subscriber, then it sends a NOTIFY with Subscription-State: active;expires=3600 and PIDF XML with status 'open'.
2) When the remote party (DN 2002) is offhook then "Cisco Unified CM2" sends a NOTIFY with PIDF XML containing status <e:activities>on-the-phone</e:activities>.
3) When the remote party (DN 2002) is onhook, then "Cisco Unified CM" sends a NOTIFY with PIDF XML containing status 'open'.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

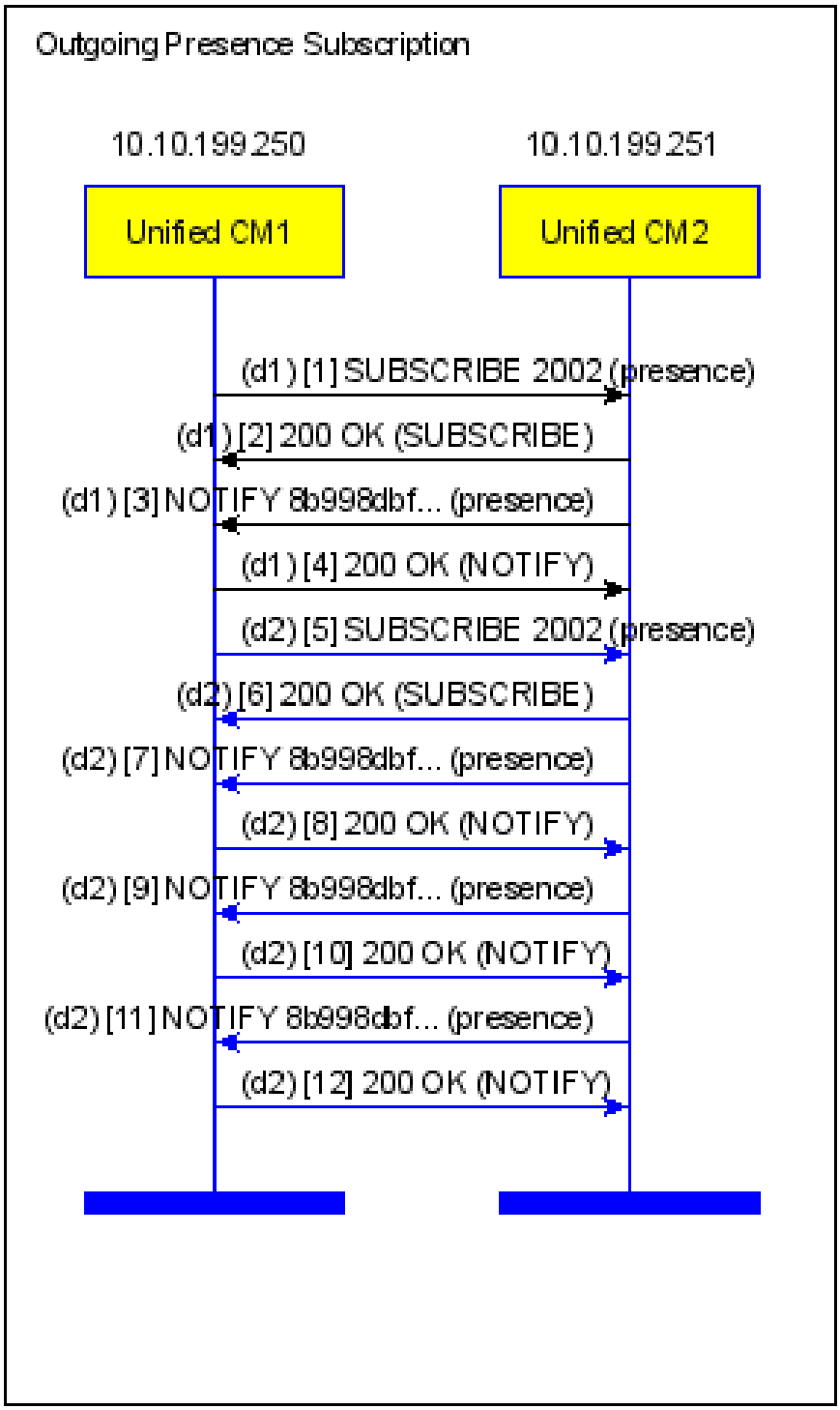
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

Phone A DN 1001 configures the BLF-SD set to 22002
Phone A DN 1001 sends Subscription for Phone B DN 2002 events.
Phone B DN 2002 goes offHook
Phone A receives Notification that Phone B DN 2002 is offHook
Phone B DN 1002 goes onHook
Phone A receives Notification that Phone B DN 2002 is onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] SUBSCRIBE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK523efc8305
From: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250>;tag=2070903355
To: <sip:2002@10.10.199.251>;tag=811650147
Call-ID: 60f5880-b7d1b87e-18-fac712ac@10.10.199.250
CSeq: 102 SUBSCRIBE
Date: Thu, 18 Feb 2010 22:06:54 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 0
Contact: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250:5060;transport=tcp>
Max-Forwards: 69
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK523efc8305
From: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250>;tag=2070903355
To: <sip:2002@10.10.199.251>;tag=811650147
Date: Thu, 18 Feb 2010 22:19:15 GMT
Call-ID: 60f5880-b7d1b87e-18-fac712ac@10.10.199.250
CSeq: 102 SUBSCRIBE
Content-Length: 0
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 0
```

[diagram] Call-ID:[prev][next]
[3] NOTIFY sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250:5060;transport=tcp SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK656352862b
From: <sip:2002@10.10.199.251>;tag=811650147
To: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250>;tag=2070903355
Call-ID: 60f5880-b7d1b87e-18-fac712ac@10.10.199.250
CSeq: 108 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 22:19:15 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Subscription-State: terminated;reason=timeout
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK656352862b
From: <sip:2002@10.10.199.251>;tag=811650147
To: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250>;tag=2070903355
Date: Thu, 18 Feb 2010 22:06:54 GMT
Call-ID: 60f5880-b7d1b87e-18-fac712ac@10.10.199.250
CSeq: 108 NOTIFY
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[5] SUBSCRIBE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5320690816
From: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250>;tag=1383326873
To: <sip:2002@10.10.199.251>
Call-ID: a884100-b7d1ba33-19-fac712ac@10.10.199.250
CSeq: 101 SUBSCRIBE
Date: Thu, 18 Feb 2010 22:07:47 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 10800
Contact: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250:5060;transport=tcp>
Accept: application/pidf+xml
Max-Forwards: 69
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[6] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK5320690816
From: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250>;tag=1383326873
To: <sip:2002@10.10.199.251>;tag=1249679250
Date: Thu, 18 Feb 2010 22:20:07 GMT
Call-ID: a884100-b7d1ba33-19-fac712ac@10.10.199.250
CSeq: 101 SUBSCRIBE
Content-Length: 0
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 10800
```

CISCO CONFIDENTIAL

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

[7] NOTIFY sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK66514aa18a
From: <sip:2002@10.10.199.251>;tag=1249679250
To: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250>;tag=1383326873
Call-ID: a884100-b7d1ba33-19-fac712ac@10.10.199.250
CSeq: 101 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 22:20:07 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Subscription-State: active;expires=10800
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/pidf+xml
Content-Length: 738

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:2002@10.10.199.251"
xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model"
xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid" xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <dm:person>
    <status>
    <basic>open</basic>
    </status>
    <e:activities>
    </e:activities>
  </dm:person>
  <tuple id="cmp-2002-958">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:2002@10.10.199.251:5060</contact>
    <timestamp>2010-02-18T22:20:07Z</timestamp>
  </tuple>
</presence>
```

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK66514aa18a
From: <sip:2002@10.10.199.251>;tag=1249679250
To: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250>;tag=1383326873
Date: Thu, 18 Feb 2010 22:07:47 GMT
Call-ID: a884100-b7d1ba33-19-fac712ac@10.10.199.250
CSeq: 101 NOTIFY
Content-Length: 0
```

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

[9] NOTIFY sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK677f266922
From: <sip:2002@10.10.199.251>;tag=1249679250
To: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250>;tag=1383326873
Call-ID: a884100-b7d1ba33-19-fac712ac@10.10.199.250
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 22:20:31 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Subscription-State: active;expires=10776
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/pidf+xml
Content-Length: 831

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:2002@10.10.199.251"
xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model"
xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid" xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <dm:person>
    <status>
    <basic>open</basic>
    </status>
    <e:activities>
      <e:on-the-phone/>
    </e:activities>
  </dm:person>
  <tuple id="cmp-2002-958">
    <status>
      <basic>open</basic>
```

CISCO CONFIDENTIAL

```
      <e:activities>
        <e:on-the-phone/>
      </e:activities>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:2002@10.10.199.251:5060</contact>
    <timestamp>2010-02-18T22:20:31Z</timestamp>
  </tuple>
</presence>
```

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

[10] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK677f266922
From: <sip:2002@10.10.199.251>;tag=1249679250
To: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250>;tag=1383326873
Date: Thu, 18 Feb 2010 22:08:10 GMT
Call-ID: a884100-b7d1ba33-19-fac712ac@10.10.199.250
CSeq: 102 NOTIFY
Content-Length: 0
```

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

[11] NOTIFY sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK6813dbf288
From: <sip:2002@10.10.199.251>;tag=1249679250
To: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250>;tag=1383326873
Call-ID: a884100-b7d1ba33-19-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 22:20:33 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Subscription-State: active;expires=10774
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/pidf+xml
Content-Length: 738

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:2002@10.10.199.251"
xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model"
xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid" xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <dm:person>
    <status>
    <basic>open</basic>
    </status>
    <e:activities>
    </e:activities>
  </dm:person>
  <tuple id="cmp-2002-958">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:2002@10.10.199.251:5060</contact>
    <timestamp>2010-02-18T22:20:33Z</timestamp>
  </tuple>
</presence>
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK6813dbf288
From: <sip:2002@10.10.199.251>;tag=1249679250
To: <sip:8b998dbf-1c07-f2e4-4858-b44a38e4b5e3@10.10.199.250>;tag=1383326873
Date: Thu, 18 Feb 2010 22:08:13 GMT
Call-ID: a884100-b7d1ba33-19-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Content-Length: 0
```

3.2 Incoming Presence Subscription

Title: Incoming Presence Subscription

Description:

The scenario for incoming 'presence' subscription on Cisco Unified CM's SIP trunk for the SIP phone's (DN:1001) 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 CM2) responds by sending 200 OK for Notify.
5) When the SCCP 1001 is offhook another NOTIFY with "on-the-phone" in the PIDF is sent on the sip trunk.
6) When the SCCP 1001 is onhook again, another NOTIFY to update the status is sent.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM2 & Unified CM1 has route pattern 1.XXXX

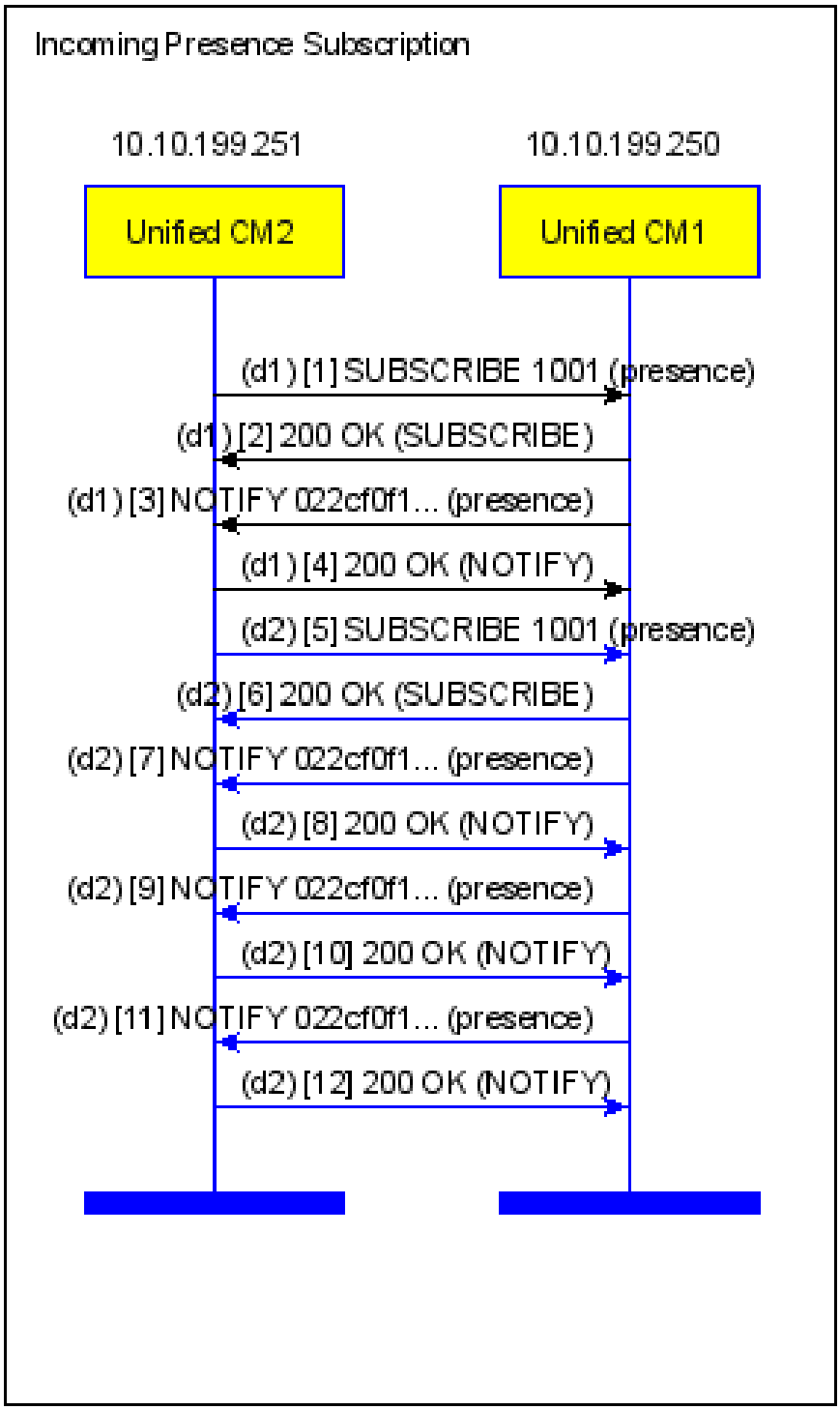
Scenario:

Phone B DN 2002 configures the BLF-SD set to 11001
Unified CM2 sends Subscription for Event:presence for phone 1001 to Unified CM1.
Phone A DN 1001 goes offHook
Phone B DN 2002 receives Notification that Phone A DN 1001 went offHook
Phone A DN 1001 goes onHook
Phone B receives Notification that Phone A DN 1001 is onHook

End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] SUBSCRIBE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK84b95dfc1
From: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=1876715402
To: <sip:1001@10.10.199.250>;tag=1159628062
Call-ID: 5092d400-b7d1bfb1-17-fbc712ac@10.10.199.251
CSeq: 102 SUBSCRIBE
Date: Thu, 18 Feb 2010 22:47:40 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 0
Contact: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251:5060;transport=tcp>
Max-Forwards: 69
Content-Length: 0

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK84b95dfc1
From: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=1876715402
To: <sip:1001@10.10.199.250>;tag=1159628062
Date: Thu, 18 Feb 2010 22:35:20 GMT
Call-ID: 5092d400-b7d1bfb1-17-fbc712ac@10.10.199.251
CSeq: 102 SUBSCRIBE
Content-Length: 0
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 0

[diagram] Call-ID:[prev][next]
[3] NOTIFY sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK626a54834b
From: <sip:1001@10.10.199.250>;tag=1159628062
To: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=1876715402
Call-ID: 5092d400-b7d1bfb1-17-fbc712ac@10.10.199.251
CSeq: 107 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 22:35:20 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Subscription-State: terminated;reason=timeout
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Length: 0

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK626a54834b
From: <sip:1001@10.10.199.250>;tag=1159628062
To: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=1876715402
Date: Thu, 18 Feb 2010 22:47:40 GMT
Call-ID: 5092d400-b7d1bfb1-17-fbc712ac@10.10.199.251
CSeq: 107 NOTIFY
Content-Length: 0

[diagram] Call-ID:[prev][next]
[5] SUBSCRIBE sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK855fe4c2e1
From: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=675660720
To: <sip:1001@10.10.199.250>
Call-ID: ba13e200-b7d1c3bd-18-fbc712ac@10.10.199.251
CSeq: 101 SUBSCRIBE
Date: Thu, 18 Feb 2010 22:48:29 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 10800
Contact: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251:5060;transport=tcp>
Accept: application/pidf+xml
Max-Forwards: 69
Content-Length: 0

[diagram] Call-ID:[prev][next]
[6] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK855fe4c2e1
From: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=675660720
To: <sip:1001@10.10.199.250>;tag=499285639
Date: Thu, 18 Feb 2010 22:36:09 GMT
Call-ID: ba13e200-b7d1c3bd-18-fbc712ac@10.10.199.251
CSeq: 101 SUBSCRIBE
Content-Length: 0
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 10800

CISCO CONFIDENTIAL

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

[7] NOTIFY sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK63e6f2f71
From: <sip:1001@10.10.199.250>;tag=499285639
To: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=675660720
Call-ID: ba13e200-b7d1c3bd-18-fbc712ac@10.10.199.251
CSeq: 101 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 22:36:09 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Subscription-State: active;expires=10800
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/pidf+xml
Content-Length: 738

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:1001@10.10.199.250"
xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model"
xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid" xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <dm:person>
    <status>
    <basic>open</basic>
    </status>
    <e:activities>
    </e:activities>
  </dm:person>
  <tuple id="cmp-1001-942">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:1001@10.10.199.250:5060</contact>
    <timestamp>2010-02-18T22:36:09Z</timestamp>
  </tuple>
</presence>
```

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK63e6f2f71
From: <sip:1001@10.10.199.250>;tag=499285639
To: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=675660720
Date: Thu, 18 Feb 2010 22:48:29 GMT
Call-ID: ba13e200-b7d1c3bd-18-fbc712ac@10.10.199.251
CSeq: 101 NOTIFY
Content-Length: 0
```

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

[9] NOTIFY sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK647ebf5d97
From: <sip:1001@10.10.199.250>;tag=499285639
To: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=675660720
Call-ID: ba13e200-b7d1c3bd-18-fbc712ac@10.10.199.251
CSeq: 102 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 22:36:44 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Subscription-State: active;expires=10765
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/pidf+xml
Content-Length: 831

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:1001@10.10.199.250"
xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model"
xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid" xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <dm:person>
    <status>
    <basic>open</basic>
    </status>
    <e:activities>
      <e:on-the-phone/>
    </e:activities>
  </dm:person>
  <tuple id="cmp-1001-942">
    <status>
      <basic>open</basic>
```

CISCO CONFIDENTIAL

```
      <e:activities>
        <e:on-the-phone/>
      </e:activities>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:1001@10.10.199.250:5060</contact>
    <timestamp>2010-02-18T22:36:44Z</timestamp>
  </tuple>
</presence>
```

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

[10] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK647ebf5d97
From: <sip:1001@10.10.199.250>;tag=499285639
To: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=675660720
Date: Thu, 18 Feb 2010 22:49:05 GMT
Call-ID: ba13e200-b7d1c3bd-18-fbc712ac@10.10.199.251
CSeq: 102 NOTIFY
Content-Length: 0
```

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

[11] NOTIFY sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6544c60665
From: <sip:1001@10.10.199.250>;tag=499285639
To: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=675660720
Call-ID: ba13e200-b7d1c3bd-18-fbc712ac@10.10.199.251
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Thu, 18 Feb 2010 22:36:47 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Subscription-State: active;expires=10762
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/pidf+xml
Content-Length: 738

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="sip:1001@10.10.199.250"
xmlns:e="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model"
xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid" xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <dm:person>
    <status>
    <basic>open</basic>
    </status>
    <e:activities>
    </e:activities>
  </dm:person>
  <tuple id="cmp-1001-942">
    <status>
      <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:1001@10.10.199.250:5060</contact>
    <timestamp>2010-02-18T22:36:47Z</timestamp>
  </tuple>
</presence>
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6544c60665
From: <sip:1001@10.10.199.250>;tag=499285639
To: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=675660720
Date: Thu, 18 Feb 2010 22:49:08 GMT
Call-ID: ba13e200-b7d1c3bd-18-fbc712ac@10.10.199.251
CSeq: 103 NOTIFY
Content-Length: 0
```

CISCO CONFIDENTIAL

3.3 Incoming Presence Forbidden for Authorization Failure

Title: Incoming Presence Forbidden for Authorization Failure

Description:

The presence authorization failure for the scenario when incoming 'presence' subscription is received on Cisco Unified CM's SIP trunk for the SCCP phone's (DN:1001) BLF status.

The SUBSCRIBE request with header 'Event: presence' is received by the sip trunk. The request is forwarded to the Notifier/SubscriptionManager modules in Cisco Unified CM for processing. The Notifier/SM fails the authorization due to presence group mismatch & sends the "403 Forbidden" to remote for Subscribe.

Configuration:

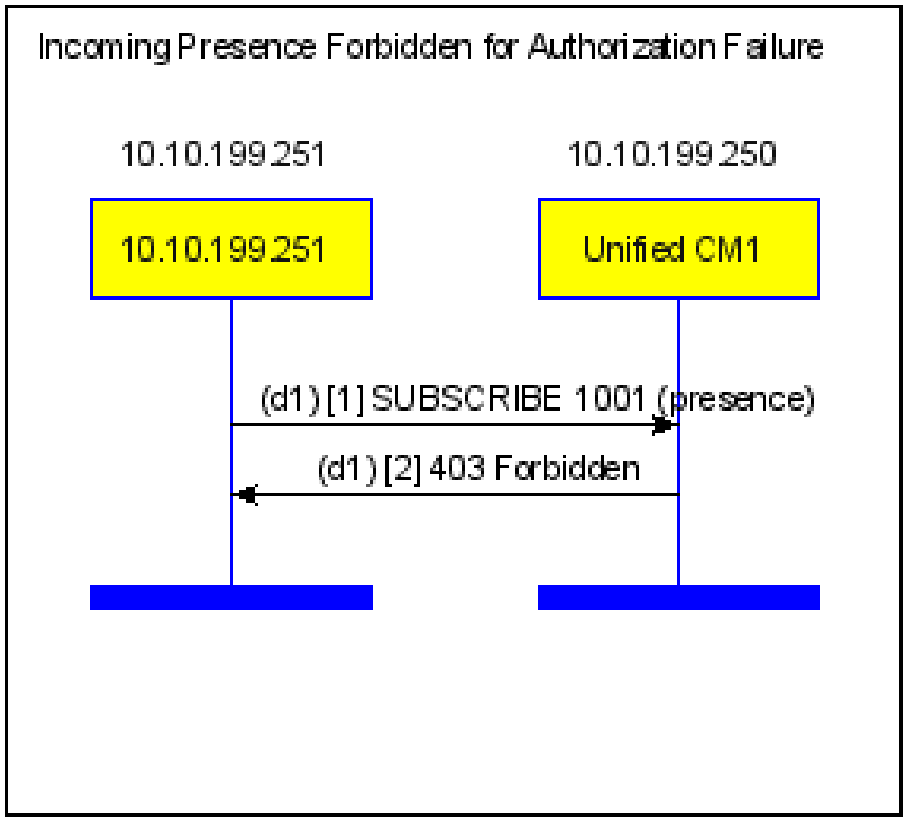
Node = Remote UA, IP = 10.10.200.179
Node = Unified CM1, IP = 10.10.199.250

Unified CM1 has its SIP Trunk Security Profile configured to have "Accept Presence Subscription" unchecked.

Scenario:

Remote UA sends Presence Subscription message to Unified CM1
Unified CM1 rejects the message with 403

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] SUBSCRIBE sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK873c279fb5
From: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=74259611
To: <sip:1001@10.10.199.250>
Call-ID: 162b3600-b7d1c605-1a-fbc712ac@10.10.199.251
CSeq: 101 SUBSCRIBE
Date: Thu, 18 Feb 2010 22:58:13 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 10800
Contact: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251:5060;transport=tcp>
Accept: application/pidf+xml
Max-Forwards: 69
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 403 Forbidden
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK873c279fb5
From: <sip:022cf0f1-ad77-0c10-09ac-084a9511b42f@10.10.199.251>;tag=74259611
To: <sip:1001@10.10.199.250>;tag=355943845
Date: Thu, 18 Feb 2010 22:45:52 GMT
Call-ID: 162b3600-b7d1c605-1a-fbc712ac@10.10.199.251
CSeq: 101 SUBSCRIBE
Content-Length: 0
```

CISCO CONFIDENTIAL

4. Transfer

4.1 Basic Attended Transfer Call via an Inter Cluster SIP Trunk

Title: Basic Attended Transfer Call via an Inter Cluster SIP Trunk

Description:

The following basic call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an Inter Cluster SIP Trunk.

Cisco Unified IP Phone 1001 (registered with Unified CM1) calls Cisco Unified IP Phone 2002 (registered with Unified CM2) and Cisco Unified IP Phone IP Phone 2002 made an attended transfer to Cisco Unified IP Phone IP Phone 2001 (registered with Unified CM2 as well)

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP
Phone = C, Line = 2001, IP = 10.10.199.171, Model = SIP TNP

SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

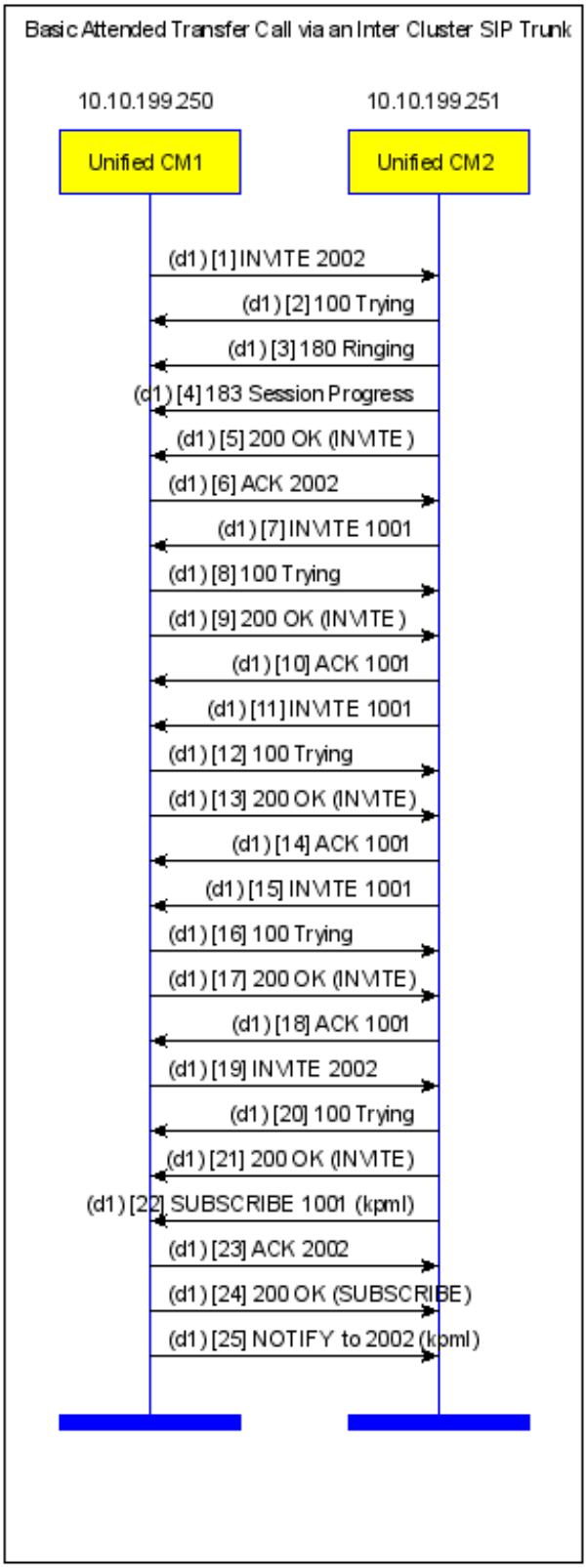
Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers
Phone B DN 2002 presses transfer softkey and dials Phone C DN 2001
Phone C DN 2001 is ringing
Phone C DN 2001 answers
Phone B DN 2002 presses Transfer softkey to complete the transfer
Phone A DN 1001 and Phone C DN 2001 are connected
Phone A DN 1001 goes onHook
Phone C DN 2001 goes onHook

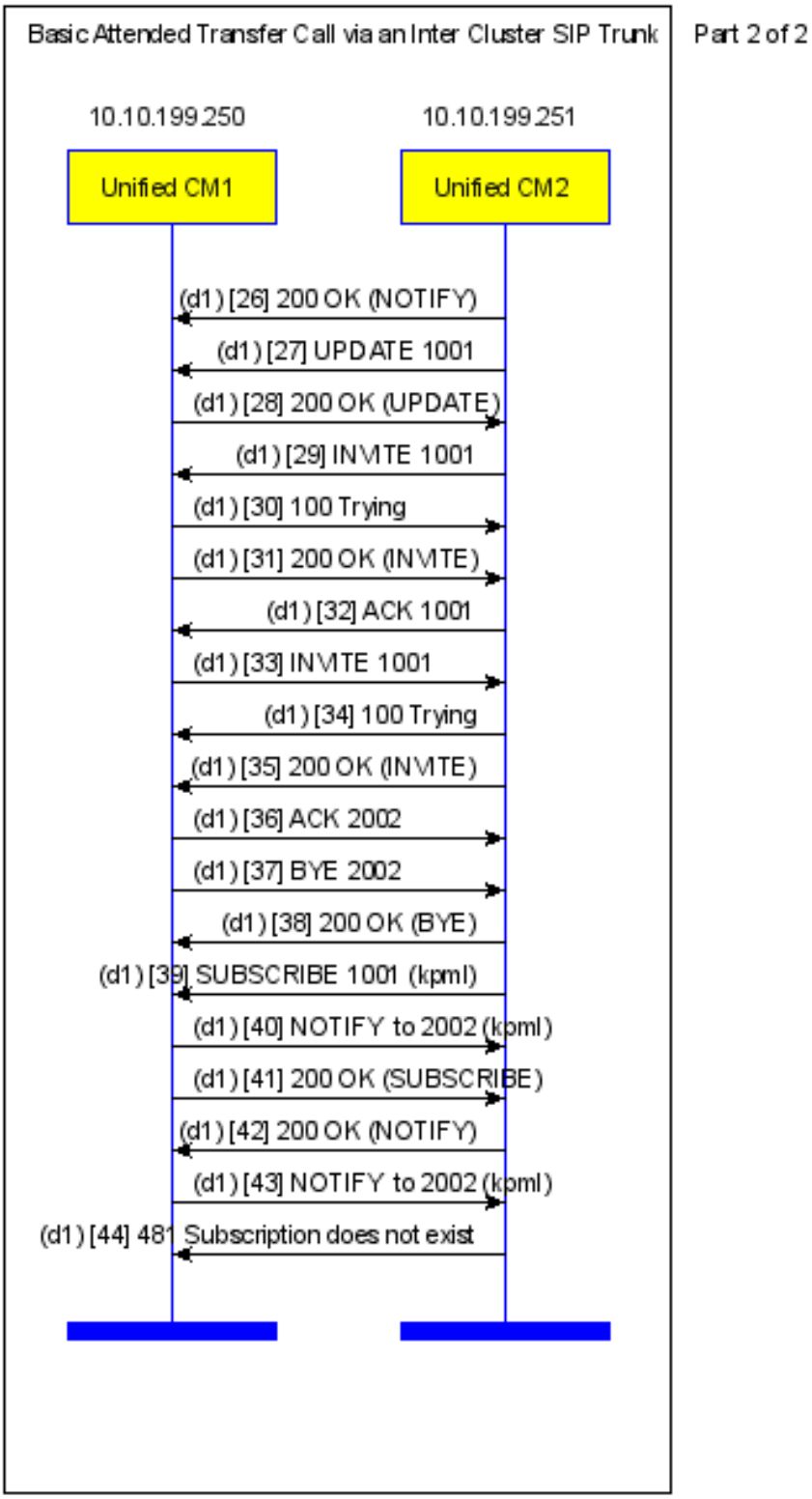
End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2126276bcc5
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>
Date: Wed, 24 Feb 2010 18:49:50 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 1640259712-3092346062-0000000027-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2126276bcc5
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>
Date: Wed, 24 Feb 2010 19:02:26 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2126276bcc5
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 19:02:26 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2126276bcc5
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 19:02:26 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2126276bcc5
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 19:02:26 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2133300e511
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 18:49:50 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 21934 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9a52d1db6
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
```

CISCO CONFIDENTIAL

```
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 19:02:30 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 1640259712-3092346062-0000000027-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 28974 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9a52d1db6
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 18:49:54 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9a52d1db6
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 18:49:54 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 21934 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9b19323969
```

CISCO CONFIDENTIAL

```
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 19:02:30 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9c2a0da811
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 19:02:33 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 1640259712-3092346062-0000000027-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 221

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 28974 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[12] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9c2a0da811
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 18:49:57 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[13] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9c2a0da811
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 18:49:57 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 228
```

CISCO CONFIDENTIAL

```
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 21934 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[14] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9d4cdaa560
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 19:02:33 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9e557e1884
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 19:02:33 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 1640259712-3092346062-0000000027-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

[16] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9e557e1884
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 18:49:57 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[17] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9e557e1884
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 18:49:57 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337
```

CISCO CONFIDENTIAL

```
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[18] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9f52715693
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 19:02:33 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 227

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 4000 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[19] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21456a3ffb9
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 18:49:57 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22286 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[20] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21456a3ffb9
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 19:02:33 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[21] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21456a3ffb9
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 19:02:33 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22286 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]
[22] SUBSCRIBE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKa0ebf3d46
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 104 SUBSCRIBE
Date: Wed, 24 Feb 2010 19:02:33 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Expires: 7200
Contact: <sip:10.10.199.251:5060;transport=tcp>
Accept: application/kpml-response+xml
Max-Forwards: 70
Content-Type: application/kpml-request+xml
Content-Length: 370

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-request kpml-request.xsd" version="1.0">

  <pattern interdigittimer="7260000" persist="persist">
    <regex tag="dtmf">[x*#ABCD]</regex>
  </pattern>

</kpml-request>
```

[diagram] Call-ID:[prev][next]
[23] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21539236f1b
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 18:49:57 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
CSeq: 102 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

```
[24] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKa0ebf3d46
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 18:49:57 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 104 SUBSCRIBE
Content-Length: 0
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 7200
```

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

```
[25] NOTIFY sip:10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2164c0b49a4
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Wed, 24 Feb 2010 18:49:57 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: active;expires=7200
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
```

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

```
[26] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2164c0b49a4
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 19:02:33 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Content-Length: 0
```

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

```
[27] UPDATE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKa56042b614
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 19:02:33 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
Supported: timer,resource-priority,replaces
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 105 UPDATE
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

```
[28] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKa56042b614
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 18:50:07 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 105 UPDATE
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 0
```

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

```
[29] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKa85c22262a
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
```

CISCO CONFIDENTIAL

```
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 19:02:43 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 1640259712-3092346062-0000000027-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 106 INVITE
Max-Forwards: 70
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=calling;screen=yes;privacy=off
Contact: <sip:1001@10.10.199.251:5060;transport=tcp>;video;audio
Content-Length: 0
```

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

[30] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKa85c22262a
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 18:50:07 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 106 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[31] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKa85c22262a
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 18:50:07 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 106 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[32] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKabcb9db43
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 19:02:43 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 106 ACK
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Type: application/sdp
```

CISCO CONFIDENTIAL

```
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 19486 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[33] INVITE sip:1001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK217a78669c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 18:50:08 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 23320 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[34] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK217a78669c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 19:02:43 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[35] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK217a78669c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 19:02:43 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
```

CISCO CONFIDENTIAL

```
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 19486 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[36] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2182b55ce9c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 18:50:08 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

```
[37] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21911889009
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 18:50:08 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 105 BYE
Content-Length: 0
```

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

```
[38] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21911889009
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 19:02:51 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 105 BYE
Content-Length: 0
```

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

```
[39] SUBSCRIBE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKaf9b3b2c
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 107 SUBSCRIBE
Date: Wed, 24 Feb 2010 19:02:51 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Expires: 0
Contact: <sip:10.10.199.251:5060;transport=tcp>
Max-Forwards: 70
Content-Length: 0
```

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

```
[40] NOTIFY sip:10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21a44b6cfa8
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 106 NOTIFY
Max-Forwards: 70
Date: Wed, 24 Feb 2010 18:50:16 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: terminated
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[41] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKaf9b3b2c
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
Date: Wed, 24 Feb 2010 18:50:16 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 107 SUBSCRIBE
Content-Length: 0
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 0
```

[diagram] Call-ID:[prev][next]
[42] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21a44b6cfa8
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 19:02:51 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 106 NOTIFY
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[43] NOTIFY sip:10.10.199.251:5060;transport=tcp SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21b764bacf
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 107 NOTIFY
Max-Forwards: 70
Date: Wed, 24 Feb 2010 18:50:16 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: terminated;reason=timeout
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Type: application/kpml-response+xml
Content-Length: 348

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-response kpml-response.xsd" code="487" digits=""
forced_flush="false" suppressed="false" tag="dtmf" text="Subscription Expired" version="1.0"/>
```

[diagram] Call-ID:[prev][next]
[44] SIP/2.0 481 Subscription does not exist
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21b764bacf
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557826
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552765
Date: Wed, 24 Feb 2010 19:02:51 GMT
Call-ID: 61c46080-b85174ce-191-fac712ac@10.10.199.250
CSeq: 107 NOTIFY
Content-Length: 0
```

CISCO CONFIDENTIAL

4.2 Basic Early Transfer Call via an Inter Cluster SIP Trunk

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

Description:

The following basic call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an Inter Cluster SIP Trunk.

Cisco Unified IP Phone 1001 (registered with Unified CM1) calls Cisco Unified IP Phone 2002 (registered with Unified CM2) and Cisco Unified IP Phone IP Phone 2002 made an early transfer to Cisco Unified IP Phone IP Phone 2001 (registered with Unified CM2 as well)

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP
Phone = C, Line = 2001, IP = 10.10.199.171, Model = SIP TNP

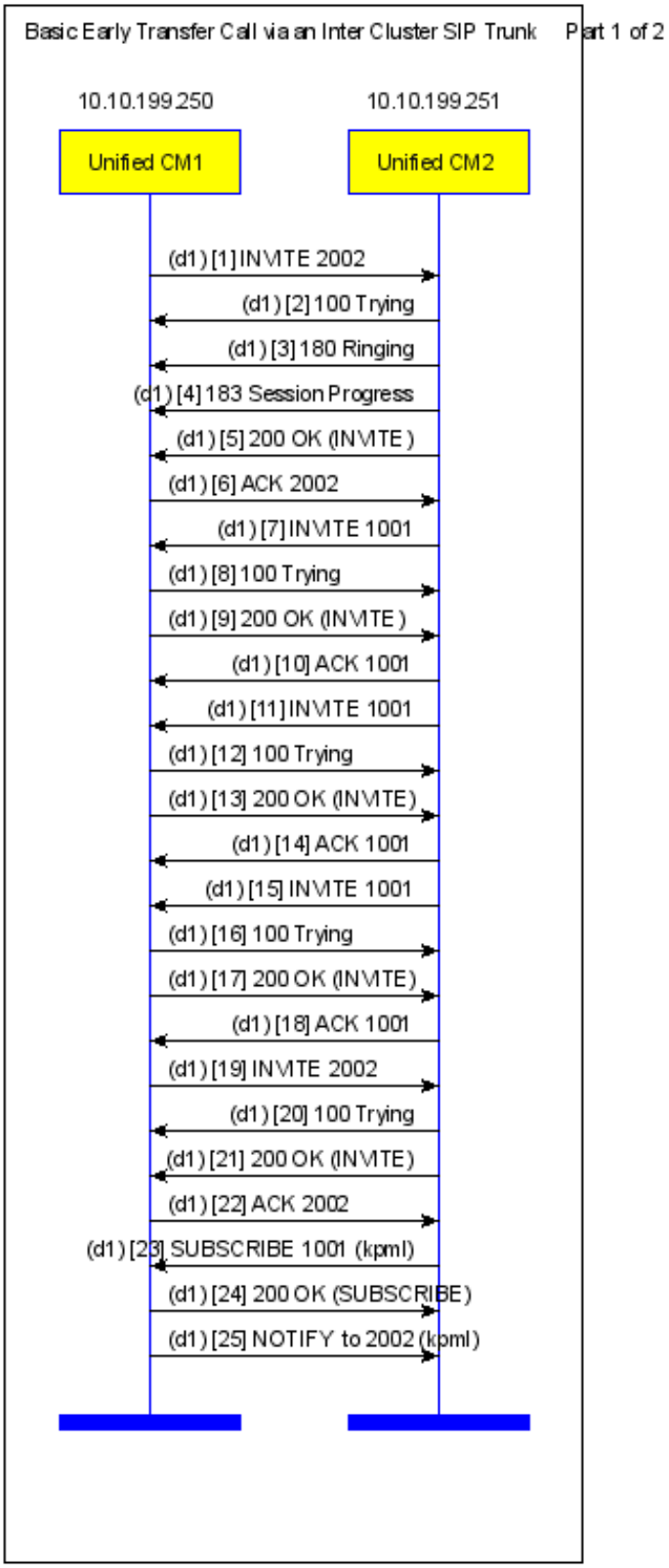
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

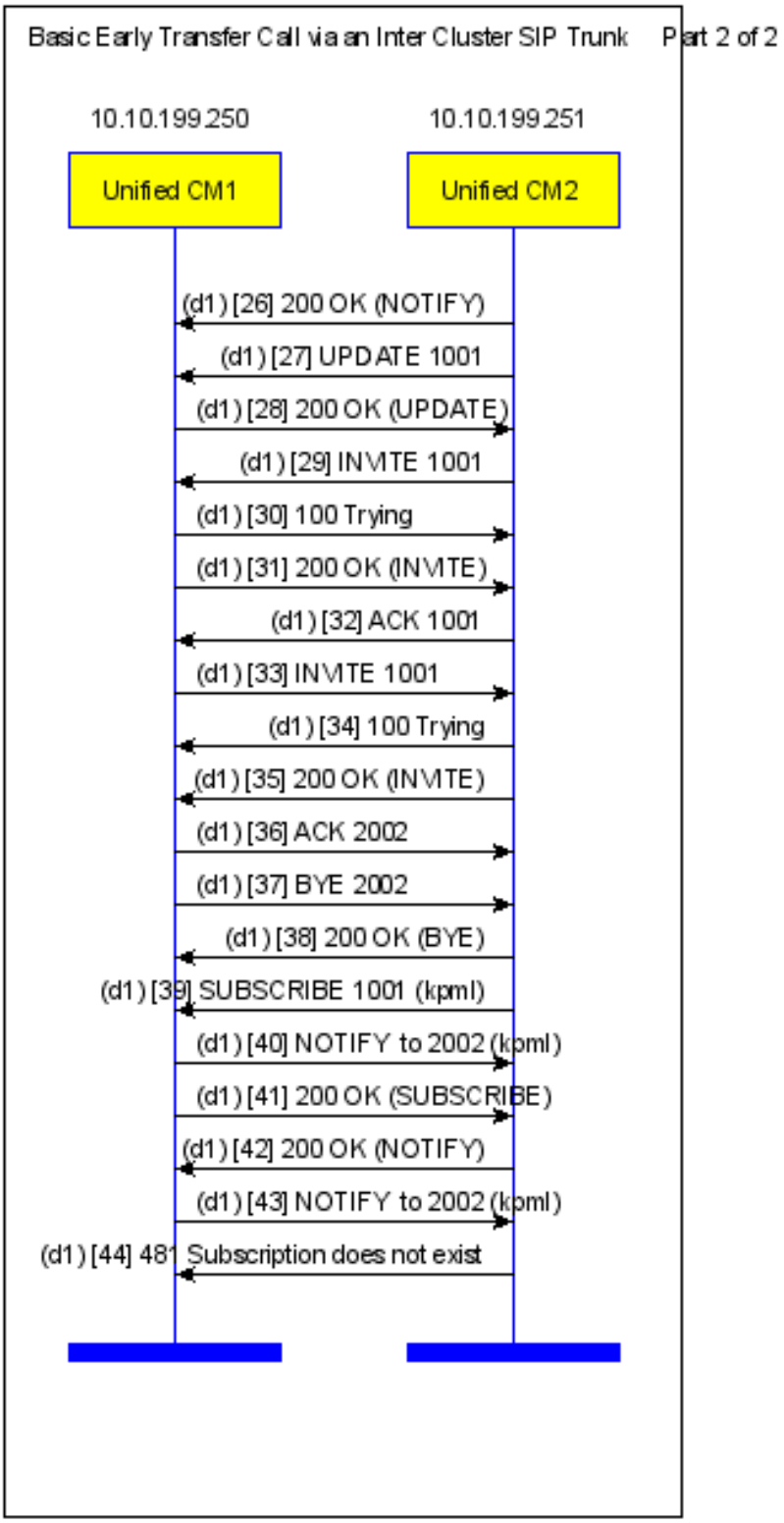
Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers
Phone B DN 2002 presses transfer softkey and dials Phone C DN 2001
Phone C DN 2001 is ringing
Phone B DN 2002 presses Transfer softkey to complete the transfer
Phone C DN 2001 answers
Phone A DN 1001 and Phone C DN 2001 are connected
Phone A DN 1001 goes onHook
Phone C DN 2001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21c3882f4ef
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>
Date: Wed, 24 Feb 2010 19:00:15 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 3595292416-3092346687-0000000028-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21c3882f4ef
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>
Date: Wed, 24 Feb 2010 19:12:51 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21c3882f4ef
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:12:51 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21c3882f4ef
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:12:51 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21c3882f4ef
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:12:51 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21db92b43d
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:00:15 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 18972 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb14d350158
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
```

CISCO CONFIDENTIAL

```
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:12:55 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 3595292416-3092346687-0000000028-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 26014 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb14d350158
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:00:20 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb14d350158
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:00:20 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 18972 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb26326e301
```

CISCO CONFIDENTIAL

```
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:12:55 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb32136d69d
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:12:57 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 3595292416-3092346687-0000000028-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 221

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 26014 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[12] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb32136d69d
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:00:22 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[13] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb32136d69d
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:00:22 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 228
```

CISCO CONFIDENTIAL

```
v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 18972 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[14] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb44c22c5e6
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:12:57 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb53e911e66
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:12:57 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 3595292416-3092346687-0000000028-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

[16] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb53e911e66
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:00:22 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[17] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb53e911e66
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:00:22 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337
```

CISCO CONFIDENTIAL

```
v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[18] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb64bc96ec1
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:12:57 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 227

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 4000 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[19] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21e3519e322
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:00:22 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 19208 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[20] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21e3519e322
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:12:58 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[21] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21e3519e322
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:12:58 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 19208 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]
[22] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK21f44b76489
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:00:22 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[23] SUBSCRIBE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb7778a11b6
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 104 SUBSCRIBE
Date: Wed, 24 Feb 2010 19:12:58 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Expires: 7200
Contact: <sip:10.10.199.251:5060;transport=tcp>
Accept: application/kpml-response+xml
Max-Forwards: 70
Content-Type: application/kpml-request+xml
Content-Length: 370

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-request kpml-request.xsd" version="1.0">

  <pattern interdigittimer="7260000" persist="persist">
    <regex tag="dtmf">[x*#ABCD]</regex>
```

CISCO CONFIDENTIAL

```
  </pattern>

</kpml-request>
```

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

```
[24] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb7778a11b6
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:00:22 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 104 SUBSCRIBE
Content-Length: 0
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 7200
```

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

```
[25] NOTIFY sip:10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22057cedaf
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Max-Forwards: 70
Date: Wed, 24 Feb 2010 19:00:22 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: active;expires=7200
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
```

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

```
[26] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22057cedaf
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:12:58 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 103 NOTIFY
Content-Length: 0
```

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

```
[27] UPDATE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb9334205a5
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:12:58 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
Supported: timer,resource-priority,replaces
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 105 UPDATE
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

```
[28] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb9334205a5
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:00:27 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 105 UPDATE
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 0
```

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

```
[29] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKbb9f96df7
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
```

CISCO CONFIDENTIAL

```
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:13:07 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 3595292416-3092346687-0000000028-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 106 INVITE
Max-Forwards: 70
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=calling;screen=yes;privacy=off
Contact: <sip:1001@10.10.199.251:5060;transport=tcp>;video;audio
Content-Length: 0
```

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

[30] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKbb9f96df7
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:00:31 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 106 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[31] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKbb9f96df7
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:00:31 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 106 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[32] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKbc15622c81
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:13:07 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 106 ACK
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Type: application/sdp
```

CISCO CONFIDENTIAL

```
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 25292 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[33] INVITE sip:1001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22113f69d5
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:00:31 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 20164 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[34] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22113f69d5
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:13:07 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[35] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22113f69d5
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:13:07 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
```

CISCO CONFIDENTIAL

```
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 25292 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[36] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2226ed18ca9
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:00:31 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

```
[37] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK223ad315ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:00:31 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 105 BYE
Content-Length: 0
```

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

```
[38] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK223ad315ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:13:15 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 105 BYE
Content-Length: 0
```

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

```
[39] SUBSCRIBE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc25f830bd3
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 107 SUBSCRIBE
Date: Wed, 24 Feb 2010 19:13:15 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Expires: 0
Contact: <sip:10.10.199.251:5060;transport=tcp>
Max-Forwards: 70
Content-Length: 0
```

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

```
[40] NOTIFY sip:10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK224337d0071
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 106 NOTIFY
Max-Forwards: 70
Date: Wed, 24 Feb 2010 19:00:39 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: terminated
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[41] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc25f830bd3
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
Date: Wed, 24 Feb 2010 19:00:39 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 107 SUBSCRIBE
Content-Length: 0
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 0
```

[diagram] Call-ID:[prev][next]
[42] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK224337d0071
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:13:15 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 106 NOTIFY
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[43] NOTIFY sip:10.10.199.251:5060;transport=tcp SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22577e100d3
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 107 NOTIFY
Max-Forwards: 70
Date: Wed, 24 Feb 2010 19:00:39 GMT
User-Agent: Cisco-CUCM8.0
Event: kpml
Subscription-State: terminated;reason=timeout
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Type: application/kpml-response+xml
Content-Length: 348

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-response kpml-response.xsd" code="487" digits=""
forced_flush="false" suppressed="false" tag="dtmf" text="Subscription Expired" version="1.0"/>
```

[diagram] Call-ID:[prev][next]
[44] SIP/2.0 481 Subscription does not exist
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22577e100d3
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557828
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552771
Date: Wed, 24 Feb 2010 19:13:15 GMT
Call-ID: d64bcf00-b851773f-192-fac712ac@10.10.199.250
CSeq: 107 NOTIFY
Content-Length: 0
```

CISCO CONFIDENTIAL

4.3 Attended Transfer Call using the Cisco Unified CM SIP Trunk

Title: Attended Transfer Call using the Cisco Unified CM SIP Trunk

Description:

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

Cisco Unified IP Phone 1001 (registered with Unified CM1) calls Cisco Unified IP Phone 1003 (registered with Unified CM1) and makes an attended transfer to SIP Proxy Phone 3002 (registered with SIP Proxy)

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = SIP Proxy, IP = 10.10.199.32

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = C, Line = 3002, IP = 10.10.199.78, Model = SIP TNP

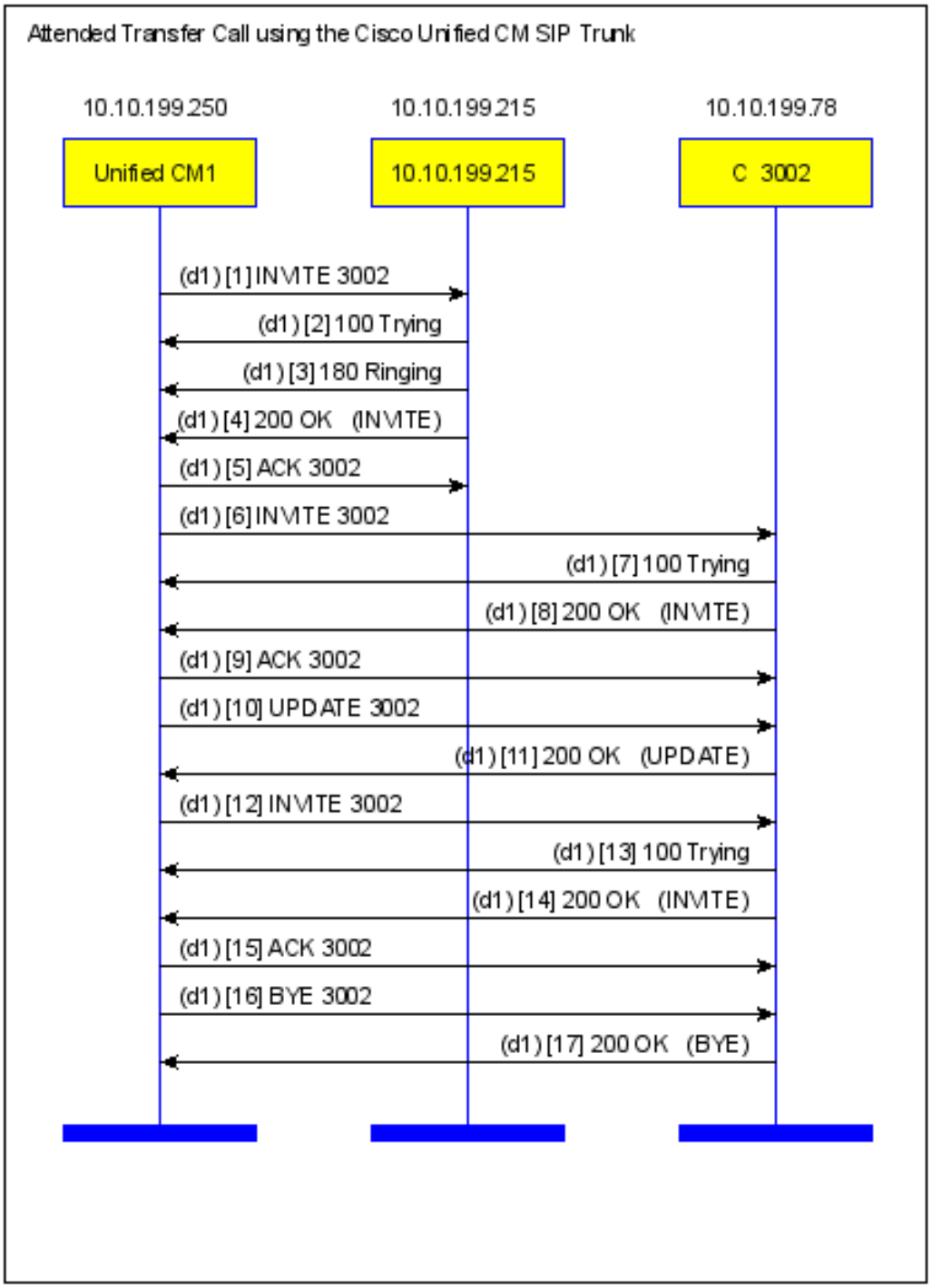
SIP Trunk between Unified CM1 & SIP Proxy has route pattern 4.XXXX

Scenario:

Phone A DN 1001 calls Phone B DN 1003 over the SIP Trunk by dialing 1003
Phone B DN 1003 answers
Phone A DN 1001 presses transfer softkey and dials Phone C DN 43002
Phone C DN 3002 is ringing
Phone C DN 3002 answers
Phone A DN 1001 presses Transfer softkey to complete the transfer
Phone B DN 1003 and Phone C DN 3002 are connected
Phone B DN 1003 goes onHook
Phone C DN 3002 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:3002@10.10.199.215:5060 SIP/2.0
```
Date: Wed, 24 Feb 2010 14:06:34 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE:  1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:3002@10.10.199.215>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK15947d9e2cd
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK15947d9e2cd
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
To: <sip:3002@10.10.199.215>
CSeq: 101 INVITE
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK15947d9e2cd
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
CSeq: 101 INVITE
Server: Cisco-CP7960G/8.0
Contact: <sip:3002@10.10.199.78:5060;transport=udp>
Record-Route: <sip:3002@10.10.199.215:5060;maddr=10.10.199.215;transport=tcp;lr>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "3002" <sip:3002@10.10.199.215>;party=called;id-type=subscriber;privacy=off;screen=yes
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK15947d9e2cd
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
CSeq: 101 INVITE
Server: Cisco-CP7960G/8.0
Contact: <sip:3002@10.10.199.78:5060;transport=udp>
Record-Route: <sip:3002@10.10.199.215:5060;maddr=10.10.199.215;transport=tcp;lr>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "3002" <sip:3002@10.10.199.215>;party=called;id-type=subscriber;privacy=off;screen=yes
Content-Length: 278
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 19770 0 IN IP4 10.10.199.78
s=SIP Call
t=0 0
m=audio 26910 RTP/AVP 0 8 18 101
c=IN IP4 10.10.199.78
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

[diagram] Call-ID:[prev][next]
[5] ACK sip:3002@10.10.199.78:5060;transport=udp SIP/2.0
```
Route: <sip:3002@10.10.199.215:5060;maddr=10.10.199.215;transport=tcp;lr>
Date: Wed, 24 Feb 2010 14:06:34 GMT
```

CISCO CONFIDENTIAL

```
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
Allow-Events: presence, kpml
Content-Length: 216
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Content-Type: application/sdp
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK15a71dfb115
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 25398 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[6] INVITE sip:3002@10.10.199.78:5060;transport=udp SIP/2.0
Route: <sip:3002@10.10.199.215:5060;maddr=10.10.199.215;transport=tcp;lr>
Date: Wed, 24 Feb 2010 14:06:41 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 221
User-Agent: Cisco-CUCM8.0
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK15b252ea717
CSeq: 102 INVITE
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 25398 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[7] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK15b252ea717
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
CSeq: 102 INVITE
Content-Length: 0
```

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

```
[8] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK15b252ea717
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
CSeq: 102 INVITE
Server: Cisco-CP7960G/8.0
Contact: <sip:3002@10.10.199.78:5060;transport=udp>
Record-Route: <sip:3002@10.10.199.78:5060;maddr=10.10.199.215;transport=tcp;lr>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "3002" <sip:3002@10.10.199.215>;party=called;id-type=subscriber;privacy=off;screen=yes
Content-Length: 207
Content-Type: application/sdp
Content-Disposition: session;handling=optional
```

CISCO CONFIDENTIAL

```
v=0
o=Cisco-SIPUA 19770 1 IN IP4 10.10.199.78
s=SIP Call
t=0 0
m=audio 26910 RTP/AVP 0 101
c=IN IP4 10.10.199.78
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=inactive
```

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

[9] ACK sip:3002@10.10.199.78:5060;transport=udp SIP/2.0

```
Route: <sip:3002@10.10.199.215:5060;maddr=10.10.199.215;transport=tcp;lr>
Date: Wed, 24 Feb 2010 14:06:41 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK15c5922672a
CSeq: 102 ACK
Max-Forwards: 70
```

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

[10] UPDATE sip:3002@10.10.199.78:5060;transport=udp SIP/2.0

```
Route: <sip:3002@10.10.199.215:5060;maddr=10.10.199.215;transport=tcp;lr>
Date: Wed, 24 Feb 2010 14:06:41 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1003@10.10.199.250>
Supported: timer,resource-priority,replaces
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK15d68b07bf2
CSeq: 103 UPDATE
Max-Forwards: 70
```

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

[11] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK15d68b07bf2
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
CSeq: 103 UPDATE
Server: Cisco-CP7960G/8.0
Contact: <sip:3002@10.10.199.78:5060;transport=udp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Content-Length: 0
```

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

[12] INVITE sip:3002@10.10.199.78:5060;transport=udp SIP/2.0

```
Route: <sip:3002@10.10.199.215:5060;maddr=10.10.199.215;transport=tcp;lr>
Date: Wed, 24 Feb 2010 14:06:42 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1003@10.10.199.250>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK15e53f5e9fd
CSeq: 104 INVITE
Max-Forwards: 70
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[13] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK15e53f5e9fd
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
CSeq: 104 INVITE
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[14] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK15e53f5e9fd
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
CSeq: 104 INVITE
Server: Cisco-CP7960G/8.0
Contact: <sip:3002@10.10.199.78:5060;transport=udp>
Record-Route: <sip:3002@10.10.199.78:5060;maddr=10.10.199.215;transport=tcp;lr>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE
Remote-Party-ID: "3002" <sip:3002@10.10.199.215>;party=called;id-type=subscriber;privacy=off;screen=yes
Content-Length: 278
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 19770 2 IN IP4 10.10.199.78
s=SIP Call
t=0 0
m=audio 26910 RTP/AVP 0 8 18 101
c=IN IP4 10.10.199.78
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

[diagram] Call-ID:[prev][next]
[15] ACK sip:3002@10.10.199.78:5060;transport=udp SIP/2.0
```
Route: <sip:3002@10.10.199.215:5060;maddr=10.10.199.215;transport=tcp;lr>
Date: Wed, 24 Feb 2010 14:06:42 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
Allow-Events: presence, kpml
Content-Length: 215
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Content-Type: application/sdp
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK15f6286e656
CSeq: 104 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 18312 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]
[16] BYE sip:3002@10.10.199.78:5060;transport=udp SIP/2.0
```
Route: <sip:3002@10.10.199.215:5060;maddr=10.10.199.215;transport=tcp;lr>
Date: Wed, 24 Feb 2010 14:06:42 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1607ef1fae5
CSeq: 105 BYE
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[17] SIP/2.0 200 OK

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK1607ef1fae5
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763646
To: <sip:3002@10.10.199.215>;tag=000f24aa92ac00555355a353-7598242a
Call-ID: 918bd680-a2d11aea-46-fac712ac@10.10.199.250
CSeq: 105 BYE
Server: Cisco-CP7960G/8.0
Content-Length: 0
```

4.4 Early Attended Transfer To SIP Proxy via Cisco Unified CM SIP Trunk

Title: Early Attended Transfer To SIP Proxy via Cisco Unified CM SIP Trunk

Description:

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

Cisco Unified IP Phone 1001 (registered with Unified CM1) calls Cisco Unified IP Phone 1003 (registered with Unified CM1) and makes an attended transfer to SIP Proxy Phone 3002 (registered with SIP Proxy)

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = SIP Proxy, IP = 10.10.199.32

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = C, Line = 3002, IP = 10.10.199.78, Model = SIP TNP

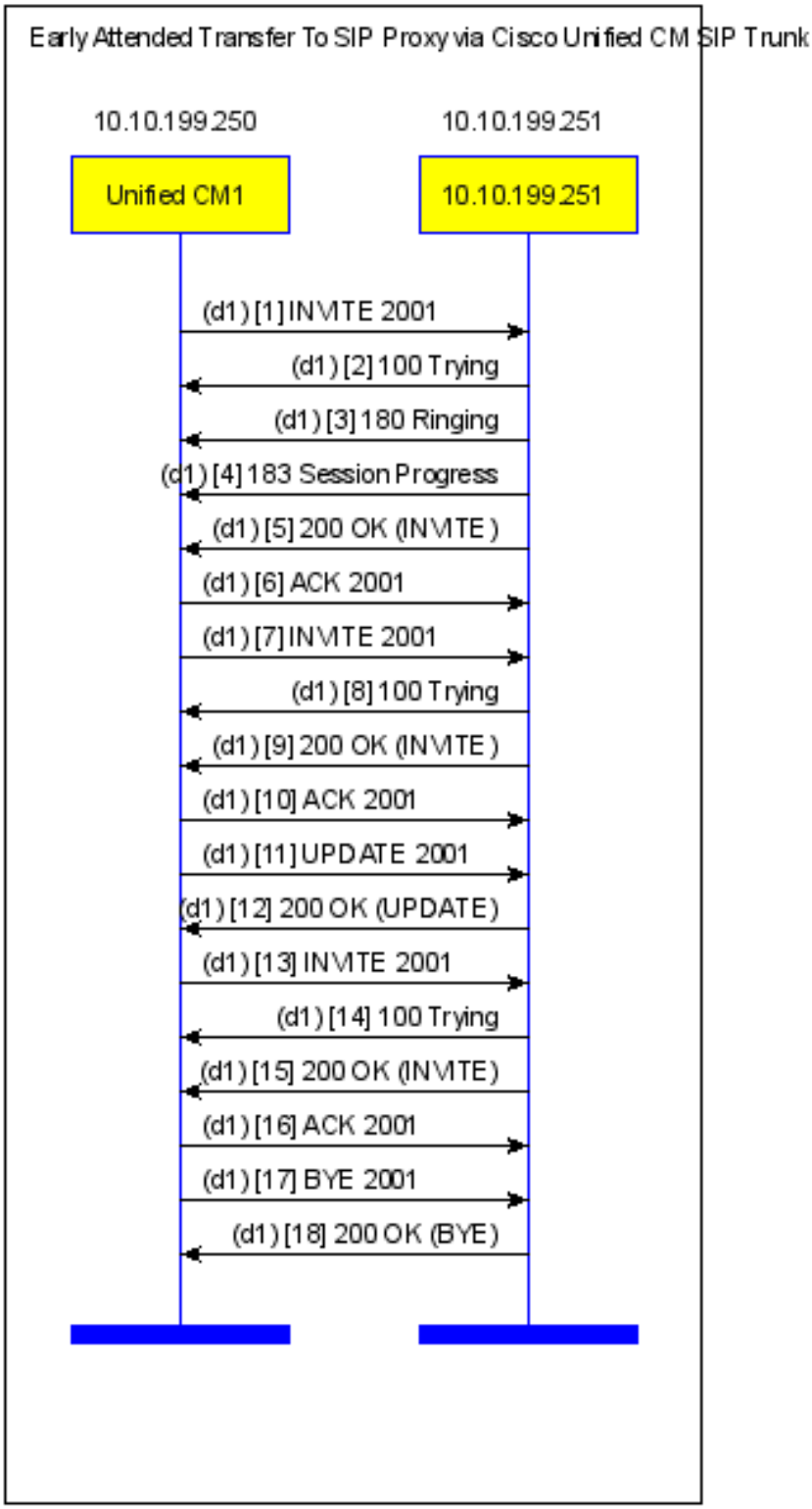
SIP Trunk between Unified CM1 & SIP Proxy has route pattern 4.XXXX

Scenario:

Phone A DN 1001 calls Phone B DN 1003 over the SIP Trunk by dialing 1003
Phone B DN 1003 answers
Phone A DN 1001 presses transfer softkey and dials Phone C DN 43002
Phone C DN 3002 is ringing
Phone A DN 1001 presses Transfer softkey to complete the transfer
Phone B DN 1003 hears Phone C DN 3002 ringing
Phone C DN 3002 answers
Phone B DN 1003 and Phone C DN 3002 are connected
Phone B DN 1003 goes onHook
Phone C DN 3002 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2001@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK226455289b4
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>
Date: Wed, 24 Feb 2010 19:07:46 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 3810325120-3092347138-0000000029-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK226455289b4
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>
Date: Wed, 24 Feb 2010 19:20:22 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK226455289b4
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:20:22 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK226455289b4
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:20:22 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 18102 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK226455289b4
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:20:22 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 18102 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2277836ebe1
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:07:46 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 31530 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] INVITE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2281ad60951
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
```

CISCO CONFIDENTIAL

```
Date: Wed, 24 Feb 2010 19:07:55 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 221

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 31530 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[8] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2281ad60951
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:20:31 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[9] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2281ad60951
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:20:31 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 18102 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[10] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2291b9d0392
```

CISCO CONFIDENTIAL

```
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:07:55 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

[11] UPDATE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22a45b42795
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:07:55 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
Supported: timer,resource-priority,replaces
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 UPDATE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22a45b42795
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:20:31 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
CSeq: 103 UPDATE
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

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

[13] INVITE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22b7a34843
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:07:56 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  1800;refresher=uas
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

[14] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22b7a34843
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:20:31 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[15] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22b7a34843
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
```

CISCO CONFIDENTIAL

```
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:20:31 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 18102 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[16] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22c182d4f48
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:07:56 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 104 ACK
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Content-Type: application/sdp
Content-Length: 215

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 27474 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[17] BYE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22d1b3241a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:07:56 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 105 BYE
Content-Length: 0
```

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

[18] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK22d1b3241a
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557833
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552778
Date: Wed, 24 Feb 2010 19:20:38 GMT
Call-ID: e31cf280-b8517902-193-fac712ac@10.10.199.250
CSeq: 105 BYE
```

CISCO CONFIDENTIAL

```
Content-Length: 0
```

CISCO CONFIDENTIAL

5. Update

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

Title: Early Transfer Call to SIP Gateway No PRACK via Cisco Unified CM SIP Trunk

Description:

The following call flow illustrates the SIP messaging that takes place between Cisco Unified CM SCCP phones hosted by a CIsco Unified CM, and a SIP GW via a Cisco Unified CM SIP Trunk

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Gateway, IP = 10.10.199.93

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 1003, IP = 10.10.199.66, Model = SCCP

Phone = C, Line = 3601, Model = FXPS

SIP Trunk between Unified CM1 & Gateway has

a) route pattern 3.XXXX

Scenario:

Cisco Unified IP SCCP Phone A DN 1001 calls Cisco Unified IP SCCP Phone B DN 1003

Phone B DN 1003 Answers

Phone B DN 1003 presses transfer softkey and calls Phone C DN 3601 which is a SIP GW phone

Phone C DN 3601 is ringing

Phone B DN 1003 presses Transfer softkey to complete the transfer

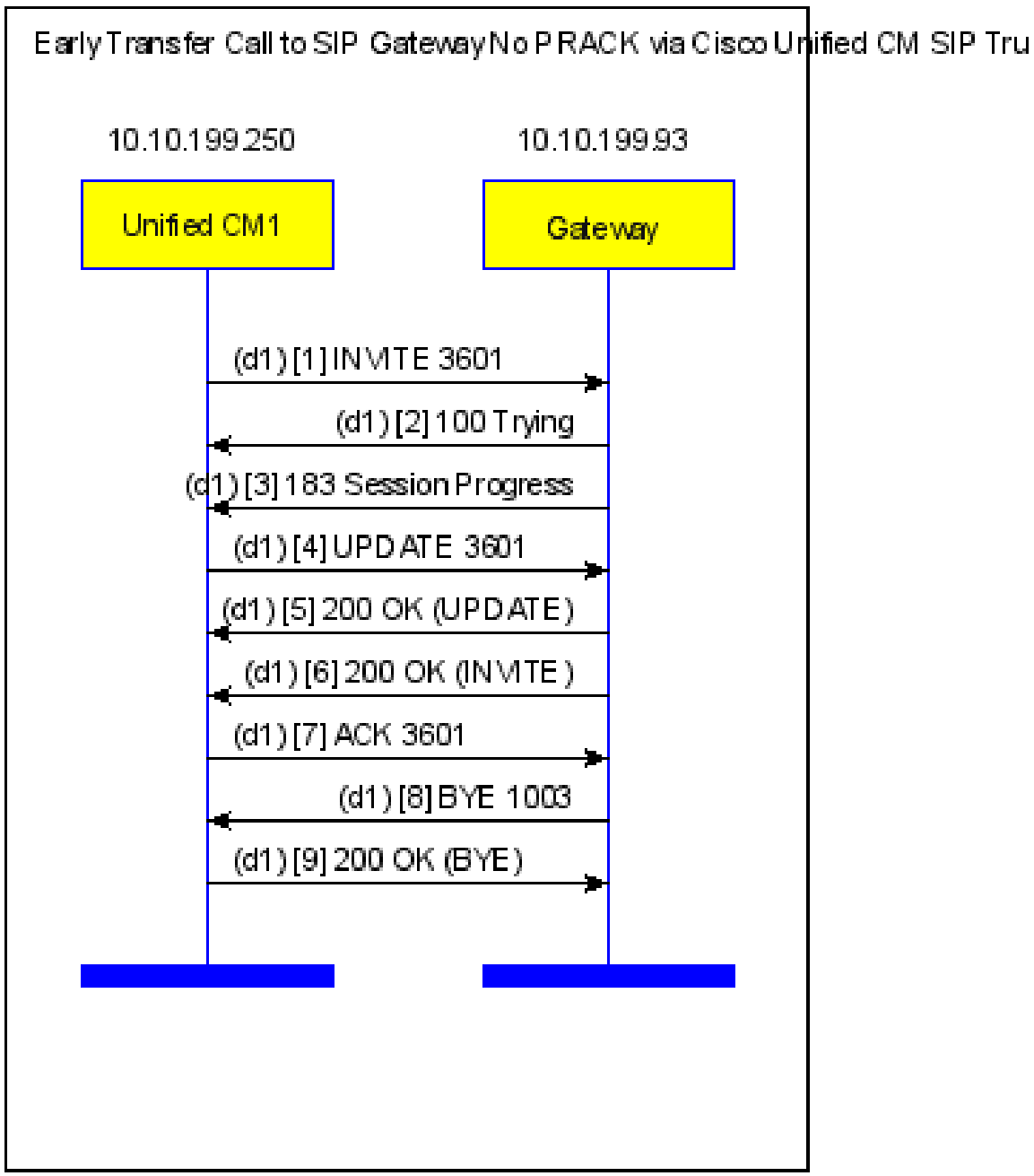
Phone C DN 3601 answers

Phone A DN 1001 and Phone C DN 3601 are connected

Phone C DN 3601 ends the call

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

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

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

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK23a6833f317
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557858
To: <sip:3601@10.10.199.93>
Date: Wed, 24 Feb 2010 19:34:11 GMT
Call-ID: 93d8c100-b8517f33-19a-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2480455936-3092348723-0000000033-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

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

[2] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK23a6833f317
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557858
To: <sip:3601@10.10.199.93>;tag=C99C03C0-4AE
Date: Wed, 24 Feb 2010 18:42:26 GMT
Call-ID: 93d8c100-b8517f33-19a-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0
```

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

[3] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK23a6833f317
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557858
To: <sip:3601@10.10.199.93>;tag=C99C03C0-4AE
Date: Wed, 24 Feb 2010 18:42:26 GMT
Call-ID: 93d8c100-b8517f33-19a-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 331

v=0
o=CiscoSystemsSIP-GW-UserAgent 61 7992 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 16950 RTP/AVP 0 8 18 101 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=rtpmap:19 CN/8000
```

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

[4] UPDATE sip:3601@10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK23b9617cd4
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557858
To: <sip:3601@10.10.199.93>;tag=C99C03C0-4AE
Date: Wed, 24 Feb 2010 19:34:11 GMT
Call-ID: 93d8c100-b8517f33-19a-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
Supported: timer,resource-priority,replaces
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 UPDATE
```

CISCO CONFIDENTIAL

```
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK23b9617cd4
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557858
To: <sip:3601@10.10.199.93>;tag=C99C03C0-4AE
Date: Wed, 24 Feb 2010 18:42:29 GMT
Call-ID: 93d8c100-b8517f33-19a-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 UPDATE
Allow-Events: telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
Content-Length: 0
```

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

[6] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK23a6833f317
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557858
To: <sip:3601@10.10.199.93>;tag=C99C03C0-4AE
Date: Wed, 24 Feb 2010 18:42:29 GMT
Call-ID: 93d8c100-b8517f33-19a-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
Session-Expires:  1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 331

v=0
o=CiscoSystemsSIP-GW-UserAgent 61 7992 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 16950 RTP/AVP 0 8 18 101 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=rtpmap:19 CN/8000
```

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

[7] ACK sip:3601@10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK23c5c75cba8
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557858
To: <sip:3601@10.10.199.93>;tag=C99C03C0-4AE
Date: Wed, 24 Feb 2010 19:34:11 GMT
Call-ID: 93d8c100-b8517f33-19a-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 27026 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK51FAC
From: <sip:3601@10.10.199.93>;tag=C99C03C0-4AE
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557858
```

CISCO CONFIDENTIAL

```
Date: Wed, 24 Feb 2010 18:42:41 GMT
Call-ID: 93d8c100-b8517f33-19a-fac712ac@10.10.199.250
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 70
Timestamp: 1267036979
CSeq: 101 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK51FAC
From: <sip:3601@10.10.199.93>;tag=C99C03C0-4AE
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557858
Date: Wed, 24 Feb 2010 19:34:44 GMT
Call-ID: 93d8c100-b8517f33-19a-fac712ac@10.10.199.250
CSeq: 101 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

5.2 Early Transfer Call to SIP Gateway with PRACK via Cisco Unified CM SIP Trunk

Title: Early Transfer Call to SIP Gateway with PRACK via Cisco Unified CM SIP Trunk

Description:

The following call flow illustrates the SIP messaging that takes place between Cisco Unified CM SCCP phones hosted by a CIsco Unified CM, and a SIP GW via a Cisco Unified CM SIP Trunk

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Gateway, IP = 10.10.199.93

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 1003, IP = 10.10.199.66, Model = SCCP

Phone = C, Line = 3601, Model = FXPS

SIP Trunk between Unified CM1 & Gateway has

a) route pattern 3.XXXX

Scenario:

Cisco Unified IP SCCP Phone A DN 1001 calls Cisco Unified IP SCCP Phone B DN 1003

Phone B DN 1003 Answers

Phone B DN 1003 presses transfer softkey and calls Phone C DN 3601 which is a SIP GW phone

Phone C DN 3601 is ringing

Phone B DN 1003 presses Transfer softkey to complete the transfer

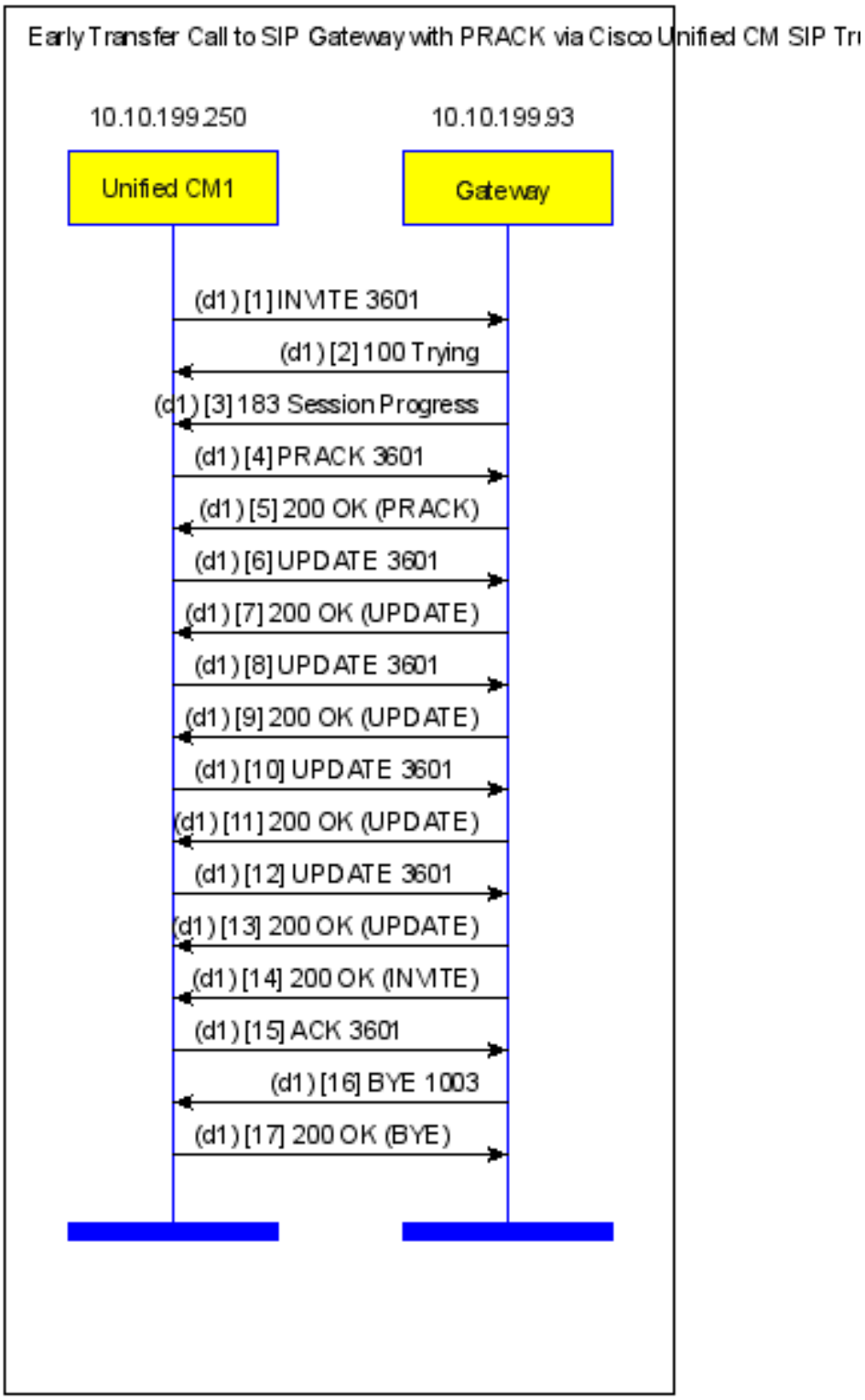
Phone C DN 3601 answers

Phone A DN 1001 and Phone C DN 3601 are connected

Phone C DN 3601 ends the call

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:3601@10.10.199.93:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2452aa53a59
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>
Date: Wed, 24 Feb 2010 19:48:49 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2670521344-3092349601-0000000035-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2452aa53a59
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 18:57:04 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2452aa53a59
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 18:57:04 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Require: 100rel
RSeq: 6151
Allow-Events: telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 333

v=0
o=CiscoSystemsSIP-GW-UserAgent 4563 8780 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 16672 RTP/AVP 0 8 18 101 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=rtpmap:19 CN/8000
```

[diagram] Call-ID:[prev][next]
[4] PRACK sip:3601@10.10.199.93:5060;transport=tcp SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK24673b752c4
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 19:48:49 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
CSeq: 102 PRACK
RAck: 6151 101 INVITE
Allow-Events: presence, kpml
```

CISCO CONFIDENTIAL

```
Max-Forwards: 70
Content-Type: application/sdp
Content-Length: 215

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 27040 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK24673b752c4
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 18:57:04 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 PRACK
Content-Length: 0
```

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

[6] UPDATE sip:3601@10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2475eda180c
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 19:48:49 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
Supported: 100rel,timer,resource-priority,replaces
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 UPDATE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1003@10.10.199.250>
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 221

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 27040 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2475eda180c
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 18:57:08 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 103 UPDATE
Allow-Events: telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
Session-Expires:  1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 262

v=0
o=CiscoSystemsSIP-GW-UserAgent 4563 8780 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 16672 RTP/AVP 0 101
c=IN IP4 10.10.199.93
a=inactive
```

CISCO CONFIDENTIAL

```
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=ptime:20
```

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

```
[8] UPDATE sip:3601@10.10.199.93:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK24868bd3e22
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 19:48:49 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
Supported: 100rel,timer,resource-priority,replaces
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 104 UPDATE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

```
[9] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK24868bd3e22
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 18:57:08 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 104 UPDATE
Allow-Events: telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
Content-Length: 0
```

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

```
[10] UPDATE sip:3601@10.10.199.93:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK249413518b
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 19:48:49 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
Supported: 100rel,timer,resource-priority,replaces
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 105 UPDATE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[11] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK249413518b
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 18:57:08 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 105 UPDATE
```

CISCO CONFIDENTIAL

```
Allow-Events: telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
Session-Expires:  1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 250

v=0
o=CiscoSystemsSIP-GW-UserAgent 4563 8781 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 16672 RTP/AVP 0 101
c=IN IP4 10.10.199.93
a=recvonly
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
```

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

[12] UPDATE sip:3601@10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK24a3a83a189
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 19:48:49 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
Supported: 100rel,timer,resource-priority,replaces
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 106 UPDATE
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 31744 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[13] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK24a3a83a189
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 18:57:08 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 106 UPDATE
Allow-Events: telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
Session-Expires:  1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 250

v=0
o=CiscoSystemsSIP-GW-UserAgent 4563 8782 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 16672 RTP/AVP 0 101
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=ptime:20
```

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

[14] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2452aa53a59
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
```

CISCO CONFIDENTIAL

```
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 18:57:08 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:3601@10.10.199.93:5060;transport=tcp>
Session-Expires:  1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 250

v=0
o=CiscoSystemsSIP-GW-UserAgent 4563 8782 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 16672 RTP/AVP 0 101
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=ptime:20
```

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

[15] ACK sip:3601@10.10.199.93:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK24b244573cc
From: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
To: <sip:3601@10.10.199.93>;tag=C9A96944-1616
Date: Wed, 24 Feb 2010 19:48:49 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 31744 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK72305
From: <sip:3601@10.10.199.93>;tag=C9A96944-1616
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
Date: Wed, 24 Feb 2010 18:57:15 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 70
Timestamp: 1267037842
CSeq: 101 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

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

[17] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bK72305
From: <sip:3601@10.10.199.93>;tag=C9A96944-1616
To: <sip:1003@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557868
Date: Wed, 24 Feb 2010 19:49:07 GMT
Call-ID: 9f2cec00-b85182a1-19d-fac712ac@10.10.199.250
CSeq: 101 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

6. TLS

6.1 TLS Rejection with X509 Subject Name Mismatch

Title: TLS Rejection with X509 Subject Name Mismatch

Description:

Incoming TLS is from a trusted peer but the X509 subject name or the cipher string from the peer's certificate doesn't match the values from the SIP trunk security profile on Cisco Unified CM.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM2 & Unified CM1 has

a) route pattern 1.XXXX

b) Has destination port configured to be 5061

c) Has "SIP Trunk Security Profile" point to the "TLS Sip Trunk Secure Profile", which is already configured to have correct X509 Subject Name.

d) "TLS Sip Trunk Security Profile" has a different X509 Subject Name.

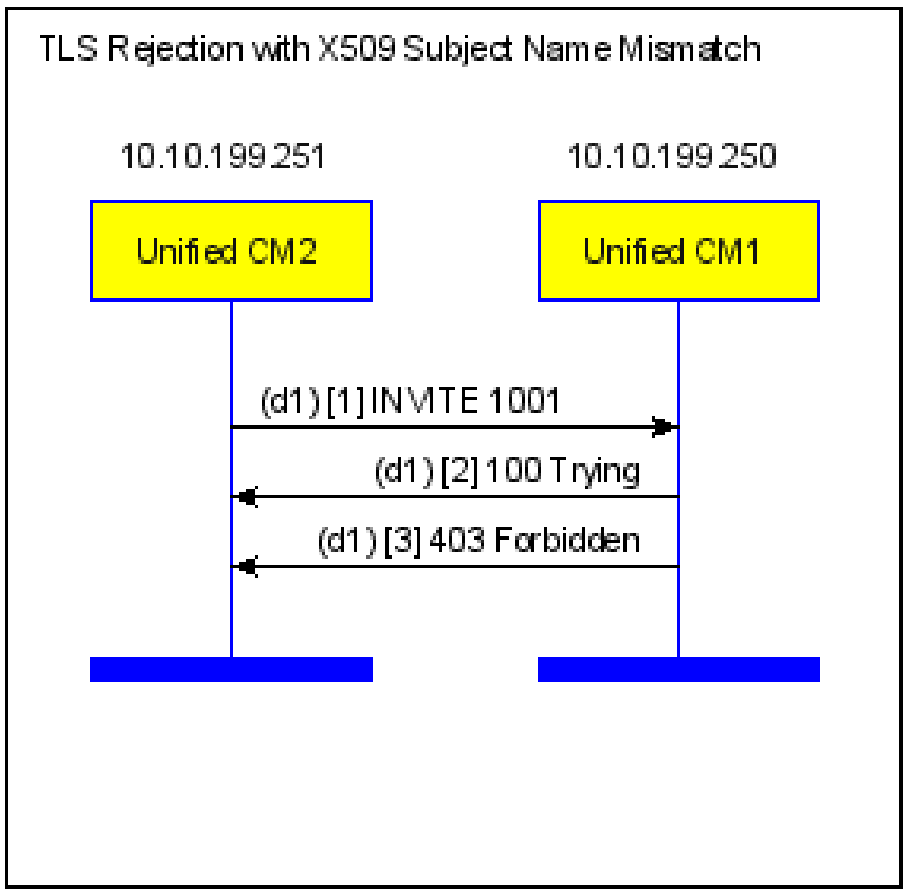
Scenario:

Phone B DN 2002 calls Phone A DN 1001 over the SIP Trunk by dialing 11001

Call gets rejected by Unified CM1 because of mismatch in X509 subject name in Sip Trunk Security Profile.

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:1001@10.10.199.250:5061 SIP/2.0
```
Via: SIP/2.0/TLS 10.10.199.251:5061;branch=z9hG4bK88123fae0e
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552756
To: <sip:1001@10.10.199.250>
Date: Tue, 23 Feb 2010 22:22:46 GMT
Call-ID: f6718480-b8415536-1b-fbc712ac@10.10.199.251
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:2002@10.10.199.251:5061;transport=tls>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.251:5061>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 4134634624-3091289398-0000000005-4224127660
Session-Expires:  1800
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TLS 10.10.199.251:5061;branch=z9hG4bK88123fae0e
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552756
To: <sip:1001@10.10.199.250>
Date: Tue, 23 Feb 2010 22:10:13 GMT
Call-ID: f6718480-b8415536-1b-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 403 Forbidden
```
Via: SIP/2.0/TLS 10.10.199.251:5061;branch=z9hG4bK88123fae0e
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552756
To: <sip:1001@10.10.199.250>;tag=648789534
Date: Tue, 23 Feb 2010 22:10:13 GMT
Call-ID: f6718480-b8415536-1b-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

CISCO CONFIDENTIAL

6.2 TLS Basic Incoming Call

Title: TLS Basic Incoming Call

Description:

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

Unified CM1 received an INVITE via the SIP Trunk.

Incoming TLS is from a trusted peer, where the X509 subject name from the peer's certificate matches

the values from the SIP trunk security profile on Cisco Unified CM1.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM2 & Unified CM1 has

a) route pattern 1.XXXX

b) Has destination port configured to be 5061

c) Has "SIP Trunk Security Profile" point to the "TLS Sip Trunk Secure Profile", which is already configured to have correct X509 Subject Name.

Scenario:

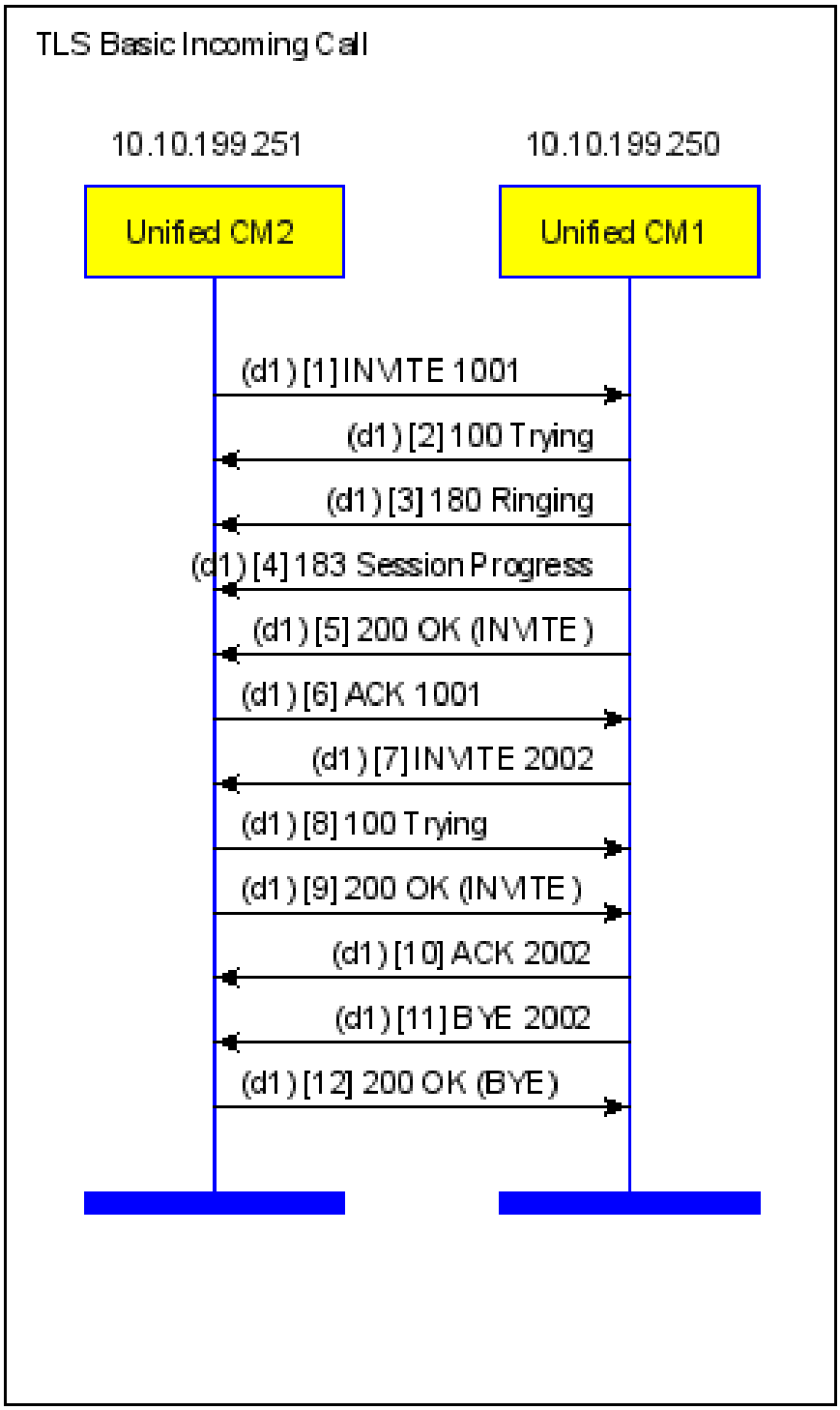
Phone B DN 2002 calls Phone A DN 1001 over the SIP Trunk by dialing 11001

Phone A DN 1001 Answers

Phone A DN 1001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:1001@10.10.199.250:5061 SIP/2.0
```
Via: SIP/2.0/TLS 10.10.199.251:5061;branch=z9hG4bK896742e3ad
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552758
To: <sip:1001@10.10.199.250>
Date: Tue, 23 Feb 2010 22:24:20 GMT
Call-ID: 2e78c780-b8415594-1c-fbc712ac@10.10.199.251
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:2002@10.10.199.251:5061;transport=tls>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.251:5061>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 0779667328-3091289492-0000000006-4224127660
Session-Expires:  1800
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TLS 10.10.199.251:5061;branch=z9hG4bK896742e3ad
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552758
To: <sip:1001@10.10.199.250>
Date: Tue, 23 Feb 2010 22:11:47 GMT
Call-ID: 2e78c780-b8415594-1c-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TLS 10.10.199.251:5061;branch=z9hG4bK896742e3ad
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552758
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557789
Date: Tue, 23 Feb 2010 22:11:47 GMT
Call-ID: 2e78c780-b8415594-1c-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:1001@10.10.199.250:5061;transport=tls>
Call-Info: <sip:10.10.199.250:5061>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TLS 10.10.199.251:5061;branch=z9hG4bK896742e3ad
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552758
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557789
Date: Tue, 23 Feb 2010 22:11:47 GMT
Call-ID: 2e78c780-b8415594-1c-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5061;transport=tls>
Call-Info: <sip:10.10.199.250:5061>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TLS 10.10.199.251:5061;branch=z9hG4bK896742e3ad
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552758
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557789
Date: Tue, 23 Feb 2010 22:11:47 GMT
Call-ID: 2e78c780-b8415594-1c-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5061;transport=tls>
Supported: replaces
Call-Info: <sip:10.10.199.250:5061>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:1001@10.10.199.250:5061;transport=tls SIP/2.0

```
Via: SIP/2.0/TLS 10.10.199.251:5061;branch=z9hG4bK8a4d6c8acd
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552758
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557789
Date: Tue, 23 Feb 2010 22:24:20 GMT
Call-ID: 2e78c780-b8415594-1c-fbc712ac@10.10.199.251
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 22896 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] INVITE sip:2002@10.10.199.251:5061;transport=tls SIP/2.0

```
Via: SIP/2.0/TLS 10.10.199.250:5061;branch=z9hG4bK13777e20fb0
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557789
```

CISCO CONFIDENTIAL

```
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552758
Date: Tue, 23 Feb 2010 22:11:50 GMT
Call-ID: 2e78c780-b8415594-1c-fbc712ac@10.10.199.251
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 0779667328-3091289492-0000000006-4224127660
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5061;transport=tls>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5061>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 25294 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Via: SIP/2.0/TLS 10.10.199.250:5061;branch=z9hG4bK13777e20fb0
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557789
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552758
Date: Tue, 23 Feb 2010 22:24:24 GMT
Call-ID: 2e78c780-b8415594-1c-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TLS 10.10.199.250:5061;branch=z9hG4bK13777e20fb0
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557789
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552758
Date: Tue, 23 Feb 2010 22:24:24 GMT
Call-ID: 2e78c780-b8415594-1c-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:2002@10.10.199.251:5061;transport=tls>
Supported: replaces
Call-Info: <sip:10.10.199.251:5061>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 22896 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:2002@10.10.199.251:5061;transport=tls SIP/2.0

```
Via: SIP/2.0/TLS 10.10.199.250:5061;branch=z9hG4bK138285169dd
```

CISCO CONFIDENTIAL

```
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557789
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552758
Date: Tue, 23 Feb 2010 22:11:50 GMT
Call-ID: 2e78c780-b8415594-1c-fbc712ac@10.10.199.251
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

[11] BYE sip:2002@10.10.199.251:5061;transport=tls SIP/2.0

```
Via: SIP/2.0/TLS 10.10.199.250:5061;branch=z9hG4bK139463fa1a0
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557789
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552758
Date: Tue, 23 Feb 2010 22:11:50 GMT
Call-ID: 2e78c780-b8415594-1c-fbc712ac@10.10.199.251
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TLS 10.10.199.250:5061;branch=z9hG4bK139463fa1a0
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557789
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-32552758
Date: Tue, 23 Feb 2010 22:24:31 GMT
Call-ID: 2e78c780-b8415594-1c-fbc712ac@10.10.199.251
CSeq: 102 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

7. T38

7.1 SIP Trunk Passes through T38 Fax Call between SIP Gateways

Title: SIP Trunk Passes through T38 Fax Call between SIP Gateways

Description:

Cisco Unified CM can pass through T38 fax calls using SIP trunk. This call flow shows how to SIP trunks let a fax call pass the Unified CM between a SIP gateway.

Current design does not support audio switch back from the fax, therefore the last reINVITE from SIP Gateway is rejected with 415.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = SIP Gateway1, IP = 10.10.197.154

Node = SIP Gateway2, IP = 10.10.201.173

Fax = A, DN = 4444

Fax = B, DN = 5555

Scenario:

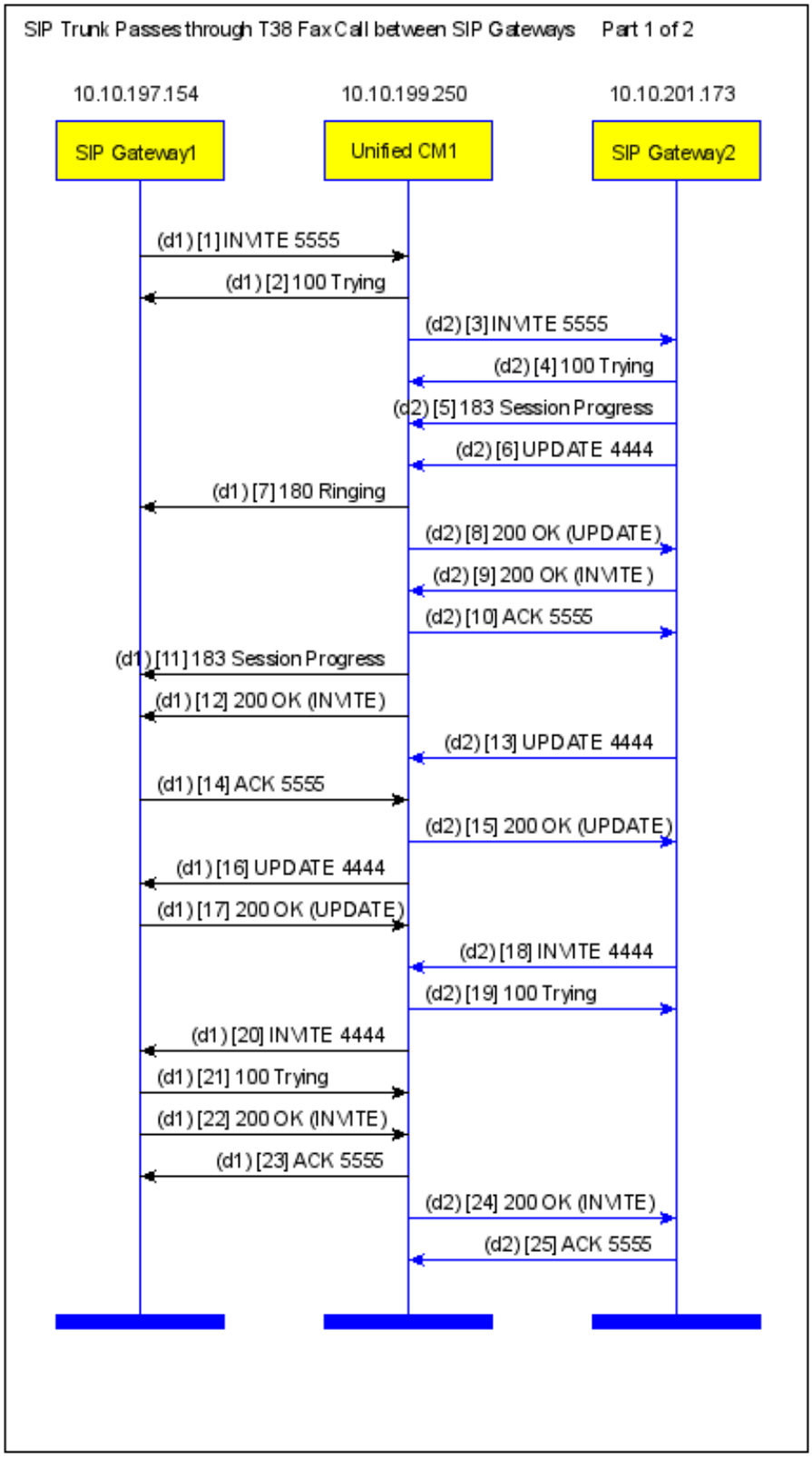
Fax A DN 4444 calls Fax B DN 5555 over Gateway then SIP Trunk.

Fax B DN 5555 Answers

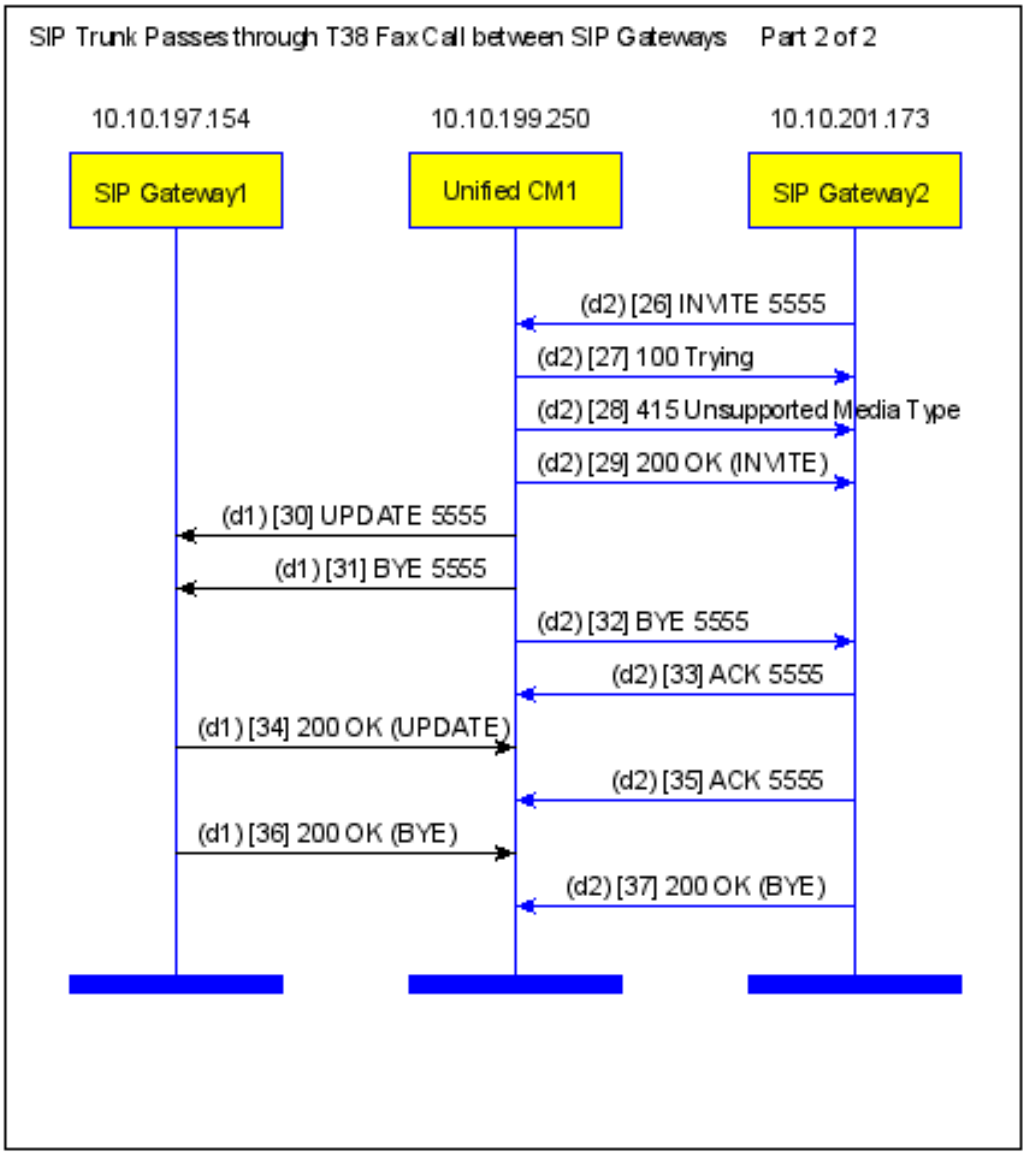
Fax A DN 4444 goes onHook

End of scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:5555@10.10.199.250:5060 SIP/2.0
```
Via: SIP/2.0/UDP 10.10.197.154:5060;branch=z9hG4bK12CF587
Remote-Party-ID: <sip:4444@10.10.197.154>;party=calling;screen=no;privacy=off
From: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
To: <sip:5555@10.10.199.250>
Date: Mon, 02 Jul 2007 22:31:37 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  90
Cisco-Guid: 3519585899-673321436-2151007151-3453582622
User-Agent: Cisco-SIPGateway/IOS-12.x
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
CSeq: 101 INVITE
Max-Forwards: 70
Timestamp: 1183415497
Contact: <sip:4444@10.10.197.154:5060>
Expires: 1800
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 244

v=0
o=CiscoSystemsSIP-GW-UserAgent 5572 2057 IN IP4 10.10.197.154
s=SIP Call
c=IN IP4 10.10.197.154
t=0 0
m=audio 18714 RTP/AVP 18 19
c=IN IP4 10.10.197.154
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
a=ptime:20
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/UDP 10.10.197.154:5060;branch=z9hG4bK12CF587
From: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
To: <sip:5555@10.10.199.250>
Date: Mon, 02 Jul 2007 22:29:41 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Timestamp: 1183415497
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] INVITE sip:5555@10.10.201.173:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6d5ec9f5cb
Remote-Party-ID: <sip:4444@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
To: <sip:5555@10.10.201.173>
Date: Mon, 02 Jul 2007 22:29:41 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Contact: <sip:4444@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires:  1800
Max-Forwards: 69
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6d5ec9f5cb
From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
To: <sip:5555@10.10.201.173>
Date: Mon, 02 Jul 2007 22:28:59 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6d5ec9f5cb
From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
To: <sip:5555@10.10.201.173>;tag=107EA538-17C5
Date: Mon, 02 Jul 2007 22:28:59 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:5555@10.10.201.173:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 244

v=0
o=CiscoSystemsSIP-GW-UserAgent 5206 5659 IN IP4 10.10.201.173
s=SIP Call
c=IN IP4 10.10.201.173
t=0 0
m=audio 16588 RTP/AVP 18 19
c=IN IP4 10.10.201.173
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
a=ptime:20
```

[diagram] Call-ID:[prev][next]
[6] UPDATE sip:4444@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK702264
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:28:59 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 6
Timestamp: 1183415339
CSeq: 101 UPDATE
Contact: <sip:5555@10.10.201.173:5060;transport=tcp>
Remote-Party-ID: <sip:5555@10.10.201.173>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[7] SIP/2.0 180 Ringing

```
Via: SIP/2.0/UDP 10.10.197.154:5060;branch=z9hG4bK12CF587
From: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
To: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
Date: Mon, 02 Jul 2007 22:29:41 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Timestamp: 1183415497
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:5555@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:5555@10.10.199.250:5060>
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[8] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK702264
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:29:41 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Timestamp: 1183415339
CSeq: 101 UPDATE
Allow-Events: presence
Contact: <sip:5555@10.10.199.250:5060;transport=tcp>
Session-Expires:  1800;refresher=uac
Require:  timer
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6d5ec9f5cb
From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
To: <sip:5555@10.10.201.173>;tag=107EA538-17C5
Date: Mon, 02 Jul 2007 22:28:59 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
```

CISCO CONFIDENTIAL

```
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:5555@10.10.201.173:5060;transport=tcp>
Supported: replaces
Session-Expires:  1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 244

v=0
o=CiscoSystemsSIP-GW-UserAgent 5206 5659 IN IP4 10.10.201.173
s=SIP Call
c=IN IP4 10.10.201.173
t=0 0
m=audio 16588 RTP/AVP 18 19
c=IN IP4 10.10.201.173
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
a=ptime:20
```

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

[10] ACK sip:5555@10.10.201.173:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK6e137f0889
From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
To: <sip:5555@10.10.201.173>;tag=107EA538-17C5
Date: Mon, 02 Jul 2007 22:29:41 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 183

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.197.154
t=0 0
m=audio 18714 RTP/AVP 18
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
```

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

[11] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/UDP 10.10.197.154:5060;branch=z9hG4bK12CF587
From: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
To: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
Date: Mon, 02 Jul 2007 22:29:41 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Timestamp: 1183415497
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:5555@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:5555@10.10.199.250:5060>
Content-Type: application/sdp
Content-Length: 183

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.201.173
t=0 0
m=audio 16588 RTP/AVP 18
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.197.154:5060;branch=z9hG4bK12CF587
From: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
To: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
Date: Mon, 02 Jul 2007 22:29:41 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
```

CISCO CONFIDENTIAL

```
Timestamp: 1183415497
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:5555@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:5555@10.10.199.250:5060>
Supported: replaces
Session-Expires:  1800;refresher=uas
Require:  timer
Content-Type: application/sdp
Content-Length: 183

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.201.173
t=0 0
m=audio 16588 RTP/AVP 18
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
```

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

[13] UPDATE sip:4444@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK71174F
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:29:06 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 6
Timestamp: 1183415346
CSeq: 102 UPDATE
Contact: <sip:5555@10.10.201.173:5060;transport=tcp>
Remote-Party-ID: <sip:5555@10.10.201.173>;party=calling;screen=no;privacy=off
Content-Length: 0
```

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

[14] ACK sip:5555@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.197.154:5060;branch=z9hG4bK12D0D6
From: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
To: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
Date: Mon, 02 Jul 2007 22:31:37 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: telephone-event
Content-Length: 0
```

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

[15] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK71174F
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:29:48 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Timestamp: 1183415346
CSeq: 102 UPDATE
Allow-Events: presence
Contact: <sip:5555@10.10.199.250:5060;transport=tcp>
Session-Expires:  1800;refresher=uas
Require:  timer
Content-Length: 0
```

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

[16] UPDATE sip:4444@10.10.197.154:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK6f1745df1c
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:29:48 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 101 UPDATE
Contact: <sip:5555@10.10.199.250:5060>
Remote-Party-ID: <sip:5555@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

[17] SIP/2.0 200 OK

CISCO CONFIDENTIAL

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK6f1745df1c
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:31:44 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 UPDATE
Allow-Events: telephone-event
Contact: <sip:5555@10.10.197.154:5060>
Content-Length: 0
```

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

[18] INVITE sip:4444@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK722491
Remote-Party-ID: <sip:5555@10.10.201.173>;party=calling;screen=no;privacy=off
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:29:42 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 1982097883-673321436-2150949515-1341985076
User-Agent: Cisco-SIPGateway/IOS-12.x
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
CSeq: 103 INVITE
Max-Forwards: 6
Timestamp: 1183415382
Contact: <sip:5555@10.10.201.173:5060;transport=tcp>
Expires: 1800
Allow-Events: telephone-event
Session-Expires:  1800;refresher=uas
Content-Type: application/sdp
Content-Length: 401

v=0
o=CiscoSystemsSIP-GW-UserAgent 5206 5661 IN IP4 10.10.201.173
s=SIP Call
c=IN IP4 10.10.201.173
t=0 0
m=image 16588 udptl t38
c=IN IP4 10.10.201.173
a=T38FaxVersion:0
a=T38MaxBitRate:7200
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72
a=T38FaxUdpEC:t38UDPRedundancy
```

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

[19] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK722491
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:30:25 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[20] INVITE sip:4444@10.10.197.154:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK701e6de0ae
Remote-Party-ID: <sip:5555@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:30:25 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Supported: timer,replaces
Min-SE:  1800
Cisco-Guid: 3519585899-673321436-2151007151-3453582622
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:5555@10.10.199.250:5060>
Expires: 180
Allow-Events: presence
```

CISCO CONFIDENTIAL

```
Session-Expires:  1800;refresher=uac
Content-Type: application/sdp
Content-Length: 364

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
t=0 0
m=image 16588 udptl t38
c=IN IP4 10.10.201.173
a=T38FaxVersion:0
a=T38MaxBitRate:7200
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
a=T38FaxRateManagement:transferredTCF
a=T38FaxUdpEC:t38UDPRedundancy
a=T38FaxMaxBuffer:200
a=T38FaxMaxDatagram:72
```

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

[21] SIP/2.0 100 Trying

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK701e6de0ae
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:32:20 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 INVITE
Allow-Events: telephone-event
Content-Length: 0
```

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

[22] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK701e6de0ae
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:32:20 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Remote-Party-ID: <sip:4444@10.10.197.154>;party=called;screen=no;privacy=off
Contact: <sip:5555@10.10.197.154:5060>
Supported: replaces
Session-Expires:  1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Length: 163

v=0
o=CiscoSystemsSIP-GW-UserAgent 5572 2058 IN IP4 10.10.197.154
s=SIP Call
c=IN IP4 10.10.197.154
t=0 0
m=image 18714 udptl t38
c=IN IP4 10.10.197.154
```

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

[23] ACK sip:5555@10.10.197.154:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK71201cf9b2
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:30:25 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Length: 0
```

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

[24] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK722491
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:30:25 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
```

CISCO CONFIDENTIAL

```
Allow-Events: presence
Remote-Party-ID: <sip:4444@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:5555@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires:  1800;refresher=uas
Require:  timer
Content-Type: application/sdp
Content-Length: 227

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
t=0 0
m=image 18714 udptl t38
c=IN IP4 10.10.197.154
a=T38MaxBitRate:7200
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
```

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

[25] ACK sip:5555@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7321C7
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:29:42 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Max-Forwards: 6
CSeq: 103 ACK
Allow-Events: telephone-event
Content-Length: 0
```

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

[26] INVITE sip:5555@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7410A4
Remote-Party-ID: <sip:5555@10.10.201.173>;party=calling;screen=no;privacy=off
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:30:18 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 1982097883-673321436-2150949515-1341985076
User-Agent: Cisco-SIPGateway/IOS-12.x
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
CSeq: 104 INVITE
Max-Forwards: 6
Timestamp: 1183415418
Contact: <sip:5555@10.10.201.173:5060;transport=tcp>
Expires: 1800
Allow-Events: telephone-event
Session-Expires:  1800;refresher=uas
Content-Type: application/sdp
Content-Length: 244

v=0
o=CiscoSystemsSIP-GW-UserAgent 5206 5662 IN IP4 10.10.201.173
s=SIP Call
c=IN IP4 10.10.201.173
t=0 0
m=audio 16588 RTP/AVP 18 19
c=IN IP4 10.10.201.173
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
a=ptime:20
```

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

[27] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7410A4
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:31:00 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[28] SIP/2.0 415 Unsupported Media Type

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7410A4
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:31:00 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[29] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7410A4
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:31:00 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
CSeq: 104 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:4444@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:5555@10.10.199.250:5060;transport=tcp>
Supported: replaces
Session-Expires:  1800;refresher=uas
Require:  timer
Content-Type: application/sdp
Content-Length: 195

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.201.173
t=0 0
m=audio 16588 RTP/AVP 18
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=inactive
```

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

[30] UPDATE sip:5555@10.10.197.154:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK727b88f070
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:30:25 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 UPDATE
Contact: <sip:5555@10.10.199.250:5060>
Remote-Party-ID: <sip:5555@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

[31] BYE sip:5555@10.10.197.154:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK73378de66c
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:30:25 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 104 BYE
Reason: Q.850;cause=47
Content-Length: 0
```

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

[32] BYE sip:5555@10.10.201.173:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK745dabe0f9
From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
To: <sip:5555@10.10.201.173>;tag=107EA538-17C5
Date: Mon, 02 Jul 2007 22:31:00 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 102 BYE
Reason: Q.850;cause=47
Content-Length: 0
```

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

[33] ACK sip:5555@10.10.199.250:5060;transport=tcp SIP/2.0

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7410A4
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:30:18 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Max-Forwards: 6
CSeq: 104 ACK
Allow-Events: telephone-event
Content-Length: 0
```

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

[34] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK727b88f070
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:32:56 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 103 UPDATE
Allow-Events: telephone-event
Contact: <sip:5555@10.10.197.154:5060>
Content-Length: 0
```

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

[35] ACK sip:5555@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.201.173:5060;branch=z9hG4bK7321C7
From: <sip:5555@10.10.201.173>;tag=107EA538-17C5
To: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
Date: Mon, 02 Jul 2007 22:30:18 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Max-Forwards: 6
CSeq: 104 ACK
Allow-Events: telephone-event
Content-Length: 0
```

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

[36] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK73378de66c
From: <sip:5555@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226828
To: <sip:4444@10.10.197.154>;tag=1A25A6E0-1551
Date: Mon, 02 Jul 2007 22:32:56 GMT
Call-ID: D474D375-282211DC-803AC3AF-CDD97D1E@10.10.197.154
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 104 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

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

[37] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK745dabe0f9
From: <sip:4444@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-18226829
To: <sip:5555@10.10.201.173>;tag=107EA538-17C5
Date: Mon, 02 Jul 2007 22:30:18 GMT
Call-ID: b8593e00-68917c55-8ef-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 102 BYE
Reason: Q.850;cause=0
Content-Length: 0
```

CISCO CONFIDENTIAL

8. SipsUri

8.1 Incoming SIPS URI Request Redirected by Cisco Unified CM

Title: Incoming SIPS URI Request Redirected by Cisco Unified CM

Description:

SIPS URI is handled but not officially supported by Cisco Unified CM.

This scenario shows the CM behavior when the SIP URI Handling service parameter is set to "redirect".

Incoming SIP URI request is redirected to the same address but with SIP URI as directed by the SIPS URI service parameter.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Gateway, IP = 10.10.197.25

Phone = A, Line = 4040, Model = FXPS

Phone = B, Line = 1002, IP = 10.10.199.238, Model = SIP TNP

SIP Trunk between Unified CM1 & Gateway

a) Has destination port configured to be 5061

b) Has "SIP Trunk Security Profile" point to the Gateway Sip Trunk Secure Profile, which is already configured to have correct X509 Subject Name.

In Call Manager Unified CM1, Service Parameter "SIPS_URI_HANDLING" is set to "Redirect".

Scenario:

Phone A DN 4040 calls Phone B DN 1002

Call gets redirected directly to Phone B DN 1002 because of SIPS_URI_HANDLING Service Parameter.

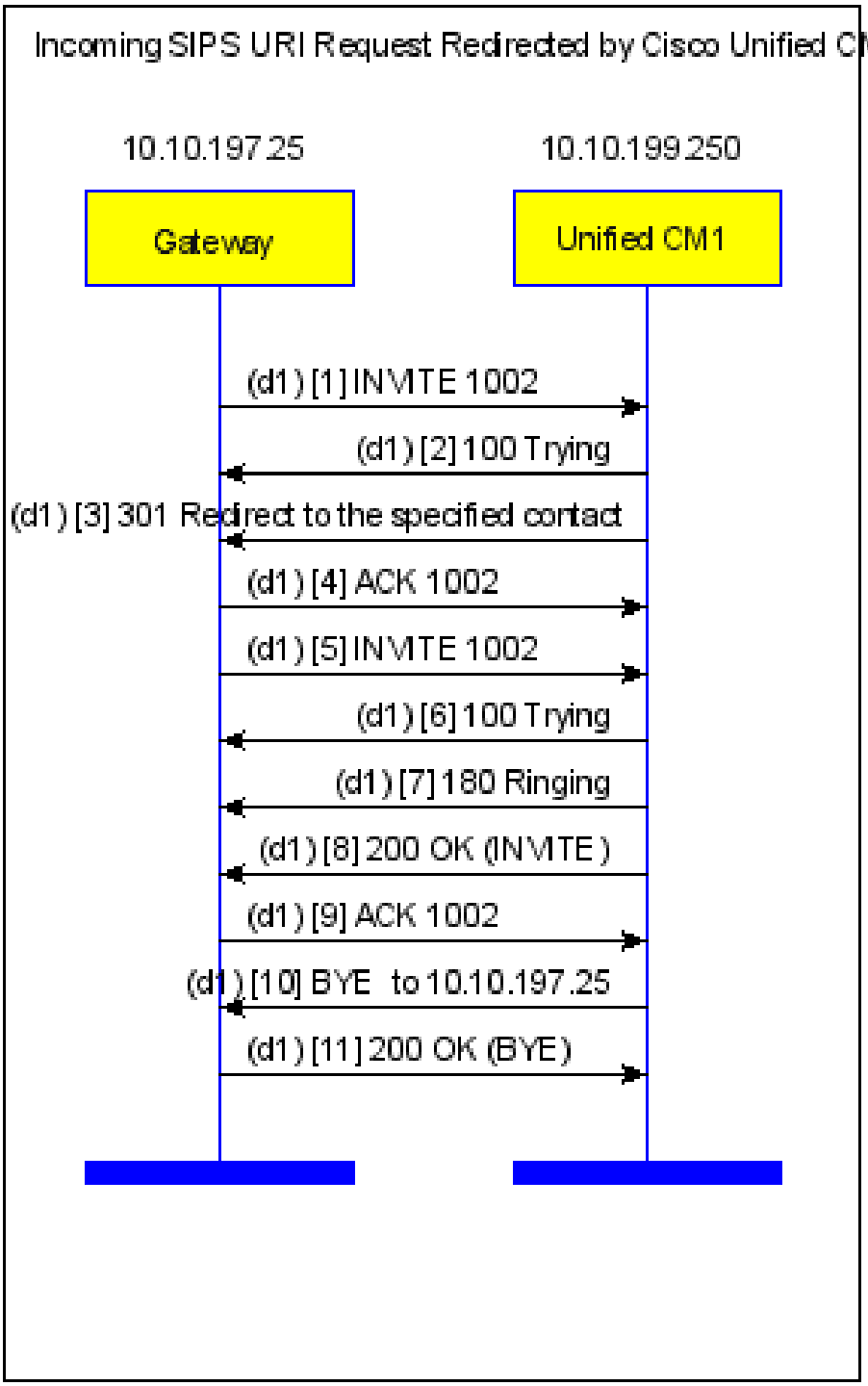
Phone B DN 1002 answers the Call

Phone A DN 4040 goes onHook

End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sips:1002@10.10.199.250:5061 SIP/2.0

```
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7B253B
From: <sips:10.10.197.25>;tag=96836BC4-ED5
To: <sips:1002@10.10.199.250>
Date: Thu, 25 Feb 2010 20:46:46 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 2235598983-619647452-2176444475-2634381766
User-Agent: Cisco-SIPGateway/IOS-12.x
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
CSeq: 101 INVITE
Max-Forwards: 70
Timestamp: 1183063606
Contact: <sips:10.10.197.25:5061>
Expires: 180
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 241

v=0
o=CiscoSystemsSIP-GW-UserAgent 3238 4753 IN IP4 10.10.197.25
s=SIP Call
c=IN IP4 10.10.197.25
t=0 0
m=audio 17126 RTP/AVP 18 19
c=IN IP4 10.10.197.25
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
a=ptime:20
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying

```
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7B253B
From: <sips:10.10.197.25>;tag=96836BC4-ED5
To: <sips:1002@10.10.199.250>
Date: Thu, 25 Feb 2010 20:46:46 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Timestamp: 1183063606
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 301 Redirect to the specified contact

```
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7B253B
From: <sips:10.10.197.25>;tag=96836BC4-ED5
To: <sips:1002@10.10.199.250>;tag=1095486251
Date: Thu, 25 Feb 2010 20:46:46 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Timestamp: 1183063606
CSeq: 101 INVITE
Allow-Events: presence
Contact: <sip:1002@10.10.199.250:5061;transport=tls>
Diversion: sips:1002@10.10.199.250:5061
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] ACK sips:1002@10.10.199.250:5061 SIP/2.0

```
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7B253B
From: <sips:10.10.197.25>;tag=96836BC4-ED5
To: <sips:1002@10.10.199.250>;tag=1095486251
Date: Thu, 25 Feb 2010 20:46:46 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: telephone-event
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[5] INVITE sip:1002@10.10.199.250:5061;transport=tls SIP/2.0

```
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7C136A
From: <sip:10.10.197.25>;tag=96836BD4-1287
To: <sip:1002@10.10.199.250>
Date: Thu, 25 Feb 2010 20:46:46 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Supported: 100rel,timer,resource-priority,replaces
```

CISCO CONFIDENTIAL

```
Min-SE:  1800
Cisco-Guid: 2235598983-619647452-2176444475-2634381766
User-Agent: Cisco-SIPGateway/IOS-12.x
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
CSeq: 102 INVITE
Max-Forwards: 70
Timestamp: 1183063606
Contact: <sip:10.10.197.25:5061;transport=tls>
Diversion: <sip:1002@10.10.199.250>
Expires: 180
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 241

v=0
o=CiscoSystemsSIP-GW-UserAgent 3238 4753 IN IP4 10.10.197.25
s=SIP Call
c=IN IP4 10.10.197.25
t=0 0
m=audio 17126 RTP/AVP 18 19
c=IN IP4 10.10.197.25
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
a=ptime:20
```

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

[6] SIP/2.0 100 Trying

```
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7C136A
From: <sip:10.10.197.25>;tag=96836BD4-1287
To: <sip:1002@10.10.199.250>
Date: Thu, 25 Feb 2010 20:46:46 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Timestamp: 1183063606
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[7] SIP/2.0 180 Ringing

```
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7C136A
From: <sip:10.10.197.25>;tag=96836BD4-1287
To: <sip:1002@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470600
Date: Thu, 25 Feb 2010 20:46:46 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Timestamp: 1183063606
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:1002@10.10.199.250:5061;transport=tls>
Content-Length: 0
```

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7C136A
From: <sip:10.10.197.25>;tag=96836BD4-1287
To: <sip:1002@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470600
Date: Thu, 25 Feb 2010 20:46:46 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Timestamp: 1183063606
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:1002@10.10.199.250:5061;transport=tls>
Supported: replaces
Session-Expires:  1800;refresher=uas
Require:  timer
Content-Type: application/sdp
Content-Length: 183

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 18916 RTP/AVP 18
a=rtpmap:18 G729/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=fmtp:18 annexb=no

[diagram]   Call-ID:[prev][next]
[9] ACK sip:1002@10.10.199.250:5061;transport=tls SIP/2.0
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7DD7
From: <sip:10.10.197.25>;tag=96836BD4-1287
To: <sip:1002@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470600
Date: Thu, 25 Feb 2010 20:46:46 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: telephone-event
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[10] BYE sip:10.10.197.25:5061;transport=tls SIP/2.0
Via: SIP/2.0/TLS 10.10.199.250:5061;branch=z9hG4bK2740dfbabb
From: <sip:1002@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470600
To: <sip:10.10.197.25>;tag=96836BD4-1287
Date: Thu, 25 Feb 2010 20:46:51 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 101 BYE
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[11] SIP/2.0 200 OK
Via: SIP/2.0/TLS 10.10.199.250:5061;branch=z9hG4bK2740dfbabb
From: <sip:1002@10.10.199.250>;tag=03f840d7-6aad-4124-bf92-ad483e762201-17470600
To: <sip:10.10.197.25>;tag=96836BD4-1287
Date: Thu, 25 Feb 2010 20:47:01 GMT
Call-ID: 85412548-24EF11DC-81BCE83B-9D0579C6@10.10.197.25
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

CISCO CONFIDENTIAL

8.2 Incoming SIPS URI Request Rejected by Cisco Unified CM

Title: Incoming SIPS URI Request Rejected by Cisco Unified CM

Description:

Incoming SIPS URI request is rejected as directed by the SIPS URI service parameter.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Gateway, IP = 10.10.197.25

Phone = A, Line = 4040, Model = FXPS

Phone = B, Line = 1002, IP = 10.10.199.238, Model = SIP TNP

SIP Trunk between Unified CM1 & Gateway

a) Has destination port configured to be 5061

b) Has "SIP Trunk Security Profile" point to the Gateway Sip Trunk Secure Profile, which is already

configured to have correct X509 Subject Name.

Scenario:

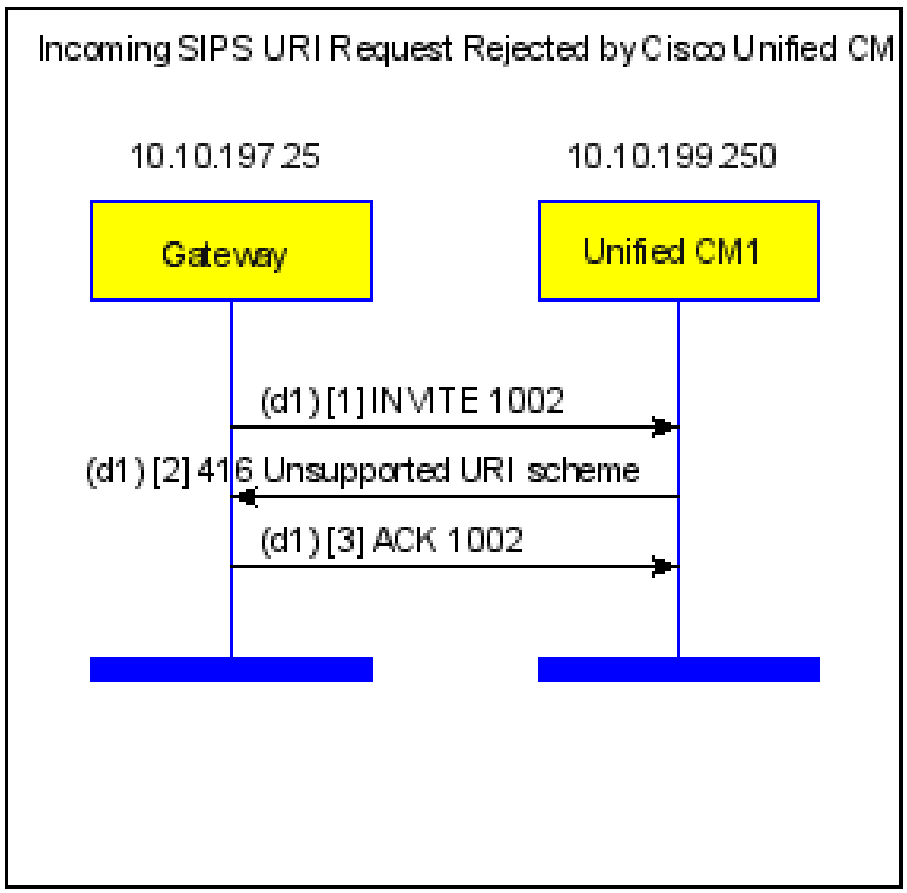
Phone A DN 4040 calls Phone B DN 1002

Call gets rejected because of SIPS_URI_HANDLING Service Parameter default Configuration.

Phone A DN 4040 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] INVITE sips:1002@10.10.199.250:5061 SIP/2.0
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7A5E0
From: <sips:10.10.197.25>;tag=968119B8-1F62
To: <sips:1002@10.10.199.250>
Date: Thu, 25 Feb 2010 20:44:14 GMT
Call-ID: 2A9B32A0-24EF11DC-81B8E83B-9D0579C6@10.10.197.25
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 714774136-619647452-2176182331-2634381766
User-Agent: Cisco-SIPGateway/IOS-12.x
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
CSeq: 101 INVITE
Max-Forwards: 70
Timestamp: 1183063454
Contact: <sips:10.10.197.25:5061>
Expires: 180
Allow-Events: telephone-event
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 241

v=0
o=CiscoSystemsSIP-GW-UserAgent 9205 6146 IN IP4 10.10.197.25
s=SIP Call
c=IN IP4 10.10.197.25
t=0 0
m=audio 16762 RTP/AVP 18 19
c=IN IP4 10.10.197.25
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:19 CN/8000
a=ptime:20

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 416 Unsupported URI scheme
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7A5E0
From: <sips:10.10.197.25>;tag=968119B8-1F62
To: <sips:1002@10.10.199.250>;tag=74282742
Call-ID: 2A9B32A0-24EF11DC-81B8E83B-9D0579C6@10.10.197.25
CSeq: 101 INVITE
Timestamp: 1183063454
Reason: Q.850;cause=97
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[3] ACK sips:1002@10.10.199.250:5061 SIP/2.0
Via: SIP/2.0/TLS 10.10.197.25:5061;branch=z9hG4bK7A5E0
From: <sips:10.10.197.25>;tag=968119B8-1F62
To: <sips:1002@10.10.199.250>;tag=74282742
Date: Thu, 25 Feb 2010 20:44:14 GMT
Call-ID: 2A9B32A0-24EF11DC-81B8E83B-9D0579C6@10.10.197.25
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: telephone-event
Content-Length: 0
```

CISCO CONFIDENTIAL

9. Info

9.1 SIP Video Call Using INFO Method

Title: SIP Video Call Using INFO Method

Description:

The INFO method is used by video capable SIP endpoints to signal different types of commands. The two commands supported by the SIP trunk device are Picture Fast Update and Picture Freeze.

Picture Fast Update is triggered by an endpoint to request a full I-frame to rebuild the frame buffer. Picture Fast Update is generally triggered at the beginning of a video session or when packet loss is severe.

Picture Freeze is used to do exactly what it sounds like. If an endpoint whishes to stop updating a picture it sends this command to indicate the current buffer should be maintained.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

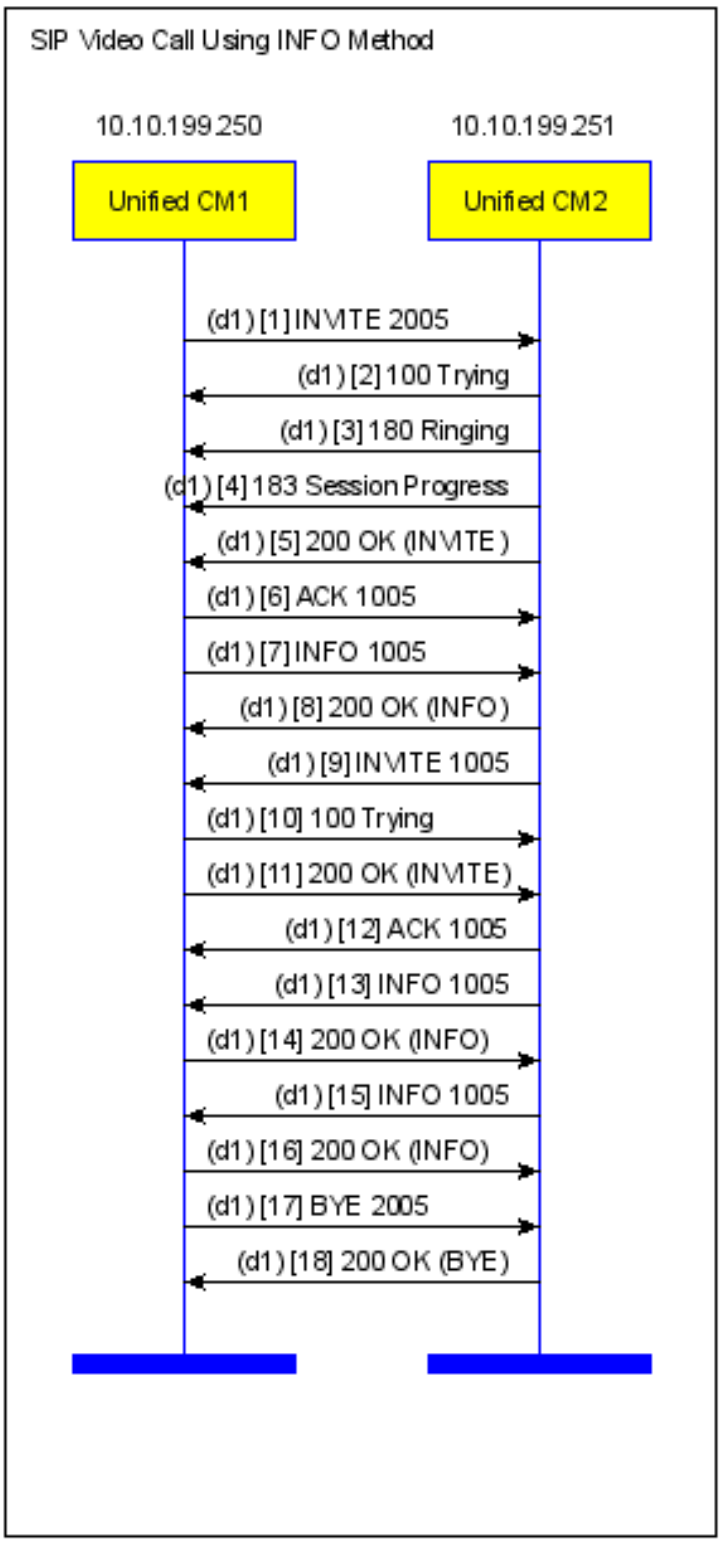
Phone = A, Line = 1005, IP = 10.10.199.71, Model = SCCP Video Endpoint
Phone = B, Line = 2005, IP = 10.10.199.72, Model = SCCP Video Endpoint

SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

Phone A DN 1005 calls Phone B DN 2005 over the SIP Trunk by dialing 22005
Phone B DN 2005 Answers
Phone A DN 1005 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2005@10.10.199.251:5060 SIP/2.0
```
Date: Tue, 29 Jul 2008 17:43:57 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Allow-Events: presence
P-Asserted-Identity: <sip:1005@10.10.199.250>
Supported: timer,resource-priority,replaces
Min-SE:  120
Remote-Party-ID: <sip:1005@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2005@10.10.199.251>
Contact: <sip:1005@10.10.199.250:5060;transport=tcp>;video;audio
Expires: 180
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK54adf9e1b
CSeq: 101 INVITE
Session-Expires:  120
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Date: Tue, 29 Jul 2008 17:45:47 GMT
From: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Allow-Events: presence
Content-Length: 0
To: <sip:2005@10.10.199.251>
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK54adf9e1b
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Date: Tue, 29 Jul 2008 17:45:47 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Allow-Events: presence
P-Asserted-Identity: <sip:2005@10.10.199.251>
Remote-Party-ID: <sip:2005@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Contact: <sip:1005@10.10.199.251:5060;transport=tcp>
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK54adf9e1b
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Date: Tue, 29 Jul 2008 17:45:47 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Allow-Events: presence
P-Asserted-Identity: <sip:2005@10.10.199.251>
Remote-Party-ID: <sip:2005@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 601
To: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Contact: <sip:1005@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK54adf9e1b
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.72
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:0
a=sendonly
m=video 4002 RTP/AVP 97 96 34 31
```

CISCO CONFIDENTIAL

```
b=TIAS:384000
a=rtpmap:97 H264/90000
a=fmtp:97 profile-level-id=42000D
a=rtpmap:96 H263-1998/90000
a=fmtp:96 QCIF=1;CIF=1;MAXBR=3840;CUSTOM=352,240,1
a=rtpmap:34 H263/90000
a=fmtp:34 MAXBR=3840
a=rtpmap:31 H261/90000
a=fmtp:31 CIF=1;QCIF=1;MAXBR=3840;D=1
a=sendonly
```

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

[5] SIP/2.0 200 OK

```
Date: Tue, 29 Jul 2008 17:45:47 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Allow-Events: presence
P-Asserted-Identity: <sip:2005@10.10.199.251>
Supported: replaces
Remote-Party-ID: <sip:2005@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 601
Require:  timer
To: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Contact: <sip:1005@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK54adf9e1b
CSeq: 101 INVITE
Session-Expires:  120;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.72
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:0
a=sendonly
m=video 4002 RTP/AVP 97 96 34 31
b=TIAS:384000
a=rtpmap:97 H264/90000
a=fmtp:97 profile-level-id=42000D
a=rtpmap:96 H263-1998/90000
a=fmtp:96 QCIF=1;CIF=1;MAXBR=3840;CUSTOM=352,240,1
a=rtpmap:34 H263/90000
a=fmtp:34 MAXBR=3840
a=rtpmap:31 H261/90000
a=fmtp:31 CIF=1;QCIF=1;MAXBR=3840;D=1
a=sendonly
```

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

[6] ACK sip:1005@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 29 Jul 2008 17:43:57 GMT
From: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Allow-Events: presence
Content-Length: 283
To: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Content-Type: application/sdp
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK65b727ded
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.71
t=0 0
m=audio 20004 RTP/AVP 9
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
```

CISCO CONFIDENTIAL

```
m=video 20006 RTP/AVP 97
b=TIAS:384000
a=rtpmap:97 H264/90000
a=fmtp:97 profile-level-id=42000D
a=recvonly
```

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

[7] INFO sip:1005@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 29 Jul 2008 17:43:57 GMT
From: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Remote-Party-ID: <sip:1005@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 190
User-Agent: Cisco-CUCM8.0
To: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Contact: <sip:1005@10.10.199.250:5060;transport=tcp>
Content-Type: application/media_control+xml
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7ad194de
CSeq: 102 INFO
Max-Forwards: 70

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<media_control>

  <vc_primitive>
    <to_encoder>
      <picture_fast_update/>
    </to_encoder>
  </vc_primitive>

</media_control>
```

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

[8] SIP/2.0 200 OK

```
Date: Tue, 29 Jul 2008 17:45:50 GMT
From: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Content-Length: 0
To: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Contact: <sip:2005@10.10.199.251:5060;transport=tcp>
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7ad194de
CSeq: 102 INFO
```

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

[9] INVITE sip:1005@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Tue, 29 Jul 2008 17:45:50 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Allow-Events: presence
P-Asserted-Identity: <sip:2005@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 732093696-2297517899-723-4224127660
Remote-Party-ID: <sip:2005@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 259
User-Agent: Cisco-CUCM8.0
To: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Contact: <sip:2005@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK76764d24d4
CSeq: 101 INVITE
Session-Expires:  120;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.72
t=0 0
m=audio 20004 RTP/AVP 9
a=rtpmap:9 G722/8000
a=ptime:20
m=video 20006 RTP/AVP 97
b=TIAS:384000
a=rtpmap:97 H264/90000
a=fmtp:97 profile-level-id=42000D
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[10] SIP/2.0 100 Trying
```
Date: Tue, 29 Jul 2008 17:44:00 GMT
From: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Allow-Events: presence
Content-Length: 0
To: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK76764d24d4
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[11] SIP/2.0 200 OK
```
Date: Tue, 29 Jul 2008 17:44:00 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Allow-Events: presence
P-Asserted-Identity: <sip:1005@10.10.199.250>
Supported: replaces
Remote-Party-ID: <sip:1005@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 259
Require:  timer
To: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Contact: <sip:1005@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK76764d24d4
CSeq: 101 INVITE
Session-Expires:  120;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.71
t=0 0
m=audio 20004 RTP/AVP 9
a=rtpmap:9 G722/8000
a=ptime:20
m=video 20006 RTP/AVP 97
b=TIAS:384000
a=rtpmap:97 H264/90000
a=fmtp:97 profile-level-id=42000D
```

[diagram] Call-ID:[prev][next]
[12] ACK sip:1005@10.10.199.250:5060;transport=tcp SIP/2.0
```
Date: Tue, 29 Jul 2008 17:45:50 GMT
From: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Allow-Events: presence
Content-Length: 0
To: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK77592198b
CSeq: 101 ACK
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[13] INFO sip:1005@10.10.199.250:5060;transport=tcp SIP/2.0
```
Date: Tue, 29 Jul 2008 17:45:50 GMT
From: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Content-Length: 190
User-Agent: Cisco-CUCM8.0
To: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Contact: <sip:2005@10.10.199.251:5060;transport=tcp>
Content-Type: application/media_control+xml
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7858a10599
CSeq: 102 INFO
Max-Forwards: 70

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<media_control>

  <vc_primitive>
    <to_encoder>
      <picture_fast_update/>
    </to_encoder>
  </vc_primitive>

</media_control>
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[14] SIP/2.0 200 OK
```
Date: Tue, 29 Jul 2008 17:44:00 GMT
From: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Content-Length: 0
To: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Contact: <sip:1005@10.10.199.250:5060;transport=tcp>
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7858a10599
CSeq: 102 INFO
```

[diagram] Call-ID:[prev][next]
[15] INFO sip:1005@10.10.199.250:5060;transport=tcp SIP/2.0
```
Date: Tue, 29 Jul 2008 17:45:50 GMT
From: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Content-Length: 190
User-Agent: Cisco-CUCM8.0
To: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Contact: <sip:2005@10.10.199.251:5060;transport=tcp>
Content-Type: application/media_control+xml
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK796d903a6b
CSeq: 103 INFO
Max-Forwards: 70

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<media_control>

  <vc_primitive>
    <to_encoder>
      <picture_fast_update/>
    </to_encoder>
  </vc_primitive>

</media_control>
```

[diagram] Call-ID:[prev][next]
[16] SIP/2.0 200 OK
```
Date: Tue, 29 Jul 2008 17:44:00 GMT
From: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Content-Length: 0
To: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Contact: <sip:1005@10.10.199.250:5060;transport=tcp>
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK796d903a6b
CSeq: 103 INFO
```

[diagram] Call-ID:[prev][next]
[17] BYE sip:2005@10.10.199.251:5060;transport=tcp SIP/2.0
```
Date: Tue, 29 Jul 2008 17:44:00 GMT
From: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
P-Asserted-Identity: <sip:1005@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8302c7061
CSeq: 103 BYE
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[18] SIP/2.0 200 OK
```
Date: Tue, 29 Jul 2008 17:46:24 GMT
From: <sip:1005@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20794164
Content-Length: 0
To: <sip:2005@10.10.199.251>;tag=e7a2b54c-403c-42f2-986a-ef3df579135a-20479656
Call-ID: ea123200-88f156dd-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8302c7061
CSeq: 103 BYE
```

CISCO CONFIDENTIAL

10. MWI

10.1 MWI Status via Unsolicited NOTIFY

Title: MWI Status via Unsolicited NOTIFY

Description:

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 two Unified Cisco CM can accept unsolicited NOTIFY to deliver Message Waiting Indication (MWI) status. The example below shows how a SIP based voice-mail server could send a "Lamp On" status for the CM hosted device(s) assigned to directory number 1001

Configuration:

Node = Voice Mail Server, IP = 10.10.200.179

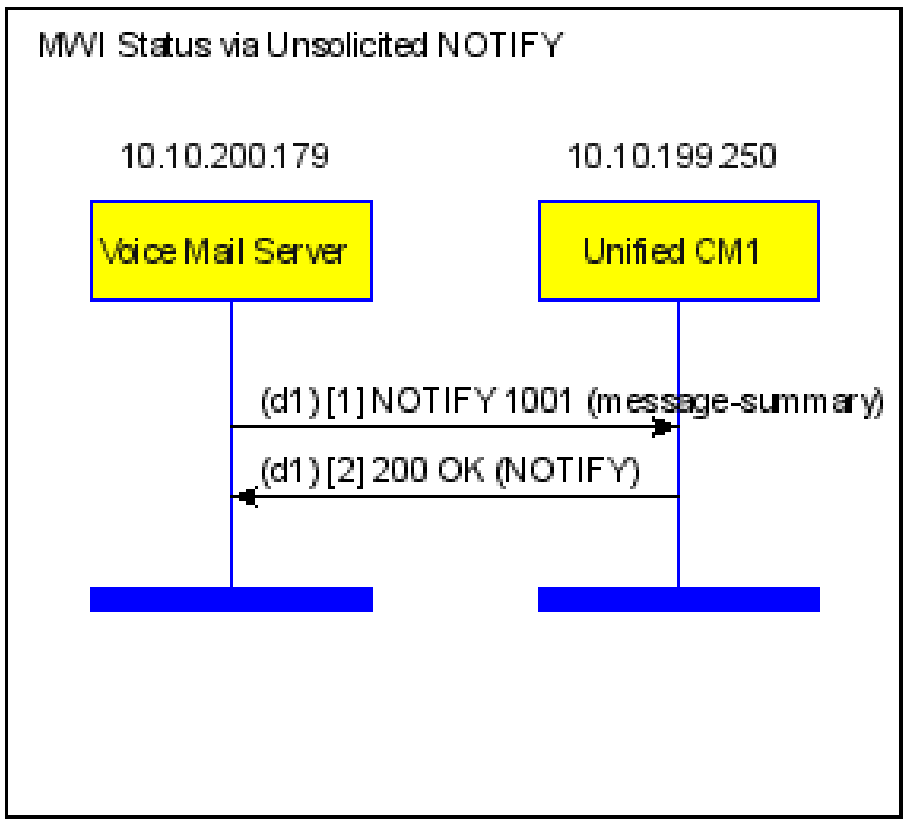
Node = Unified CM1, IP = 10.10.199.250

For Call Manager Unified CM1, the SIP Trunk Security Profile is configured to have "Accept Unsolicited Notification" checked.

Scenario:

Remote Voice Mail Server sends Unsolicited NOTIFY message to Unified CM1 to indicate Messages-Waiting for phone 1001.

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] NOTIFY sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.200.179:5060
From: <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>
Call-ID: 1-7456@10.10.200.179
CSeq: 1 NOTIFY
Event: message-summary
Allow: INVITE,ACK,BYE,CANCEL,OPTIONS,REGISTER,INFO,PRACK,SUBSCRIBE,NOTIFY,REFER,UPDATE
Expires: 180
Contact: sip:5678@10.10.200.179:5060
Max-Forwards: 70
Content-Type: text/plain
Content-Length: 23

Messages-Waiting: yes

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.200.179:5060
From: <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>;tag=197002706
Date: Tue, 23 Feb 2010 22:18:31 GMT
Call-ID: 1-7456@10.10.200.179
CSeq: 1 NOTIFY
Content-Length: 0
```

CISCO CONFIDENTIAL

11. Prack

11.1 Outbound Early Media Call with PRACK

Title: Outbound Early Media Call with PRACK

Description:

This flow shows a basic early media call from a SCCP phone to a SIP phone off a Call Manager via a SIP Trunk with rel1xx enabled. Outgoing INVITE has SDP.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2001, IP = 10.10.199.171, Model = SIP TNP

SIP Trunk between Unified CM1 & Unified CM2 has

a) route pattern 2.XXXX

b) Media Termination Point Required checked.

Call Manager Service Parameter SIP_Rel1XX_Enabled set to True on both Call Manager's.

Scenario:

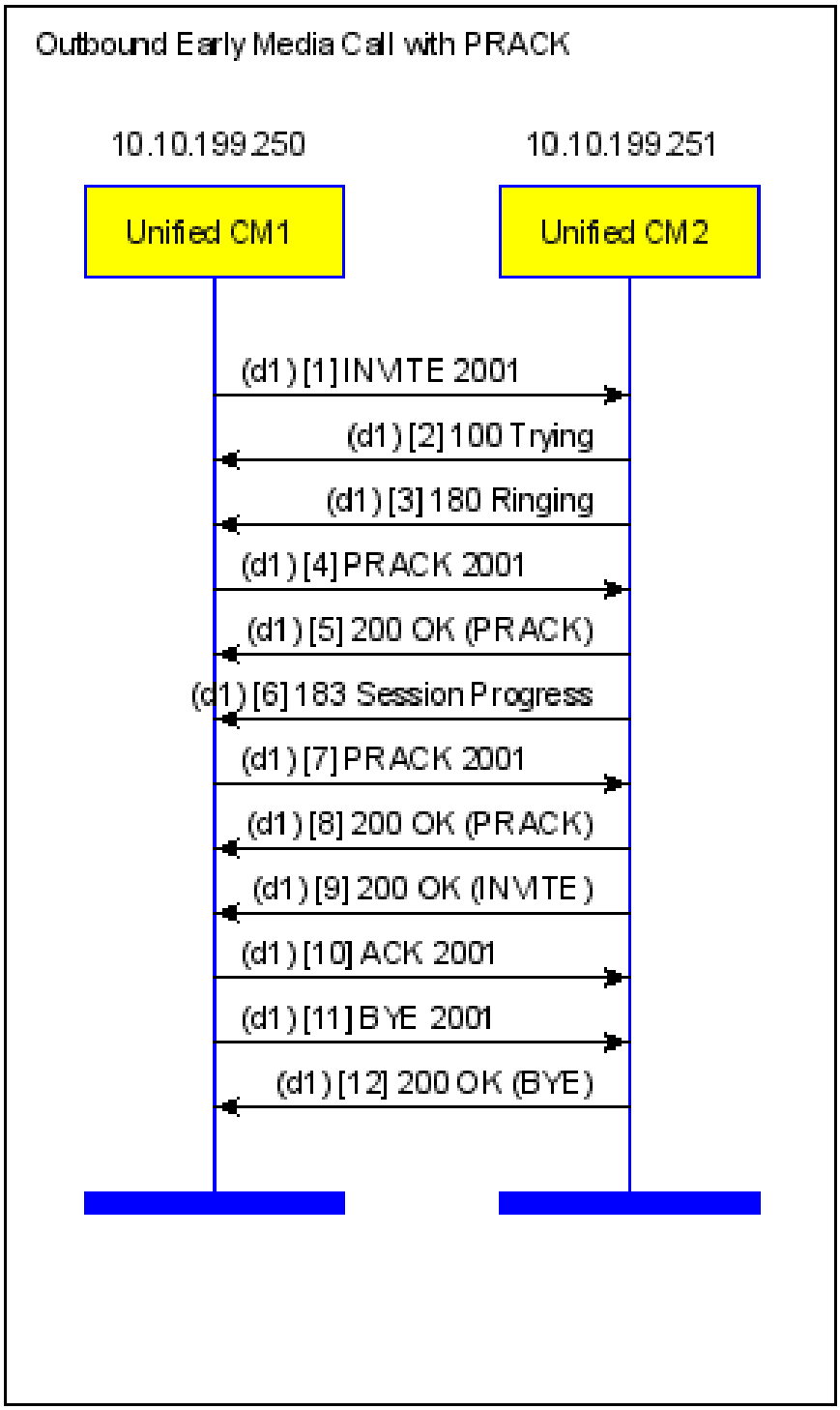
Phone A DN 1001 calls Phone B DN 2001 over the SIP Trunk by dialing 22001

Phone B DN 2001 Answers

Phone A DN 1001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

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

[1] INVITE sip:2001@10.10.199.251:5060 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK147dd0f05e
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925392
To: <sip:2001@10.10.199.251>
Date: Mon, 01 Mar 2010 18:24:20 GMT
Call-ID: a5e1a780-b8c10654-9-fac712ac@10.10.199.250
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2783029120-3099657812-0000000003-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.250
t=0 0
m=audio 24584 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[2] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK147dd0f05e
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925392
To: <sip:2001@10.10.199.251>
Date: Mon, 01 Mar 2010 18:37:08 GMT
Call-ID: a5e1a780-b8c10654-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[3] SIP/2.0 180 Ringing

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK147dd0f05e
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925392
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928454
Date: Mon, 01 Mar 2010 18:37:08 GMT
Call-ID: a5e1a780-b8c10654-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Require: 100rel
RSeq: 1508257867
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

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

[4] PRACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1578dca1f3
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925392
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928454
Date: Mon, 01 Mar 2010 18:24:20 GMT
Call-ID: a5e1a780-b8c10654-9-fac712ac@10.10.199.250
CSeq: 102 PRACK
RAck: 1508257867 101 INVITE
Allow-Events: presence, kpml
Max-Forwards: 70
Content-Length: 0
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1578dca1f3
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925392
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928454
Date: Mon, 01 Mar 2010 18:37:09 GMT
Call-ID: a5e1a780-b8c10654-9-fac712ac@10.10.199.250
CSeq: 102 PRACK
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[6] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK147dd0f05e
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925392
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928454
Date: Mon, 01 Mar 2010 18:37:09 GMT
Call-ID: a5e1a780-b8c10654-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Require: 100rel
RSeq: 1508257868
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 21524 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]
[7] PRACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK16630c4794
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925392
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928454
Date: Mon, 01 Mar 2010 18:24:20 GMT
Call-ID: a5e1a780-b8c10654-9-fac712ac@10.10.199.250
CSeq: 103 PRACK
RAck: 1508257868 101 INVITE
Allow-Events: presence, kpml
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[8] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK16630c4794
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925392
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928454
Date: Mon, 01 Mar 2010 18:37:10 GMT
Call-ID: a5e1a780-b8c10654-9-fac712ac@10.10.199.250
CSeq: 103 PRACK
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[9] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK147dd0f05e
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925392
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928454
Date: Mon, 01 Mar 2010 18:37:10 GMT
Call-ID: a5e1a780-b8c10654-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
```

CISCO CONFIDENTIAL

```
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 21524 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1711b9f
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925392
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928454
Date: Mon, 01 Mar 2010 18:24:20 GMT
Call-ID: a5e1a780-b8c10654-9-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

[11] BYE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK185287fa8
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925392
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928454
Date: Mon, 01 Mar 2010 18:24:20 GMT
Call-ID: a5e1a780-b8c10654-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 104 BYE
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK185287fa8
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925392
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928454
Date: Mon, 01 Mar 2010 18:37:14 GMT
Call-ID: a5e1a780-b8c10654-9-fac712ac@10.10.199.250
CSeq: 104 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

11.2 Outbound Delayed Media Call with PRACK

Title: Outbound Delayed Media Call with PRACK

Description:

This flow shows a basic delayed media call from a SCCP phone to SIP phone off a Call Manager via a SIP Trunk with rel1xx enabled. Outgoing INVITE has no SDP.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2001, IP = 10.10.199.171, Model = SIP TNP

SIP Trunk between Unified CM1 & Unified CM2 has

a) route pattern 2.XXXX

Call Manager Service Parameter SIP_Rel1XX_Enabled set to True on both Call Manager's.

Scenario:

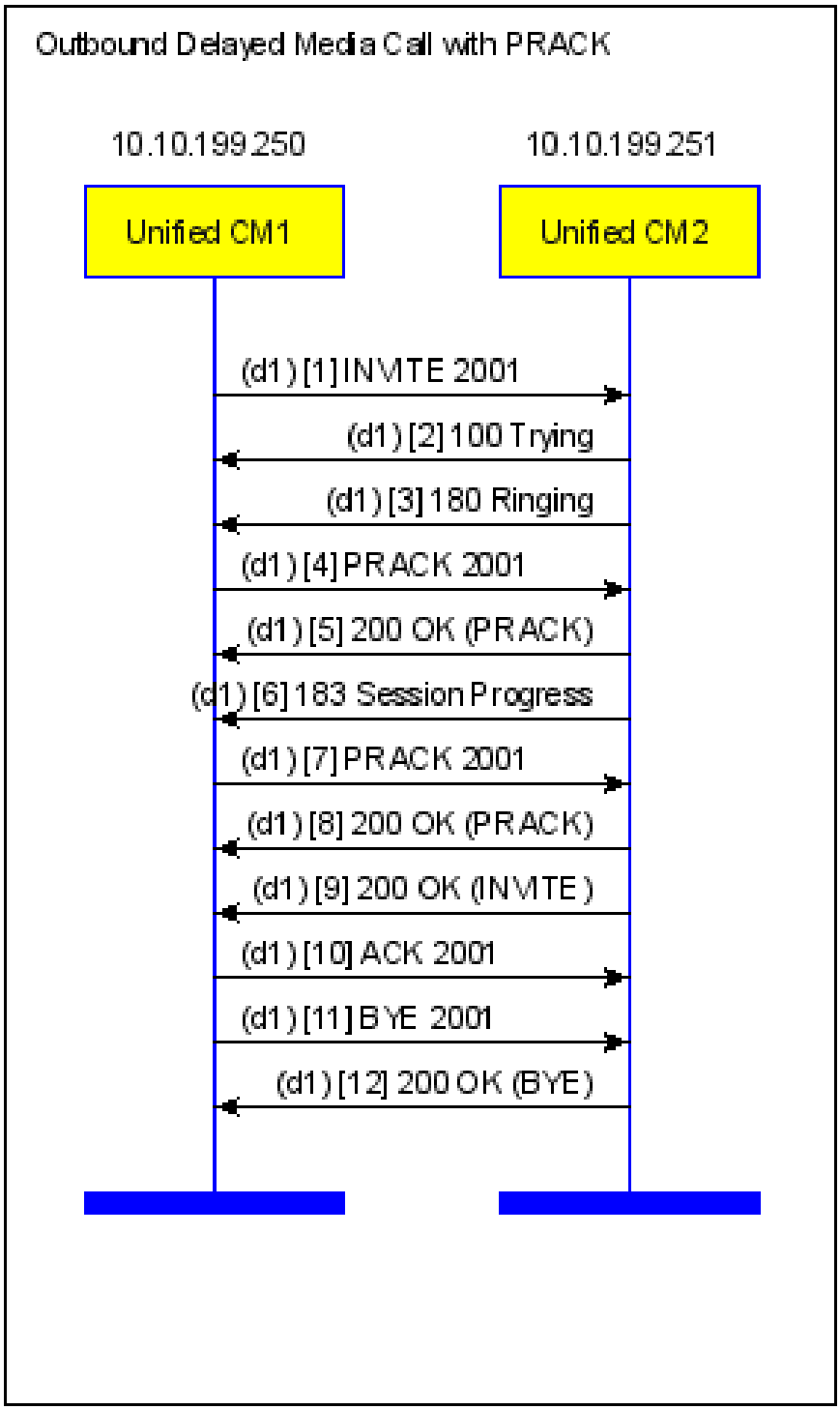
Phone A DN 1001 calls Phone B DN 2001 over the SIP Trunk by dialing 22001

Phone B DN 2001 Answers

Phone A DN 1001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2001@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK196ba4d2a0
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925395
To: <sip:2001@10.10.199.251>
Date: Mon, 01 Mar 2010 18:27:45 GMT
Call-ID: 20122c00-b8c10721-a-fac712ac@10.10.199.250
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 0538061824-3099658017-0000000004-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK196ba4d2a0
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925395
To: <sip:2001@10.10.199.251>
Date: Mon, 01 Mar 2010 18:40:33 GMT
Call-ID: 20122c00-b8c10721-a-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK196ba4d2a0
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925395
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928456
Date: Mon, 01 Mar 2010 18:40:33 GMT
Call-ID: 20122c00-b8c10721-a-fac712ac@10.10.199.250
CSeq: 101 INVITE
Require: 100rel
RSeq: 591543744
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] PRACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1a36e28229
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925395
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928456
Date: Mon, 01 Mar 2010 18:27:45 GMT
Call-ID: 20122c00-b8c10721-a-fac712ac@10.10.199.250
CSeq: 102 PRACK
RAck: 591543744 101 INVITE
Allow-Events: presence, kpml
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 200 OK
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1a36e28229
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925395
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928456
Date: Mon, 01 Mar 2010 18:40:33 GMT
Call-ID: 20122c00-b8c10721-a-fac712ac@10.10.199.250
CSeq: 102 PRACK
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[6] SIP/2.0 183 Session Progress

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK196ba4d2a0
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925395
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928456
Date: Mon, 01 Mar 2010 18:40:33 GMT
Call-ID: 20122c00-b8c10721-a-fac712ac@10.10.199.250
CSeq: 101 INVITE
Require: 100rel
RSeq: 591543745
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 18058 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] PRACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1b56dfb07b
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925395
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928456
Date: Mon, 01 Mar 2010 18:27:45 GMT
Call-ID: 20122c00-b8c10721-a-fac712ac@10.10.199.250
CSeq: 103 PRACK
RAck: 591543745 101 INVITE
Allow-Events: presence, kpml
Max-Forwards: 70
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22314 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1b56dfb07b
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925395
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928456
Date: Mon, 01 Mar 2010 18:40:35 GMT
Call-ID: 20122c00-b8c10721-a-fac712ac@10.10.199.250
CSeq: 103 PRACK
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK196ba4d2a0
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925395
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928456
Date: Mon, 01 Mar 2010 18:40:35 GMT
Call-ID: 20122c00-b8c10721-a-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
```

CISCO CONFIDENTIAL

```
Allow-Events: presence
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2001@10.10.199.251>
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 18058 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1c440b3c8e
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925395
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928456
Date: Mon, 01 Mar 2010 18:27:45 GMT
Call-ID: 20122c00-b8c10721-a-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22314 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[11] BYE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1d3154a0dd
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925395
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928456
Date: Mon, 01 Mar 2010 18:27:45 GMT
Call-ID: 20122c00-b8c10721-a-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 104 BYE
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1d3154a0dd
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925395
To: <sip:2001@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928456
Date: Mon, 01 Mar 2010 18:40:39 GMT
Call-ID: 20122c00-b8c10721-a-fac712ac@10.10.199.250
CSeq: 104 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

12. CallPreservation

12.1 Session Timers Negotiation & Refresh for the Sip Trunk Call on "Cisco Unified CM"

Title: Session Timers Negotiation & Refresh for the Sip Trunk Call on "Cisco Unified CM"

Description:
Cisco Unified IP Phone1---Cisco Unified CM1--siptrunk--Cisco Unified CM2---Cisoc Unified IP Phone2

Note:
There are 2 Service Params "SIP Min-SE Value" & "SIP Session Expires Timer" and initial session
timers negotiation for an Invite dialog is based on these.

For this scenario the following are configured values:-
"Cisco Unified CM1" (Min-SE 60, SE 90)
"Cisco Unified CM2" (Min-SE 120, SE 230)

For the Cisco Unified IP Phone1 to Cisco Unified IP Phone2 call as per above topology, the
initial outgoing INVITE from "Cisco Unified CM1" contains the Min-SE header with value 60 secs
and Session-Expires header with value 90 secs. The "Cisco Unified CM2" expects Min-SE value of
120 secs, so it sends 422 (SE Timer too small) indicating the required value in Min-SE header.

The "Cisco Unified CM1" sends an Invite with updated value in Session-Expires header. The
"Cisco Unified CM2" accepts it and sends 200 OK with Session-Expires header having negotiated
timeout and refresher="uas" is set because "Cisco Unified CM1" (i.e uac) didn't specify the
refresher and the uas has an option to choose itself as the refresher. With 200 OK and ACK
exchange an Invite dialog gets established.

The session timeout negotiated on the sip trunk is 120 secs, this sessin refresh happens every
120/2 = 60 secs.
There are 2 session refresh request/response exchanges depicted in the flow.

Configuration:

CISCO CONFIDENTIAL

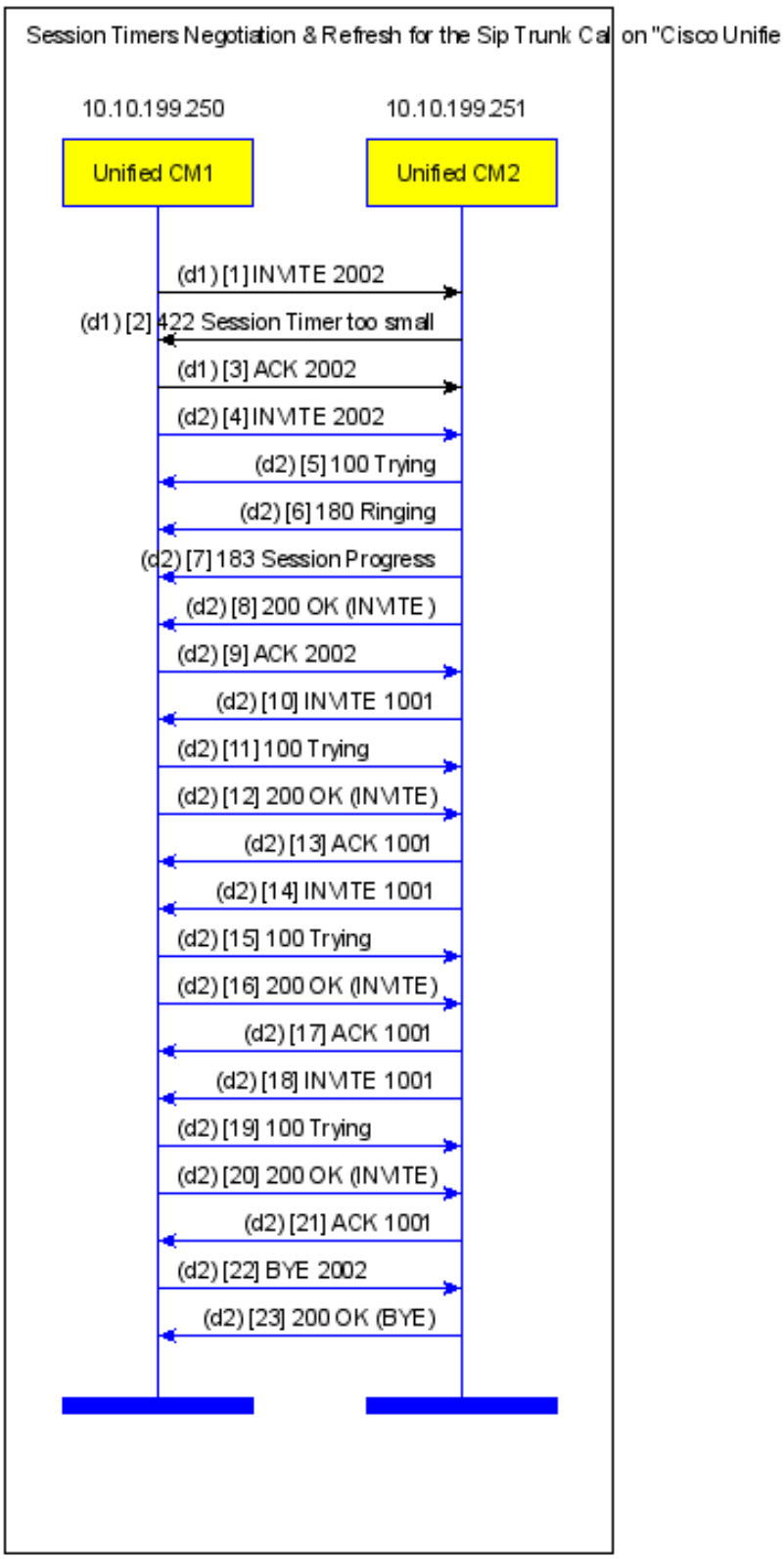
Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX
Service Parameters Min-SE and SE values are changed for both Call Managers, as described above.

Scenario:
Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers
Phone A and Phone B talk for 2 and half minutes
Phone A DN 1001 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3d6eefd1d3
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 18:52:20 GMT
Call-ID: 8f3d4f80-b8c10ce4-21-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  60
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2403159936-3099659492-0000000007-4207350444
Session-Expires:  90
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 422 Session Timer too small
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3d6eefd1d3
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
To: <sip:2002@10.10.199.251>;tag=307089512
Date: Mon, 01 Mar 2010 19:05:08 GMT
Call-ID: 8f3d4f80-b8c10ce4-21-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Min-SE:  120
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] ACK sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3d6eefd1d3
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
To: <sip:2002@10.10.199.251>;tag=307089512
Date: Mon, 01 Mar 2010 18:52:20 GMT
Call-ID: 8f3d4f80-b8c10ce4-21-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3e162bf8b2
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 18:52:20 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2403159936-3099659492-0000000008-4207350444
Session-Expires:  120
Min-SE:  120
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3e162bf8b2
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 19:05:08 GMT
```

CISCO CONFIDENTIAL

```
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[6] SIP/2.0 180 Ringing

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3e162bf8b2
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
Date: Mon, 01 Mar 2010 19:05:08 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

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

[7] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3e162bf8b2
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
Date: Mon, 01 Mar 2010 19:05:08 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3e162bf8b2
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
Date: Mon, 01 Mar 2010 19:05:08 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  120;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
```

CISCO CONFIDENTIAL

```
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[9] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3f52ebd8a5
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
Date: Mon, 01 Mar 2010 18:52:20 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22240 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK2472e4ea50
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
Date: Mon, 01 Mar 2010 19:05:09 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 2403159936-3099659492-0000000008-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  120;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 23864 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[11] SIP/2.0 100 Trying

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK2472e4ea50
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
Date: Mon, 01 Mar 2010 18:52:21 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK2472e4ea50
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
Date: Mon, 01 Mar 2010 18:52:21 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  120;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22240 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[13] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK2547741340
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
Date: Mon, 01 Mar 2010 19:05:09 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK26440c4fab
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
Date: Mon, 01 Mar 2010 19:06:09 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 2403159936-3099659492-0000000008-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires:  120;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
```

CISCO CONFIDENTIAL

```
c=IN IP4 10.10.199.179
t=0 0
m=audio 23864 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[15] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK26440c4fab
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
Date: Mon, 01 Mar 2010 18:53:21 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[16] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK26440c4fab
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
Date: Mon, 01 Mar 2010 18:53:21 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  120;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22240 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[17] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK274a2bf63c
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
Date: Mon, 01 Mar 2010 19:06:09 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Length: 0
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK285f9718ce
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
Date: Mon, 01 Mar 2010 19:07:09 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 2403159936-3099659492-0000000008-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Session-Expires:  120;refresher=uac
```

CISCO CONFIDENTIAL

```
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 23864 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[19] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK285f9718ce
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
Date: Mon, 01 Mar 2010 18:54:21 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[20] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK285f9718ce
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
Date: Mon, 01 Mar 2010 18:54:21 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Session-Expires:  120;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22240 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[21] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK2933026875
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
Date: Mon, 01 Mar 2010 19:07:09 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Content-Length: 0
```

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

[22] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK40158e8f18
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
Date: Mon, 01 Mar 2010 18:54:21 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
```

CISCO CONFIDENTIAL

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

[diagram]   Call-ID:[prev][next]
[23] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK40158e8f18
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925403
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928464
Date: Mon, 01 Mar 2010 19:07:42 GMT
Call-ID: 8f3d4f80-b8c10ce4-22-fac712ac@10.10.199.250
CSeq: 102 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

12.2 Periodic Refresh after Session Timer Negotiation Failure

Title: Periodic Refresh after Session Timer Negotiation Failure

Description:

The scenario when Session Timers negotiation fails and periodic reInvite is attempted after configured interval.

Cisco Unified IP Phone--Cisco Unified CM----siptrunk---remoteUA

The session timers negotiation shall be considered to be failed for the following cases:

a) For Cisco Unified IP Phone to remoteUA call, the Cisco Unified CM sends INVITE with Supported:timer, Min-SE and Session-Expires headers, in response the remote UA sends 200 OK without Session-Expires header.

b) For remoteUA to Cisco Unified IP Phone call, the remote UA sends an initial INVITE without Supported:timer and Min-SE headers.

For the above cases when standard session timers negotiation fails, the Cisco Unified CM UA shall monitor the session using the periodic INVITE refresh procedure without the session timers headers.

The duration for the periodic refresh is configurable from the Cisco Unified CM's service parameter namely Session-Expires. The reInvite's shall be sent in the duration of configured Session-Expires value/2.

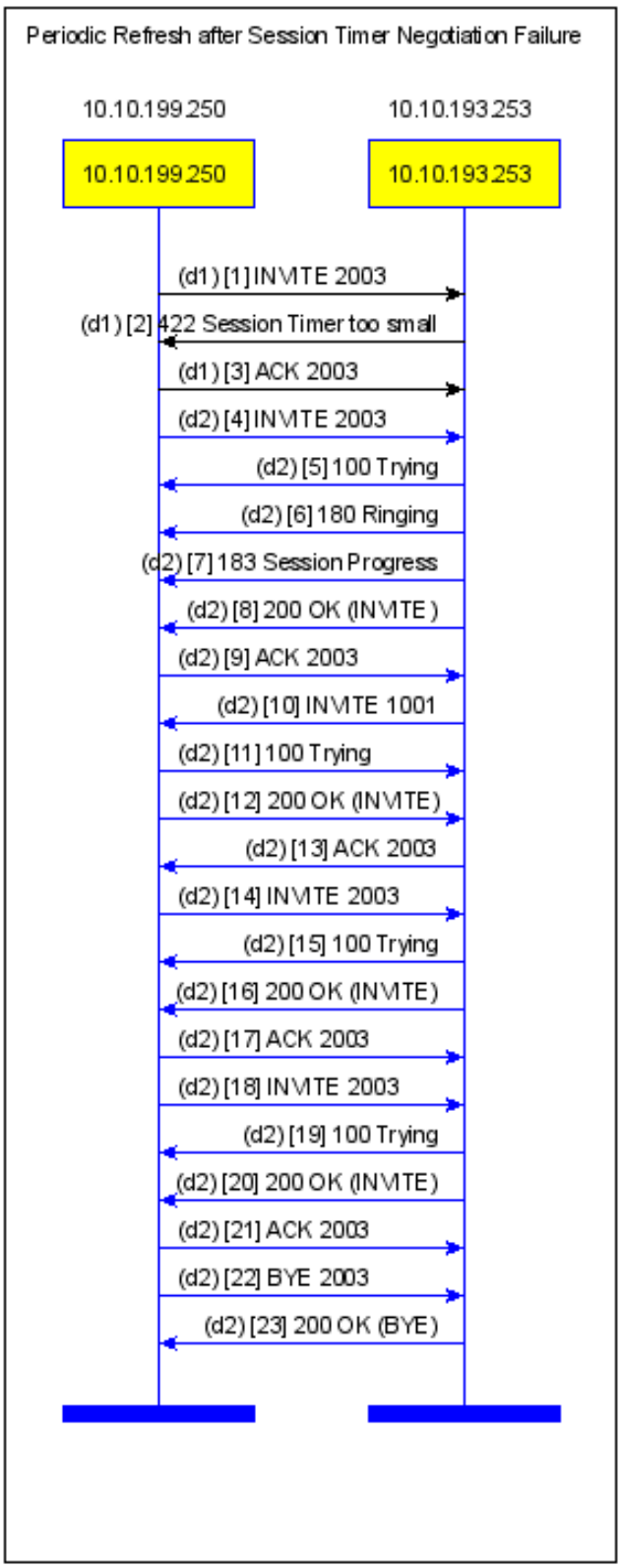
The following flow is depicting a) scenario.

Configuration:

Node = Unified CM, IP = 10.10.253.2

Node = RemoteUA, IP = 10.10.253.4

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] INVITE sip:2003@10.10.193.253:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1d60f41884
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>
Date: Thu, 12 Jul 2007 17:52:32 GMT
Call-ID: a8d2b580-69616a60-1a-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE:  60
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060>
Expires: 180
Allow-Events: presence
Session-Expires:  90
Max-Forwards: 70
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 422 Session Timer too small
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1d60f41884
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=1442724430
Date: Thu, 12 Jul 2007 17:52:32 GMT
Call-ID: a8d2b580-69616a60-1a-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Min-SE:  120
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[3] ACK sip:2003@10.10.193.253:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1d60f41884
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=1442724430
Date: Thu, 12 Jul 2007 17:52:32 GMT
Call-ID: a8d2b580-69616a60-1a-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[4] INVITE sip:2003@10.10.193.253:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1e7bcb76f7
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>
Date: Thu, 12 Jul 2007 17:52:32 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Supported: timer,replaces
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060>
Expires: 180
Allow-Events: presence
Session-Expires:  120
Min-SE:  120
Max-Forwards: 70
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[5] SIP/2.0 100 Trying
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1e7bcb76f7
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>
Date: Thu, 12 Jul 2007 17:52:32 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[6] SIP/2.0 180 Ringing
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1e7bcb76f7
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
```

CISCO CONFIDENTIAL

```
Date: Thu, 12 Jul 2007 17:52:32 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060>
Content-Length: 0
```

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

[7] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1e7bcb76f7
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:52:32 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060>
Content-Type: application/sdp
Content-Length: 301

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

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1e7bcb76f7
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:52:32 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060>
Supported: replaces
Content-Type: application/sdp
Content-Length: 301

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

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

[9] ACK sip:2003@10.10.193.253:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK1f1fc31af4
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:52:32 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 24936 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[10] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK71f776d04
Remote-Party-ID: <sip:2003@10.10.193.253>;party=calling;screen=yes;privacy=off
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
Date: Thu, 12 Jul 2007 17:52:33 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Supported: 100rel,timer,replaces
Min-SE:  120
Cisco-Guid: 2832381312-1767991904-14-4257288876
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.193.253:5060>
Expires: 180
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.193.253
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 17122 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[11] SIP/2.0 100 Trying
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK71f776d04
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
Date: Thu, 12 Jul 2007 17:52:33 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

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

```
[12] SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK71f776d04
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
Date: Thu, 12 Jul 2007 17:52:33 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.199.250:5060>
Supported: replaces
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
```

CISCO CONFIDENTIAL

```
t=0 0
m=audio 24936 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[13] ACK sip:2003@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.193.253:5060;branch=z9hG4bK88454492
From: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
To: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
Date: Thu, 12 Jul 2007 17:52:33 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

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

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK2049973286
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:53:18 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE:  60
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.199.250:5060>
Expires: 180
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 24936 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[15] SIP/2.0 100 Trying

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK2049973286
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:53:18 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[16] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK2049973286
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:53:18 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060>
Supported: replaces
Content-Type: application/sdp
Content-Length: 216

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

CISCO CONFIDENTIAL

```
c=IN IP4 10.10.199.238
t=0 0
m=audio 17122 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[17] ACK sip:2003@10.10.193.253:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK2158343c6f
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:53:18 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Length: 0
```

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

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

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK22e4c2f42
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:54:03 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Supported: timer,replaces
Min-SE:  60
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:2003@10.10.199.250:5060>
Expires: 180
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 24936 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[19] SIP/2.0 100 Trying

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK22e4c2f42
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:54:03 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[20] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK22e4c2f42
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:54:03 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 103 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
Allow-Events: presence, kpml
Remote-Party-ID: <sip:2003@10.10.193.253>;party=called;screen=yes;privacy=off
Contact: <sip:2003@10.10.193.253:5060>
Supported: replaces
Content-Type: application/sdp
Content-Length: 216

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

CISCO CONFIDENTIAL

```
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 17122 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[21] ACK sip:2003@10.10.193.253:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK233989fca8
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:54:03 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Content-Length: 0
```

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

[22] BYE sip:2003@10.10.193.253:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK244a0d362e
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:54:03 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 104 BYE
Content-Length: 0
```

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

[23] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK244a0d362e
From: <sip:1001@10.10.199.250>;tag=88fd35fa-b656-4fbc-bcf3-3fdd2ba559b3-22644516
To: <sip:2003@10.10.193.253>;tag=c5bc4d0f-1965-4b87-bd74-7e24820e120a-22650267
Date: Thu, 12 Jul 2007 17:54:48 GMT
Call-ID: a8d2b580-69616a60-1b-fac712ac@10.10.199.250
CSeq: 104 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

12.3 Sip Trunk Call Preservation when "Cisco Unified CM" is the "Refresher"

Title: Sip Trunk Call Preservation when "Cisco Unified CM" is the "Refresher"

Description:

RemoteUA--siptrunk--Cisco Unified CM2---Cisoc Unified IP Phone

The scenario for Sip Trunk Call Preservation when "Cisco Unified CM" is the "Refresher" for the Session Timers and session refresh failure condition occurs.

The Cisco Unified CM's Sip Trunk tries to send the re-Invite for Session Refresh (retry times) and when no response is received back, it would be due to either RemoteUA being shutdown or network failure on some segment for the signaling path to RemoteUA. For best effort handling of this failure condition the Cisco Unified CM assumes later i.e it could be due to network failure on signaling path.

The signaling and media channel between calling & called party may not necessarily be established through the same network. So Cisco Unified CM makes an assumption that media path between RemoteUA and Cisco Unified IP Phone may stil be active, and it should'nt be interrupted until hangup from Cisco Unified IP Phone.

Thus SIP Trunk on Cisco Unified CM takes an action to preserve the call towards the call control side (i.e Cisco Unified IP Phone side).

This results in Cisco Unified IP Phone maintaining the media for an active call, and results in having the softkeys disabled so that feature requests may not be performed. Also "TEMP FAIL" is displayed on the Cisco Unified IP Phone.

Also the SIP Trunk sends a BYE on the sip dialog with remoteUA, so that any intermediate Call stateful Proxy servers can clear the state info for the clearing dialog. The 200 OK for BYE may not be received as network to remoteUA already got disconnected. Then sip trunk call instance clears itself as signaling connection was already disconnected.

CISCO CONFIDENTIAL

Configuration:

Node = RemoteUA, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between RemoteUA & Unified CM2 has route pattern 2.XXXX

"Cisco Unified CM1" (Min-SE 60, SE 90)

"Cisco Unified CM2" (Min-SE 120, SE 230)

Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002

Phone B DN 2002 Answers

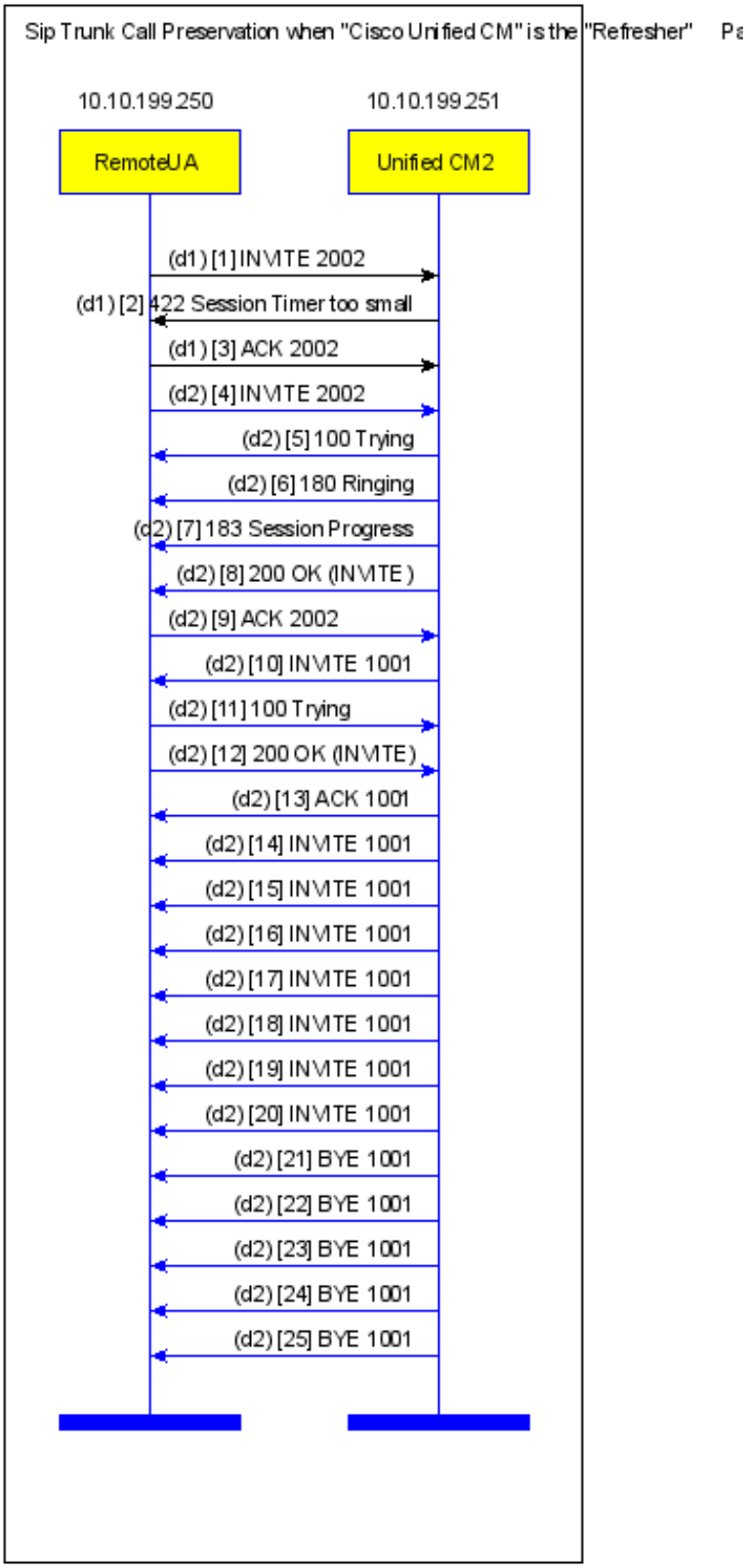
Phone A and Phone B talk for 2 and half minutes

Inbetween, RemoteUA fails to respond to Unified CM2's re-Invite for session-refresh

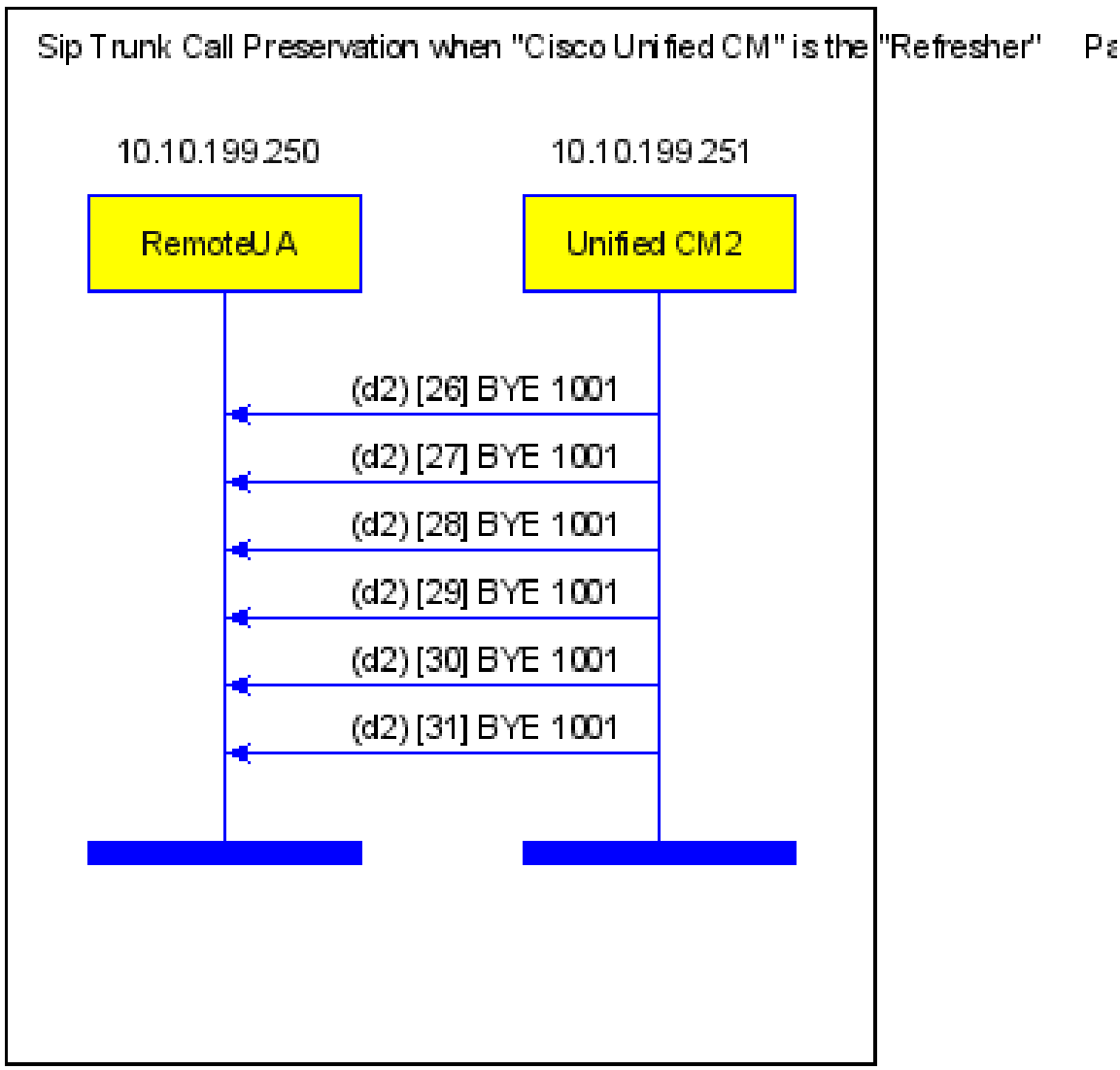
Phone A DN 1001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa34fc2efb
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 19:27:49 GMT
Call-ID: 8438ee00-b8c11535-b-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  60
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2218323456-3099661621-0000000001-4207350444
Session-Expires:  90
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 422 Session Timer too small
```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa34fc2efb
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
To: <sip:2002@10.10.199.251>;tag=1984827916
Date: Mon, 01 Mar 2010 19:40:37 GMT
Call-ID: 8438ee00-b8c11535-b-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Min-SE:  120
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] ACK sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa34fc2efb
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
To: <sip:2002@10.10.199.251>;tag=1984827916
Date: Mon, 01 Mar 2010 19:27:49 GMT
Call-ID: 8438ee00-b8c11535-b-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKb43b603a1
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 19:27:49 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2218323456-3099661621-0000000002-4207350444
Session-Expires:  120
Min-SE:  120
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 100 Trying
```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKb43b603a1
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 19:40:37 GMT
```

CISCO CONFIDENTIAL

```
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[6] SIP/2.0 180 Ringing

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKb43b603a1
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
Date: Mon, 01 Mar 2010 19:40:37 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

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

[7] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKb43b603a1
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
Date: Mon, 01 Mar 2010 19:40:37 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKb43b603a1
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
Date: Mon, 01 Mar 2010 19:40:37 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  120;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
```

CISCO CONFIDENTIAL

```
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[9] ACK sip:2002@10.10.199.251:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKc783d6f0
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
Date: Mon, 01 Mar 2010 19:27:49 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22156 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] INVITE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK32fe73e9a
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:40:39 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 2218323456-3099661621-0000000002-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060>
Expires: 180
Allow-Events: presence
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  120;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 23782 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[11] SIP/2.0 100 Trying

CISCO CONFIDENTIAL

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK32fe73e9a
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:27:51 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK32fe73e9a
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:27:51 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  120;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22156 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[13] ACK sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK33e71cd7c
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:40:39 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0
```

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

[14] INVITE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK345c9012e
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:41:39 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 2218323456-3099661621-0000000002-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060>
Expires: 180
Allow-Events: presence
Session-Expires:  120;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
```

CISCO CONFIDENTIAL

```
c=IN IP4 10.10.199.179
t=0 0
m=audio 23782 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[15] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK345c9012e
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:41:39 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 2218323456-3099661621-0000000002-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060>
Expires: 180
Allow-Events: presence
Session-Expires:  120;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 23782 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[16] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK345c9012e
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:41:40 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 2218323456-3099661621-0000000002-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060>
Expires: 180
Allow-Events: presence
Session-Expires:  120;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 23782 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[17] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK345c9012e
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
```

CISCO CONFIDENTIAL

```
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:41:42 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 2218323456-3099661621-0000000002-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060>
Expires: 180
Allow-Events: presence
Session-Expires:  120;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 23782 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[18] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK345c9012e
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:41:46 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 2218323456-3099661621-0000000002-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060>
Expires: 180
Allow-Events: presence
Session-Expires:  120;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 23782 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[19] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK345c9012e
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:41:54 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 2218323456-3099661621-0000000002-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060>
Expires: 180
```

CISCO CONFIDENTIAL

```
Allow-Events: presence
Session-Expires:  120;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 23782 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[20] INVITE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK345c9012e
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:42:10 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 2218323456-3099661621-0000000002-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060>
Expires: 180
Allow-Events: presence
Session-Expires:  120;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 23782 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[21] BYE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK3563b5cc26
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:42:10 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

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

[22] BYE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK3563b5cc26
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:42:10 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

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

[23] BYE sip:1001@10.10.199.250:5060 SIP/2.0

CISCO CONFIDENTIAL

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK3563b5cc26
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:42:10 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

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

[24] BYE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK3563b5cc26
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:42:10 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

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

[25] BYE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK3563b5cc26
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:42:10 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

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

[26] BYE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK3563b5cc26
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:42:10 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

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

[27] BYE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK3563b5cc26
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:42:10 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

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

[28] BYE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK3563b5cc26
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:42:10 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

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

[29] BYE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK3563b5cc26
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
```

CISCO CONFIDENTIAL

```
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:42:10 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

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

[30] BYE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK3563b5cc26
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:42:10 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

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

[31] BYE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK3563b5cc26
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928470
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19944298
Date: Mon, 01 Mar 2010 19:42:10 GMT
Call-ID: 8438ee00-b8c11535-c-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
CSeq: 103 BYE
Reason: Q.850;cause=86
Content-Length: 0
```

12.4 Sip Trunk Call Preservation when "Cisco Unified CM" is the "Non-Refresher"

Title: Sip Trunk Call Preservation when "Cisco Unified CM" is the "Non-Refresher"

Description:

Cisco Unified IP Phone---Cisco Unified CM--siptrunk---RemoteUA

The scenario for Sip Trunk Call Preservation when "Cisco Unified CM" is the "Non-Refresher" for the Session Timers and session refresh failure condition occurs.

The Cisco Unified Cm's Sip Trunk detects that session refresh isn't received in the negotiated duration, it would be due to either RemoteUA being shutdown or network failure on some segment for the signaling path to RemoteUA. For best effort handling of this failure condition the Cisco Unified CM assumes later i.e it could be due to network failure on signaling path.

The signaling and media channel between calling & called party may not necessarily be established through the same network. So Cisco Unified CM makes an assumption that media path between RemoteUA and Cisco Unified IP Phone may still be active, and it shouldn't be interrupted.

Thus SIP Trunk on Cisco Unified CM takes an action to preserve the call towards the call control side (i.e Cisco Unified IP Phone side). This results in Cisco Unified IP Phone maintaining the media for an active call, and results in having the softkeys disabled so that feature requests may not be performed. Also "TEMP FAIL" is displayed on the Cisco Unified IP Phone.

Also the SIP Trunk sends a BYE on the sip dialog with remoteUA, so that any intermediate Call stateful Proxy servers can clear the state info for the clearing dialog. The 200 OK for BYE may not be received as network to remoteUA already got disconnected. Then sip trunk call instance clears itself as signaling connection was already disconnected.

Configuration:

CISCO CONFIDENTIAL

Node = Unified CM1, IP = 10.10.199.250
Node = RemoteUA, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between RemoteUA & Unified CM2 has route pattern 2.XXXX
"Cisco Unified CM1" (Min-SE 60, SE 90)
"Cisco Unified CM2" (Min-SE 120, SE 230)

Scenario:
Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers
Phone A and Phone B talk for 2 and half minutes
Inbetween, RemoteUA fails to send re-Invite for session-refresh.
Phone A DN 1001 goes onHook
End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK78501036
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 19:49:25 GMT
Call-ID: 88b2d600-b8c11a45-8-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  60
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2293421568-3099662917-0000000001-4207350444
Session-Expires:  90
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 422 Session Timer too small
```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK78501036
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1382524032
Date: Mon, 01 Mar 2010 20:02:13 GMT
Call-ID: 88b2d600-b8c11a45-8-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Min-SE:  120
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] ACK sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK78501036
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1382524032
Date: Mon, 01 Mar 2010 19:49:25 GMT
Call-ID: 88b2d600-b8c11a45-8-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK815168a2c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 19:49:25 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 2293421568-3099662917-0000000002-4207350444
Session-Expires:  120
Min-SE:  120
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 100 Trying
```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK815168a2c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 20:02:13 GMT
```

CISCO CONFIDENTIAL

```
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[6] SIP/2.0 180 Ringing

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK815168a2c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 20:02:13 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

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

[7] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK815168a2c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 20:02:13 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK815168a2c
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 20:02:13 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  120;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
```

CISCO CONFIDENTIAL

```
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[9] ACK sip:2002@10.10.199.251:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK93d26b4ad
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 19:49:25 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 20684 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] INVITE sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK361b129ef4
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
Date: Mon, 01 Mar 2010 20:02:15 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  120
Cisco-Guid: 2293421568-3099662917-0000000002-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060>
Expires: 180
Allow-Events: presence
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  120;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 22308 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[11] SIP/2.0 100 Trying

CISCO CONFIDENTIAL

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK361b129ef4
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[12] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK361b129ef4
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  120;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 20684 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[13] ACK sip:1001@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.251:5060;branch=z9hG4bK371275577c
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
Date: Mon, 01 Mar 2010 20:02:15 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0
```

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

[14] BYE sip:2002@10.10.199.251:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa111a89ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0
```

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

[15] BYE sip:2002@10.10.199.251:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa111a89ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 102 BYE
Reason: Q.850;cause=41
```

CISCO CONFIDENTIAL

```
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[16] BYE sip:2002@10.10.199.251:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa111a89ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[17] BYE sip:2002@10.10.199.251:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa111a89ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[18] BYE sip:2002@10.10.199.251:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa111a89ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[19] BYE sip:2002@10.10.199.251:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa111a89ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[20] BYE sip:2002@10.10.199.251:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa111a89ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[21] BYE sip:2002@10.10.199.251:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa111a89ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
```

CISCO CONFIDENTIAL

```
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0
```

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

```
[22] BYE sip:2002@10.10.199.251:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa111a89ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0
```

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

```
[23] BYE sip:2002@10.10.199.251:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa111a89ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0
```

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

```
[24] BYE sip:2002@10.10.199.251:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bKa111a89ac
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19949310
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928472
Date: Mon, 01 Mar 2010 19:49:27 GMT
Call-ID: 88b2d600-b8c11a45-9-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 102 BYE
Reason: Q.850;cause=41
Content-Length: 0
```

CISCO CONFIDENTIAL

13. 3xx

13.1 Incoming 3xx Redirection

Title: Incoming 3xx Redirection

Description:

Cisco Unified CM SIP trunk processes the incoming 3xx response by sending out new INVITE specified in the contact headers of the 3xx response.

Cisco Unified IP SCCP phone 1001 dials SIP Proxy phone 3001.
SIP Proxy is in redirect mode, and therefore sends a 302 to the Cisco Unified CM.
Cisco Unified CM processes the 3xx response and sends an INVITE to the contact address in the 3xx.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = SIP Proxy, IP = 10.10.199.32

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 3001, IP = 10.10.199.42, Model = SIP TNP

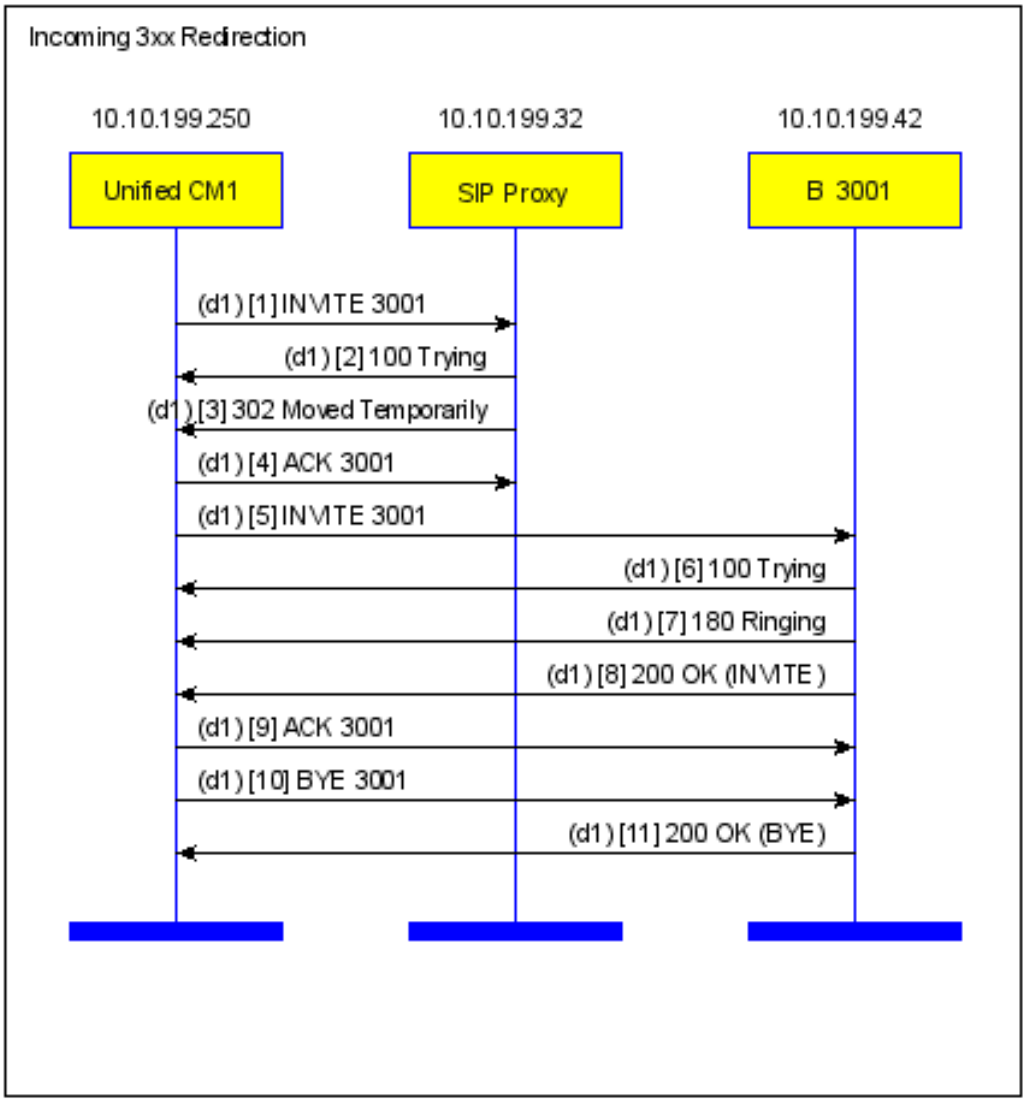
SIP Trunk on Unified CM1 pointing to the SIP Proxy with route pattern 4.XXXX

Scenario:

Phone A DN 1001 calls Phone B DN 3001 over the SIP Trunk by dialing 43001
Phone B DN 3001 is ringing
Phone B DN 3001 Answers
Phone A DN 1001 and Phone B DN 3001 have two-way speech
Phone A DN 1001 goes onHook
Phone B DN 3001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:3001@10.10.199.32:5060 SIP/2.0
Date: Thu, 25 Feb 2010 02:04:41 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20571118
Allow-Events: presence
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Min-SE: 120
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:3001@10.10.199.32>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: b3470800-88e17ab9-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17c0acda8
CSeq: 101 INVITE
Session-Expires: 120
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK17c0acda8
Call-ID: b3470800-88e17ab9-6-fac712ac@10.10.199.250
From: <sip:1001@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20571118
To: <sip:3001@10.10.199.32>
CSeq: 101 INVITE
Content-Length: 0

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 302 Moved Temporarily
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK17c0acda8
Call-ID: b3470800-88e17ab9-6-fac712ac@10.10.199.250
From: <sip:1001@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20571118
To: <sip:3001@10.10.199.32>;tag=513dea65-224cc635
CSeq: 101 INVITE
Contact: <sip:3001@10.10.199.42:5060>
Content-Length: 0

[diagram] Call-ID:[prev][next]
[4] ACK sip:3001@10.10.199.32:5060 SIP/2.0
Date: Thu, 25 Feb 2010 02:04:41 GMT
From: <sip:1001@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20571118
Allow-Events: presence
Content-Length: 0
To: <sip:3001@10.10.199.32>;tag=513dea65-224cc635
Call-ID: b3470800-88e17ab9-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17c0acda8
CSeq: 101 ACK
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[5] INVITE sip:3001@10.10.199.42:5060 SIP/2.0
Date: Thu, 25 Feb 2010 02:04:41 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20571118
Allow-Events: presence
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Min-SE: 120
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:3001@10.10.199.42>
Contact: <sip:1001@10.10.199.250:5060>
Expires: 180
Call-ID: b3470800-88e17ab9-6-fac712ac@10.10.199.250
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK239b2040f
CSeq: 102 INVITE
Session-Expires: 120
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[6] SIP/2.0 100 Trying
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK239b2040f
From: <sip:1001@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20571118
To: <sip:3001@10.10.199.42>
Call-ID: b3470800-88e17ab9-6-fac712ac@10.10.199.250
Date: Mon, 28 Jul 2008 23:06:20 GMT

CISCO CONFIDENTIAL

```
CSeq: 102 INVITE
Server: CSCO/7
Contact: <sip:3001@10.10.199.42:5060>
Content-Length: 0
```

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

[7] SIP/2.0 180 Ringing

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK239b2040f
From: <sip:1001@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20571118
To: <sip:3001@10.10.199.42>;tag=000f24aa92b9000937081eea-09b2e9e4
Call-ID: b3470800-88e17ab9-6-fac712ac@10.10.199.250
Date: Mon, 28 Jul 2008 23:06:20 GMT
CSeq: 102 INVITE
Server: CSCO/7
Contact: <sip:3001@10.10.199.42:5060>
Content-Length: 0
```

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK239b2040f
From: <sip:1001@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20571118
To: <sip:3001@10.10.199.42>;tag=000f24aa92b9000937081eea-09b2e9e4
Call-ID: b3470800-88e17ab9-6-fac712ac@10.10.199.250
Date: Mon, 28 Jul 2008 23:06:21 GMT
CSeq: 102 INVITE
Server: CSCO/7
Contact: <sip:3001@10.10.199.42:5060>
Content-Type: application/sdp
Content-Length: 249

v=0
o=Cisco-SIPUA 21056 13601 IN IP4 10.10.199.42
s=SIP Call
c=IN IP4 10.10.199.42
t=0 0
m=audio 23362 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
```

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

[9] ACK sip:3001@10.10.199.42:5060 SIP/2.0

```
Date: Thu, 25 Feb 2010 02:04:41 GMT
From: <sip:1001@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20571118
Allow-Events: presence
Content-Length: 216
To: <sip:3001@10.10.199.42>;tag=000f24aa92b9000937081eea-09b2e9e4
Content-Type: application/sdp
Call-ID: b3470800-88e17ab9-6-fac712ac@10.10.199.250
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK35e13a9ab
CSeq: 102 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 25382 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] BYE sip:3001@10.10.199.42:5060 SIP/2.0

```
Date: Thu, 25 Feb 2010 02:04:41 GMT
From: <sip:1001@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20571118
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:3001@10.10.199.42>;tag=000f24aa92b9000937081eea-09b2e9e4
Call-ID: b3470800-88e17ab9-6-fac712ac@10.10.199.250
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK41652fbbf
CSeq: 103 BYE
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[11] SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK41652fbbf
From: <sip:1001@10.10.199.250>;tag=95ef4362-75f9-4faf-ae01-3fcd294149a0-20571118
To: <sip:3001@10.10.199.42>;tag=000f24aa92b9000937081eea-09b2e9e4
Call-ID: b3470800-88e17ab9-6-fac712ac@10.10.199.250
Date: Mon, 28 Jul 2008 23:06:28 GMT
CSeq: 103 BYE
Server: CSCO/7
Content-Length: 0
```

CISCO CONFIDENTIAL

14. Authentication-Authorization

14.1 Unified CM gets Authenticated as UAC

Title: Unified CM gets Authenticated as UAC

Description:

When Cisco Unified CM is challenged as a UAC, it looks up the user credentials from the given realm and send the new request with Authorization header.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002

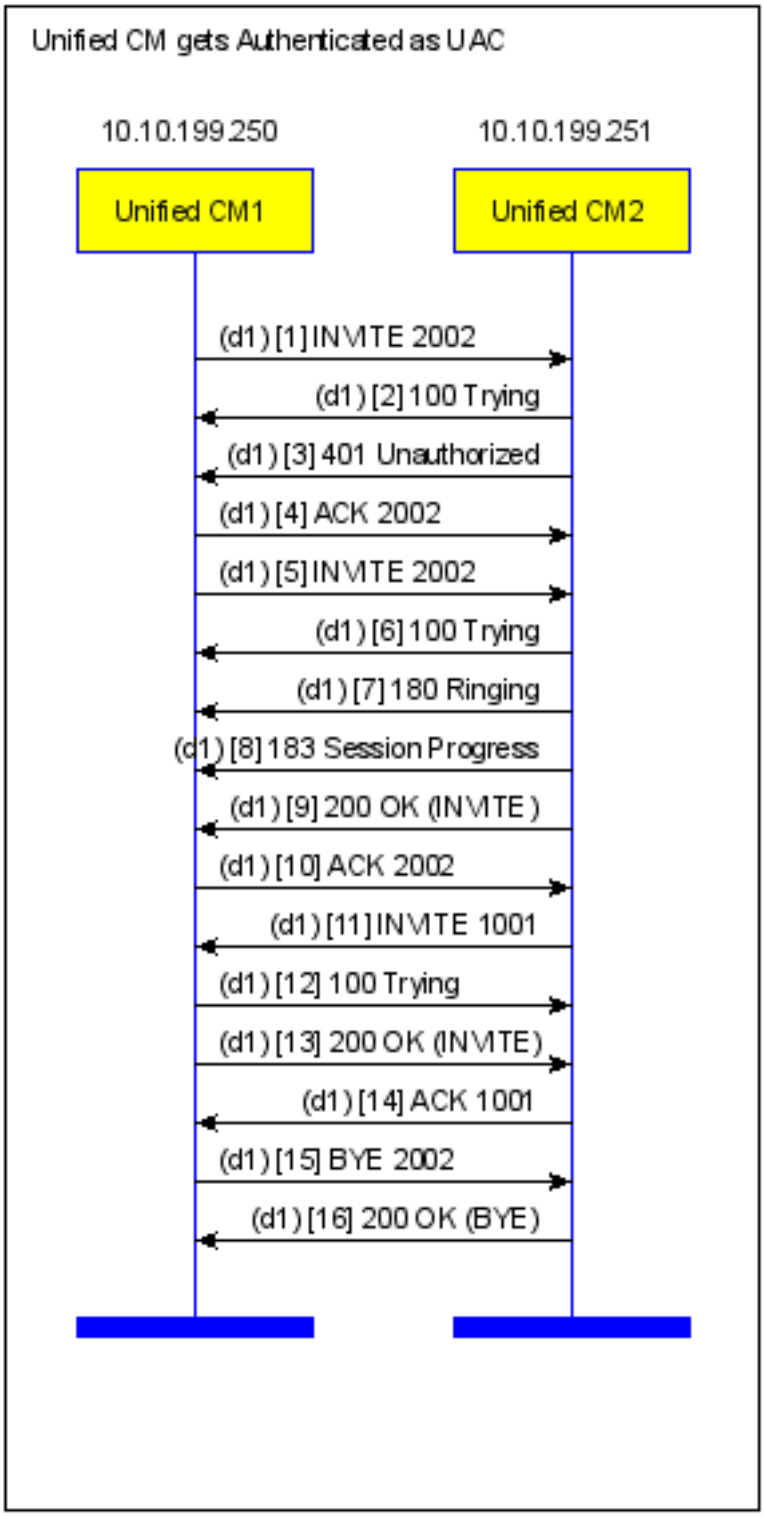
Phone B returns 401 Unauthorized response.

Unified CM1 on which PhoneA is present, looks up user credentials and sends out new INVITE with Authorization header.

All the subsequent requests from the Unified CM for this dialog will have Authorization header already.

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2e162f4561
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 18:39:14 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 3133094528-3099658706-0000000006-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2e162f4561
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 18:52:02 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 401 Unauthorized
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2e162f4561
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
To: <sip:2002@10.10.199.251>;tag=688005185
Date: Mon, 01 Mar 2010 18:52:02 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence
WWW-Authenticate: Digest realm="StandAloneCluster", nonce="xtcaqVMzAmyhbXkqTaq5X5C3n/fzjrBO", algorithm=MD5
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] ACK sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2e162f4561
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
To: <sip:2002@10.10.199.251>;tag=688005185
Date: Mon, 01 Mar 2010 18:39:14 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[5] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f6b5a9a76
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 18:39:14 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Authorization: Digest
username="siptrunk",realm="StandAloneCluster",uri="sip:2002@10.10.199.251:5060",response="bf494ad6341fde965f
35c5d9e8d1ee34",nonce="xtcaqVMzAmyhbXkqTaq5X5C3n/fzjrBO",algorithm=MD5
Supported: X-cisco-srtp-fallback
Supported: Geolocation
```

CISCO CONFIDENTIAL

```
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 3133094528-3099658706-0000000006-4207350444
Session-Expires:  1800
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

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

[6] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f6b5a9a76
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
To: <sip:2002@10.10.199.251>
Date: Mon, 01 Mar 2010 18:52:03 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[7] SIP/2.0 180 Ringing

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f6b5a9a76
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928460
Date: Mon, 01 Mar 2010 18:52:03 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
```

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

[8] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f6b5a9a76
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928460
Date: Mon, 01 Mar 2010 18:52:03 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f6b5a9a76
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928460
Date: Mon, 01 Mar 2010 18:52:03 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
CSeq: 102 INVITE
```

CISCO CONFIDENTIAL

```
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3044bafd26
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928460
Date: Mon, 01 Mar 2010 18:39:14 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Authorization: Digest
username="siptrunk",realm="StandAloneCluster",uri="sip:2002@10.10.199.251:5060",response="bf494ad6341fde965f
35c5d9e8d1ee34",nonce="xtcaqVMzAmyhbXkqTaq5X5C3n/fzjrBO",algorithm=MD5
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 25656 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK1f731d216
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928460
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
Date: Mon, 01 Mar 2010 18:52:04 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 3133094528-3099658706-0000000006-4207350444
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:2002@10.10.199.251>
```

CISCO CONFIDENTIAL

```
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 27278 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[12] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK1f731d216
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928460
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
Date: Mon, 01 Mar 2010 18:39:16 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[13] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK1f731d216
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928460
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
Date: Mon, 01 Mar 2010 18:39:16 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 25656 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[14] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK202e0b0445
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928460
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
Date: Mon, 01 Mar 2010 18:52:04 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0
```

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

[15] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK31e284aa7
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928460
Date: Mon, 01 Mar 2010 18:39:16 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
P-Asserted-Identity: <sip:1001@10.10.199.250>
CSeq: 103 BYE
Authorization: Digest
username="siptrunk",realm="StandAloneCluster",uri="sip:2002@10.10.199.251:5060;transport=tcp",response="ec51
6668519be446ee62fded82da8e41",nonce="xtcaqVMzAmyhbXkqTaq5X5C3n/fzjrBO",algorithm=MD5
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[16] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK31e284aa7
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925399
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928460
Date: Mon, 01 Mar 2010 18:52:08 GMT
Call-ID: babf3a80-b8c109d2-18-fac712ac@10.10.199.250
CSeq: 103 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

14.2 Unified CM Authenticates Incoming Request

Title: Unified CM Authenticates Incoming Request

Description:

When a SIP trunk receives an incoming request, if authentication is enabled for this trunk, Cisco Unified CM will check the credential of the incoming request.

Unified CM will return 401 if authentication fails or the request doesn't have the Authorization header. If authorization is enabled for this trunk and authentication passes, Unified CM will also check the priviledges against the username. Unified CM will return 403 if authorization fails.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM2 & Unified CM1 has route pattern 1.XXXX

Scenario:

Phone B DN 2002 calls Phone A DN 1001 over the SIP Trunk by dialing 11001

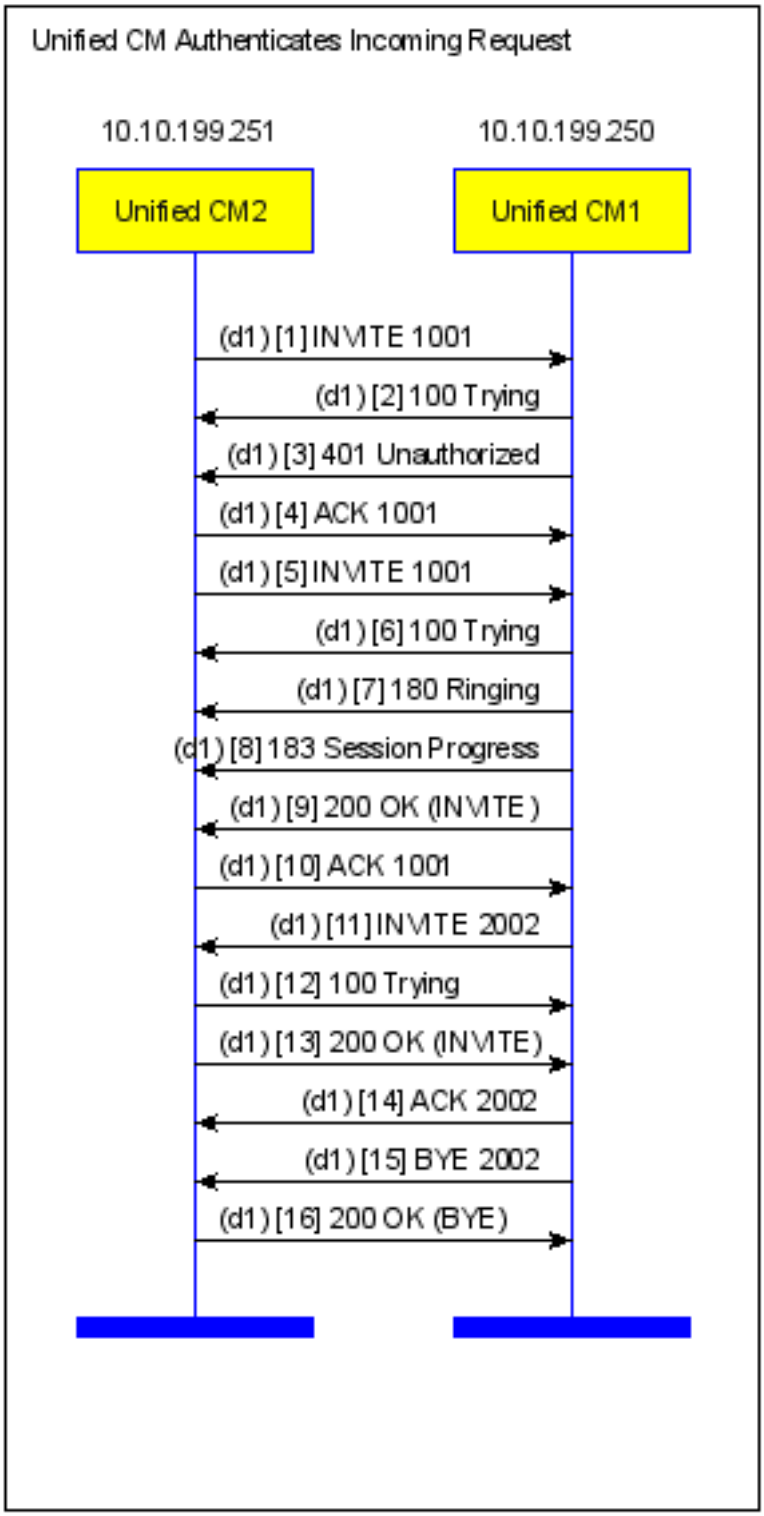
Phone A's CCM Unified CM1 sends back 401 Unauthorized response since the INVITE doesn't have the Authorization header.

Unified CM2 on which PhoneB is present, looks up user credentials and sends out new INVITE with Authorization header.

Unified CM1 checks the Authorization header with its configured user credentials, Authentication passes, call moves on.

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK21278d4a96
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
To: <sip:1001@10.10.199.250>
Date: Mon, 01 Mar 2010 18:55:59 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Cisco-Guid: 0298192640-3099659711-0000000001-4224127660
Session-Expires:  1800
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK21278d4a96
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
To: <sip:1001@10.10.199.250>
Date: Mon, 01 Mar 2010 18:43:11 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 401 Unauthorized
```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK21278d4a96
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
To: <sip:1001@10.10.199.250>;tag=1561039660
Date: Mon, 01 Mar 2010 18:43:11 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow-Events: presence
WWW-Authenticate: Digest realm="StandAloneCluster", nonce="j0XNzi4JXI2ygOnhjAncWXPXfU23rEzo", algorithm=MD5
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] ACK sip:1001@10.10.199.250:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK21278d4a96
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
To: <sip:1001@10.10.199.250>;tag=1561039660
Date: Mon, 01 Mar 2010 18:55:59 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[5] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK223f1d0633
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
To: <sip:1001@10.10.199.250>
Date: Mon, 01 Mar 2010 18:55:59 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Authorization: Digest
username="siptrunk",realm="StandAloneCluster",uri="sip:1001@10.10.199.250:5060",response="526a4a4e0390b32e50
a6d8fb42f1e80b",nonce="j0XNzi4JXI2ygOnhjAncWXPXfU23rEzo",algorithm=MD5
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Cisco-Guid: 0298192640-3099659711-0000000001-4224127660
```

CISCO CONFIDENTIAL

```
Session-Expires:  1800
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

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

[6] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK223f1d0633
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
To: <sip:1001@10.10.199.250>
Date: Mon, 01 Mar 2010 18:43:11 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
CSeq: 102 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[7] SIP/2.0 180 Ringing

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK223f1d0633
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925400
Date: Mon, 01 Mar 2010 18:43:11 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 0
```

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

[8] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK223f1d0633
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925400
Date: Mon, 01 Mar 2010 18:43:11 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
CSeq: 102 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK223f1d0633
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925400
Date: Mon, 01 Mar 2010 18:43:11 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
CSeq: 102 INVITE
```

CISCO CONFIDENTIAL

```
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Supported: replaces
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 337

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK233b4e73b4
From: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
To: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925400
Date: Mon, 01 Mar 2010 18:55:59 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
Max-Forwards: 70
CSeq: 102 ACK
Authorization: Digest
username="siptrunk",realm="StandAloneCluster",uri="sip:1001@10.10.199.250:5060",response="526a4a4e0390b32e50
a6d8fb42f1e80b",nonce="j0XNzi4JXI2ygOnhjAncWXPXfU23rEzo",algorithm=MD5
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 18212 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[11] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3652a6d8eb
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925400
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
Date: Mon, 01 Mar 2010 18:43:13 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 0298192640-3099659711-0000000001-4224127660
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Supported: X-cisco-srtp-fallback
Supported: Geolocation
```

CISCO CONFIDENTIAL

```
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:1001@10.10.199.250>
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 16606 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[12] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3652a6d8eb
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925400
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
Date: Mon, 01 Mar 2010 18:56:01 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

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

[13] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK3652a6d8eb
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925400
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
Date: Mon, 01 Mar 2010 18:56:01 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:2002@10.10.199.251>
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 18212 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[14] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK376887a11e
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925400
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
Date: Mon, 01 Mar 2010 18:43:13 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Length: 0
```

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

[15] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK38390543df
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925400
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
Date: Mon, 01 Mar 2010 18:43:13 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
User-Agent: Cisco-CUCM8.0
```

CISCO CONFIDENTIAL

```
Max-Forwards: 70
CSeq: 102 BYE
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[16] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK38390543df
From: <sip:1001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-19925400
To: <sip:2002@10.10.199.251>;tag=1b1993ff-121d-4616-8dc5-353990242dfe-19928463
Date: Mon, 01 Mar 2010 18:56:06 GMT
Call-ID: 11c60f00-b8c10dbf-7-fbc712ac@10.10.199.251
CSeq: 102 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

15. ACL

15.1 Access Control List, Deny Presence Subscription

Title: Access Control List, Deny Presence Subscription

Description:

When a SIP trunk is configured not to allow Subscription with presence, an incoming SUBSCRIBE with presence event to this trunk is rejected with 403 response.

Configuration:

Node = Remote UA, IP = 10.10.200.179

Node = Unified CM1, IP = 10.10.199.250

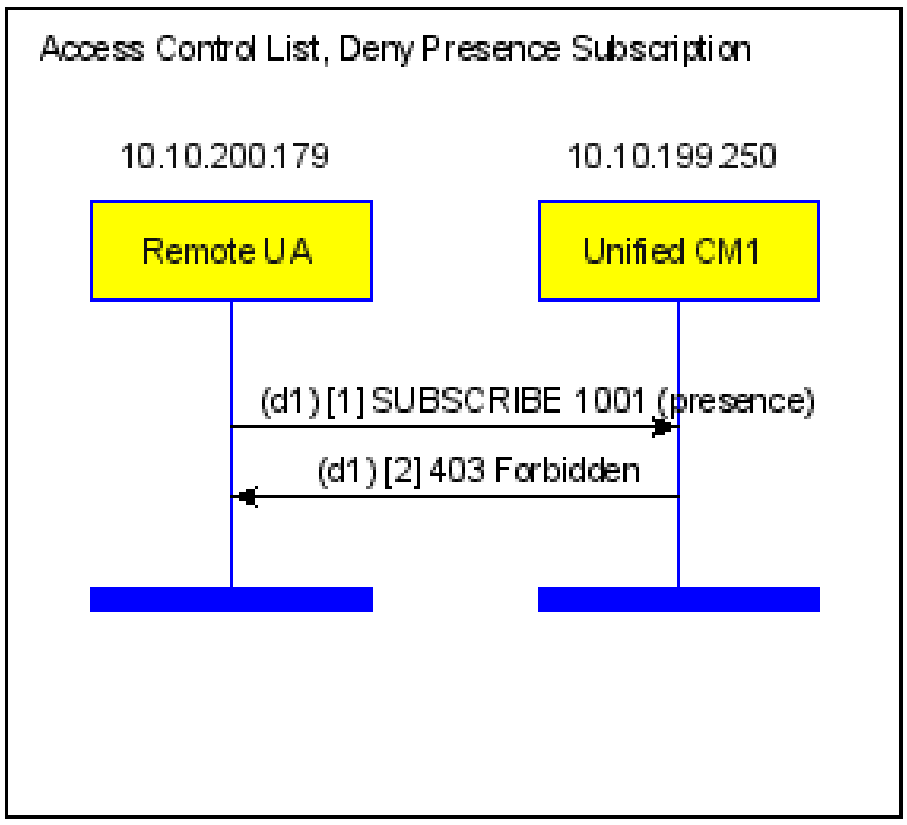
Unified CM1 has its SIP Trunk Security Profile configured to have "Accept Presence Subscription" unchecked.

Scenario:

Remote UA sends Presence Subscription message to Unified CM1

Unified CM1 rejects the message with 403

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] SUBSCRIBE sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.200.179:5060
From: <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>
Call-ID: 1-23268@10.10.200.179
CSeq: 101 SUBSCRIBE
Event: presence
Accept: application/dialog-info+xml
Expires: 7200
Contact: sip:5678@10.10.200.179:5060
Max-Forwards: 70
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 403 Forbidden
Via: SIP/2.0/TCP 10.10.200.179:5060
From: <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>;tag=878310955
Date: Thu, 25 Feb 2010 16:58:39 GMT
Call-ID: 1-23268@10.10.200.179
CSeq: 101 SUBSCRIBE
Content-Length: 0
```

CISCO CONFIDENTIAL

15.2 Access Control List, Deny Out of Dialog REFER

Title: Access Control List, Deny Out of Dialog REFER

Description:

When a SIP trunk is configured not to allow out-of-dialog REFER,
an incoming OOD REFER to this trunk is rejected with 403 response.

Configuration:

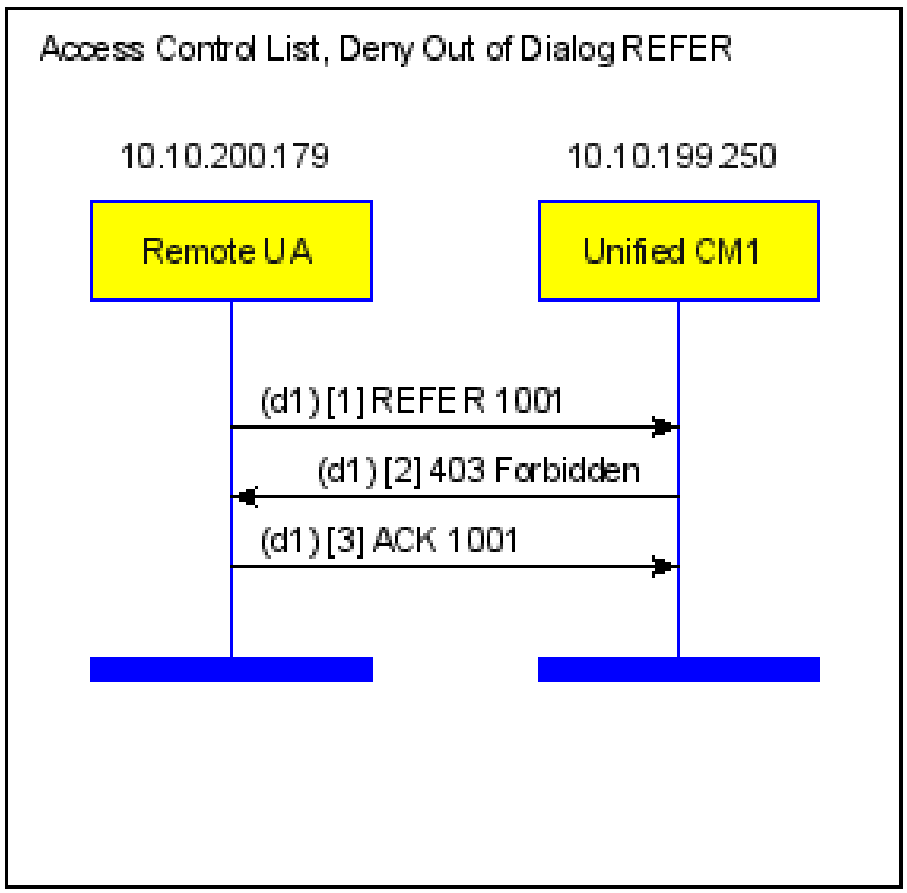
Node = Remote UA, IP = 10.10.200.179
Node = Unified CM1, IP = 10.10.199.250

Unified CM1 has its SIP Trunk Security Profile configured to have
"Accept Out-of-Dialog REFER" unchecked.

Scenario:

Remote UA sends Out-of-Dialog REFER message to Unified CM1
Unified CM1 rejects the message with 403

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] REFER sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.200.179:5060
From: sipp <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>
Call-ID: 1-23217@10.10.200.179
Cseq: 103 REFER
Contact: <sip:5678@10.10.200.179:5060>
Refer-To: <sip:1009@10.10.199.250>
Referred-By: <sip:1234@whatever.com>;x-cisco-monitor-call
Max-Forwards: 70
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 403 Forbidden
Via: SIP/2.0/TCP 10.10.200.179:5060
From: sipp <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>;tag=1728203837
Date: Thu, 25 Feb 2010 16:57:42 GMT
Call-ID: 1-23217@10.10.200.179
CSeq: 103 REFER
Content-Length: 0
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>

[diagram]   Call-ID:[prev][next]
[3] ACK sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.200.179:5060
From: sipp <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>;tag=1728203837
Call-ID: 1-23217@10.10.200.179
CSeq: 104 ACK
Contact: sip:5678@10.10.200.179:5060
Max-Forwards: 70
Content-Length: 0
```

CISCO CONFIDENTIAL

15.3 Access Control List, Deny Unsolicited NOTIFY

Title: Access Control List, Deny Unsolicited NOTIFY

Description:

When a SIP trunk is configured not to allow Unsolicited NOTIFY, an incoming Unsolicited NOTIFY(MWI, for example) to this trunk is rejected with 403 response.

Configuration:

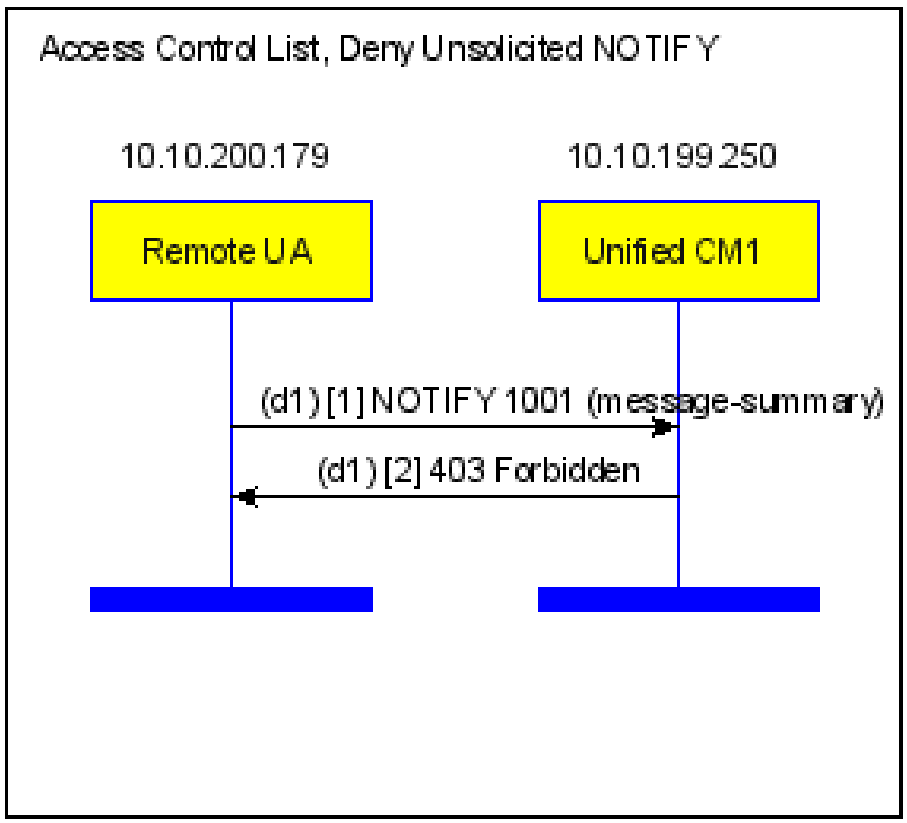
Node = Remote UA, IP = 10.10.200.179
Node = Unified CM1, IP = 10.10.199.250

Unified CM1 has its SIP Trunk Security Profile configured to have "Accept Unsolicited Notification" unchecked.

Scenario:

Remote UA sends Unsolicited NOTIFY message to Unified CM1
Unified CM1 rejects the message with 403

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] NOTIFY sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.200.179:5060
From: <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>
Call-ID: 1-23302@10.10.200.179
CSeq: 1 NOTIFY
Event: message-summary
Allow: INVITE,ACK,BYE,CANCEL,OPTIONS,REGISTER,INFO,PRACK,SUBSCRIBE,NOTIFY,REFER,UPDATE
Expires: 180
Contact: sip:5678@10.10.200.179:5060
Max-Forwards: 70
Content-Type: text/plain
Content-Length: 23

Messages-Waiting: yes

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 403 Forbidden
Via: SIP/2.0/TCP 10.10.200.179:5060
From: <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>;tag=1474228007
Date: Thu, 25 Feb 2010 17:02:01 GMT
Call-ID: 1-23302@10.10.200.179
CSeq: 1 NOTIFY
Content-Length: 0
```

CISCO CONFIDENTIAL

15.4 Access Control List, Deny INVITE with Replaces Header

Title: Access Control List, Deny INVITE with Replaces Header

Description:

When a SIP trunk is configured not to allow Replaces header, an incoming INVITE with Replaces header to this trunk is rejected with 403 response.

Configuration:

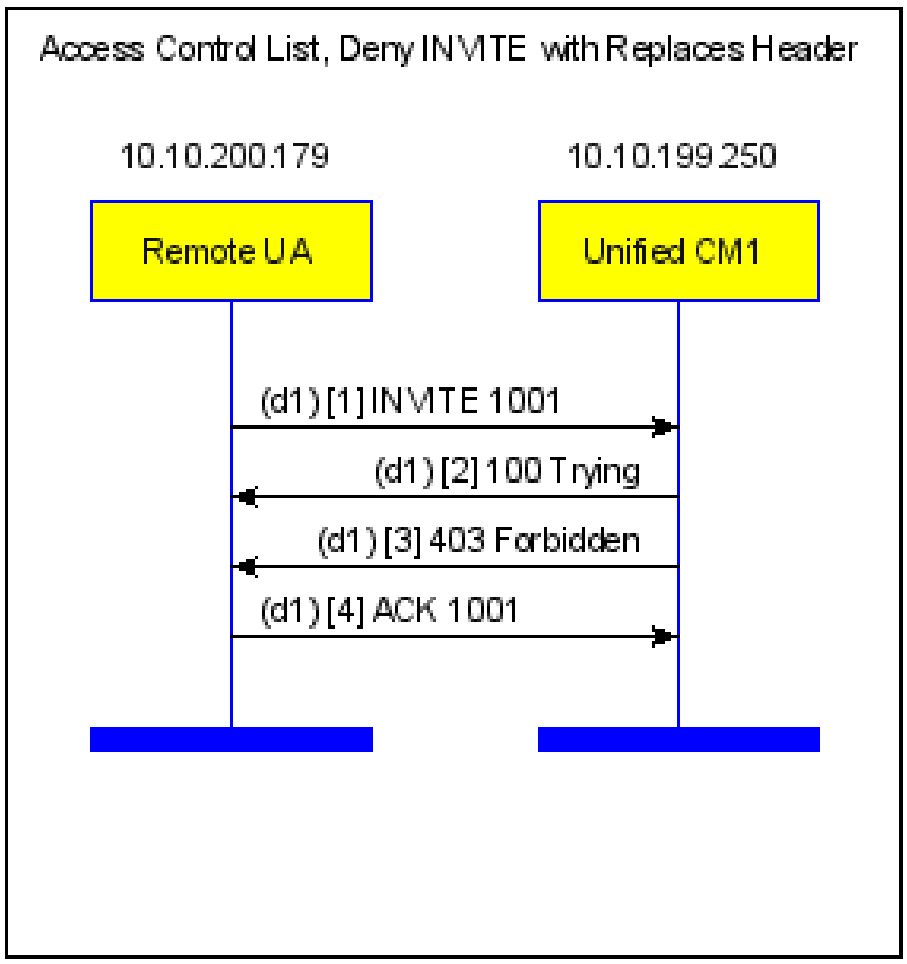
Node = Remote UA, IP = 10.10.200.179
Node = Unified CM1, IP = 10.10.199.250

Unified CM1 has its SIP Trunk Security Profile configured to have "Accept Replaces Header" unchecked.

Scenario:

Remote UA sends INVITE with Replaces header message to Unified CM1
Unified CM1 rejects the message with 403

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.200.179:5060
From: <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>
Call-ID: 1-23310@10.10.200.179
CSeq: 1 INVITE
Contact: sip:5678@10.10.200.179:5060
Max-Forwards: 70
Subject: Performance Test
Content-Type: application/sdp
Replaces: 42592@bobster.example.org;to-tag=7743;from-tag=6472
Content-Length: 318

v=0
o=CiscoSystemsCCM-SIP 2000 1000 IN IP4 10.10.193.222
s=SIP Call
c=IN IP4 10.10.193.222
t=0 0
m=audio 4000 RTP/AVP 2 0 8 18
a=rtpmap:2 G726-32/8000
a=ptime:120
a=rtpmap:0 PCMU/8000
a=ptime:40
a=rtpmap:8 PCMA/8000
a=ptime:40
a=rtpmap:18 G729/8000
a=ptime:60
a=fmtp:18 annexa=yes;annexb=no
a=sendonly

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.200.179:5060
From: <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>
Date: Thu, 25 Feb 2010 17:02:49 GMT
Call-ID: 1-23310@10.10.200.179
CSeq: 1 INVITE
Allow-Events: presence
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[3] SIP/2.0 403 Forbidden
Via: SIP/2.0/TCP 10.10.200.179:5060
From: <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>;tag=1065439042
Date: Thu, 25 Feb 2010 17:02:49 GMT
Call-ID: 1-23310@10.10.200.179
CSeq: 1 INVITE
Allow-Events: presence
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[4] ACK sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.200.179:5060
From: <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>;tag=1065439042
Call-ID: 1-23310@10.10.200.179
CSeq: 1 ACK
Contact: sip:5678@10.10.200.179:5060
Max-Forwards: 70
Subject: Performance Test
Content-Length: 0
```

CISCO CONFIDENTIAL

15.5 Access Control List, Deny REFER with Replaces Header

Title: Access Control List, Deny REFER with Replaces Header

Description:

When a SIP trunk is configured not to allow Replaces header, an incoming REFER with Replaces header to this trunk is rejected with 403 response.

Configuration:

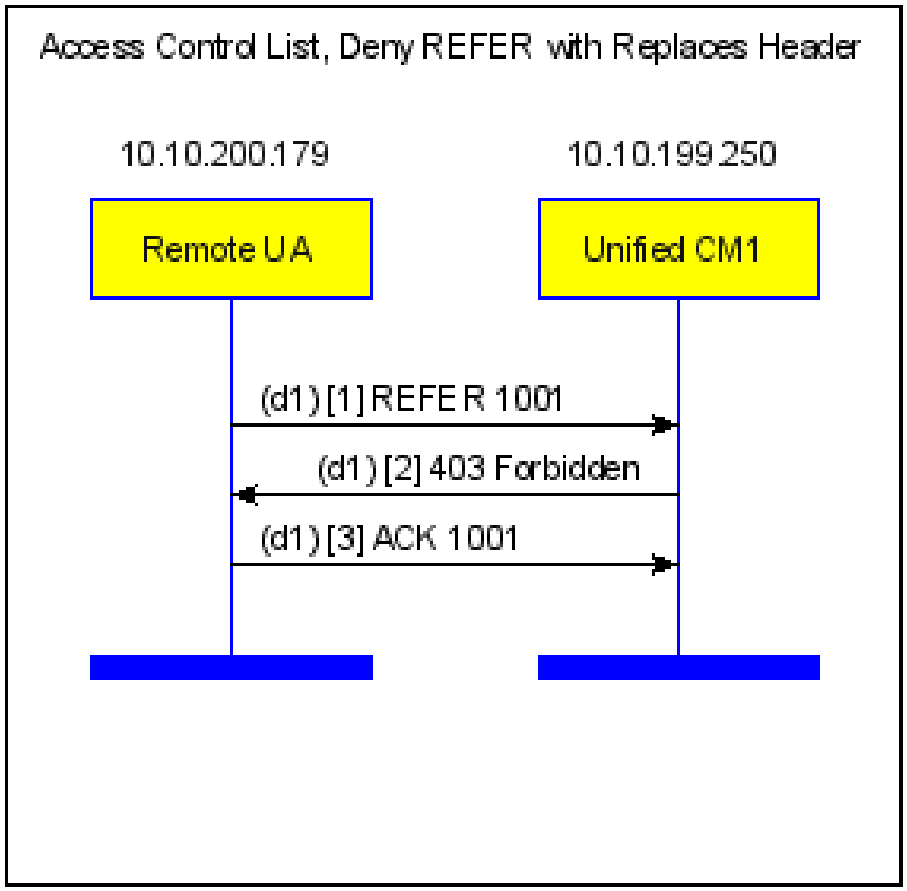
Node = Remote UA, IP = 10.10.200.179
Node = Unified CM1, IP = 10.10.199.250

Unified CM1 has its SIP Trunk Security Profile configured to have "Accept Replaces Header" unchecked.

Scenario:

Remote UA sends REFER with Replaces header message to Unified CM1
Unified CM1 rejects the message with 403

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] REFER sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.200.179:5060
From: sipp <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>
Call-ID: 1-23275@10.10.200.179
Cseq: 103 REFER
Contact: <sip:5678@10.10.200.179:5060>
Refer-To: <sip:1009@10.10.199.250?Replaces=0.943331825637387%3Bto-tag%3D1_1146_CtkS000002%3Bfrom-
tag%3Drefer-1_AtoC>
Referred-By: <sip:1234@whatever.com>;x-cisco-monitor-call
Max-Forwards: 70
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 403 Forbidden
Via: SIP/2.0/TCP 10.10.200.179:5060
From: sipp <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>;tag=152762659
Date: Thu, 25 Feb 2010 16:59:37 GMT
Call-ID: 1-23275@10.10.200.179
CSeq: 103 REFER
Content-Length: 0
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>

[diagram]   Call-ID:[prev][next]
[3] ACK sip:1001@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.200.179:5060
From: sipp <sip:5678@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250:5060>;tag=152762659
Call-ID: 1-23275@10.10.200.179
CSeq: 104 ACK
Contact: sip:5678@10.10.200.179:5060
Max-Forwards: 70
Content-Length: 0
```

CISCO CONFIDENTIAL

16. RSVP

16.1 Outgoing RSVP Call through SIP Trunk

Title: Outgoing RSVP Call through SIP Trunk

Description:

The scenario for a RSVP outgoing call from a Cisco Unified IP Phone to a UserAgent reachable through Cisco Unified CM's SIP Trunk.

The Cisco Unified IP PHone and the SipTrunk devices are in different location and having RSVP

policy=Mandatory between them.

During call setup, a RSVP agent shall be allocated for each device in a different location, which would provide rsvp media path as following:

Cisco Unified IP Phone<--unresereved media->RSVPAgent1<--reserved media path--->RSVPAgent2<--unreserved media->remoteUA

The RSVPAgent1 is catering to the Cisco Unified IP Phone's location. The RSVPAgent2 is catering to the Cisco Unified CM's SIP Trunk's location.

Configuration:

Node = Unified CM, IP = 10.10.199.250

Node = Unified CM, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

Scenario:

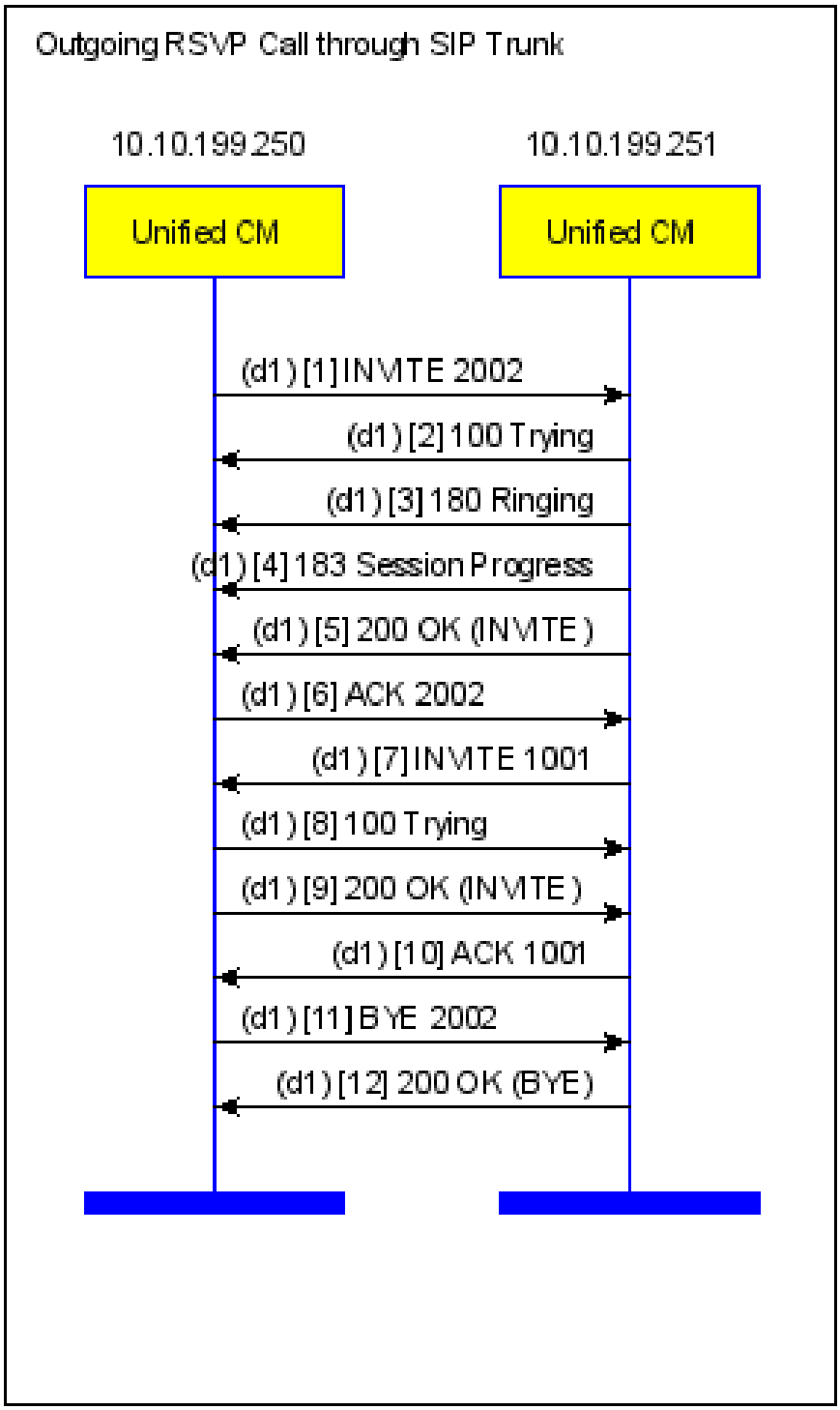
Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002

Phone B DN 2002 Answers

Phone A DN 1001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Date: Wed, 24 Feb 2010 15:50:26 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674139
Allow-Events: presence
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE:  1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 68ef1280-a2f1d642-60-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK883bbf271
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Date: Wed, 24 Feb 2010 15:51:43 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674139
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: 68ef1280-a2f1d642-60-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK883bbf271
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Date: Wed, 24 Feb 2010 15:51:43 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674139
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674200
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 68ef1280-a2f1d642-60-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK883bbf271
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Date: Wed, 24 Feb 2010 15:51:43 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674139
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 250
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674200
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 68ef1280-a2f1d642-60-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK883bbf271
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.163
t=0 0
m=audio 4000 RTP/AVP 18 101
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 200 OK
```
Date: Wed, 24 Feb 2010 15:51:43 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674139
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 250
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674200
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 68ef1280-a2f1d642-60-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK883bbf271
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.163
t=0 0
m=audio 4000 RTP/AVP 18 101
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]
[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
```
Date: Wed, 24 Feb 2010 15:50:26 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674139
Allow-Events: presence
Content-Length: 251
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674200
Content-Type: application/sdp
Call-ID: 68ef1280-a2f1d642-60-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8951deeec2
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.163
t=0 0
m=audio 19348 RTP/AVP 18 101
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]
[7] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
```
Date: Wed, 24 Feb 2010 15:51:45 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674200
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 239
User-Agent: Cisco-CUCM8.0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674139
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 68ef1280-a2f1d642-60-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK19f1f5286
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.163
t=0 0
m=audio 17308 RTP/AVP 18 101
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Wed, 24 Feb 2010 15:50:28 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674200
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674139
Call-ID: 68ef1280-a2f1d642-60-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK19f1f5286
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Wed, 24 Feb 2010 15:50:28 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674200
Allow-Events: presence
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 239
Require:  timer
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674139
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 68ef1280-a2f1d642-60-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK19f1f5286
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.163
t=0 0
m=audio 19348 RTP/AVP 18 101
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Wed, 24 Feb 2010 15:51:45 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674200
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674139
Call-ID: 68ef1280-a2f1d642-60-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK1a44460480
CSeq: 101 ACK
Max-Forwards: 70
```

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

[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Wed, 24 Feb 2010 15:50:28 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674139
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674200
Call-ID: 68ef1280-a2f1d642-60-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8a375a0f56
CSeq: 102 BYE
Max-Forwards: 70
```

CISCO CONFIDENTIAL

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

[12] SIP/2.0 200 OK

```
Date: Wed, 24 Feb 2010 15:51:51 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674139
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674200
Call-ID: 68ef1280-a2f1d642-60-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8a375a0f56
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

17. Publish

17.1 Basic PUBLISH Operations

Title: Basic PUBLISH Operations

Description:

Cisco Unified CM SIP trunk supports line appearance based presence information publication by using SIP PUBLISH method. This flow shows the basic PUBLISH operations for a given line appearance.

- Directory number 1001 on IP PhoneA is associated with Presence Server's user alice.
- When PhoneA registers with CM, SIP trunk sends out creates the publication with no etags.
- After the refresh timer expires, SIP trunk refreshes the publication with empty presence body.
- When PhoneA goes offhook/onhook, SIP trunk modifies the publication with new presence bodies.
- After PhoneA unregisters from CM, SIP trunk deletes the publication with 0 Expires header

Configuration:

Node = Cisco Unified CM, IP = 10.10.199.250

Node = Presence Server, IP = 10.10.199.215

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Scenario:

Phone A resets

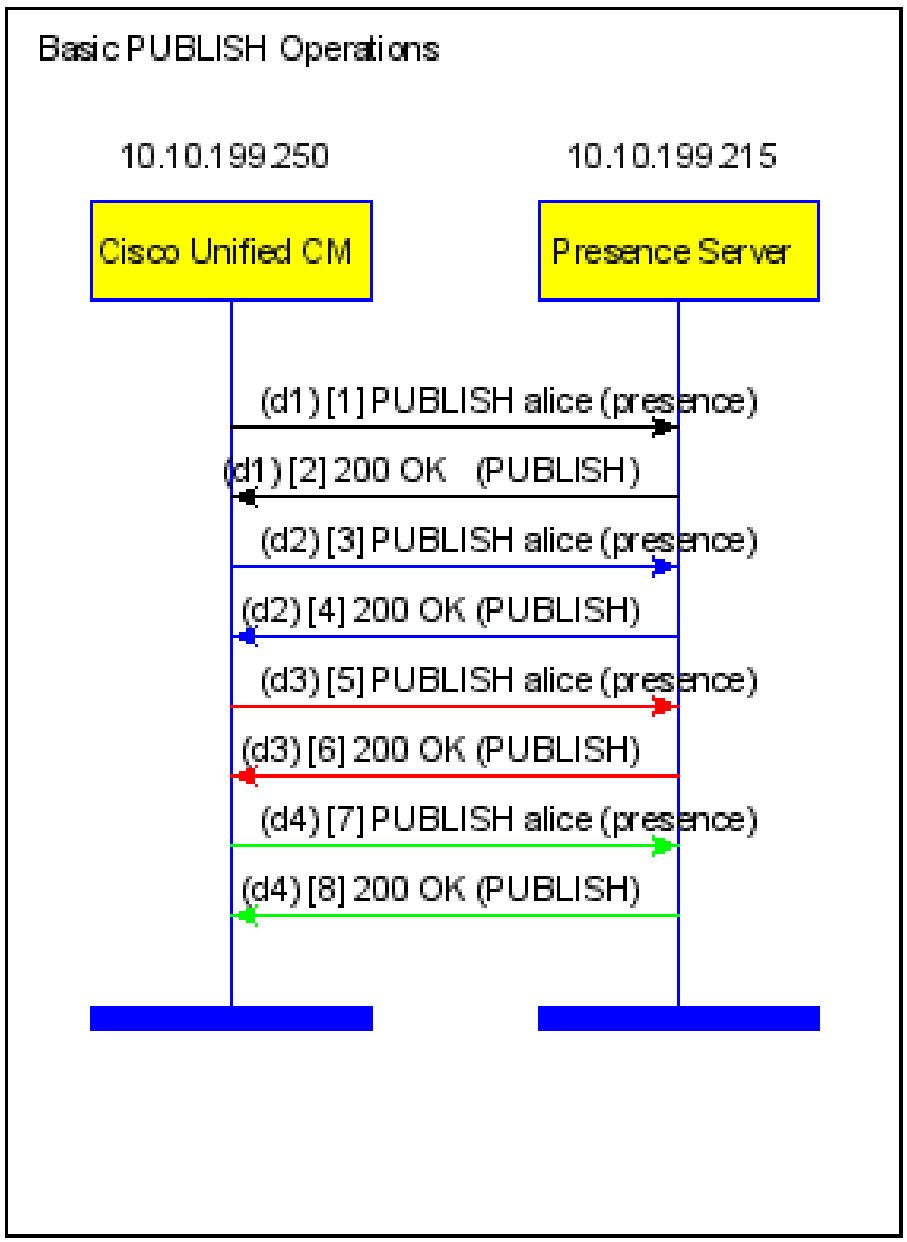
Phone A offHook

Phone A onHook

Phone A resets

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] PUBLISH sip:alice@10.10.199.215:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9d31c1013e
From: <sip:alice@10.10.199.250>;tag=1383407338
To: <sip:alice@10.10.199.215>
Call-ID: c5317f80-b83112c4-53-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Mon, 22 Feb 2010 23:27:00 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
Content-Type: application/pidf+xml
Content-Length: 838

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-8b998dbf-1c07-f2e4-4858-b44a38e4b5e3">
    <status>
    <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=8b998dbf-1c07-f2e4-4858-
b44a38e4b5e3;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-22T23:27:00Z</timestamp>
  </tuple>
</presence>

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bK9d31c1013e
CSeq: 101 PUBLISH
Call-ID: c5317f80-b83112c4-53-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=1383407338
To: <sip:alice@10.10.199.215>;tag=98fcc389
Content-Length: 0
SIP-ETag: 410813c0-7f22-4d01-a094-5241cecf
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>

[diagram]   Call-ID:[prev][next]
[3] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9e1bc7d42e
From: <sip:alice@10.10.199.250>;tag=1965668649
To: <sip:alice@10.10.199.215>
Call-ID: c95d9d00-b83112cb-54-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Mon, 22 Feb 2010 23:27:07 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: 410813c0-7f22-4d01-a094-5241cecf
Content-Type: application/pidf+xml
Content-Length: 883

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-8b998dbf-1c07-f2e4-4858-b44a38e4b5e3">
    <status>
    <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=8b998dbf-1c07-f2e4-4858-
b44a38e4b5e3;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-22T23:27:07Z</timestamp>
  </tuple>
```

CISCO CONFIDENTIAL

```
</presence>

[diagram]   Call-ID:[prev][next]
[4] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9e1bc7d42e
CSeq: 101 PUBLISH
Call-ID: c95d9d00-b83112cb-54-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=1965668649
To: <sip:alice@10.10.199.215>;tag=f58700ee
Content-Length: 0
SIP-ETag: b66b77d3-900e-4fdd-853f-81dfd543
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>

[diagram]   Call-ID:[prev][next]
[5] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9f52e181e7
From: <sip:alice@10.10.199.250>;tag=1627838304
To: <sip:alice@10.10.199.215>
Call-ID: cb276080-b83112ce-55-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Mon, 22 Feb 2010 23:27:10 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: b66b77d3-900e-4fdd-853f-81dfd543
Content-Type: application/pidf+xml
Content-Length: 838

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-8b998dbf-1c07-f2e4-4858-b44a38e4b5e3">
    <status>
    <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=8b998dbf-1c07-f2e4-4858-
b44a38e4b5e3;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-22T23:27:10Z</timestamp>
  </tuple>
</presence>

[diagram]   Call-ID:[prev][next]
[6] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9f52e181e7
CSeq: 101 PUBLISH
Call-ID: cb276080-b83112ce-55-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=1627838304
To: <sip:alice@10.10.199.215>;tag=741851a6
Content-Length: 0
SIP-ETag: 70bad6ba-dd8f-4a1f-a9b9-e42b6302
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>

[diagram]   Call-ID:[prev][next]
[7] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa02c7d8c3c
From: <sip:alice@10.10.199.250>;tag=1599573727
To: <sip:alice@10.10.199.215>
Call-ID: d37f9b80-b83112dc-56-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Mon, 22 Feb 2010 23:27:24 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 0
SIP-If-Match: 70bad6ba-dd8f-4a1f-a9b9-e42b6302
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[8] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa02c7d8c3c
CSeq: 101 PUBLISH
```

CISCO CONFIDENTIAL

```
Call-ID: d37f9b80-b83112dc-56-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=1599573727
To: <sip:alice@10.10.199.215>;tag=98470ff8
Content-Length: 0
Contact: <sip:10.10.199.215:5070;transport=tcp>
```

17.2 PUBLISH with Shared Line, A Holds and B Resumes

Title: PUBLISH with Shared Line, A Holds and B Resumes

Description:

Since presence publication is line appearance based, the same directory number on difference phones are treated separately.

- Directory number 4001 on IP PhoneA is associated with Presence Server's user alice.
- Directory number 4001 on IP PhoneB is associated with Presence Server's user bob.
- Alice made a phone call, since IP PhoneA owns the call, 4001 on PhoneA is published as busy.
- Alice hold the call. No new PUBLISH message since PhoneA still owns the call.
- Bob resumes the call from PhoneB, so PhoneB takes over the call ownership from PhoneA. 4001 on PhoneA is published as idle, and 4001 on PhoneB is published at busy.
- Bob hangs up the phone. 4001 on PhoneB is published as idle.

Configuration:

Node = Cisco Unified CM, IP = 10.10.199.250
Node = Cisco Unified CM, IP = 10.10.199.251
Node = Presence Server, IP = 10.10.199.215

Phone = A, Line = 4001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 4001, IP = 10.10.199.66, Model = SCCP
Phone = C, Line = 2002, IP = 10.10.199.179, Model = SCCP

Sip trunk between CCM1 and CCM2 has route pattern 2.XXXX

Scenario:

Phone A DN 4001 calls Phone C DN 2002 by dialing digits 22002
Phone C rings
Phone C answers. Phone B DN 4001 shows busy sign (red button on line)
Phone A presses hold softkey
Phone B presses resume softkey on DN 4001 call.
Phone A gets disconnected, since Phone B resumed the call.
Now Phone B and Phone C talk.

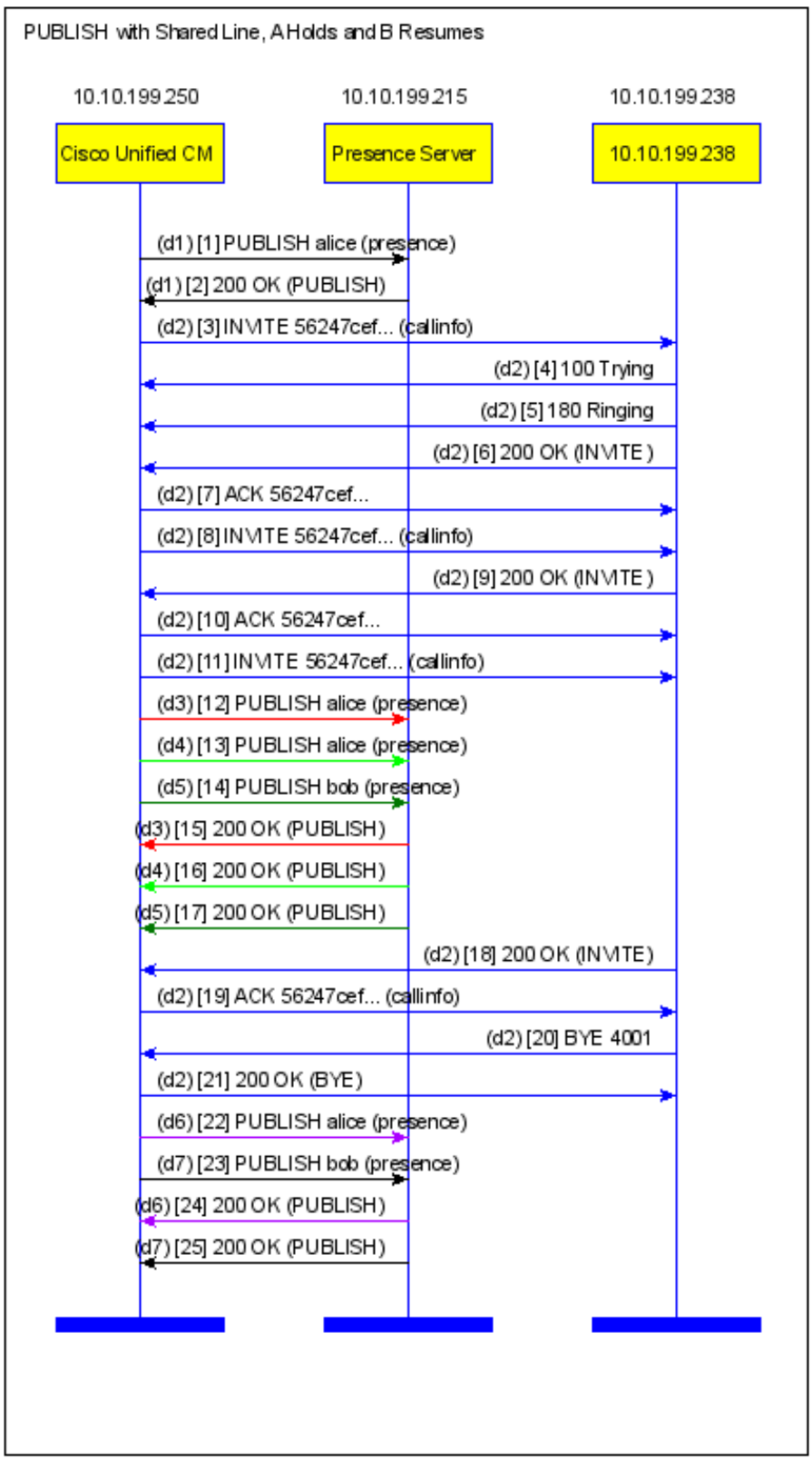
CISCO CONFIDENTIAL

Phone B goes onHook

Phone C goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK112219d65b2
From: <sip:alice@10.10.199.250>;tag=340856698
To: <sip:alice@10.10.199.215>
Call-ID: 5b66b380-b84117cc-ac-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:00:44 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: f47ed7bb-d2bf-4830-b24b-fb51b911
Content-Type: application/pidf+xml
Content-Length: 883

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-8b998dbf-1c07-f2e4-4858-b44a38e4b5e3">
    <status>
    <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=8b998dbf-1c07-f2e4-4858-
b44a38e4b5e3;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-23T18:00:44Z</timestamp>
  </tuple>
</presence>
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK112219d65b2
CSeq: 101 PUBLISH
Call-ID: 5b66b380-b84117cc-ac-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=340856698
To: <sip:alice@10.10.199.215>;tag=5e30c2d3
Content-Length: 0
SIP-ETag: d7ef5111-0970-4769-89d2-5e1bb714
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>
```

[diagram] Call-ID:[prev][next]
[3] INVITE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1134da500aa
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>
Date: Tue, 23 Feb 2010 18:00:48 GMT
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
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; gci= 1-36048;
call-instance= 1
Send-Info: conference
Alert-Info: <file://Bellcore-dr1/>
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.250:5060;transport=tcp>
Remote-Party-ID: <sip:4001@10.10.199.250;x-cisco-callback-number=4001>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1134da500aa
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
Date: Tue, 23 Feb 2010 18:00:47 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.4.0
```

CISCO CONFIDENTIAL

```
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Allow-Events: kpml,dialog
Content-Length: 0
```

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

[5] SIP/2.0 180 Ringing

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1134da500aa
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68990f1da1db-a884b5e4
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
Date: Tue, 23 Feb 2010 18:00:47 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.4.0
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 0
```

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

[6] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1134da500aa
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68990f1da1db-a884b5e4
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
Date: Tue, 23 Feb 2010 18:00:50 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.4.0
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 304
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 27481 0 IN IP4 10.10.199.238
s=SIP Call
t=0 0
m=audio 21338 RTP/AVP 0 8 18 9 101
c=IN IP4 10.10.199.238
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:9 G722/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

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

[7] ACK sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11411360e62
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68990f1da1db-a884b5e4
Date: Tue, 23 Feb 2010 18:00:48 GMT
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 26734 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] INVITE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK115188078f1
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
```

CISCO CONFIDENTIAL

```
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68990f1da1db-a884b5e4
Date: Tue, 23 Feb 2010 18:00:56 GMT
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:4001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= from; gci= 1-36048;
call-instance= 1
Remote-Party-ID: <sip:4001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 221

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 26734 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK115188078f1
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68990f1da1db-a884b5e4
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
Date: Tue, 23 Feb 2010 18:00:56 GMT
CSeq: 102 INVITE
Server: Cisco-CP7970G/8.4.0
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 209
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 27481 1 IN IP4 10.10.199.238
s=SIP Call
t=0 0
m=audio 21338 RTP/AVP 9 101
c=IN IP4 10.10.199.238
a=rtpmap:9 G722/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=inactive
```

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

[10] ACK sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK116565f08ec
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68990f1da1db-a884b5e4
Date: Tue, 23 Feb 2010 18:00:56 GMT
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Length: 0
```

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

[11] INVITE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK117580e85bf
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68990f1da1db-a884b5e4
Date: Tue, 23 Feb 2010 18:01:06 GMT
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
```

CISCO CONFIDENTIAL

```
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:4001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= from; gci= 1-36048;
call-instance= 1
Remote-Party-ID: <sip:4001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

[12] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1182ffec9f6
From: <sip:alice@10.10.199.250>;tag=305862431
To: <sip:alice@10.10.199.215>
Call-ID: 6883a280-b84117e2-ae-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:01:06 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: d7ef5111-0970-4769-89d2-5e1bb714
Content-Type: application/pidf+xml
Content-Length: 838

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-8b998dbf-1c07-f2e4-4858-b44a38e4b5e3">
    <status>
    <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=8b998dbf-1c07-f2e4-4858-
b44a38e4b5e3;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-23T18:01:06Z</timestamp>
  </tuple>
</presence>
```

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

[13] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1194244980e
From: <sip:alice@10.10.199.250>;tag=1992045176
To: <sip:alice@10.10.199.215>
Call-ID: 6883a280-b84117e2-af-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:01:06 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: 6131626c-9438-4782-a5e2-091311c8
Content-Type: application/pidf+xml
Content-Length: 883

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-96738445-678b-f015-7b3e-4aeba2c49019">
    <status>
    <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=96738445-678b-f015-7b3e-
4aeba2c49019;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-23T18:01:06Z</timestamp>
  </tuple>
```

CISCO CONFIDENTIAL

```
</presence>

[diagram]   Call-ID:[prev][next]
[14] PUBLISH sip:bob@10.10.199.215:5070 SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11a32c0dcb1
From: <sip:bob@10.10.199.250>;tag=728819273
To: <sip:bob@10.10.199.215>
Call-ID: 6883a280-b84117e2-b0-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:01:06 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: 39cde282-0a36-41e5-9104-d59e018f
Content-Type: application/pidf+xml
Content-Length: 881

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="bob@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-96738445-678b-f015-7b3e-4aeba2c49019">
    <status>
    <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=96738445-678b-f015-7b3e-
4aeba2c49019;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-23T18:01:06Z</timestamp>
  </tuple>
</presence>

[diagram]   Call-ID:[prev][next]
[15] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1182ffec9f6
CSeq: 101 PUBLISH
Call-ID: 6883a280-b84117e2-ae-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=305862431
To: <sip:alice@10.10.199.215>;tag=9060cfae
Content-Length: 0
SIP-ETag: 0512aede-f9a3-40f9-be8a-a2907c47
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>

[diagram]   Call-ID:[prev][next]
[16] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1194244980e
CSeq: 101 PUBLISH
Call-ID: 6883a280-b84117e2-af-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=1992045176
To: <sip:alice@10.10.199.215>;tag=9510420a
Content-Length: 0
SIP-ETag: 1ad57fb8-62b1-4077-8be3-79168eed
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>

[diagram]   Call-ID:[prev][next]
[17] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11a32c0dcb1
CSeq: 101 PUBLISH
Call-ID: 6883a280-b84117e2-b0-fac712ac@10.10.199.250
From: <sip:bob@10.10.199.250>;tag=728819273
To: <sip:bob@10.10.199.215>;tag=ed7b8e84
Content-Length: 0
SIP-ETag: e44d0a26-a421-4897-b223-b9831e38
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>

[diagram]   Call-ID:[prev][next]
[18] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK117580e85bf
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68990f1da1db-a884b5e4
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
```

CISCO CONFIDENTIAL

```
Date: Tue, 23 Feb 2010 18:01:05 GMT
CSeq: 103 INVITE
Server: Cisco-CP7970G/8.4.0
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 304
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 27481 2 IN IP4 10.10.199.238
s=SIP Call
t=0 0
m=audio 21338 RTP/AVP 0 8 18 9 101
c=IN IP4 10.10.199.238
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:9 G722/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

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

[19] ACK sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11b739aa73a
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68990f1da1db-a884b5e4
Date: Tue, 23 Feb 2010 18:01:06 GMT
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= from; gci= 1-36048;
call-instance= 1
Content-Type: application/sdp
Content-Length: 215

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 28328 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[20] BYE sip:4001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.238:35507;branch=z9hG4bK7c0aaa32
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68990f1da1db-a884b5e4
To: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:01:16 GMT
CSeq: 101 BYE
User-Agent: Cisco-CP7970G/8.4.0
Content-Length: 0
```

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

[21] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.238:35507;branch=z9hG4bK7c0aaa32
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68990f1da1db-a884b5e4
To: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557782
Date: Tue, 23 Feb 2010 18:01:17 GMT
Call-ID: 5dc90d80-b84117d0-ad-fac712ac@10.10.199.250
CSeq: 101 BYE
Content-Length: 0
```

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

[22] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11c123d1da5
From: <sip:alice@10.10.199.250>;tag=293749179
To: <sip:alice@10.10.199.215>
Call-ID: 6f121a00-b84117ed-b1-fac712ac@10.10.199.250
```

CISCO CONFIDENTIAL

```
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:01:17 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: 1ad57fb8-62b1-4077-8be3-79168eed
Content-Type: application/pidf+xml
Content-Length: 838

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-96738445-678b-f015-7b3e-4aeba2c49019">
    <status>
    <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=96738445-678b-f015-7b3e-
4aeba2c49019;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-23T18:01:17Z</timestamp>
  </tuple>
</presence>
```

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

[23] PUBLISH sip:bob@10.10.199.215:5070 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11d7e1eb82c
From: <sip:bob@10.10.199.250>;tag=582980702
To: <sip:bob@10.10.199.215>
Call-ID: 6f121a00-b84117ed-b2-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:01:17 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: e44d0a26-a421-4897-b223-b9831e38
Content-Type: application/pidf+xml
Content-Length: 836

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="bob@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-96738445-678b-f015-7b3e-4aeba2c49019">
    <status>
    <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=96738445-678b-f015-7b3e-
4aeba2c49019;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-23T18:01:17Z</timestamp>
  </tuple>
</presence>
```

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

[24] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11c123d1da5
CSeq: 101 PUBLISH
Call-ID: 6f121a00-b84117ed-b1-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=293749179
To: <sip:alice@10.10.199.215>;tag=ba434c13
Content-Length: 0
SIP-ETag: f57226e7-9c91-4e7f-9990-a72e3a70
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>
```

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

[25] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11d7e1eb82c
CSeq: 101 PUBLISH
```

CISCO CONFIDENTIAL

```
Call-ID: 6f121a00-b84117ed-b2-fac712ac@10.10.199.250
From: <sip:bob@10.10.199.250>;tag=582980702
To: <sip:bob@10.10.199.215>;tag=0be8833b
Content-Length: 0
SIP-ETag: 4559827f-0725-47bb-8512-0138c268
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>
```

CISCO CONFIDENTIAL

17.3 PUBLISH with Shared Line, A Holds and B Selects

Title: PUBLISH with Shared Line, A Holds and B Selects

Description:

Since presence publication is line appearance based, the same directory number on difference phones are treated separately.

- Directory number 4001 on IP PhoneA is associated with CUPS user alice.
- Directory number 4001 on IP PhoneB is associated with CUPS user bob.
- Alice made a phone call, since IP PhoneA owns the call, 4001 on PhoneA is published as busy.
- Alice hold the call. No new PUBLISH message since PhoneA still owns the call.
- Bob selects the call from PhoneB, so PhoneB takes over the call ownership from PhoneA. 4001 on PhoneA is published as idle, and 4001 on PhoneB is published at busy.
- Bob resumes the call. No new PUBLISH message since PhoneB still owns the call.
- Bob hangs up the phone. 4001 on PhoneB is published as idle.

Configuration:

Node = Cisco Unified CM, IP = 10.10.199.250
Node = Cisco Unified CM, IP = 10.10.199.251
Node = Presence Server, IP = 10.10.199.215

Phone = A, Line = 4001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 4001, IP = 10.10.199.66, Model = SCCP
Phone = C, Line = 2002, IP = 10.10.199.179, Model = SCCP

Sip Trunk between CCM1 and CCM2 has route pattern 2.XXXX

Scenario:

Phone A DN 4001 calls Phone C DN 2002 by dialing digits 22002
Phone C rings
Phone C answers. Phone B DN 4001 shows busy sign (red button on line)
Phone A presses hold softkey

CISCO CONFIDENTIAL

Phone B selects the DN 4001 call

Phone B presses resume softkey on DN 4001 call

Phone A gets disconnected, since Phone B resumed the call

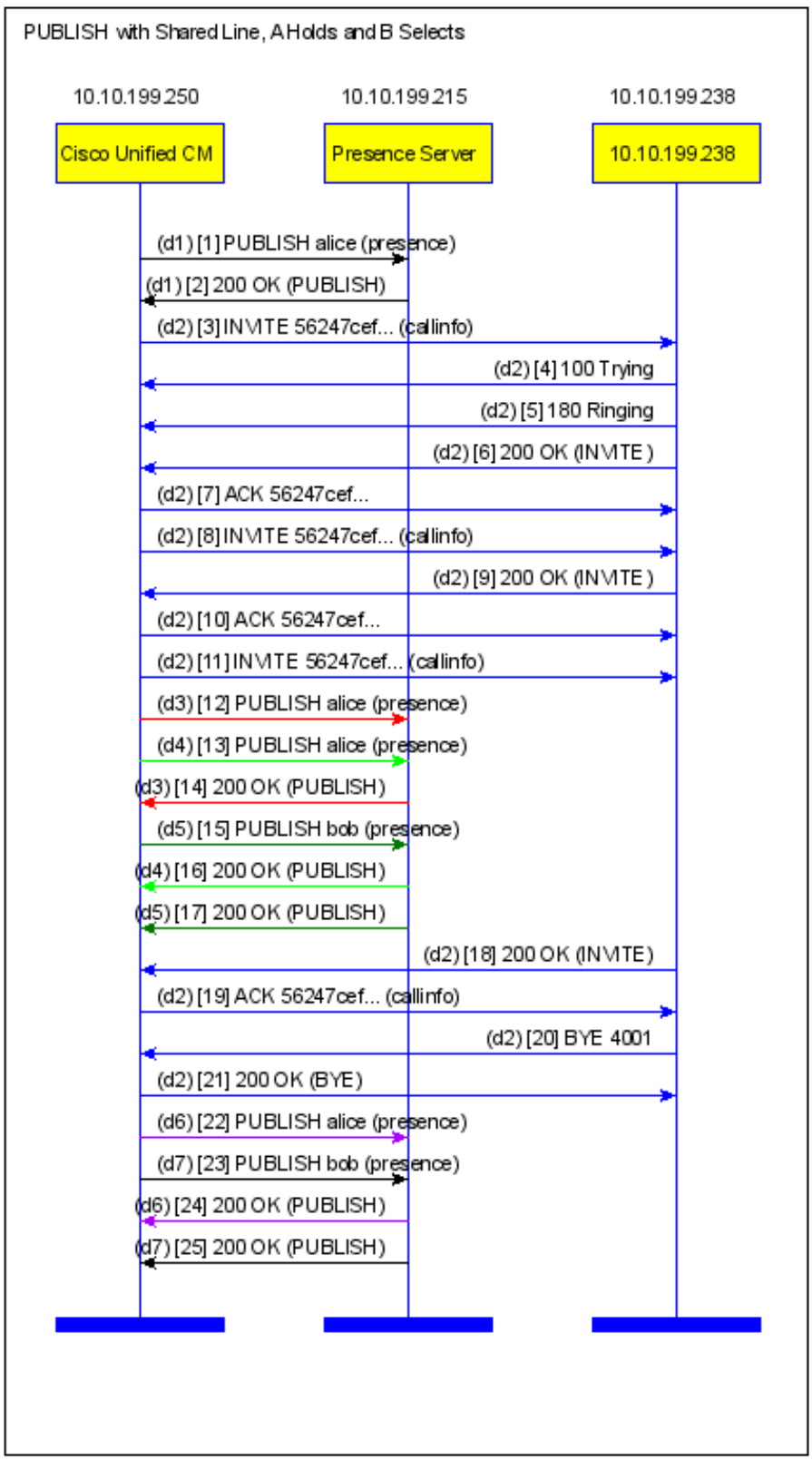
Now Phone B and Phone C talk

Phone B goes onHook

Phone C goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11e60c0a0c2
From: <sip:alice@10.10.199.250>;tag=251530531
To: <sip:alice@10.10.199.215>
Call-ID: 30ca2a00-b8411c8d-b3-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:21:01 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: 0512aede-f9a3-40f9-be8a-a2907c47
Content-Type: application/pidf+xml
Content-Length: 883

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-8b998dbf-1c07-f2e4-4858-b44a38e4b5e3">
    <status>
    <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=8b998dbf-1c07-f2e4-4858-
b44a38e4b5e3;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-23T18:21:01Z</timestamp>
  </tuple>
</presence>
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11e60c0a0c2
CSeq: 101 PUBLISH
Call-ID: 30ca2a00-b8411c8d-b3-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=251530531
To: <sip:alice@10.10.199.215>;tag=ac5afb74
Content-Length: 0
SIP-ETag: 4428d522-cab8-4eda-b58e-0d0b23c1
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>
```

[diagram] Call-ID:[prev][next]
[3] INVITE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11f20c6733e
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>
Date: Tue, 23 Feb 2010 18:21:04 GMT
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
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; gci= 1-36049;
call-instance= 1
Send-Info: conference
Alert-Info: <file://Bellcore-dr1/>
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.250:5060;transport=tcp>
Remote-Party-ID: <sip:4001@10.10.199.250;x-cisco-callback-number=4001>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11f20c6733e
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
Date: Tue, 23 Feb 2010 18:21:03 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.4.0
```

CISCO CONFIDENTIAL

```
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Allow-Events: kpml,dialog
Content-Length: 0
```

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

[5] SIP/2.0 180 Ringing

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11f20c6733e
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68a50f6ac595-bdd363e7
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
Date: Tue, 23 Feb 2010 18:21:03 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.4.0
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 0
```

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

[6] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK11f20c6733e
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68a50f6ac595-bdd363e7
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
Date: Tue, 23 Feb 2010 18:21:07 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.4.0
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 304
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 25175 0 IN IP4 10.10.199.238
s=SIP Call
t=0 0
m=audio 26522 RTP/AVP 0 8 18 9 101
c=IN IP4 10.10.199.238
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:9 G722/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

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

[7] ACK sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1202a4e8db4
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68a50f6ac595-bdd363e7
Date: Tue, 23 Feb 2010 18:21:04 GMT
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 17316 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] INVITE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK12153b15742
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
```

CISCO CONFIDENTIAL

```
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68a50f6ac595-bdd363e7
Date: Tue, 23 Feb 2010 18:21:27 GMT
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 102 INVITE
Max-Forwards: 70
Contact: <sip:4001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= from; gci= 1-36049;
call-instance= 1
Remote-Party-ID: <sip:4001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 221

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 17316 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK12153b15742
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68a50f6ac595-bdd363e7
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
Date: Tue, 23 Feb 2010 18:21:26 GMT
CSeq: 102 INVITE
Server: Cisco-CP7970G/8.4.0
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 209
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 25175 1 IN IP4 10.10.199.238
s=SIP Call
t=0 0
m=audio 26522 RTP/AVP 9 101
c=IN IP4 10.10.199.238
a=rtpmap:9 G722/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=inactive
```

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

[10] ACK sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1223d7d991f
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68a50f6ac595-bdd363e7
Date: Tue, 23 Feb 2010 18:21:27 GMT
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 102 ACK
Allow-Events: presence
Content-Length: 0
```

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

[11] INVITE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK123331e03b3
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68a50f6ac595-bdd363e7
Date: Tue, 23 Feb 2010 18:21:29 GMT
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
```

CISCO CONFIDENTIAL

```
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 103 INVITE
Max-Forwards: 70
Contact: <sip:4001@10.10.199.250:5060;transport=tcp>
Expires: 180
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= from; gci= 1-36049;
call-instance= 1
Remote-Party-ID: <sip:4001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
```

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

[12] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK12465791f48
From: <sip:alice@10.10.199.250>;tag=363342527
To: <sip:alice@10.10.199.215>
Call-ID: 417aa000-b8411ca9-b5-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:21:29 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: 4428d522-cab8-4eda-b58e-0d0b23c1
Content-Type: application/pidf+xml
Content-Length: 838

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-8b998dbf-1c07-f2e4-4858-b44a38e4b5e3">
    <status>
    <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=8b998dbf-1c07-f2e4-4858-
b44a38e4b5e3;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-23T18:21:29Z</timestamp>
  </tuple>
</presence>
```

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

[13] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK12549526613
From: <sip:alice@10.10.199.250>;tag=1569512720
To: <sip:alice@10.10.199.215>
Call-ID: 417aa000-b8411ca9-b6-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:21:29 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: f57226e7-9c91-4e7f-9990-a72e3a70
Content-Type: application/pidf+xml
Content-Length: 883

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-96738445-678b-f015-7b3e-4aeba2c49019">
    <status>
    <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=96738445-678b-f015-7b3e-
4aeba2c49019;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-23T18:21:29Z</timestamp>
  </tuple>
```

CISCO CONFIDENTIAL

```
</presence>

[diagram]   Call-ID:[prev][next]
[14] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK12465791f48
CSeq: 101 PUBLISH
Call-ID: 417aa000-b8411ca9-b5-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=363342527
To: <sip:alice@10.10.199.215>;tag=b93f817a
Content-Length: 0
SIP-ETag: 31869032-9653-4bc6-8d5c-1908229e
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>

[diagram]   Call-ID:[prev][next]
[15] PUBLISH sip:bob@10.10.199.215:5070 SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK12656f239e0
From: <sip:bob@10.10.199.250>;tag=407847295
To: <sip:bob@10.10.199.215>
Call-ID: 417aa000-b8411ca9-b7-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:21:29 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: 4559827f-0725-47bb-8512-0138c268
Content-Type: application/pidf+xml
Content-Length: 881

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="bob@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-96738445-678b-f015-7b3e-4aeba2c49019">
    <status>
    <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=96738445-678b-f015-7b3e-
4aeba2c49019;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-23T18:21:29Z</timestamp>
  </tuple>
</presence>

[diagram]   Call-ID:[prev][next]
[16] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK12549526613
CSeq: 101 PUBLISH
Call-ID: 417aa000-b8411ca9-b6-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=1569512720
To: <sip:alice@10.10.199.215>;tag=ce3ce8ce
Content-Length: 0
SIP-ETag: 54447ffc-053e-4cb3-9043-48256bb8
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>

[diagram]   Call-ID:[prev][next]
[17] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK12656f239e0
CSeq: 101 PUBLISH
Call-ID: 417aa000-b8411ca9-b7-fac712ac@10.10.199.250
From: <sip:bob@10.10.199.250>;tag=407847295
To: <sip:bob@10.10.199.215>;tag=7b2d5b35
Content-Length: 0
SIP-ETag: 65fb11d9-7fe7-4f6b-becf-e1797f98
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>

[diagram]   Call-ID:[prev][next]
[18] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK123331e03b3
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68a50f6ac595-bdd363e7
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
```

CISCO CONFIDENTIAL

```
Date: Tue, 23 Feb 2010 18:21:28 GMT
CSeq: 103 INVITE
Server: Cisco-CP7970G/8.4.0
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 304
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 25175 2 IN IP4 10.10.199.238
s=SIP Call
t=0 0
m=audio 26522 RTP/AVP 0 8 18 9 101
c=IN IP4 10.10.199.238
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:9 G722/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

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

[19] ACK sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:35507;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1276881167a
From: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68a50f6ac595-bdd363e7
Date: Tue, 23 Feb 2010 18:21:29 GMT
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
Max-Forwards: 70
CSeq: 103 ACK
Allow-Events: presence
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= from; gci= 1-36049;
call-instance= 1
Content-Type: application/sdp
Content-Length: 215

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 19602 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[20] BYE sip:4001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.238:35507;branch=z9hG4bKa79fe49d
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68a50f6ac595-bdd363e7
To: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:21:40 GMT
CSeq: 101 BYE
User-Agent: Cisco-CP7970G/8.4.0
Content-Length: 0
```

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

[21] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.238:35507;branch=z9hG4bKa79fe49d
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d68a50f6ac595-bdd363e7
To: <sip:4001@10.10.199.250>;tag=abee6e2b-75b0-4537-80f3-7a3a37d0fa55-32557786
Date: Tue, 23 Feb 2010 18:21:41 GMT
Call-ID: 3293ed80-b8411c90-b4-fac712ac@10.10.199.250
CSeq: 101 BYE
Content-Length: 0
```

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

[22] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1284e8cd008
From: <sip:alice@10.10.199.250>;tag=1673484908
To: <sip:alice@10.10.199.215>
Call-ID: 48a1ae00-b8411cb5-b8-fac712ac@10.10.199.250
```

CISCO CONFIDENTIAL

```
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:21:41 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: 54447ffc-053e-4cb3-9043-48256bb8
Content-Type: application/pidf+xml
Content-Length: 838

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-96738445-678b-f015-7b3e-4aeba2c49019">
    <status>
    <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=96738445-678b-f015-7b3e-
4aeba2c49019;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-23T18:21:41Z</timestamp>
  </tuple>
</presence>

[diagram]   Call-ID:[prev][next]
[23] PUBLISH sip:bob@10.10.199.215:5070 SIP/2.0
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1292588b6ab
From: <sip:bob@10.10.199.250>;tag=1013068553
To: <sip:bob@10.10.199.215>
Call-ID: 48a1ae00-b8411cb5-b9-fac712ac@10.10.199.250
CSeq: 101 PUBLISH
Max-Forwards: 70
Date: Tue, 23 Feb 2010 18:21:41 GMT
User-Agent: Cisco-CUCM8.0
Event: presence
Expires: 3600
SIP-If-Match: 65fb11d9-7fe7-4f6b-becf-e1797f98
Content-Type: application/pidf+xml
Content-Length: 836

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="bob@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-96738445-678b-f015-7b3e-4aeba2c49019">
    <status>
    <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=96738445-678b-f015-7b3e-
4aeba2c49019;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2010-02-23T18:21:41Z</timestamp>
  </tuple>
</presence>

[diagram]   Call-ID:[prev][next]
[24] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1284e8cd008
CSeq: 101 PUBLISH
Call-ID: 48a1ae00-b8411cb5-b8-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=1673484908
To: <sip:alice@10.10.199.215>;tag=140d87eb
Content-Length: 0
SIP-ETag: 503f6288-81fd-4b5d-84d5-330a674b
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>

[diagram]   Call-ID:[prev][next]
[25] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1292588b6ab
CSeq: 101 PUBLISH
```

CISCO CONFIDENTIAL

```
Call-ID: 48a1ae00-b8411cb5-b9-fac712ac@10.10.199.250
From: <sip:bob@10.10.199.250>;tag=1013068553
To: <sip:bob@10.10.199.215>;tag=426c090e
Content-Length: 0
SIP-ETag: 983690d3-9130-4f4f-957c-d3346562
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>
```

CISCO CONFIDENTIAL

17.4 PUBLISH Support for Mobility

Title: PUBLISH Support for Mobility

Description:

This flow shows the PUBLISH support for mobility.

- Directory number 4001 is associated with a remote destination profile, which points to a mobile phone number 9199234040, connected to Unified CM through a SIP Gateway.
- The remote profile is associated with user carl.
- When 4001 is called, mobile number 9199234040 also rings.
- If the mobile phone answers the call, busy status is published. Since the remote destination is a mobile phone, the mobile number is in the PUBLISH message.
- After the call is terminated, idle status is published.

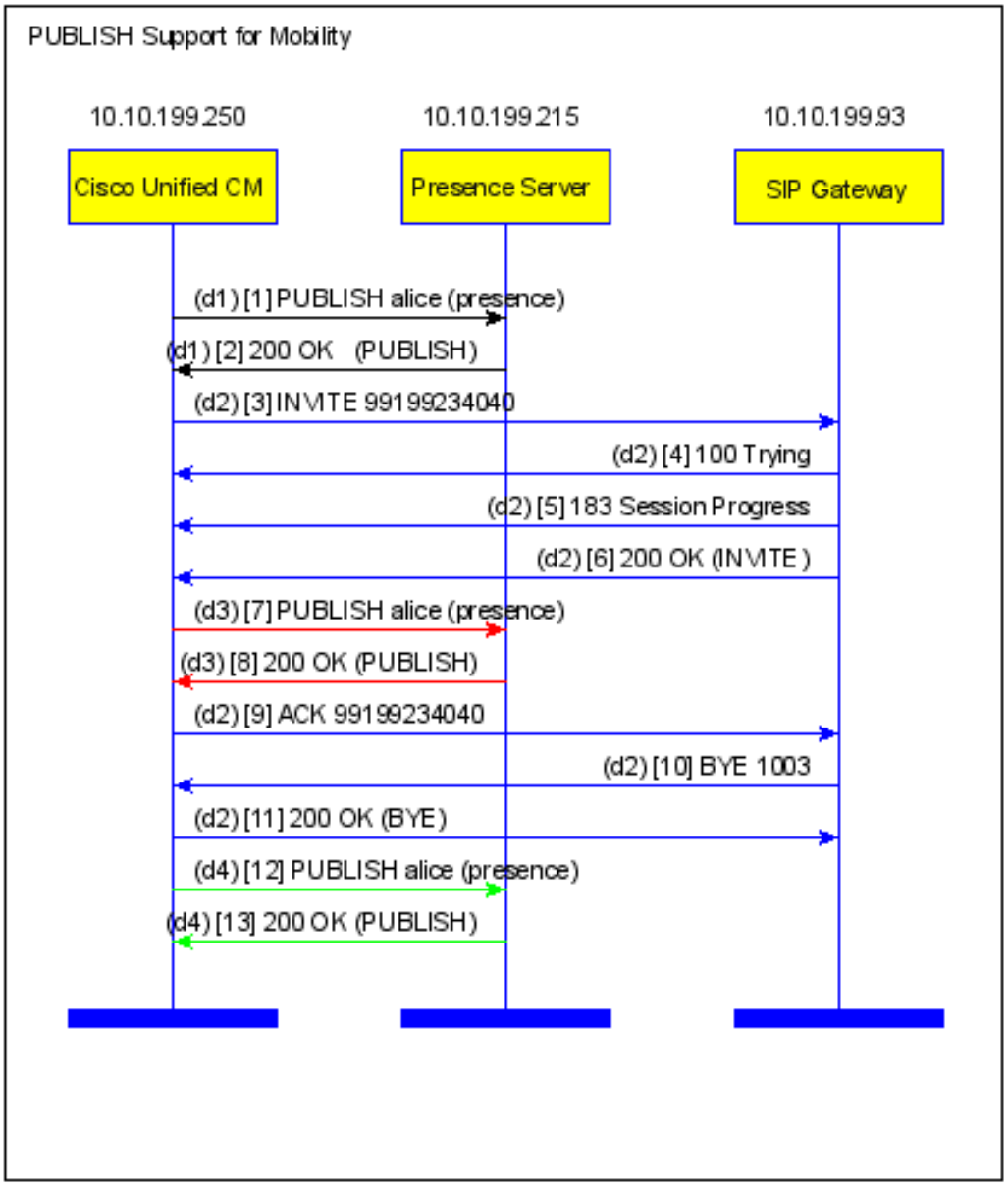
Configuration:

Node = Cisco Unified CM, IP = 10.10.199.250

Node = Presence Server, IP = 10.10.199.215

Node = SIP Gateway, IP = 10.10.199.93

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] PUBLISH sip:alice@10.10.199.215:5060 SIP/2.0
Date: Tue, 23 Feb 2010 17:44:25 GMT
From: <sip:alice@10.10.199.250>;tag=473185106
Event: presence
Content-Length: 838
User-Agent: Cisco-CUCM8.0
To: <sip:alice@10.10.199.215>
Expires: 3600
Content-Type: application/pidf+xml
Call-ID: 53c62800-a371d9f9-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa772bcbdb
CSeq: 101 PUBLISH
Max-Forwards: 70

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-8b998dbf-1c07-f2e4-4858-b44a38e4b5e3">
    <status>
    <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=8b998dbf-1c07-f2e4-4858-
b44a38e4b5e3;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6</contact>
    <model>Cisco 7970</model>
    <timestamp>2009-06-16T17:44:25Z</timestamp>
  </tuple>
</presence>

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;received=10.10.199.250;branch=z9hG4bKa772bcbdb
CSeq: 101 PUBLISH
Call-ID: 53c62800-a371d9f9-9-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=473185106
To: <sip:alice@10.10.199.215>;tag=f66065a9
Content-Length: 0
SIP-ETag: 339dadb0-95b5-43f2-9010-ae928d37
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>

[diagram]   Call-ID:[prev][next]
[3] INVITE sip:99199234040@10.10.199.93:5060 SIP/2.0
Date: Tue, 23 Feb 2010 17:46:24 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411421
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1003@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE:  1800
Remote-Party-ID: <sip:1003@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:99199234040@10.10.199.93>
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 9ab41d80-a371da70-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb191abcf
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[4] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb191abcf
From: <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411421
To: <sip:99199234040@10.10.199.93>;tag=475F05C8-AFE
Date: Tue, 23 Feb 2010 17:47:27 GMT
Call-ID: 9ab41d80-a371da70-a-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow-Events: telephone-event
Content-Length: 0
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 183 Session Progress

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb191abcf
From: <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411421
To: <sip:99199234040@10.10.199.93>;tag=475F05C8-AFE
Date: Tue, 23 Feb 2010 17:47:27 GMT
Call-ID: 9ab41d80-a371da70-a-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:99199234040@10.10.199.93:5060;transport=tcp>
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 333

v=0
o=CiscoSystemsSIP-GW-UserAgent 7154 2643 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 19364 RTP/AVP 0 8 18 101 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=rtpmap:19 CN/8000
```

[diagram] Call-ID:[prev][next]
[6] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb191abcf
From: <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411421
To: <sip:99199234040@10.10.199.93>;tag=475F05C8-AFE
Date: Tue, 23 Feb 2010 17:47:27 GMT
Call-ID: 9ab41d80-a371da70-a-fac712ac@10.10.199.250
Server: Cisco-SIPGateway/IOS-12.x
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, INFO, REGISTER
Allow-Events: telephone-event
Contact: <sip:99199234040@10.10.199.93:5060;transport=tcp>
Session-Expires:  1800;refresher=uac
Require: timer
Content-Type: application/sdp
Content-Disposition: session;handling=required
Content-Length: 333

v=0
o=CiscoSystemsSIP-GW-UserAgent 7154 2643 IN IP4 10.10.199.93
s=SIP Call
c=IN IP4 10.10.199.93
t=0 0
m=audio 19364 RTP/AVP 0 8 18 101 19
c=IN IP4 10.10.199.93
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=rtpmap:19 CN/8000
```

[diagram] Call-ID:[prev][next]
[7] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0

```
Date: Tue, 23 Feb 2010 17:46:28 GMT
From: <sip:alice@10.10.199.250>;tag=219151673
Event: presence
Content-Length: 899
User-Agent: Cisco-CUCM8.0
To: <sip:alice@10.10.199.215>
Expires: 3600
Content-Type: application/pidf+xml
Call-ID: 9d167780-a371da74-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc6514a7f1
CSeq: 101 PUBLISH
Max-Forwards: 70
SIP-If-Match: ed569887-c838-410f-b2b7-e0f79b29
```

CISCO CONFIDENTIAL

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-4cf407b2-c86c-6a45-dac8-412c1341c046">
    <status>
    <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=4cf407b2-c86c-6a45-dac8-
412c1341c046;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6;mobile=99199234040</contact>
    <model>unknown</model>
    <timestamp>2009-06-16T17:46:28Z</timestamp>
  </tuple>
</presence>
```

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

[8] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc6514a7f1
CSeq: 101 PUBLISH
Call-ID: 9d167780-a371da74-b-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=219151673
To: <sip:alice@10.10.199.215>;tag=88921565
Content-Length: 0
SIP-ETag: a0ff049a-90d1-4c43-959f-41d58f95
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>
```

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

[9] ACK sip:99199234040@10.10.199.93:5060;transport=tcp SIP/2.0

```
Date: Tue, 23 Feb 2010 17:46:24 GMT
From: <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411421
Allow-Events: presence, kpml
Content-Length: 215
To: <sip:99199234040@10.10.199.93>;tag=475F05C8-AFE
Content-Type: application/sdp
Call-ID: 9ab41d80-a371da70-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd7d59b8a4
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 26396 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bKC16F2
From: <sip:99199234040@10.10.199.93>;tag=475F05C8-AFE
To: <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411421
Date: Tue, 23 Feb 2010 17:47:32 GMT
Call-ID: 9ab41d80-a371da70-a-fac712ac@10.10.199.250
User-Agent: Cisco-SIPGateway/IOS-12.x
Max-Forwards: 70
Timestamp: 1245174460
CSeq: 101 BYE
Reason: Q.850;cause=16
Content-Length: 0
```

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

[11] SIP/2.0 200 OK

```
Date: Tue, 23 Feb 2010 17:46:37 GMT
From: <sip:99199234040@10.10.199.93>;tag=475F05C8-AFE
Content-Length: 0
To: <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411421
Call-ID: 9ab41d80-a371da70-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.93;branch=z9hG4bKC16F2
CSeq: 101 BYE
```

CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[12] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0
Date: Tue, 23 Feb 2010 17:46:47 GMT
From: <sip:alice@10.10.199.250>;tag=1720047523
Event: presence
Content-Length: 854
User-Agent: Cisco-CUCM8.0
To: <sip:alice@10.10.199.215>
Expires: 3600
Content-Type: application/pidf+xml
Call-ID: a869a300-a371da87-c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe709f258c
CSeq: 101 PUBLISH
Max-Forwards: 70
SIP-If-Match: a0ff049a-90d1-4c43-959f-41d58f95

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="0a02af61-9166-5a4a-f251-25d3e9351bf6-4cf407b2-c86c-6a45-dac8-412c1341c046">
    <status>
    <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:4001@10.10.199.250:5060;dpkid=4cf407b2-c86c-6a45-dac8-
412c1341c046;npkid=0a02af61-9166-5a4a-f251-25d3e9351bf6;mobile=99199234040</contact>
    <model>unknown</model>
    <timestamp>2009-06-16T17:46:47Z</timestamp>
  </tuple>
</presence>

[diagram]   Call-ID:[prev][next]
[13] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe709f258c
CSeq: 101 PUBLISH
Call-ID: a869a300-a371da87-c-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=1720047523
To: <sip:alice@10.10.199.215>;tag=e21401c9
Content-Length: 0
SIP-ETag: 847b2f49-b007-47bc-b90f-e37d1570
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>
```

CISCO CONFIDENTIAL

17.5 PUBlISH Support for DND

Title: PUBlISH Support for DND

Description:

This flow shows the PUBLISH support for DND. DND status is published independent of the line appearance's busy/idle status.

- Directory number 1001 is associated with an end user alice.
- Phone DND turned.
- When the phone becomes busy, DND status is published as well.
- When the phone becomes idle, DND status is published as well.

Configuration:

Node = Cisco Unified CM, IP = 10.10.199.250

Node = Presence Server, IP = 10.10.199.215

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

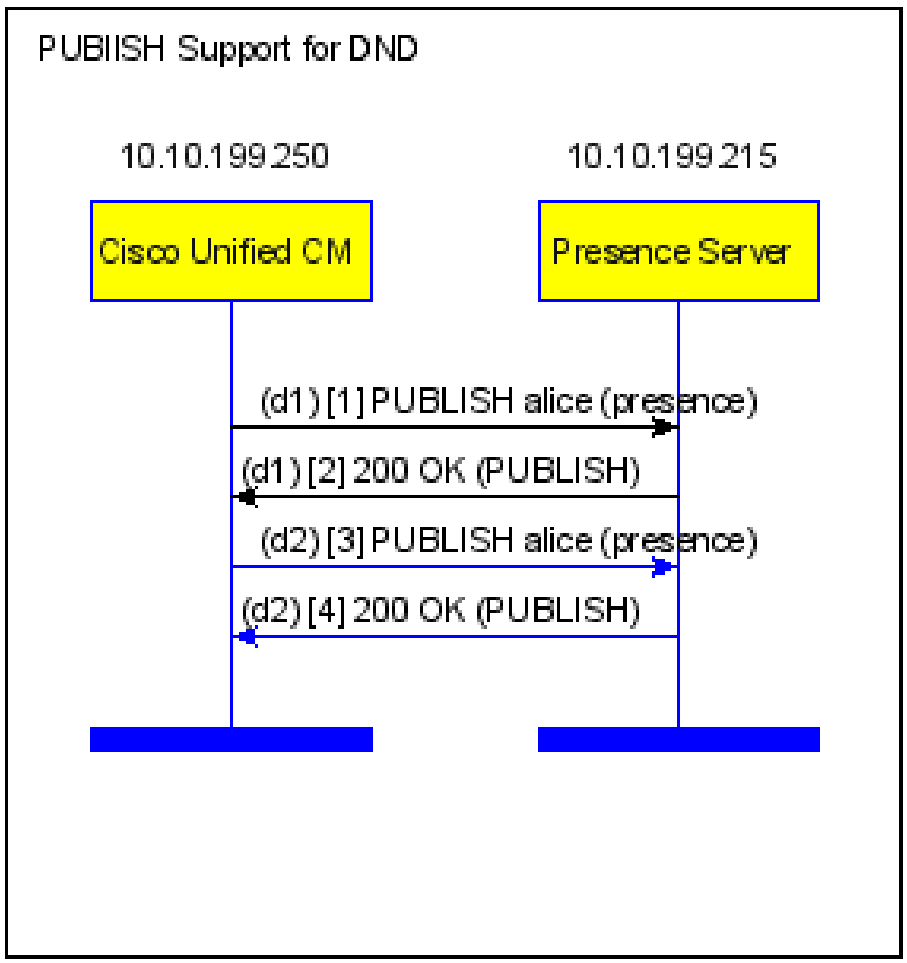
Scenario:

Phone A offHook

Phone A onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0
Date: Tue, 23 Feb 2010 19:13:15 GMT
From: <sip:alice@10.10.199.250>;tag=1248830532
Event: presence
Content-Length: 967
User-Agent: Cisco-CUCM8.0
To: <sip:alice@10.10.199.215>
Expires: 3600
Content-Type: application/pidf+xml
Call-ID: 93cf5d00-a2e1b44b-1e-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2cf2adbd8
CSeq: 101 PUBLISH
Max-Forwards: 70
SIP-If-Match: 2b9b64b9-0903-43db-a72c-deed564f

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="77ae8b01-67fb-7a3e-8bf8-3fb9a77ef111-8b998dbf-1c07-f2e4-4858-b44a38e4b5e3">
    <status>
    <basic>closed</basic>
    </status>
    <r:activities><r:busy/></r:activities>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
    </sc:servcaps>
    <contact priority="0.8">sip:1001@10.10.199.250:5060;dpkid=8b998dbf-1c07-f2e4-4858-
b44a38e4b5e3;npkid=77ae8b01-67fb-7a3e-8bf8-3fb9a77ef111</contact>
    <model>Cisco 7970</model>
    <timestamp>2009-06-09T19:13:15Z</timestamp>
  </tuple>
  <dm:person>
    <r:activities>
      <ce:dnd/>
    </r:activities>
  </dm:person>
</presence>

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2cf2adbd8
CSeq: 101 PUBLISH
Call-ID: 93cf5d00-a2e1b44b-1e-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=1248830532
To: <sip:alice@10.10.199.215>;tag=f83a539e
Content-Length: 0
SIP-ETag: d1c9ff82-861c-491c-9735-dcfb47f7
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>

[diagram]   Call-ID:[prev][next]
[3] PUBLISH sip:alice@10.10.199.215:5070 SIP/2.0
Date: Tue, 23 Feb 2010 19:13:19 GMT
From: <sip:alice@10.10.199.250>;tag=1558792911
Event: presence
Content-Length: 922
User-Agent: Cisco-CUCM8.0
To: <sip:alice@10.10.199.215>
Expires: 3600
Content-Type: application/pidf+xml
Call-ID: 9631b700-a2e1b44f-1f-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2d6c8faa9d
CSeq: 101 PUBLISH
Max-Forwards: 70
SIP-If-Match: d1c9ff82-861c-491c-9735-dcfb47f7

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<presence xmlns="urn:ietf:params:xml:ns:pidf" entity="alice@10.10.199.250"
xmlns:r="urn:ietf:params:xml:ns:pidf:status:rpid" xmlns:ce="urn:cisco:params:xml:ns:pidf:rpid"
xmlns:dm="urn:ietf:params:xml:ns:pidf:data-model" xmlns:so="urn:cisco:params:xml:ns:pidf:source"
xmlns:sc="urn:ietf:params:xml:ns:pidf:servcaps">
  <tuple id="77ae8b01-67fb-7a3e-8bf8-3fb9a77ef111-8b998dbf-1c07-f2e4-4858-b44a38e4b5e3">
    <status>
    <basic>open</basic>
    </status>
    <sc:servcaps>
      <sc:audio>true</sc:audio>
```

CISCO CONFIDENTIAL

```
    </sc:servcaps>
    <contact priority="0.8">sip:1001@10.10.199.250:5060;dpkid=8b998dbf-1c07-f2e4-4858-
b44a38e4b5e3;npkid=77ae8b01-67fb-7a3e-8bf8-3fb9a77ef111</contact>
    <model>Cisco 7970</model>
    <timestamp>2009-06-09T19:13:19Z</timestamp>
  </tuple>
  <dm:person>
    <r:activities>
      <ce:dnd/>
    </r:activities>
  </dm:person>
</presence>
```

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

[4] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2d6c8faa9d
CSeq: 101 PUBLISH
Call-ID: 9631b700-a2e1b44f-1f-fac712ac@10.10.199.250
From: <sip:alice@10.10.199.250>;tag=1558792911
To: <sip:alice@10.10.199.215>;tag=01e94eea
Content-Length: 0
SIP-ETag: 458ba51f-ca66-4e1b-9ff4-6b627b22
Expires: 3600
Contact: <sip:10.10.199.215:5070;transport=tcp>
```

CISCO CONFIDENTIAL

18. G.729

18.1 Establish G.729a with No MTP

Title: Establish G.729a with No MTP

Description:

This feature allows for calls with pre-allocated MTP to be initiated with low bandwidth codecs such as G729.

The CM1 is configured with MTP Required and the G.729a codec on SIP Trunk going to CM2. CM2 trunk doesn't have MTP Required checked.

External MTP is attaced to Unified CM1.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251
Node = External MTP, IP = 10.10.199.163

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

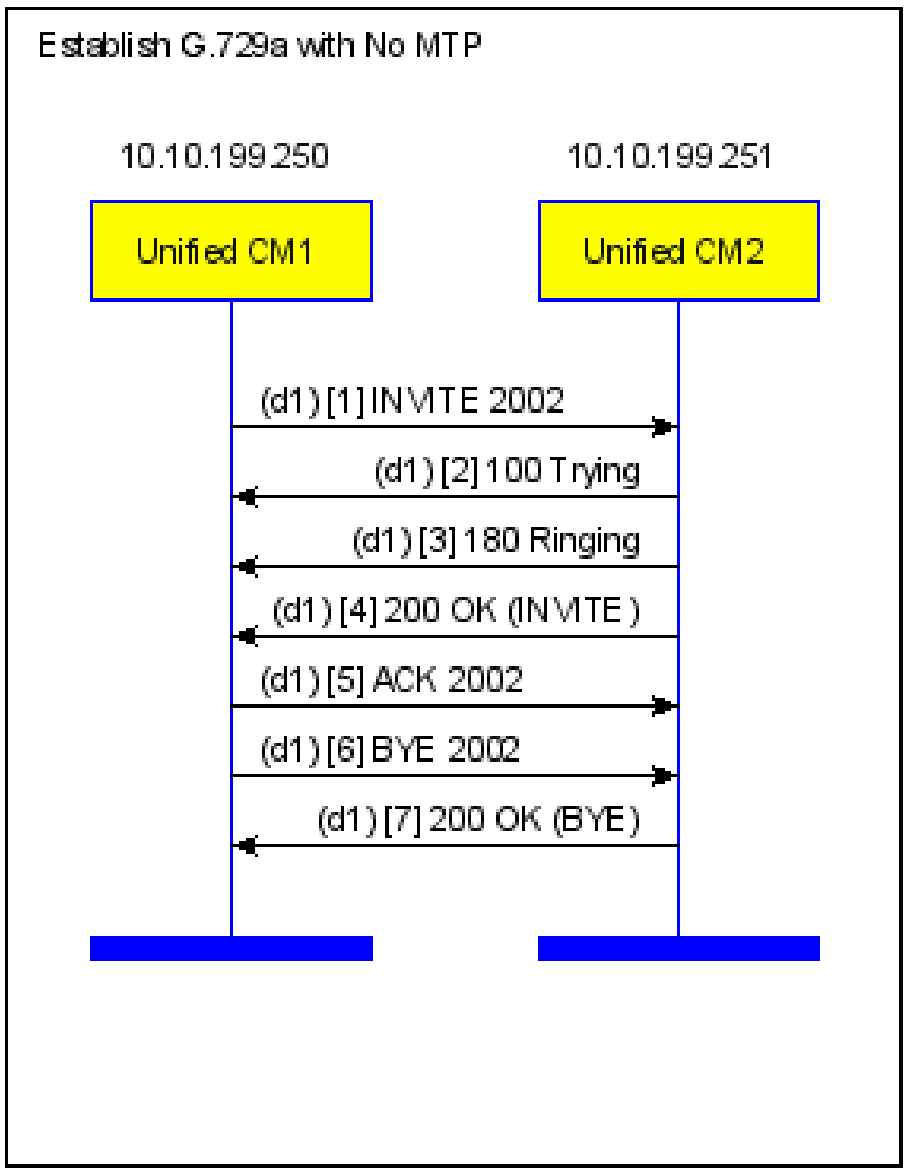
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers
Phone A DN 1001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

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

[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0

```
Date: Tue, 09 Jun 2009 16:02:12 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674102
Allow-Events: presence
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE:  1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 239
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: e3545f80-a2e18784-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb3f404d92
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.163
t=0 0
m=audio 18542 RTP/AVP 18 101
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[2] SIP/2.0 100 Trying

```
Date: Tue, 09 Jun 2009 16:03:26 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674102
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: e3545f80-a2e18784-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb3f404d92
CSeq: 101 INVITE
```

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

[3] SIP/2.0 180 Ringing

```
Date: Tue, 09 Jun 2009 16:03:26 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674102
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674177
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: e3545f80-a2e18784-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb3f404d92
CSeq: 101 INVITE
```

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

[4] SIP/2.0 200 OK

```
Date: Tue, 09 Jun 2009 16:03:26 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674102
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 239
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674177
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: e3545f80-a2e18784-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb3f404d92
CSeq: 101 INVITE
```

CISCO CONFIDENTIAL

```
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 25606 RTP/AVP 18 101
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 09 Jun 2009 16:02:12 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674102
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674177
Call-ID: e3545f80-a2e18784-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKcaad2f0b
CSeq: 101 ACK
Max-Forwards: 70
```

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

[6] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 09 Jun 2009 16:02:12 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674102
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674177
Call-ID: e3545f80-a2e18784-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd5c572dd0
CSeq: 102 BYE
Max-Forwards: 70
```

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

[7] SIP/2.0 200 OK

```
Date: Tue, 09 Jun 2009 16:03:34 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674102
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674177
Call-ID: e3545f80-a2e18784-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd5c572dd0
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

18.2 Establish G.729 with MTP

Title: Establish G.729 with MTP

Description:

This feature allows for calls with pre-allocated MTP to be initiate with low bandwidth codecs such as G729.

The CM1 is configured with MTP required and the G.729a codec on SIP Trunk going to CM2. CM2 trunk has MTP Required with G.711ulaw codec on SIP Trunk going to CM1

External MTP is attached to CM1.
External MTP is attached to CM2.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251
Node = External MTP, IP = 10.10.199.163
Node = External MTP, IP = 10.10.199.164

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

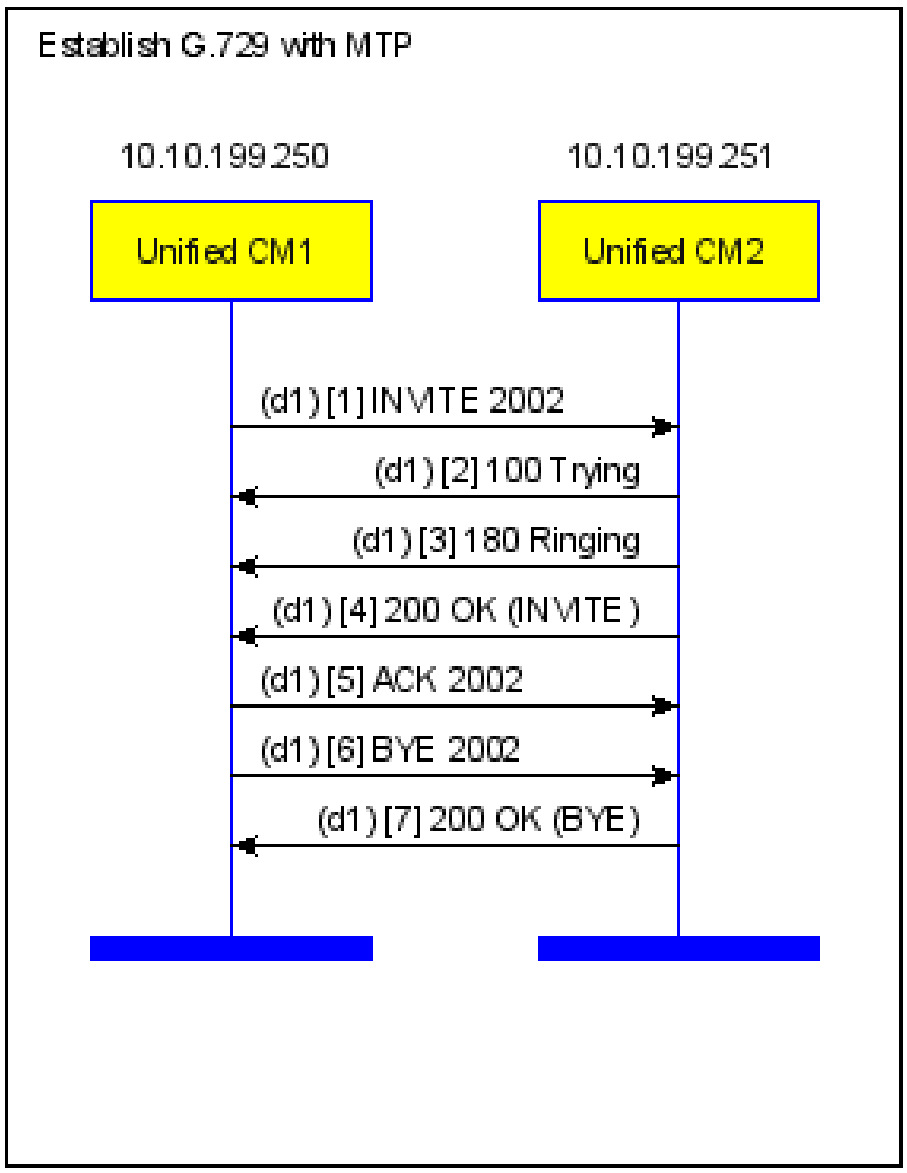
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers
Phone A DN 1001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

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

[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0

```
Date: Tue, 09 Jun 2009 16:08:02 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674105
Allow-Events: presence
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE:  1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 239
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: b3f22280-a2e188e2-8-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe145ee3fe
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.163
t=0 0
m=audio 18478 RTP/AVP 18 101
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[2] SIP/2.0 100 Trying

```
Date: Tue, 09 Jun 2009 16:09:16 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674105
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: b3f22280-a2e188e2-8-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe145ee3fe
CSeq: 101 INVITE
```

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

[3] SIP/2.0 180 Ringing

```
Date: Tue, 09 Jun 2009 16:09:16 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674105
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674179
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: b3f22280-a2e188e2-8-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe145ee3fe
CSeq: 101 INVITE
```

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

[4] SIP/2.0 200 OK

```
Date: Tue, 09 Jun 2009 16:09:16 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674105
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 239
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674179
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: b3f22280-a2e188e2-8-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe145ee3fe
CSeq: 101 INVITE
```

CISCO CONFIDENTIAL

```
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.164
t=0 0
m=audio 18096 RTP/AVP 18 101
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 09 Jun 2009 16:08:02 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674105
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674179
Call-ID: b3f22280-a2e188e2-8-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKf6b6155e5
CSeq: 101 ACK
Max-Forwards: 70
```

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

[6] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 09 Jun 2009 16:08:02 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674105
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674179
Call-ID: b3f22280-a2e188e2-8-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1076584e96
CSeq: 102 BYE
Max-Forwards: 70
```

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

[7] SIP/2.0 200 OK

```
Date: Tue, 09 Jun 2009 16:09:23 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674105
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674179
Call-ID: b3f22280-a2e188e2-8-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1076584e96
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

18.3 Delayed Media Call with No MTP

Title: Delayed Media Call with No MTP

Description:

This feature allows for calls with pre-allocated MTP to be initiate with low bandwidth codecs such as G729.

The CM1 is not configured with MTP required on SIP Trunk going to CM2.
CM2 has MTP Required with G.711ulaw codec on SIP Trunk going to CM1

External MTP1 is attached to CCM1.
External MTP2 is attached to CCM2.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251
Node = External MTP, IP = 10.10.199.163
Node = External MTP, IP = 10.10.199.164

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

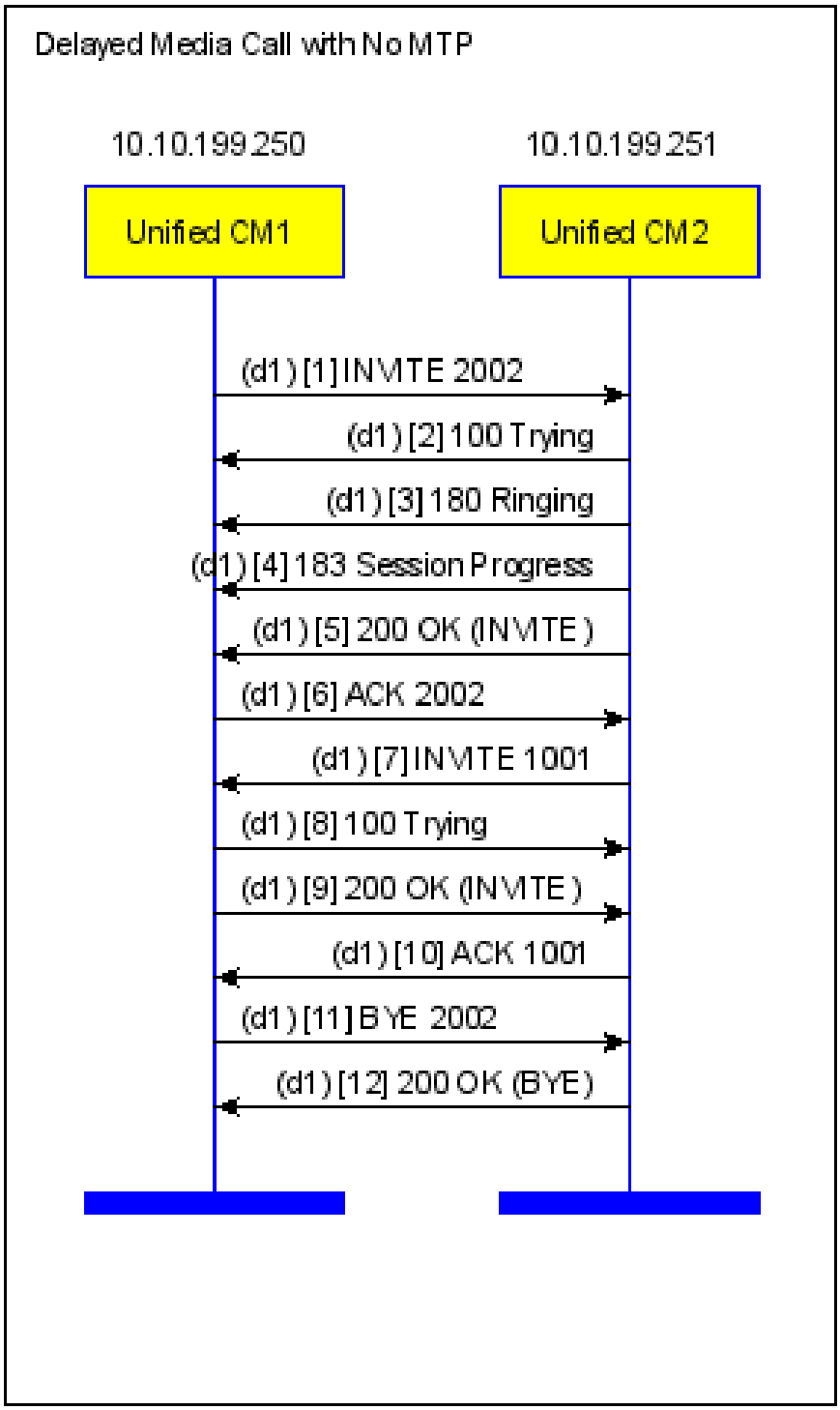
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers
Phone A DN 1001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Tue, 09 Jun 2009 18:05:05 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674110
Allow-Events: presence
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: dfae400-a2e1a451-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK147461810b
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Tue, 09 Jun 2009 18:06:19 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674110
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: dfae400-a2e1a451-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK147461810b
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Tue, 09 Jun 2009 18:06:19 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674110
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674185
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: dfae400-a2e1a451-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK147461810b
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Tue, 09 Jun 2009 18:06:19 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674110
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 263
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674185
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: dfae400-a2e1a451-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK147461810b
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 4000 RTP/AVP 0 8 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 200 OK

```
Date: Tue, 09 Jun 2009 18:06:19 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674110
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 263
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674185
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: dfae400-a2e1a451-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK147461810b
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 4000 RTP/AVP 0 8 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]
[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 09 Jun 2009 18:05:05 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674110
Allow-Events: presence
Content-Length: 228
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674185
Content-Type: application/sdp
Call-ID: dfae400-a2e1a451-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1519d3eb90
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 19478 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]
[7] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Tue, 09 Jun 2009 18:06:21 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674185
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674110
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: dfae400-a2e1a451-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK96135f1b9
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.251
t=0 0
m=audio 24602 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Tue, 09 Jun 2009 18:05:07 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674185
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674110
Call-ID: dfae400-a2e1a451-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK96135f1b9
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Tue, 09 Jun 2009 18:05:07 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674185
Allow-Events: presence
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 216
Require:  timer
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674110
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: dfae400-a2e1a451-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK96135f1b9
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 19478 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Tue, 09 Jun 2009 18:06:21 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674185
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674110
Call-ID: dfae400-a2e1a451-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKa3a9d10b0
CSeq: 101 ACK
Max-Forwards: 70
```

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

[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 09 Jun 2009 18:05:07 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674110
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674185
Call-ID: dfae400-a2e1a451-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1636fde52a
CSeq: 102 BYE
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Tue, 09 Jun 2009 18:06:26 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674110
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674185
Call-ID: dfae400-a2e1a451-a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1636fde52a
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

18.4 Delayed Media Call No Support

Title: Delayed Media Call No Support

Description:

This feature allows for calls with pre-allocated MTP to be initiate with low bandwidth codecs such as G729.

The CM1 is configured with MTP required and G.729a codec on SIP Trunk going to CM2.
No MTP device is configured that supports G.729a,
CM2 trunk has no MTP Required checked.

External MTP is attached to CCM1

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251
Node = External MTP, IP = 10.10.199.163

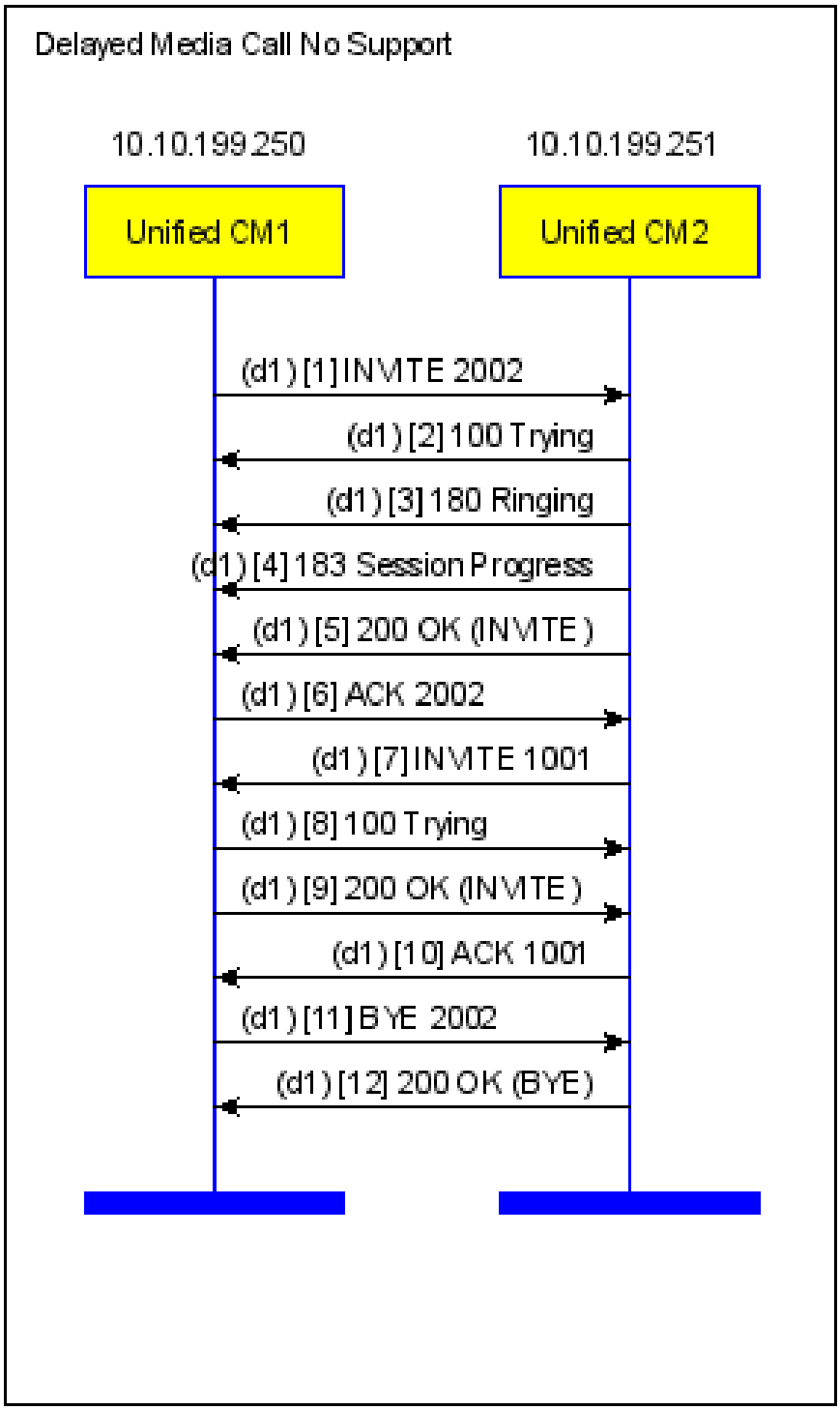
Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers
Phone A DN 1001 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Tue, 09 Jun 2009 18:17:52 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674112
Allow-Events: presence
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: d725cd80-a2e1a750-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK172327f2d1
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Tue, 09 Jun 2009 18:19:07 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674112
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: d725cd80-a2e1a750-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK172327f2d1
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Tue, 09 Jun 2009 18:19:07 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674112
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674188
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: d725cd80-a2e1a750-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK172327f2d1
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Tue, 09 Jun 2009 18:19:07 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674112
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674188
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: d725cd80-a2e1a750-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK172327f2d1
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20

CISCO CONFIDENTIAL

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

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

[5] SIP/2.0 200 OK

```
Date: Tue, 09 Jun 2009 18:19:07 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674112
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674188
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: d725cd80-a2e1a750-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK172327f2d1
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 09 Jun 2009 18:17:52 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674112
Allow-Events: presence
Content-Length: 228
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674188
Content-Type: application/sdp
Call-ID: d725cd80-a2e1a750-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1868d07e7f
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.250
t=0 0
m=audio 24638 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Tue, 09 Jun 2009 18:19:09 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674188
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674112
```

CISCO CONFIDENTIAL

```
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: d725cd80-a2e1a750-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb1ed0c5dc
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 20426 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Tue, 09 Jun 2009 18:17:54 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674188
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674112
Call-ID: d725cd80-a2e1a750-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb1ed0c5dc
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Tue, 09 Jun 2009 18:17:54 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674188
Allow-Events: presence
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 216
Require:  timer
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674112
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: d725cd80-a2e1a750-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb1ed0c5dc
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.250
t=0 0
m=audio 24638 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Tue, 09 Jun 2009 18:19:09 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674188
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674112
Call-ID: d725cd80-a2e1a750-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc28e800a
CSeq: 101 ACK
Max-Forwards: 70
```

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

[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 09 Jun 2009 18:17:54 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674112
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
```

CISCO CONFIDENTIAL

```
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674188
Call-ID: d725cd80-a2e1a750-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK193fa0a37
CSeq: 102 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Tue, 09 Jun 2009 18:19:15 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-28674112
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-28674188
Call-ID: d725cd80-a2e1a750-b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK193fa0a37
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

19. PAI

19.1 Basic Outgoing Call with default identity configurations on SIP Trunk

Title: Basic Outgoing Call with default identity configurations on SIP Trunk

Description:

Basic Unified CM to Unified CM SIP Trunk Call with default configurations, Asserted-Identity[v] & Remote-Party-Id[v]

The following basic call flow illustrates the SIP messaging for an outgoing SIP Trunk call from a Unified CM1 to a remote Unified CM2.

The Unified CM1 sends an INVITE over the SIP Trunk and Unified CM2 sends 100, 180 and 200 SIP Response

messages.

The INVITE request carries a Remote-Party-Id & Asserted-Identity headers. There is "no" Privacy header sent

as Display name & Number are not restricted.

The 180 & 200 response messages carry the Alerting & Connected Name in Remote-Party-Id & Asserted-Identity headers.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 & Unified CM2 has

a) route pattern 2.XXXX

b) Has destination port configured to be 5060

c) Remote-Party-Id [v] Asserted-Identity [v], SIP Privacy= Default, Asserted-Type=Default

Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002

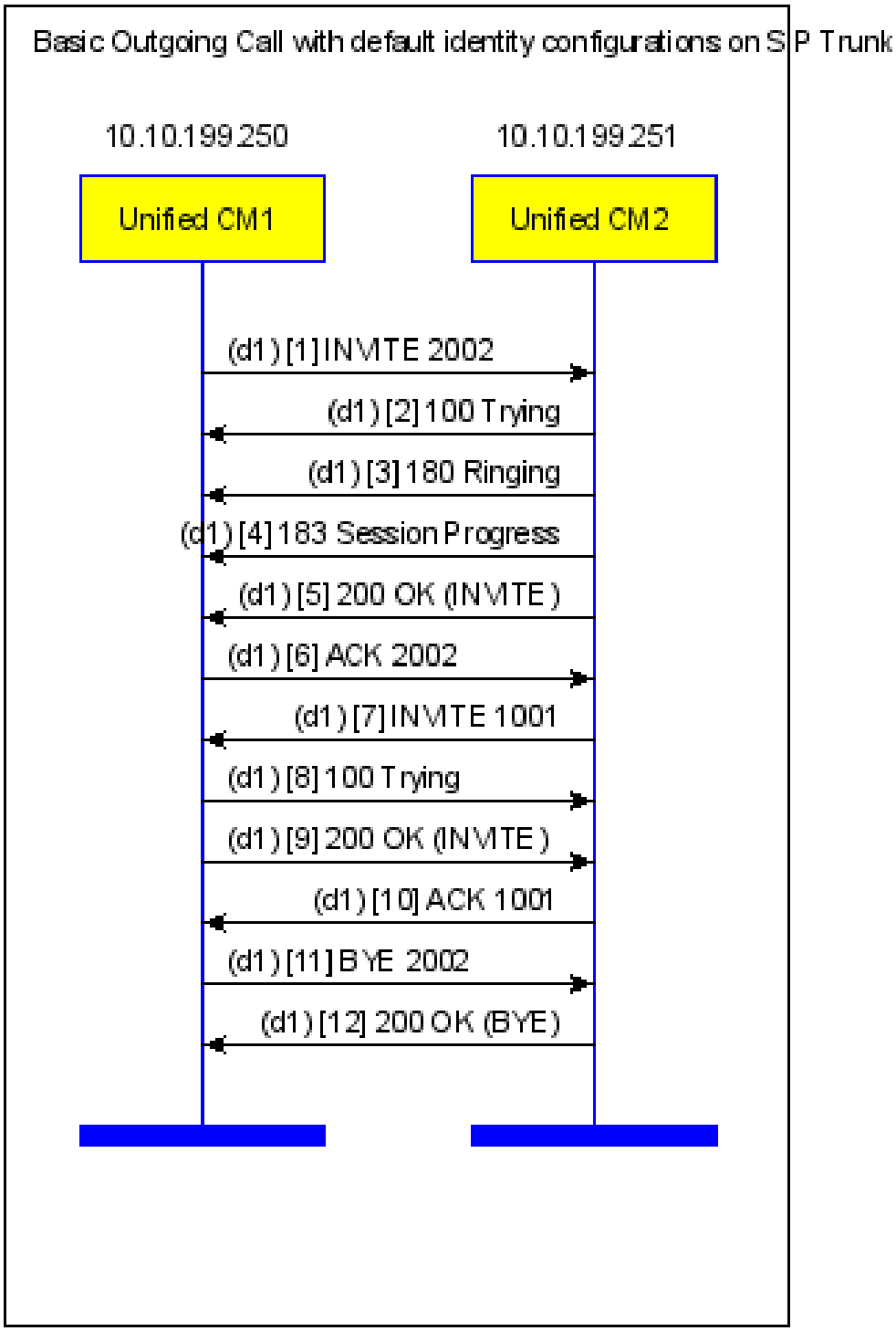
Phone B DN 2002 Answers

CISCO CONFIDENTIAL

Phone A goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:17:15 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763522
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE:  1800
Remote-Party-ID: "Alice, Connect" <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: b0901d00-a2812bcb-25-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK744bbb208f
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 20:18:17 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763522
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: b0901d00-a2812bcb-25-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK744bbb208f
CSeq: 101 INVITE

[diagram]   Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 20:18:17 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763522
Allow-Events: presence
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763438
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: b0901d00-a2812bcb-25-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK744bbb208f
CSeq: 101 INVITE

[diagram]   Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 20:18:17 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763522
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763438
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: b0901d00-a2812bcb-25-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK744bbb208f
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 20:18:17 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763522
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763438
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: b0901d00-a2812bcb-25-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK744bbb208f
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:17:15 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763522
Allow-Events: presence, kpml
Content-Length: 228
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763438
Content-Type: application/sdp
Call-ID: b0901d00-a2812bcb-25-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK751863e465
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22274 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 20:18:21 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763438
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
```

CISCO CONFIDENTIAL

```
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763522
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: b0901d00-a2812bcb-25-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7322d63d7b
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 32066 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 20:17:19 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763438
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763522
Call-ID: b0901d00-a2812bcb-25-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7322d63d7b
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 20:17:19 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763438
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Alice, Connect" <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 216
Require:  timer
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763522
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: b0901d00-a2812bcb-25-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7322d63d7b
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22274 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:18:21 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763438
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763522
Call-ID: b0901d00-a2812bcb-25-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7412ef9bb2
CSeq: 101 ACK
Max-Forwards: 70
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 20:17:19 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763522
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763438
Call-ID: b0901d00-a2812bcb-25-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK763017d295
CSeq: 102 BYE
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 20:18:28 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763522
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763438
Call-ID: b0901d00-a2812bcb-25-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK763017d295
CSeq: 102 BYE

CISCO CONFIDENTIAL

19.2 Basic Outgoing Call with identity in only From header

Title: Basic Outgoing Call with identity in only From header

Description:

Basic Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [] Asserted-Identity [] i.e no RPID or Asserted-Identity

The following basic call flow illustrates the SIP messaging for an outgoing SIP Trunk call from a Unified CM1 to a remote Unified CM2.

The Unified CM1 sends an INVITE over the SIP Trunk for inviting Unified CM2 to the call.

The INVITE request carries a Display Name/Number identity in a From header with no Remote-Party-Id or Asserted-Identity headers.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 to Unified CM2 has

a) route pattern 2.XXXX

b) Has destination port configured to be 5060

c) Remote-Party-Id [] Asserted-Identity [], SIP Privacy=Default, Asserted-Type=Default

Scenario:

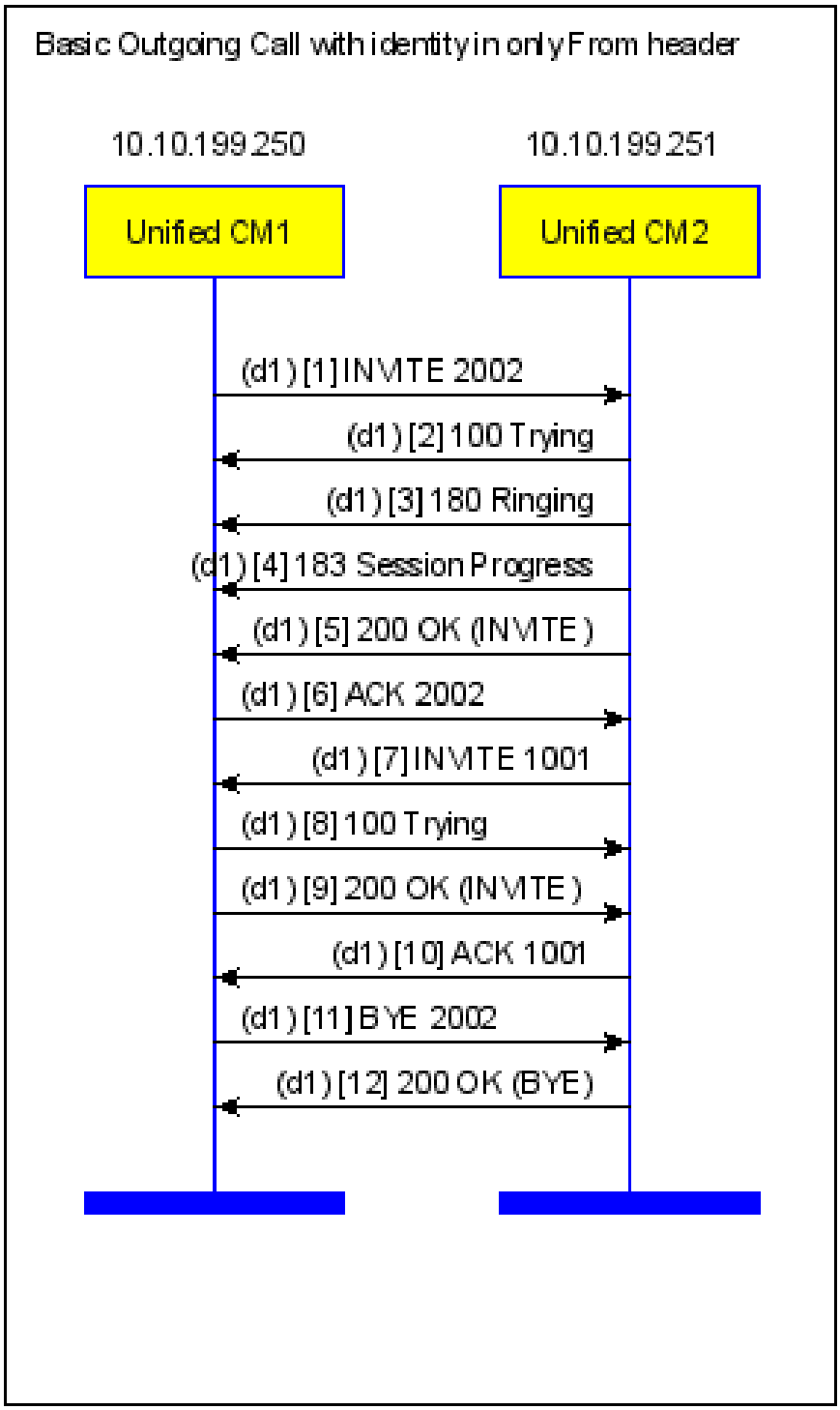
Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002

Phone B answers the call

Phone A goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:14:21 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763546
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: aa9e3a00-a281392d-29-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9538be33c1
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 21:15:23 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763546
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: aa9e3a00-a281392d-29-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9538be33c1
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 21:15:23 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763546
Allow-Events: presence
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763458
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: aa9e3a00-a281392d-29-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9538be33c1
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 21:15:23 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763546
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763458
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: aa9e3a00-a281392d-29-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9538be33c1
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000

CISCO CONFIDENTIAL

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

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:15:23 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763546
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763458
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: aa9e3a00-a281392d-29-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9538be33c1
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:14:21 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763546
Allow-Events: presence, kpml
Content-Length: 228
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763458
Content-Type: application/sdp
Call-ID: aa9e3a00-a281392d-29-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK964ca82ce5
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 20578 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:15:25 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763458
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
```

CISCO CONFIDENTIAL

```
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763546
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: aa9e3a00-a281392d-29-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK877452933
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 30366 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:14:23 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763458
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763546
Call-ID: aa9e3a00-a281392d-29-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK877452933
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:14:23 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763458
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Content-Length: 216
Require:  timer
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763546
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: aa9e3a00-a281392d-29-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK877452933
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 20578 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:15:25 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763458
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763546
Call-ID: aa9e3a00-a281392d-29-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8861773fd
CSeq: 101 ACK
Max-Forwards: 70
```

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

[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:14:23 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763546
```

CISCO CONFIDENTIAL

```
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763458
Call-ID: aa9e3a00-a281392d-29-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9770f715c5
CSeq: 102 BYE
Max-Forwards: 70
```

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

[12] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:15:31 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763546
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763458
Call-ID: aa9e3a00-a281392d-29-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9770f715c5
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

19.3 Basic Outgoing Call with only Remote-Party-Id

Title: Basic Outgoing Call with only Remote-Party-Id

Description:

Basic Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [v] Asserted-Identity []
The following basic call flow illustrates the SIP messaging for an outgoing SIP Trunk call from a Unified CM1 to a remote Unified CM2.

The Unified CM1 sends an INVITE over the SIP Trunk for inviting Unified CM2 to the call.
The INVITE request carries a Remote-Party-Id header & no Asserted-Identity header.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

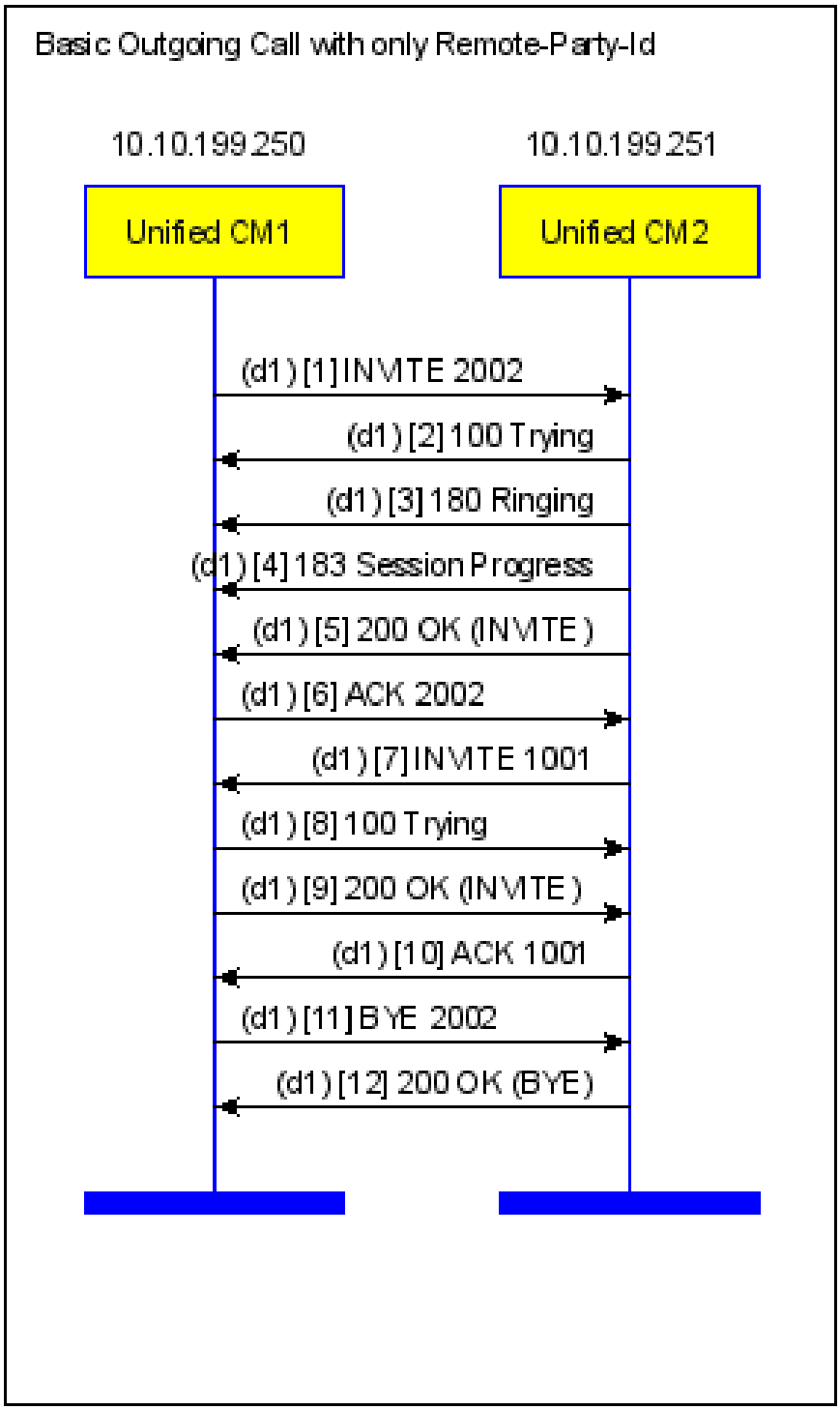
SIP Trunk from Unified CM1 to Unified CM2 has
a) route pattern 2.XXXX
b) Has destination port configured to be 5060
c) Remote-Party-Id [v] Asserted-Identity [], SIP Privacy= Default, Asserted-Type=Default

Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B answers the call
Phone A goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:18:31 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: "Alice, Connect" <sip:1001@10.10.199.250;x-cisco-callback-
number=1001>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9b54182bfa
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 21:19:33 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9b54182bfa
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 21:19:33 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Allow-Events: presence
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9b54182bfa
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 21:19:33 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9b54182bfa
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:19:33 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9b54182bfa
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:18:31 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Allow-Events: presence, kpml
Content-Length: 228
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Content-Type: application/sdp
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9c3bf50e5e
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 29162 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:19:35 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
```

CISCO CONFIDENTIAL

```
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8b30ecba8b
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 22566 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:18:33 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8b30ecba8b
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:18:33 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Alice, Connect" <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 216
Require:  timer
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8b30ecba8b
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 29162 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:19:35 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8cac63254
CSeq: 101 ACK
Max-Forwards: 70
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:18:33 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9d1e899078
CSeq: 102 BYE
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:19:39 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9d1e899078
CSeq: 102 BYE

CISCO CONFIDENTIAL

19.4 Basic Outgoing Call with identity in P-Preferred-Identity header.

Title: Basic Outgoing Call with identity in P-Preferred-Identity header.

Description:

Basic Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [] Asserted-Identity [v], Asserted-Type=PPI

The following basic call flow illustrates the SIP messaging for an outgoing SIP Trunk call from a Unified CM1 to a remote Unified CM2.

The Unified CM1 sends an INVITE over the SIP Trunk for inviting Unified CM2 to the call.
The INVITE request carries a P-Preferred-Identity header.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

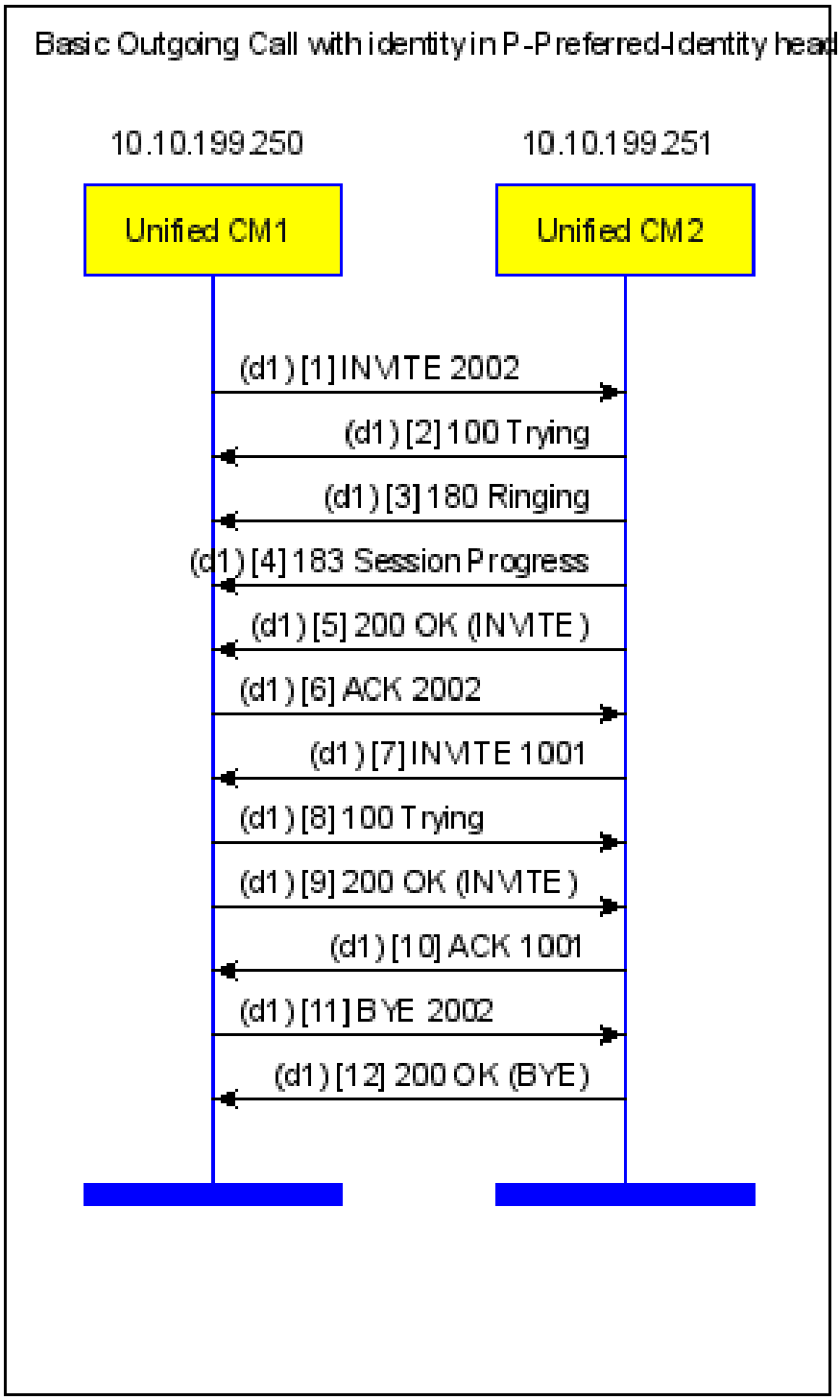
Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 & Unified CM2 has
a) route pattern 2.XXXX
b) Has destination port configured to be 5060
c) Remote-Party-Id [] Asserted-Identity [v], SIP Privacy= Default, Asserted-Type=PPI

Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B answers the call
Phone A goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Date: Thu, 04 Jun 2009 21:21:17 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE:  1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9e6c0faefd
CSeq: 101 INVITE
P-Preferred-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Session-Expires:  1800
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Date: Thu, 04 Jun 2009 21:22:20 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9e6c0faefd
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Date: Thu, 04 Jun 2009 21:22:20 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Allow-Events: presence
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9e6c0faefd
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Date: Thu, 04 Jun 2009 21:22:20 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9e6c0faefd
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
```

CISCO CONFIDENTIAL

```
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:22:20 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9e6c0faefd
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:21:17 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Allow-Events: presence, kpml
Content-Length: 228
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Content-Type: application/sdp
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9f2dafc04f
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 29476 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:22:22 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
```

CISCO CONFIDENTIAL

```
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8d6d313e3e
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 22880 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:21:20 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8d6d313e3e
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:21:20 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Content-Length: 216
Require:  timer
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8d6d313e3e
CSeq: 101 INVITE
P-Preferred-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 29476 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:22:22 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8e771e3cc3
CSeq: 101 ACK
Max-Forwards: 70
```

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

[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

CISCO CONFIDENTIAL

```
Date: Thu, 04 Jun 2009 21:21:20 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa06d942a7e
P-Preferred-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
CSeq: 102 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:22:28 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa06d942a7e
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

19.5 Basic Incoming SIP TrunkCall, sending 180/200 with Asserted-Identity & Privacy:id

Title: Basic Incoming SIP TrunkCall, sending 180/200 with Asserted-Identity & Privacy:id

Description:

Basic Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [] Asserted-Identity [v] and SIP Privacy =Id

The following basic call flow illustrates the SIP messaging for an incoming SIP Trunk call to a Unified CM1 from a remote Unified CM2.

The Unified CM1 is shown sending 180 and 200 OK for to Unified CM2.

The 180 and 200 OK response messages carries a Privacy & Asserted-Identity headers.
Based on SIP Privacy=Id configuration, there is a Privacy:id header sent

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

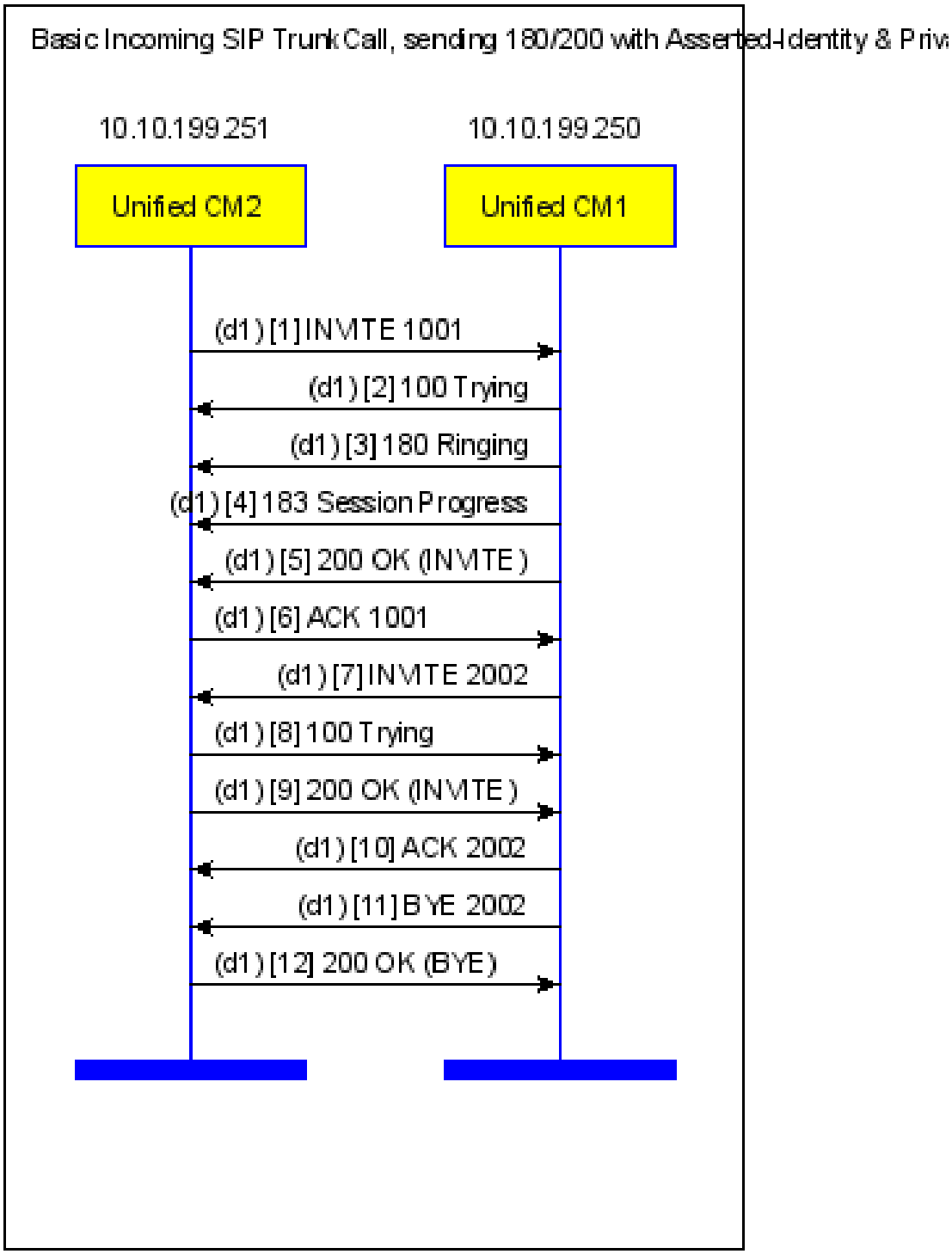
Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 to Unified CM2 has
a) route pattern 2.XXXX
b) Has destination port configured to be 5060
c) Remote-Party-Id [] Asserted-Identity [v], Asserted-Type=Default, SIP Privacy=Id

Scenario:

Phone Phone B DN 2002 calls A DN 1001 over the SIP Trunk by dialing 11001
Phone A answers the call
Phone A goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:29:58 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763443
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:1001@10.10.199.250>
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Call-ID: 7758ac80-a2812ec6-19-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK77358fcce1
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 20:28:57 GMT
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763443
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>
Call-ID: 7758ac80-a2812ec6-19-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK77358fcce1
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 20:28:57 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763443
Allow-Events: presence
P-Asserted-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Supported: Geolocation
Content-Length: 0
Privacy: id
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763525
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Call-ID: 7758ac80-a2812ec6-19-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK77358fcce1
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 20:28:57 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763443
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Supported: Geolocation
Content-Length: 337
Privacy: id
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763525
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 7758ac80-a2812ec6-19-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK77358fcce1
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 20:28:57 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763443
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: replaces
Supported: Geolocation
Content-Length: 337
Require:  timer
Privacy: id
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763525
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 7758ac80-a2812ec6-19-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK77358fcce1
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:29:58 GMT
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763443
Allow-Events: presence, kpml
Content-Length: 228
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763525
Content-Type: application/sdp
Call-ID: 7758ac80-a2812ec6-19-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK78a975bc6
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 20084 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:28:59 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763525
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
```

CISCO CONFIDENTIAL

```
Min-SE:  1800
Content-Length: 216
User-Agent: Cisco-CUCM8.0
Privacy: id
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763443
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 7758ac80-a2812ec6-19-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7a25512f5c
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 26694 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 20:30:01 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763525
Allow-Events: presence, kpml
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763443
Call-ID: 7758ac80-a2812ec6-19-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7a25512f5c
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 20:30:01 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763525
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 216
Require:  timer
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763443
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 7758ac80-a2812ec6-19-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7a25512f5c
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 20084 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:28:59 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763525
Allow-Events: presence, kpml
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763443
Call-ID: 7758ac80-a2812ec6-19-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7b63475377
CSeq: 101 ACK
Max-Forwards: 70
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 20:28:59 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763525
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763443
Call-ID: 7758ac80-a2812ec6-19-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7c25f0f600
CSeq: 102 BYE
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 20:30:07 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763525
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763443
Call-ID: 7758ac80-a2812ec6-19-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7c25f0f600
CSeq: 102 BYE

CISCO CONFIDENTIAL

19.6 Incoming SIP TrunkCall, sending identity in Asserted-Identity with Privacy:none

Title: Incoming SIP TrunkCall, sending identity in Asserted-Identity with Privacy:none

Description:

Basic Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [] Asserted-Identity [v] and SIP Privacy =None

The following basic call flow illustrates the SIP messaging for an incoming SIP Trunk call to a Unified CM1 from a remote Unified CM2.

The Unified CM1 is shown sending 180 and 200 OK for to Unified CM2.

The 180 and 200 OK response messages carries an identity in Asserted-Identity header.

Based on SIP Privacy=None configuration, there is a Privacy:none header sent

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 to Unified CM2 has

a) route pattern 2.XXXX

b) Has destination port configured to be 5060

c) Remote-Party-Id [] Asserted-Identity [v], Asserted-Type=Default, SIP Privacy=None

Scenario:

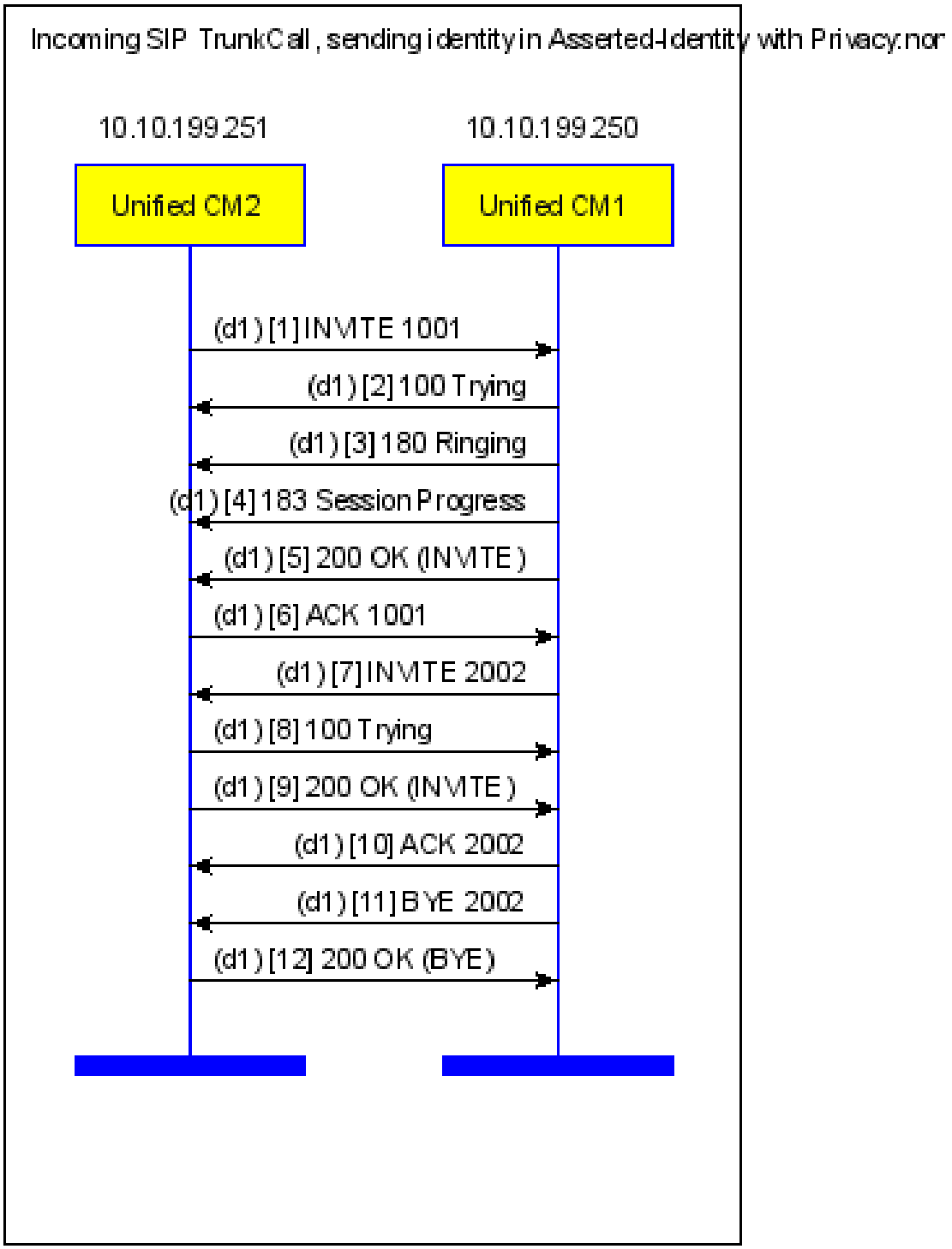
Phone Phone B DN 2002 calls A DN 1001 over the SIP Trunk by dialing 11001

Phone A answers the call

Phone A goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:38:10 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763445
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:1001@10.10.199.250>
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Call-ID: 9c99ea80-a28130b2-1a-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK795df1e97f
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 20:37:08 GMT
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763445
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>
Call-ID: 9c99ea80-a28130b2-1a-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK795df1e97f
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 20:37:08 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763445
Allow-Events: presence
P-Asserted-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Supported: Geolocation
Content-Length: 0
Privacy: none
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763527
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Call-ID: 9c99ea80-a28130b2-1a-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK795df1e97f
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 20:37:08 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763445
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Supported: Geolocation
Content-Length: 337
Privacy: none
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763527
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 9c99ea80-a28130b2-1a-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK795df1e97f
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 20:37:08 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763445
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: replaces
Supported: Geolocation
Content-Length: 337
Require:  timer
Privacy: none
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763527
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 9c99ea80-a28130b2-1a-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK795df1e97f
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:38:10 GMT
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763445
Allow-Events: presence, kpml
Content-Length: 228
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763527
Content-Type: application/sdp
Call-ID: 9c99ea80-a28130b2-1a-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7a122e08ff
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 20082 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:37:10 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763527
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
```

CISCO CONFIDENTIAL

```
Min-SE:  1800
Content-Length: 216
User-Agent: Cisco-CUCM8.0
Privacy: none
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763445
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 9c99ea80-a28130b2-1a-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7d6a393852
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 26692 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 20:38:12 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763527
Allow-Events: presence, kpml
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763445
Call-ID: 9c99ea80-a28130b2-1a-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7d6a393852
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 20:38:12 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763527
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 216
Require:  timer
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763445
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 9c99ea80-a28130b2-1a-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7d6a393852
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 20082 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:37:10 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763527
Allow-Events: presence, kpml
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763445
Call-ID: 9c99ea80-a28130b2-1a-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7edb261fb
CSeq: 101 ACK
Max-Forwards: 70
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 20:37:10 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763527
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763445
Call-ID: 9c99ea80-a28130b2-1a-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7f23a5864e
CSeq: 102 BYE
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 20:38:17 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763527
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763445
Call-ID: 9c99ea80-a28130b2-1a-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK7f23a5864e
CSeq: 102 BYE

CISCO CONFIDENTIAL

19.7 Basic Incoming SIP TrunkCall

Title: Basic Incoming SIP TrunkCall

Description:

Basic Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [V] Asserted-Identity [v] and

SIP Privacy =Id

The following basic call flow illustrates the SIP messaging for an incoming SIP Trunk call to a Unified CM1 from a remote Unified CM2.

The Unified CM1 is shown sending 180 and 200 OK for to Unified CM2.

The 180 and 200 OK response messages carries a Remote-Party-Id & Asserted-Identity headers.

Based on SIP Privacy=Id configuration, there is a Privacy:id header sent

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 to Unified CM2 has

a) route pattern 2.XXXX

b) Has destination port configured to be 5060

c) Remote-Party-Id [v] Asserted-Identity [v], Asserted-Type=Default, SIP Privacy=Id

Scenario:

Phone Phone B DN 2002 calls A DN 1001 over the SIP Trunk by dialing 11001

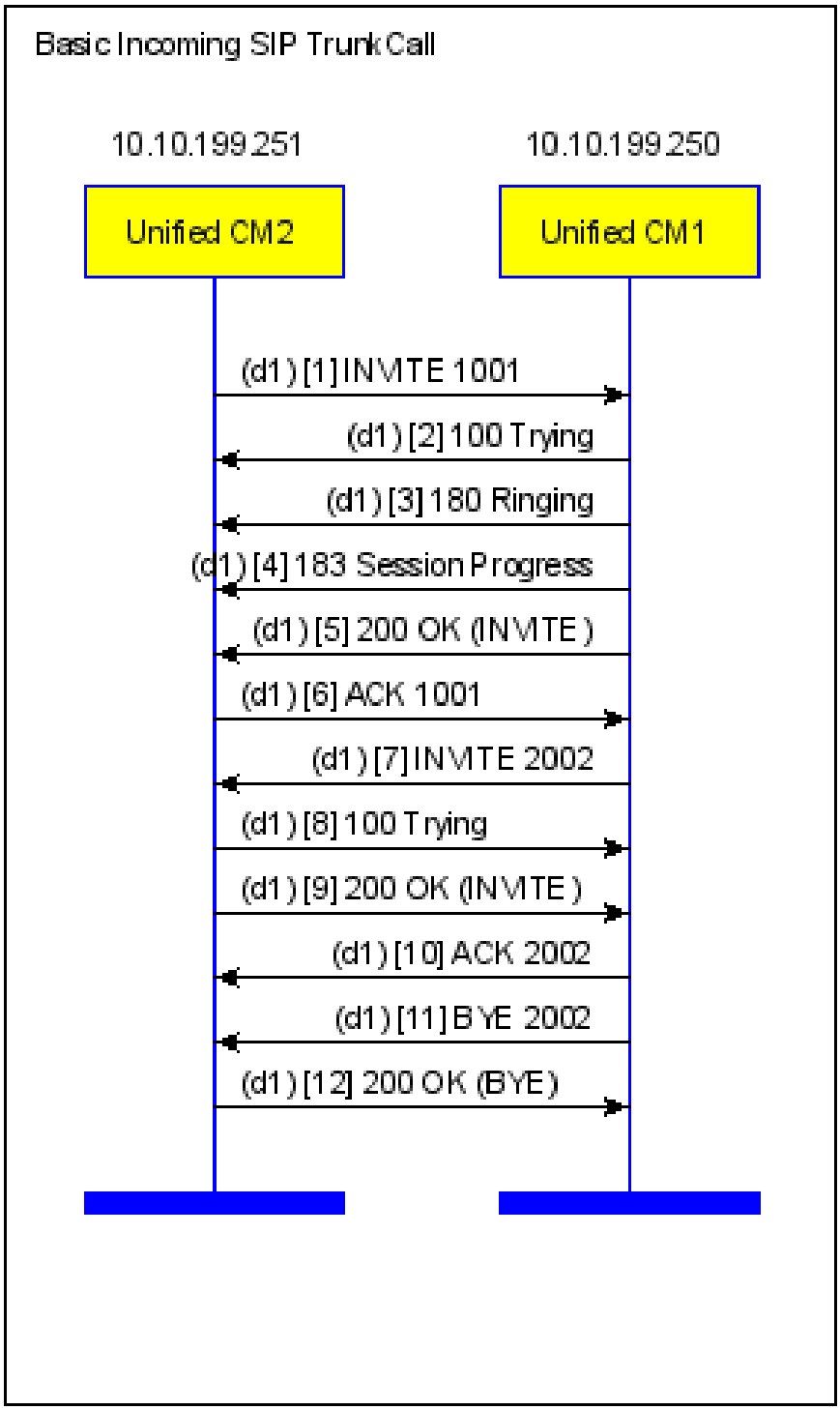
PhoneA answers the call

PhoneA goes onHook

End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:42:41 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763447
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:1001@10.10.199.250>
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Call-ID: 3e213c00-a28131c1-1b-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7b76ae3d81
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 20:41:39 GMT
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763447
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>
Call-ID: 3e213c00-a28131c1-1b-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7b76ae3d81
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 20:41:39 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763447
Allow-Events: presence
P-Asserted-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Supported: Geolocation
Remote-Party-ID: "Alice, Alert" <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 0
Privacy: id
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763529
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Call-ID: 3e213c00-a28131c1-1b-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7b76ae3d81
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 20:41:39 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763447
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Supported: Geolocation
Remote-Party-ID: "Alice, Alert" <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 337
Privacy: id
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763529
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 3e213c00-a28131c1-1b-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7b76ae3d81
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 20:41:39 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763447
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Alice, Connect" <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
Privacy: id
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763529
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 3e213c00-a28131c1-1b-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7b76ae3d81
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:42:41 GMT
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763447
Allow-Events: presence, kpml
Content-Length: 228
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763529
Content-Type: application/sdp
Call-ID: 3e213c00-a28131c1-1b-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7c47b789f1
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 30806 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:41:41 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763529
```

CISCO CONFIDENTIAL

```
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "Alice, Connect" <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
Privacy: id
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763447
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 3e213c00-a28131c1-1b-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK804150b0a4
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 21032 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 20:42:43 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763529
Allow-Events: presence, kpml
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763447
Call-ID: 3e213c00-a28131c1-1b-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK804150b0a4
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 20:42:43 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763529
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 216
Require:  timer
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763447
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 3e213c00-a28131c1-1b-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK804150b0a4
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 30806 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:41:41 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763529
Allow-Events: presence, kpml
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763447
Call-ID: 3e213c00-a28131c1-1b-fbc712ac@10.10.199.251
```

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK817e182edf
CSeq: 101 ACK
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 20:41:41 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763529
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763447
Call-ID: 3e213c00-a28131c1-1b-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8247c650d0
CSeq: 102 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 20:42:49 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763529
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763447
Call-ID: 3e213c00-a28131c1-1b-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8247c650d0
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

19.8 Incoming SIP TrunkCall, sending 180, 200 without any identity headers

Title: Incoming SIP TrunkCall, sending 180, 200 without any identity headers

Description:

Basic Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [] Asserted-Identity []

The following basic call flow illustrates the SIP messaging for an incoming SIP Trunk call to a Unified CM1 from a remote Unified CM2.

The Unified CM1 is shown sending 180 and 200 OK for to Unified CM2.

The 180 and 200 OK response messages doesn't carry Remote-Party-Id or Asserted-Identity headers.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 to Unified CM2 has

a) route pattern 2.XXXX

b) Has destination port configured to be 5060

c) Remote-Party-Id [], Asserted-Identity [], Asserted-Type=Default, SIP Privacy=Default

Scenario:

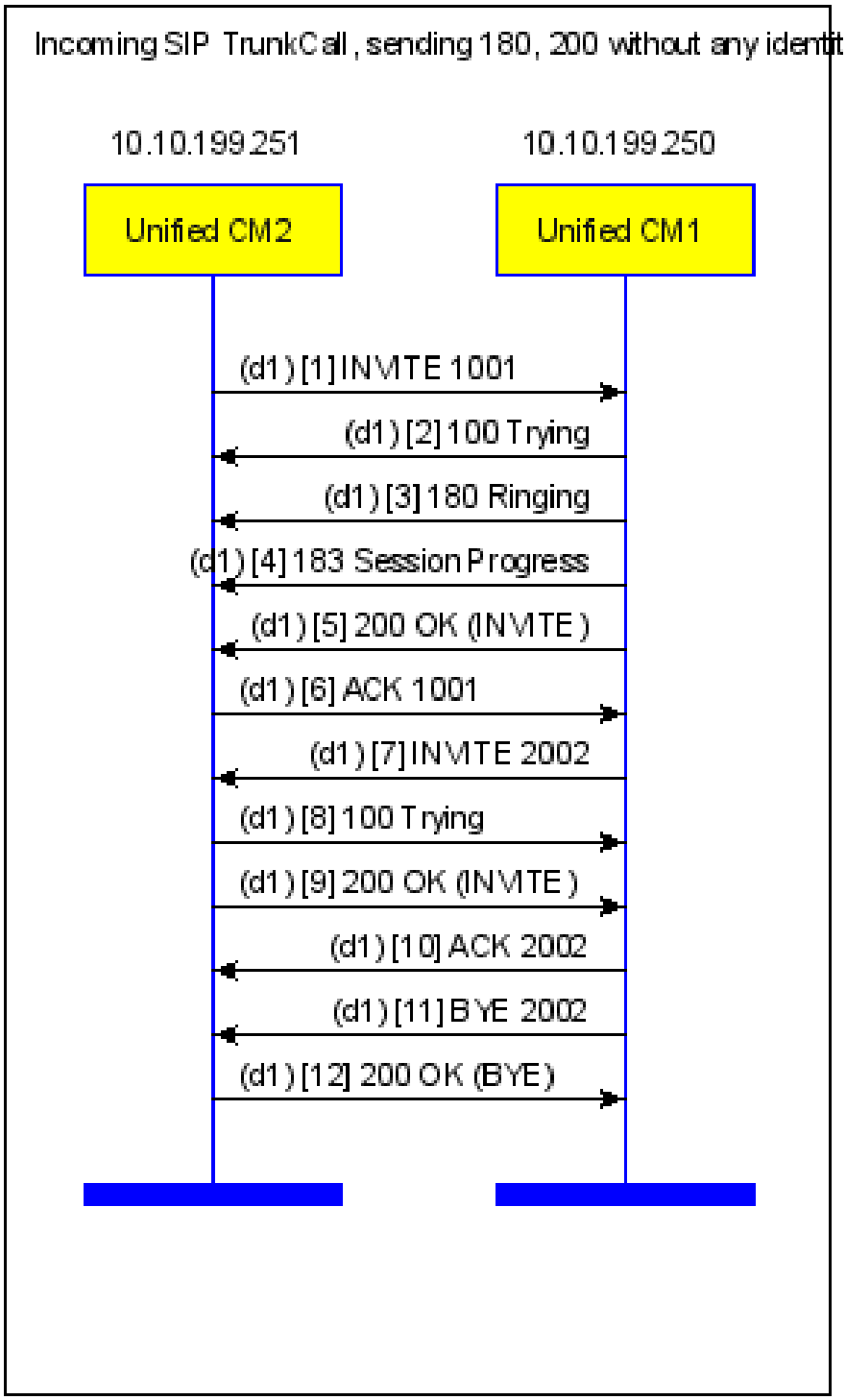
Phone Phone B DN 2002 calls A DN 1001 over the SIP Trunk by dialing 11001

Phone A answers the call

Phone A goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:47:41 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763449
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:1001@10.10.199.250>
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Call-ID: f0f19a00-a28132ed-1c-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7d64d92530
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 20:46:39 GMT
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763449
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>
Call-ID: f0f19a00-a28132ed-1c-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7d64d92530
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 20:46:39 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763449
Allow-Events: presence
Supported: Geolocation
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763531
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Call-ID: f0f19a00-a28132ed-1c-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7d64d92530
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 20:46:39 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763449
Allow-Events: presence, kpml
Supported: Geolocation
Content-Length: 337
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763531
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: f0f19a00-a28132ed-1c-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7d64d92530
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly

CISCO CONFIDENTIAL

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

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

```
[5] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 20:46:39 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763449
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Content-Length: 337
Require:  timer
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763531
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: f0f19a00-a28132ed-1c-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7d64d92530
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[6] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 20:47:41 GMT
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763449
Allow-Events: presence, kpml
Content-Length: 228
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763531
Content-Type: application/sdp
Call-ID: f0f19a00-a28132ed-1c-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7e4ffa4a07
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 28014 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

```
[7] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 20:46:41 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763531
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763449
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
```

CISCO CONFIDENTIAL

```
Call-ID: f0f19a00-a28132ed-1c-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK83139884f9
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 18242 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 20:47:43 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763531
Allow-Events: presence, kpml
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763449
Call-ID: f0f19a00-a28132ed-1c-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK83139884f9
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 20:47:43 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763531
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 216
Require:  timer
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763449
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: f0f19a00-a28132ed-1c-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK83139884f9
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 28014 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:46:41 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763531
Allow-Events: presence, kpml
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763449
Call-ID: f0f19a00-a28132ed-1c-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK84132659f4
CSeq: 101 ACK
Max-Forwards: 70
```

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

[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:46:41 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763531
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763449
Call-ID: f0f19a00-a28132ed-1c-fbc712ac@10.10.199.251
```

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK851c199251
CSeq: 102 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 20:47:49 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763531
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763449
Call-ID: f0f19a00-a28132ed-1c-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK851c199251
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

19.9 Basic Incoming SIP TrunkCall, sending PPI in outgoing 180/200

Title: Basic Incoming SIP TrunkCall, sending PPI in outgoing 180/200

Description:

Basic Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [] Asserted-Identity [v], Asserted-Type=PPI

& SIP Privacy=Default

The following basic call flow illustrates the SIP messaging for an incoming SIP Trunk call to a Unified CM1 from a remote Unified CM2.

The Unified CM1 is shown sending 180 and 200 OK for to Unified CM2.

The 180 and 200 OK response messages carry P-Preferred-Identity header with Alerting & Connected Name.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 & Unified CM2 has

a) route pattern 2.XXXX

b) Has destination port configured to be 5060

c) Remote-Party-Id [] Asserted-Identity [v], Asserted-Type=PPI, SIP Privacy=Default

Scenario:

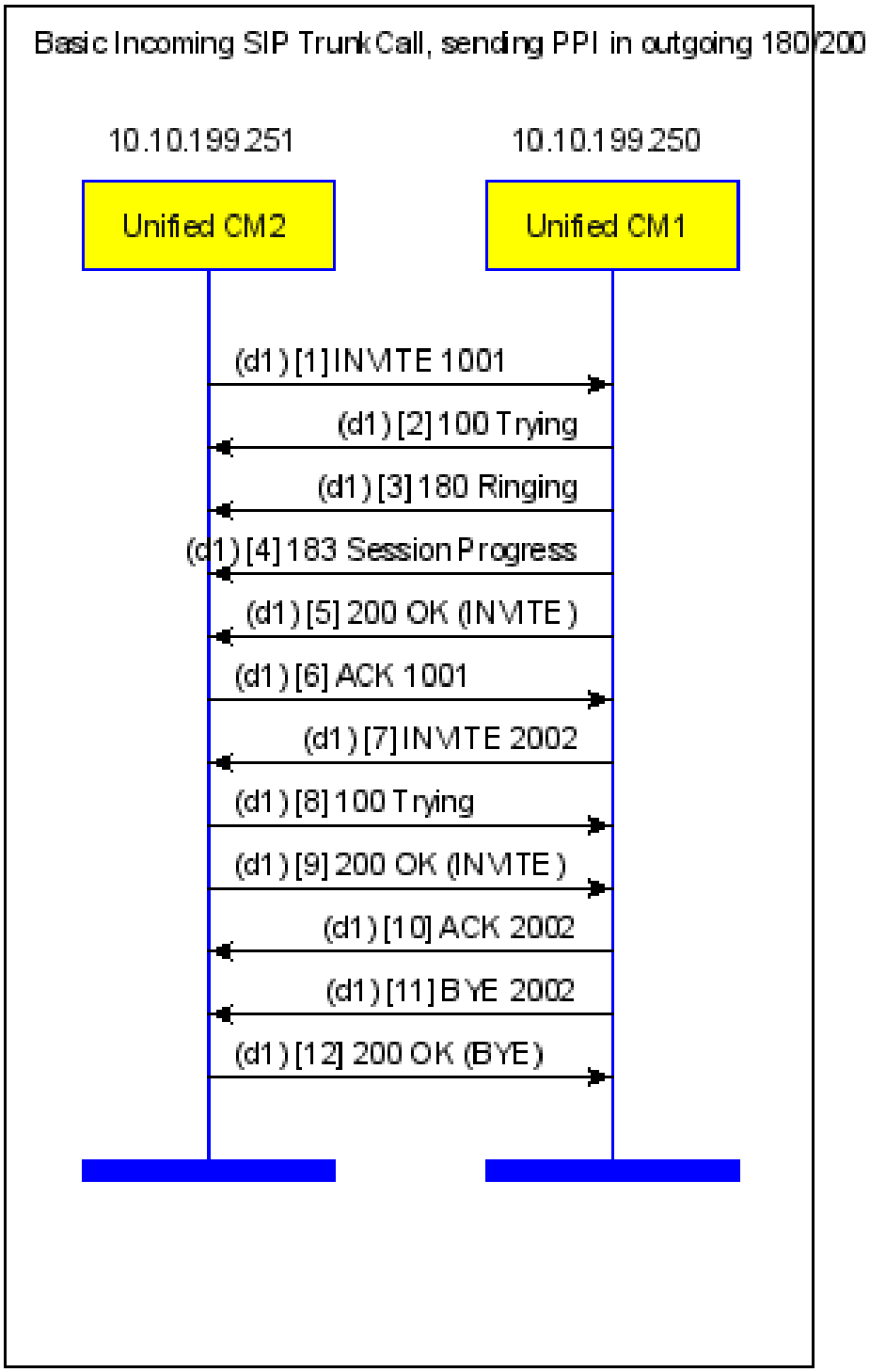
Phone Phone B DN 2002 calls A DN 1001 over the SIP Trunk by dialing 11001

Phone A answers the call

Phone A goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:1001@10.10.199.250:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:51:16 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763451
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:1001@10.10.199.250>
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Call-ID: 7117ff80-a28133c4-1d-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7f6ca21457
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 20:50:14 GMT
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763451
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>
Call-ID: 7117ff80-a28133c4-1d-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7f6ca21457
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 20:50:14 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763451
Allow-Events: presence
Supported: Geolocation
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763533
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Call-ID: 7117ff80-a28133c4-1d-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7f6ca21457
CSeq: 101 INVITE
P-Preferred-Identity: "Alice, Alert" <sip:1001@10.10.199.250>

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 20:50:14 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763451
Allow-Events: presence, kpml
Supported: Geolocation
Content-Length: 337
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763533
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 7117ff80-a28133c4-1d-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7f6ca21457
CSeq: 101 INVITE
P-Preferred-Identity: "Alice, Alert" <sip:1001@10.10.199.250>

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000

CISCO CONFIDENTIAL

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

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 20:50:14 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763451
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Content-Length: 337
Require:  timer
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763533
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 7117ff80-a28133c4-1d-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK7f6ca21457
CSeq: 101 INVITE
P-Preferred-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:51:16 GMT
From: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763451
Allow-Events: presence, kpml
Content-Length: 228
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763533
Content-Type: application/sdp
Call-ID: 7117ff80-a28133c4-1d-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8065c2cf60
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 16758 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:50:16 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763533
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763451
```

CISCO CONFIDENTIAL

```
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 7117ff80-a28133c4-1d-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK864be51b2f
CSeq: 101 INVITE
P-Preferred-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 23368 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 20:51:18 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763533
Allow-Events: presence, kpml
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763451
Call-ID: 7117ff80-a28133c4-1d-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK864be51b2f
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 20:51:18 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763533
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 216
Require:  timer
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763451
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 7117ff80-a28133c4-1d-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK864be51b2f
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 16758 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:50:16 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763533
Allow-Events: presence, kpml
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763451
Call-ID: 7117ff80-a28133c4-1d-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK873c58c3d6
CSeq: 101 ACK
Max-Forwards: 70
```

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

[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 20:50:16 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763533
```

CISCO CONFIDENTIAL

```
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763451
Call-ID: 7117ff80-a28133c4-1d-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK884913f549
CSeq: 102 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 20:51:24 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763533
Content-Length: 0
To: "Bob, Connect" <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763451
Call-ID: 7117ff80-a28133c4-1d-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK884913f549
CSeq: 102 BYE
```

19.10 Mid-Call UPDATE for Display identity change using Asserted-Identity.

Title: Mid-Call UPDATE for Display identity change using Asserted-Identity.

Description:
Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [] Asserted-Identity [v] & Privacy=Default
sending UPDATE for mid call Display Name/Number update.

The following call flow illustrates the SIP messaging for an outgoing SIP Trunk call from a
Unified CM1 to a remote Unified CM2. The call is Transferred to another endpoint registered to Unified CM1,
which results in sending of UPDATE from Unified CM1 to Unified CM2.

The Unified CM1 sends an initial INVITE over the SIP Trunk and later sending UPDATE.

The INVITE request carries an identity in Asserted-Identity header. There is "no" Privacy header sent
as Display name & Number are not restricted.

Configuration:
Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP
Phone = C, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 to Unified CM2 has
a) route pattern 2.XXXX
b) Has destination port configured to be 5060
c) Remote-Party-Id [] Asserted-Identity [v], SIP Privacy= Default, Asserted-Type=Default

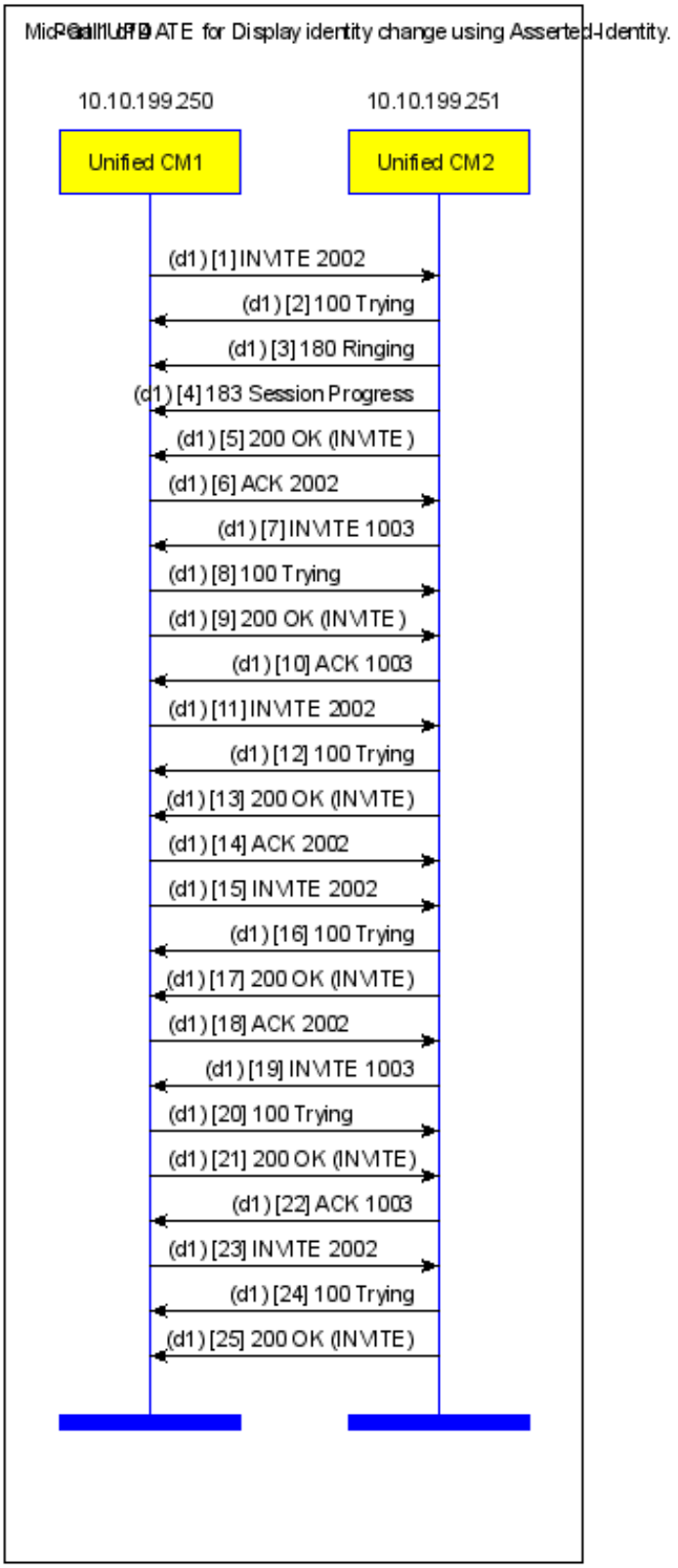
Scenario:
Phone A DN 1003 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone A Transfers call to C DN 1001 and an UPDATE is sent from Unified CM1 to Unified CM2, with

CISCO CONFIDENTIAL

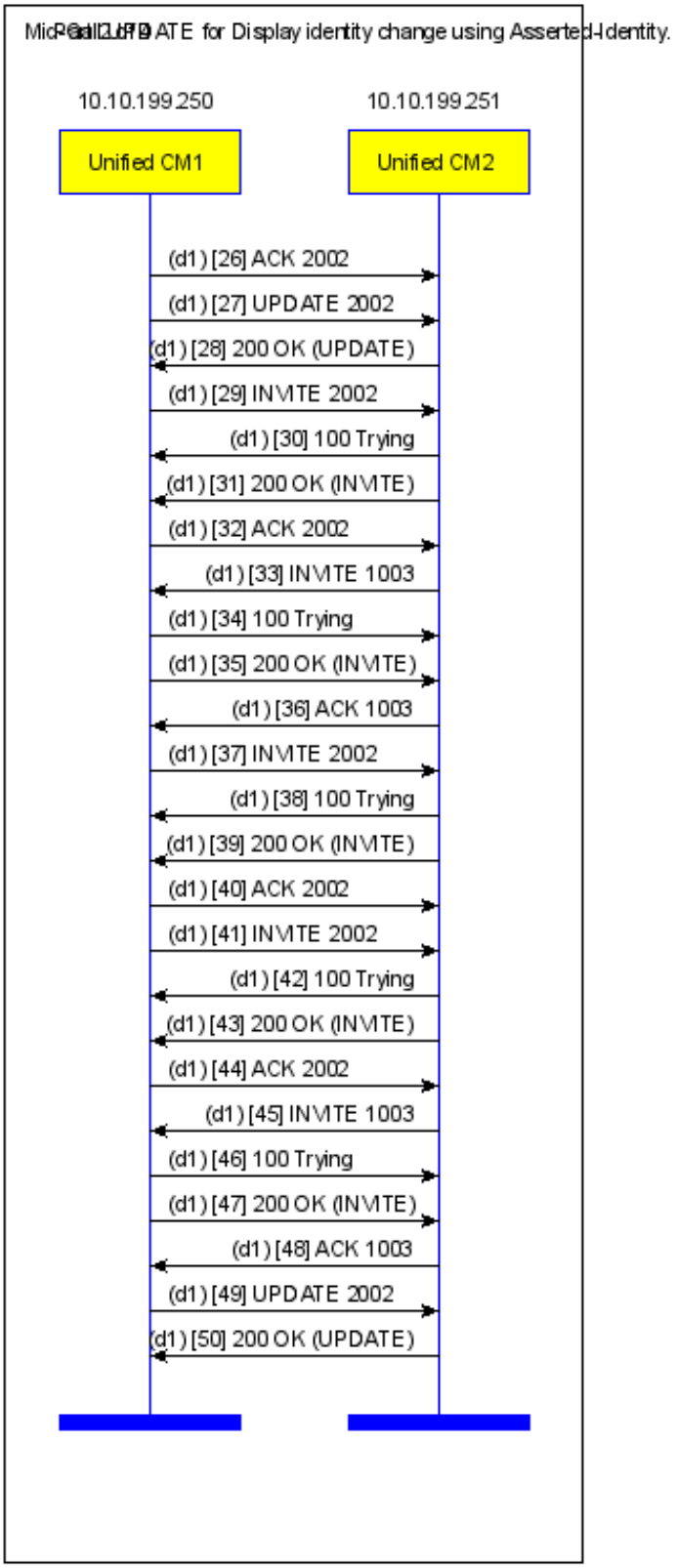
P-Asserted-Identity having identity of Phone = C.

End of Scenario

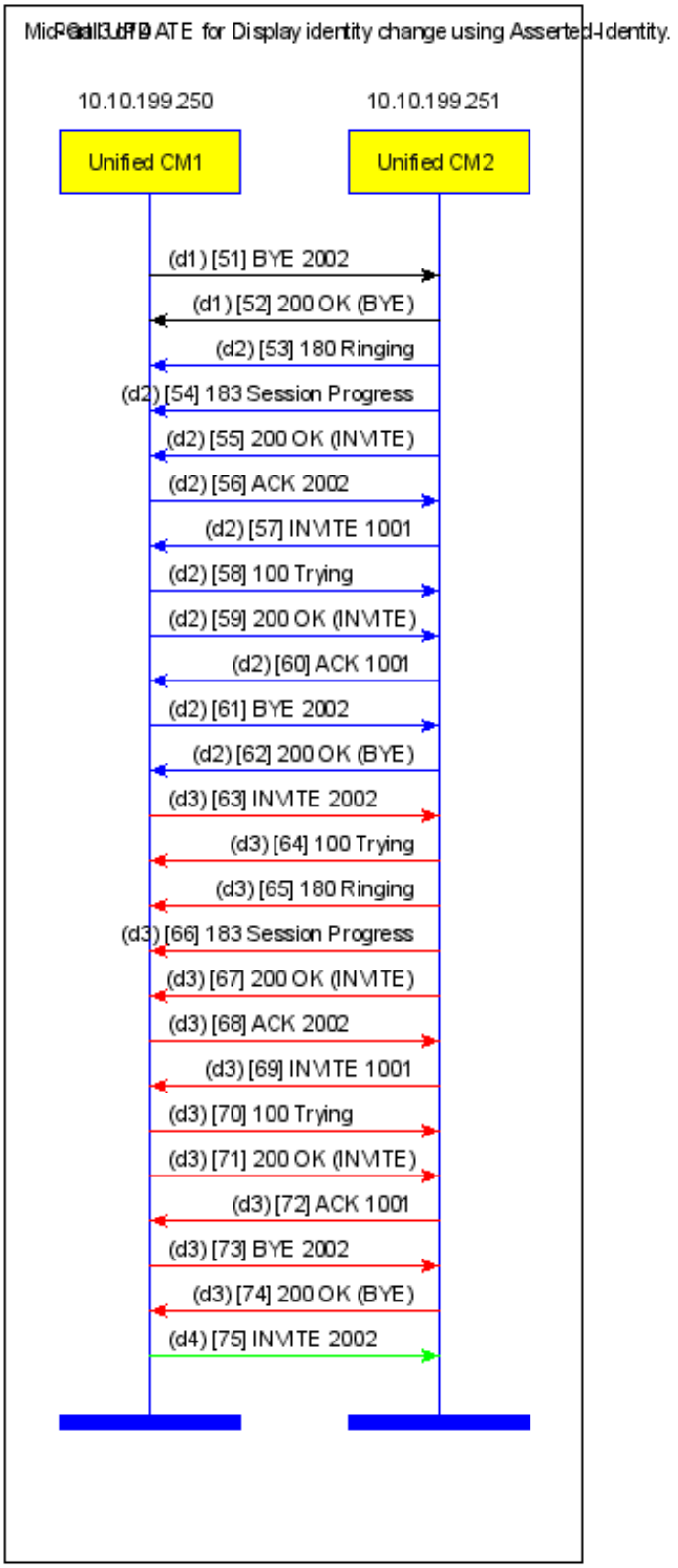
CISCO CONFIDENTIAL



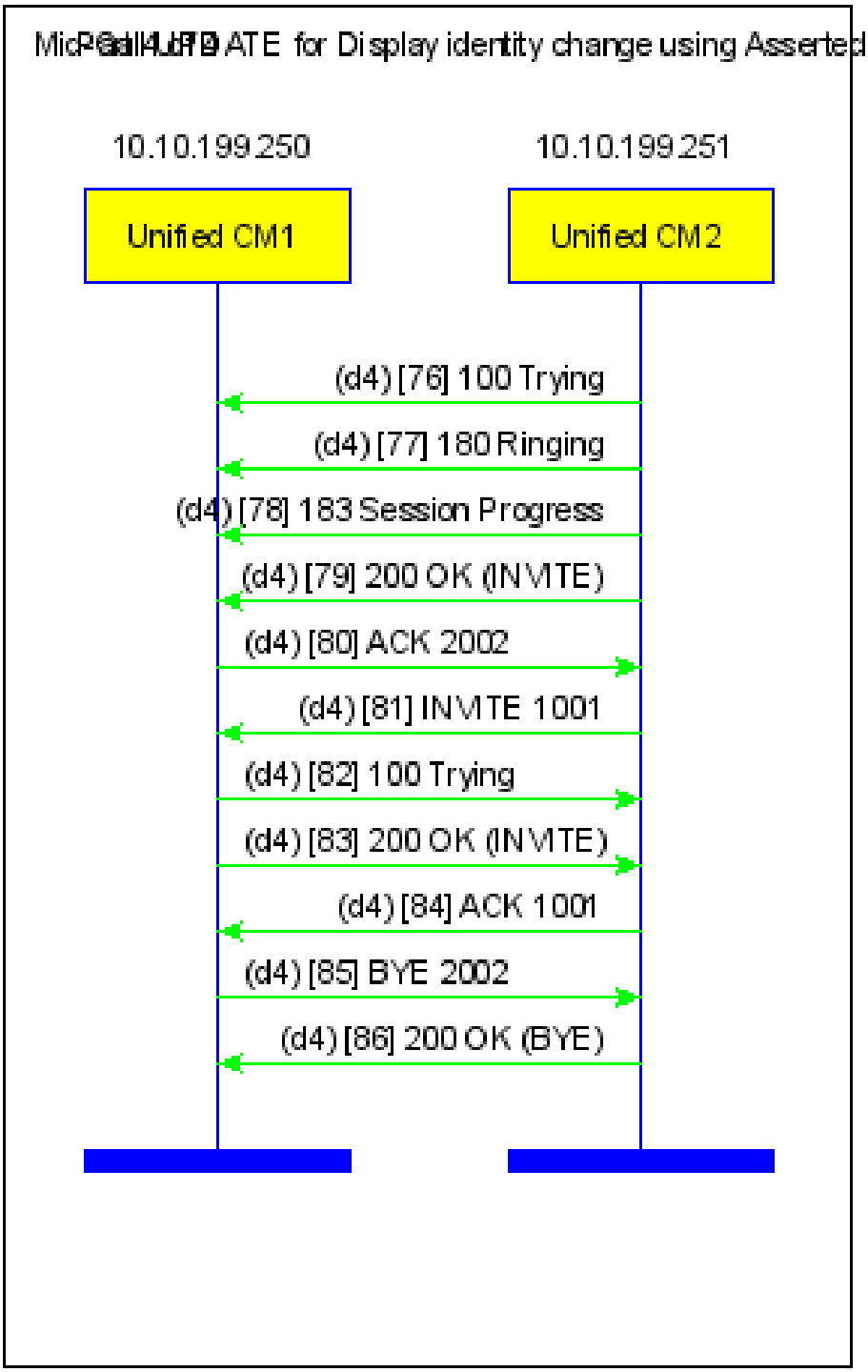
CISCO CONFIDENTIAL



CISCO CONFIDENTIAL



CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:24:37 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa173441d0d
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 21:25:39 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa173441d0d
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 21:25:39 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa173441d0d
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 21:25:39 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa173441d0d
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20

CISCO CONFIDENTIAL

```
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:25:39 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa173441d0d
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:24:37 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
Content-Length: 227
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa27a8cf4f
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 16620 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:25:41 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
```

CISCO CONFIDENTIAL

```
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8f26910e0
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 26402 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:24:39 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8f26910e0
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:24:39 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
P-Asserted-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Supported: replaces
Supported: Geolocation
Content-Length: 215
Require:  timer
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8f26910e0
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 16620 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:25:41 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9065d341ae
CSeq: 101 ACK
Max-Forwards: 70
```

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

[11] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

CISCO CONFIDENTIAL

```
Date: Thu, 04 Jun 2009 21:24:43 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 221
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa336728a5c
CSeq: 102 INVITE
Session-Expires:  1800;refresher=uas
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 16620 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[12] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:25:45 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa336728a5c
CSeq: 102 INVITE
```

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

[13] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:25:45 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 228
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa336728a5c
CSeq: 102 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 26402 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[14] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:24:43 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
```

CISCO CONFIDENTIAL

```
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa444d125ff
CSeq: 102 ACK
Max-Forwards: 70
```

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

[15] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:24:43 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa513e2fcc7
CSeq: 103 INVITE
Session-Expires:  1800;refresher=uas
Max-Forwards: 70
```

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

[16] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:25:45 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa513e2fcc7
CSeq: 103 INVITE
```

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

[17] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:25:45 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa513e2fcc7
CSeq: 103 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[18] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

CISCO CONFIDENTIAL

```
Date: Thu, 04 Jun 2009 21:24:43 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
Content-Length: 171
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa61fb3fcee
CSeq: 103 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.250
t=0 0
m=audio 4000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

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

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

```
Date: Thu, 04 Jun 2009 21:25:45 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 160
User-Agent: Cisco-CUCM8.0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9138c85cae
CSeq: 102 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 26858 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

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

[20] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:24:43 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9138c85cae
CSeq: 102 INVITE
```

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

[21] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:24:43 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
P-Asserted-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Supported: replaces
Supported: Geolocation
Content-Length: 171
Require:  timer
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
```

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9138c85cae
CSeq: 102 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.250
t=0 0
m=audio 4000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=sendonly
```

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

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

```
Date: Thu, 04 Jun 2009 21:25:45 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK9275b3cbe2
CSeq: 102 ACK
Max-Forwards: 70
```

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

[23] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:24:47 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 164
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa741ec0d2b
CSeq: 104 INVITE
Session-Expires:  1800;refresher=uas
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 4000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

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

[24] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:25:49 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa741ec0d2b
CSeq: 104 INVITE
```

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

[25] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:25:49 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
```

CISCO CONFIDENTIAL

```
Content-Length: 172
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa741ec0d2b
CSeq: 104 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 26858 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

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

[26] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:24:47 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa8387d6cbe
CSeq: 104 ACK
Max-Forwards: 70
```

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

[27] UPDATE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:24:47 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa943f8ebcd
CSeq: 105 UPDATE
Max-Forwards: 70
```

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

[28] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:25:50 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa943f8ebcd
CSeq: 105 UPDATE
Session-Expires:  1800;refresher=uas
```

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

[29] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:24:48 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
```

CISCO CONFIDENTIAL

```
Expires: 180
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKaaa7cc14
CSeq: 106 INVITE
Session-Expires:  1800;refresher=uas
Max-Forwards: 70
```

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

[30] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:25:50 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKaaa7cc14
CSeq: 106 INVITE
```

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

[31] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:25:50 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKaaa7cc14
CSeq: 106 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[32] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:24:48 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
Content-Length: 171
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKab2caee4b
CSeq: 106 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.250
t=0 0
m=audio 4000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[33] INVITE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0
```
Date: Thu, 04 Jun 2009 21:25:50 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 160
User-Agent: Cisco-CUCM8.0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK937024010a
CSeq: 103 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 8 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 27298 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

[diagram] Call-ID:[prev][next]
[34] SIP/2.0 100 Trying
```
Date: Thu, 04 Jun 2009 21:24:48 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK937024010a
CSeq: 103 INVITE
```

[diagram] Call-ID:[prev][next]
[35] SIP/2.0 200 OK
```
Date: Thu, 04 Jun 2009 21:24:48 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Supported: replaces
Supported: Geolocation
Content-Length: 171
Require:  timer
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK937024010a
CSeq: 103 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 8 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.250
t=0 0
m=audio 4000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=sendonly
```

[diagram] Call-ID:[prev][next]
[36] ACK sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0
```
Date: Thu, 04 Jun 2009 21:25:50 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
```

CISCO CONFIDENTIAL

```
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK941ef7a78a
CSeq: 103 ACK
Max-Forwards: 70
```

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

[37] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:24:49 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 164
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKac19d21b12
CSeq: 107 INVITE
Session-Expires:  1800;refresher=uas
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 9 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 4000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

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

[38] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:25:51 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKac19d21b12
CSeq: 107 INVITE
```

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

[39] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:25:51 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 172
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKac19d21b12
CSeq: 107 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 9 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 27298 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[40] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
```
Date: Thu, 04 Jun 2009 21:24:49 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKad15cac4ed
CSeq: 107 ACK
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[41] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
```
Date: Thu, 04 Jun 2009 21:24:49 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKae6fff7e1f
CSeq: 108 INVITE
Session-Expires:  1800;refresher=uas
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[42] SIP/2.0 100 Trying
```
Date: Thu, 04 Jun 2009 21:25:51 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKae6fff7e1f
CSeq: 108 INVITE
```

[diagram] Call-ID:[prev][next]
[43] SIP/2.0 200 OK
```
Date: Thu, 04 Jun 2009 21:25:51 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 338
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKae6fff7e1f
CSeq: 108 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 10 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
```

CISCO CONFIDENTIAL

```
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[44] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:24:49 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
Content-Length: 229
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKaf2e2c5c77
CSeq: 108 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 10 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 17646 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[45] INVITE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:25:51 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 217
User-Agent: Cisco-CUCM8.0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK959dd8e38
CSeq: 104 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 11 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 27432 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[46] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 21:24:49 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK959dd8e38
CSeq: 104 INVITE

[diagram]   Call-ID:[prev][next]
[47] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:24:49 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
```

CISCO CONFIDENTIAL

```
Supported: replaces
Supported: Geolocation
Content-Length: 217
Require:  timer
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK959dd8e38
CSeq: 104 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 11 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 17646 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:25:51 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK967caa02e3
CSeq: 104 ACK
Max-Forwards: 70
```

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

[49] UPDATE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:24:49 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb03035fd53
CSeq: 109 UPDATE
Max-Forwards: 70
```

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

[50] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:25:51 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb03035fd53
CSeq: 109 UPDATE
Session-Expires:  1800;refresher=uas
```

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

[51] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:24:49 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
P-Asserted-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb11c2f8c68
CSeq: 110 BYE
```

CISCO CONFIDENTIAL

```
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[52] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:25:59 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763554
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763466
Call-ID: 19c85e00-a2813b95-2d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb11c2f8c68
CSeq: 110 BYE

[diagram]   Call-ID:[prev][next]
[53] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 21:17:50 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763548
Allow-Events: presence
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763460
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 23ca580-a28139c0-2a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK985b18e587
CSeq: 101 INVITE

[diagram]   Call-ID:[prev][next]
[54] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 21:17:50 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763548
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763460
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 23ca580-a28139c0-2a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK985b18e587
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[55] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:17:50 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763548
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763460
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
```

CISCO CONFIDENTIAL

```
Content-Type: application/sdp
Call-ID: 23ca580-a28139c0-2a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK985b18e587
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[56] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:16:48 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763548
Allow-Events: presence, kpml
Content-Length: 228
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763460
Content-Type: application/sdp
Call-ID: 23ca580-a28139c0-2a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9961e687dc
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 18954 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:17:53 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763460
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763548
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 23ca580-a28139c0-2a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK89755379d4
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 28742 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
```

CISCO CONFIDENTIAL

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

[diagram]   Call-ID:[prev][next]
[58] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 21:16:51 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763460
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763548
Call-ID: 23ca580-a28139c0-2a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK89755379d4
CSeq: 101 INVITE

[diagram]   Call-ID:[prev][next]
[59] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:16:51 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763460
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Alice, Connect" <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 216
Require:  timer
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763548
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 23ca580-a28139c0-2a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK89755379d4
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 18954 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[60] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:17:53 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763460
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763548
Call-ID: 23ca580-a28139c0-2a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8a557291d4
CSeq: 101 ACK
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[61] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:16:51 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763548
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763460
Call-ID: 23ca580-a28139c0-2a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9a7e3e481f
CSeq: 102 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[62] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:17:59 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763548
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763460
Call-ID: 23ca580-a28139c0-2a-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9a7e3e481f
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[63] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Date: Thu, 04 Jun 2009 21:18:31 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE:  1800
Remote-Party-ID: "Alice, Connect" <sip:1001@10.10.199.250;x-cisco-callback-
number=1001>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9b54182bfa
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[64] SIP/2.0 100 Trying
```
Date: Thu, 04 Jun 2009 21:19:33 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9b54182bfa
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[65] SIP/2.0 180 Ringing
```
Date: Thu, 04 Jun 2009 21:19:33 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Allow-Events: presence
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9b54182bfa
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[66] SIP/2.0 183 Session Progress
```
Date: Thu, 04 Jun 2009 21:19:33 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9b54182bfa
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[67] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:19:33 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9b54182bfa
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[68] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:18:31 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Allow-Events: presence, kpml
Content-Length: 228
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Content-Type: application/sdp
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9c3bf50e5e
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 29162 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:19:35 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
```

CISCO CONFIDENTIAL

```
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8b30ecba8b
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 22566 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[70] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:18:33 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8b30ecba8b
CSeq: 101 INVITE
```

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

[71] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:18:33 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Alice, Connect" <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 216
Require:  timer
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8b30ecba8b
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 29162 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[72] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:19:35 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8cac63254
CSeq: 101 ACK
Max-Forwards: 70
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[73] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:18:33 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9d1e899078
CSeq: 102 BYE
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[74] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:19:39 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763550
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763462
Call-ID: 3fa13300-a2813a27-2b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9d1e899078
CSeq: 102 BYE

[diagram] Call-ID:[prev][next]
[75] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:21:17 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9e6c0faefd
CSeq: 101 INVITE
P-Preferred-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[76] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 21:22:20 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9e6c0faefd
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[77] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 21:22:20 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Allow-Events: presence
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9e6c0faefd
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[78] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 21:22:20 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>

CISCO CONFIDENTIAL

```
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9e6c0faefd
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[79] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:22:20 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9e6c0faefd
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[80] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:21:17 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Allow-Events: presence, kpml
Content-Length: 228
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Content-Type: application/sdp
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9f2dafc04f
CSeq: 101 ACK
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 29476 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:22:22 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8d6d313e3e
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 22880 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[82] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:21:20 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8d6d313e3e
CSeq: 101 INVITE
```

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

[83] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:21:20 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Content-Length: 216
Require:  timer
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8d6d313e3e
CSeq: 101 INVITE
P-Preferred-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
```

CISCO CONFIDENTIAL

```
c=IN IP4 10.10.199.130
t=0 0
m=audio 29476 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[84] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:22:22 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8e771e3cc3
CSeq: 101 ACK
Max-Forwards: 70
```

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

[85] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:21:20 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa06d942a7e
P-Preferred-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
CSeq: 102 BYE
Max-Forwards: 70
```

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

[86] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:22:28 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763552
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763464
Call-ID: a292ca00-a2813acd-2c-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa06d942a7e
CSeq: 102 BYE
```

19.11 Mid-Call UPDATE for Display identity change with P-Preferred-Identity

Title: Mid-Call UPDATE for Display identity change with P-Preferred-Identity

Description:

Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [] Asserted-Identity [v] & SIP Privacy=Default

Asserted-Type=PPI, sending UPDATE for mid call Display Name/Number update.

The following call flow illustrates the SIP messaging for an outgoing SIP Trunk call from a

Unified CM1 to a remote Unified CM2. The call is Transferred to another endpoint registered to Unified CM1,

which results in sending of UPDATE from Unified CM1 to Unified CM2.

The Unified CM1 sends an UPDATE message with P-Preferred-Identity.

There is "no" Privacy header sent as Display name & Number are not restricted.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.250

Phone = A, Line = 1003, IP = 10.10.199.66, Model = SCCP

Phone = C, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 to Unified CM2 has

a) route pattern 2.XXXX

b) Has destination port configured to be 5060

c) Remote-Party-Id [] Asserted-Identity [v], SIP Privacy= Default, Asserted-Type=PPI

Scenario:

Phone A DN 1003 calls Phone B DN 2002 over the SIP Trunk by dialing 22002

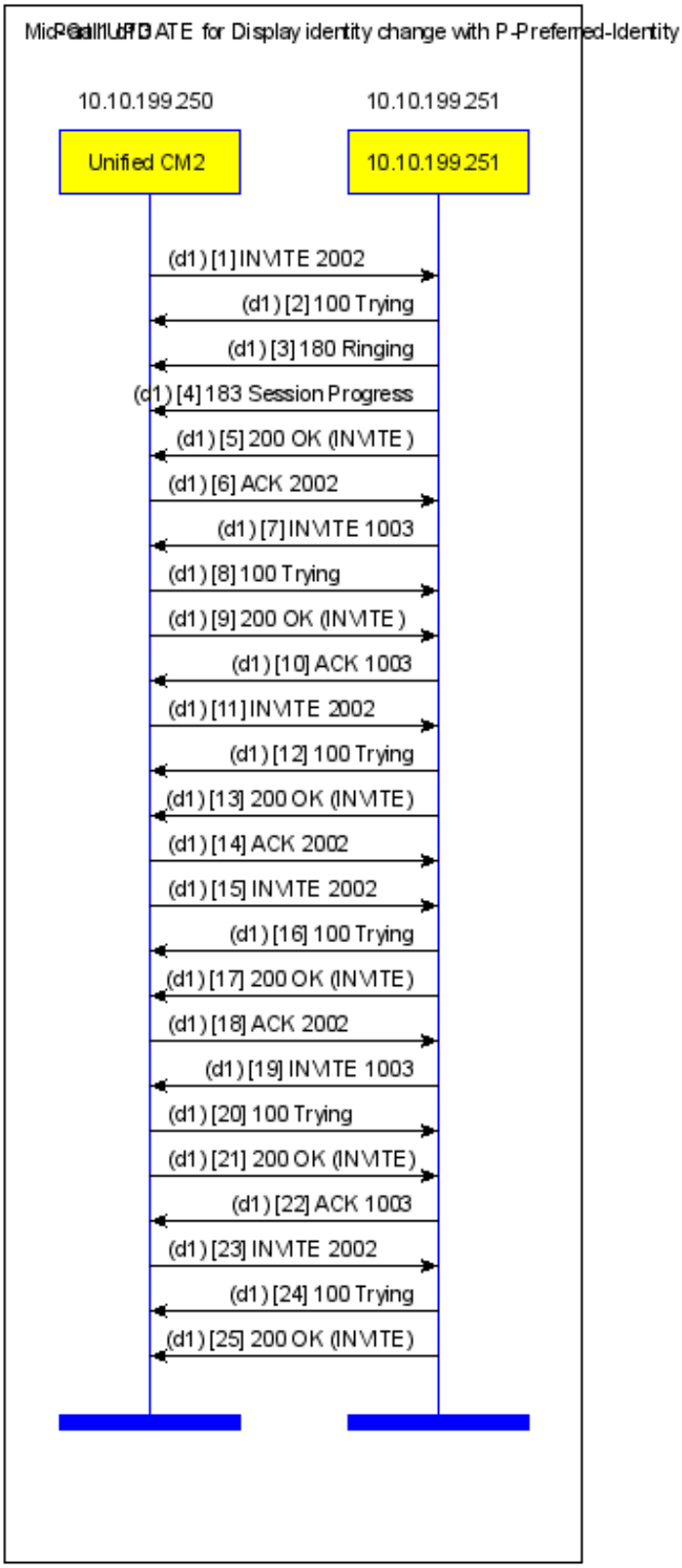
Phone A Transfers call to C DN 1001 and an UPDATE is sent from Unified CM1 to Unified CM2, with

P-Preferred-Identity having identity of Phone = C.

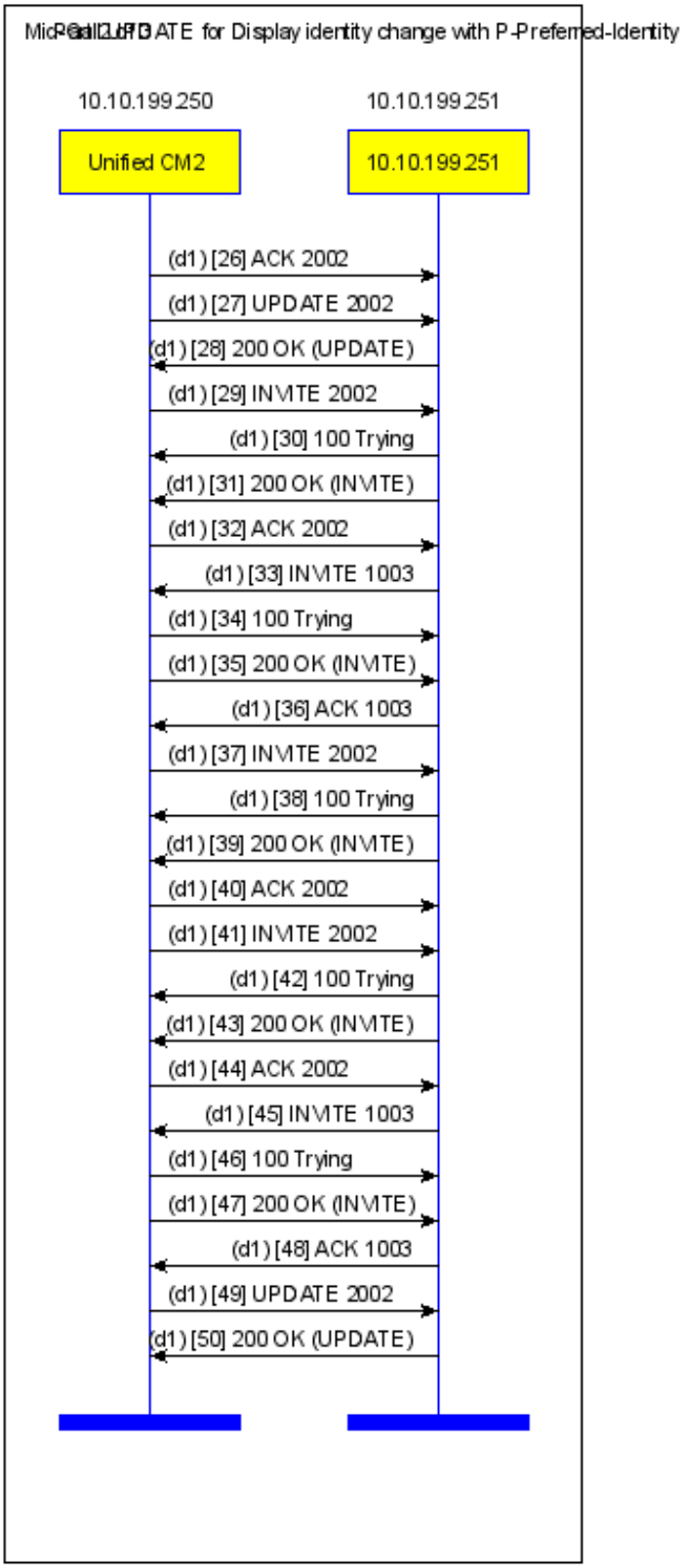
End of Scenario

CISCO CONFIDENTIAL

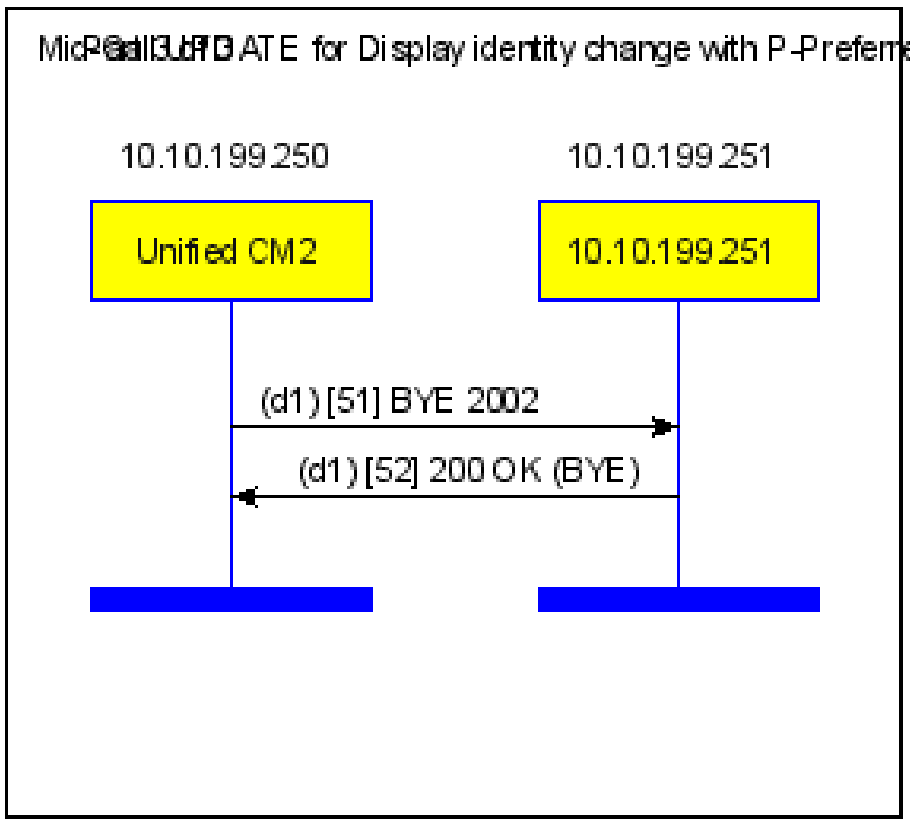
CISCO CONFIDENTIAL



CISCO CONFIDENTIAL



CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:35:09 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdd4f21e8bb
CSeq: 101 INVITE
P-Preferred-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 21:36:11 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdd4f21e8bb
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 21:36:11 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdd4f21e8bb
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 21:36:11 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdd4f21e8bb
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20

CISCO CONFIDENTIAL

```
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:36:11 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdd4f21e8bb
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:35:09 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Content-Length: 227
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKde72f704a5
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 30642 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:36:13 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
```

CISCO CONFIDENTIAL

```
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKab7c37762f
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 24038 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[8] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 21:35:10 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKab7c37762f
CSeq: 101 INVITE

[diagram]   Call-ID:[prev][next]
[9] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:35:10 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Content-Length: 215
Require:  timer
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKab7c37762f
CSeq: 101 INVITE
P-Preferred-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.66
t=0 0
m=audio 30642 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[10] ACK sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:36:13 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKac61c752fd
CSeq: 101 ACK
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[11] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
```

CISCO CONFIDENTIAL

```
Date: Thu, 04 Jun 2009 21:35:13 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 221
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdf6ec662f2
CSeq: 102 INVITE
P-Preferred-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Session-Expires:  1800;refresher=uas
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 30642 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[12] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:36:16 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdf6ec662f2
CSeq: 102 INVITE
```

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

[13] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:36:16 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 228
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdf6ec662f2
CSeq: 102 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 24038 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[14] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:35:13 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
```

CISCO CONFIDENTIAL

```
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe0f3b0837
CSeq: 102 ACK
Max-Forwards: 70
```

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

[15] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:35:13 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe1d5e948a
CSeq: 103 INVITE
P-Preferred-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Session-Expires:  1800;refresher=uas
Max-Forwards: 70
```

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

[16] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:36:16 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe1d5e948a
CSeq: 103 INVITE
```

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

[17] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:36:16 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe1d5e948a
CSeq: 103 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[18] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

CISCO CONFIDENTIAL

```
Date: Thu, 04 Jun 2009 21:35:13 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Content-Length: 171
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe276c989c0
CSeq: 103 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.250
t=0 0
m=audio 4000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

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

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

```
Date: Thu, 04 Jun 2009 21:36:16 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 160
User-Agent: Cisco-CUCM8.0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKade2ef581
CSeq: 102 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 24352 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

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

[20] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:35:14 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKade2ef581
CSeq: 102 INVITE
```

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

[21] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:35:14 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Content-Length: 171
Require:  timer
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKade2ef581
```

CISCO CONFIDENTIAL

```
CSeq: 102 INVITE
P-Preferred-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.250
t=0 0
m=audio 4000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=sendonly
```

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

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

```
Date: Thu, 04 Jun 2009 21:36:16 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKae4f416c1d
CSeq: 102 ACK
Max-Forwards: 70
```

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

[23] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:35:19 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 164
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe35b1a7e1c
CSeq: 104 INVITE
P-Preferred-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
Session-Expires:  1800;refresher=uas
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 4000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

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

[24] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:36:21 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe35b1a7e1c
CSeq: 104 INVITE
```

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

[25] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:36:21 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
```

CISCO CONFIDENTIAL

```
Content-Length: 172
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe35b1a7e1c
CSeq: 104 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 24352 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

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

[26] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:35:19 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe4bcc07c4
CSeq: 104 ACK
Max-Forwards: 70
```

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

[27] UPDATE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:35:19 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe5a2bca9c
CSeq: 105 UPDATE
P-Preferred-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Max-Forwards: 70
```

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

[28] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:36:21 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe5a2bca9c
CSeq: 105 UPDATE
Session-Expires:  1800;refresher=uas
```

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

[29] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:35:19 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
```

CISCO CONFIDENTIAL

```
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe67b1456c3
CSeq: 106 INVITE
P-Preferred-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Session-Expires:  1800;refresher=uas
Max-Forwards: 70
```

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

[30] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:36:21 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe67b1456c3
CSeq: 106 INVITE
```

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

[31] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:36:21 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe67b1456c3
CSeq: 106 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[32] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:35:19 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Content-Length: 171
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe71b4c7f2d
CSeq: 106 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 7 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.250
t=0 0
m=audio 4000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[33] INVITE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:36:22 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE: 1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 160
User-Agent: Cisco-CUCM8.0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKaf4997c0a4
CSeq: 103 INVITE
Session-Expires: 1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 8 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 24938 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20

[diagram] Call-ID:[prev][next]
[34] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 21:35:19 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKaf4997c0a4
CSeq: 103 INVITE

[diagram] Call-ID:[prev][next]
[35] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:35:19 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Content-Length: 171
Require: timer
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKaf4997c0a4
CSeq: 103 INVITE
P-Preferred-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Session-Expires: 1800;refresher=uac

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

[diagram] Call-ID:[prev][next]
[36] ACK sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:36:22 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575

CISCO CONFIDENTIAL

```
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb065067c73
CSeq: 103 ACK
Max-Forwards: 70
```

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

[37] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:35:20 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 164
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe88784082
CSeq: 107 INVITE
P-Preferred-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Session-Expires:  1800;refresher=uas
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 9 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 4000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

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

[38] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:36:22 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe88784082
CSeq: 107 INVITE
```

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

[39] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:36:22 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 172
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe88784082
CSeq: 107 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 9 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 24938 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[40] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
```
Date: Thu, 04 Jun 2009 21:35:20 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe971acf33e
CSeq: 107 ACK
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[41] INVITE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
```
Date: Thu, 04 Jun 2009 21:35:20 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Min-SE:  1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKea689c73eb
CSeq: 108 INVITE
P-Preferred-Identity: "Alice, Alert" <sip:1001@10.10.199.250>
Session-Expires:  1800;refresher=uas
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[42] SIP/2.0 100 Trying
```
Date: Thu, 04 Jun 2009 21:36:22 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKea689c73eb
CSeq: 108 INVITE
```

[diagram] Call-ID:[prev][next]
[43] SIP/2.0 200 OK
```
Date: Thu, 04 Jun 2009 21:36:22 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 338
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKea689c73eb
CSeq: 108 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 10 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
```

CISCO CONFIDENTIAL

```
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[44] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:35:20 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Content-Length: 229
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKeb798dcee1
CSeq: 108 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 10 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 31640 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[45] INVITE sip:1003@10.10.199.250:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:36:23 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 217
User-Agent: Cisco-CUCM8.0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb13ae847b
CSeq: 104 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 11 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 25040 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[46] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 21:35:20 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb13ae847b
CSeq: 104 INVITE

[diagram]   Call-ID:[prev][next]
[47] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:35:20 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
Supported: replaces
```

CISCO CONFIDENTIAL

```
Supported: Geolocation
Content-Length: 217
Require:  timer
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb13ae847b
CSeq: 104 INVITE
P-Preferred-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 11 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 31640 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:36:23 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Allow-Events: presence, kpml
Content-Length: 0
To: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKb248aa652c
CSeq: 104 ACK
Max-Forwards: 70
```

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

[49] UPDATE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:35:20 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
Supported: timer,resource-priority,replaces
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:1003@10.10.199.250:5060;transport=tcp>
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKec3d93e518
CSeq: 109 UPDATE
P-Preferred-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Max-Forwards: 70
```

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

[50] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:36:23 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKec3d93e518
CSeq: 109 UPDATE
Session-Expires:  1800;refresher=uas
```

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

[51] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:35:20 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKed4a25cd3d
P-Preferred-Identity: "Charlie, Connect" <sip:1003@10.10.199.250>
CSeq: 110 BYE
```

CISCO CONFIDENTIAL

```
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[52] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:36:26 GMT
From: "Charlie, Connect" <sip:1003@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763575
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763472
Call-ID: 927bea00-a2813e0d-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKed4a25cd3d
CSeq: 110 BYE
```

19.12 Incoming OOB REFER request for performing a click to call scenario.

Title: Incoming OOB REFER request for performing a click to call scenario.

Description:

Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [] Asserted-Identity [v] & SIP Privacy=Default,

Asserted-Type=Default, processing incoming OOB REFER for click to call scenario.

The following call flow illustrates the SIP messaging for an incoming REFER message to Unified CM1.

The Unified CM1 uses REFER and places a call between the party addressed in Request URI and the

party in Refer-To header, which is a device registered on Unified CM1

The REFER request carries an identity in P-Asserted-Identity header. The Unified CM1 uses an identity in the P-Asserted-Identity of REFER for sending an identity in Remote-Party-Id header of an INVITE sent to the party in Request-URI. Once half call is established with party in Request-URI,

it is redirected to party in Refer-To.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Remote Phone, IP = 10.10.200.179

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 1003, IP = 10.10.199.66, Model = SCCP

Remote, Line = 9193929980, Display Name = "REFERPAI" IP = 10.10.200.101, Model = SIP

SIP Trunk from Unified CM1 to remote has

a) Remote-Party-Id [] Asserted-Identity [v], SIP Privacy= Default, Asserted-Type=Default

Scenario:

Remote sends OOB REFER over the SIP Trunk requesting a call from Phone A DN 1003 to Phone B DN 1001

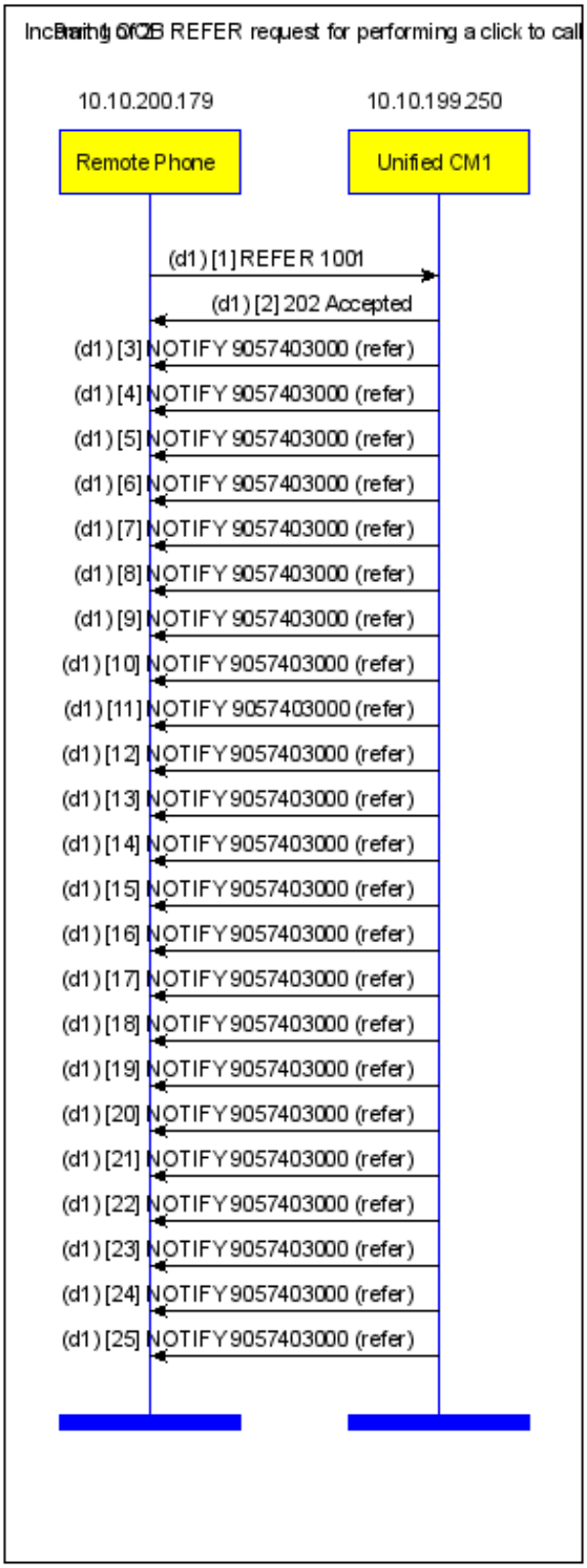
The Unified CM1 sends an INVITE to Phone A DN 1003 and uses identity in Remote-Party-Id as

CISCO CONFIDENTIAL

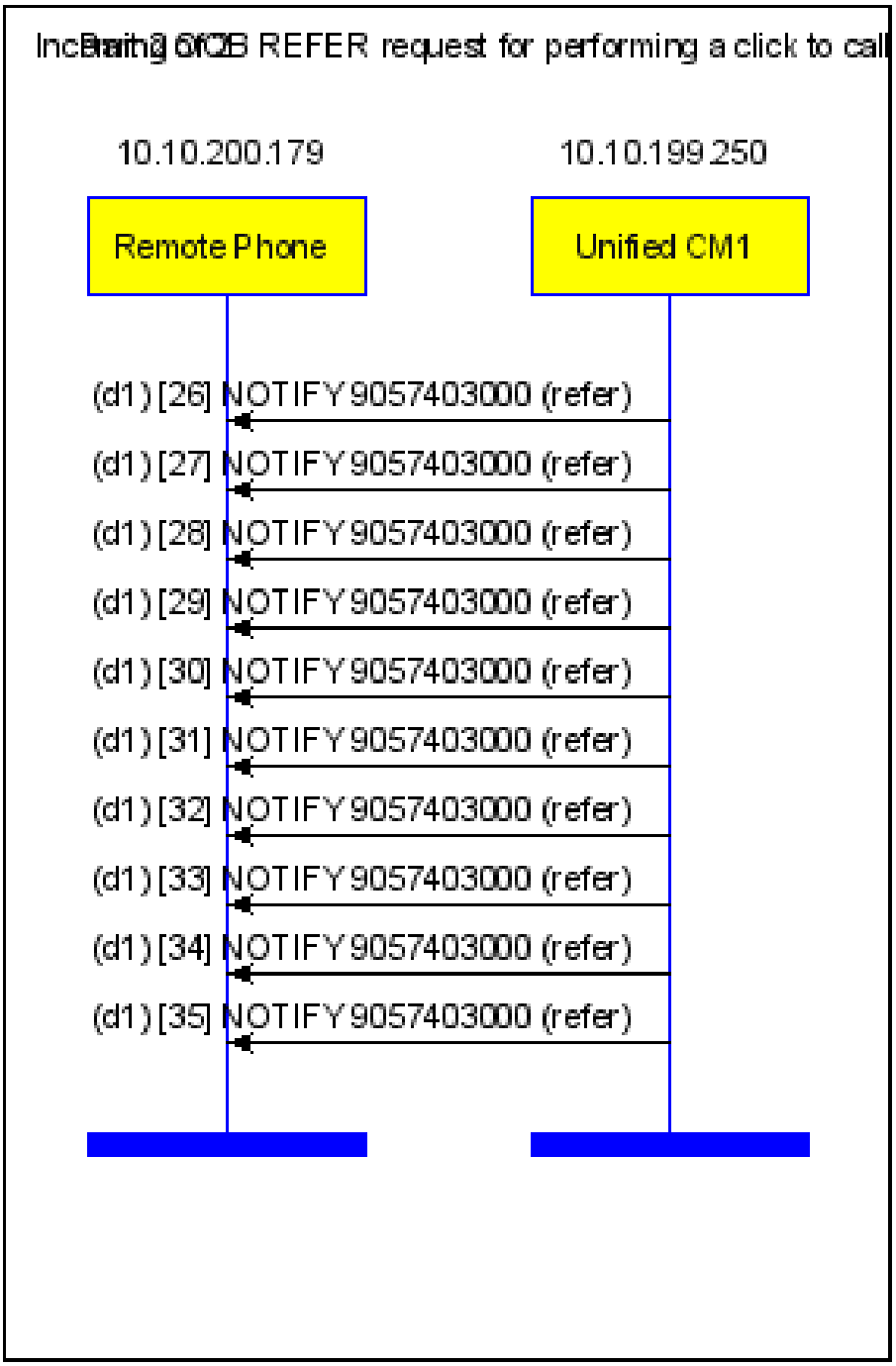
taken from REFER message's P-Asserted-Identity header.

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] REFER sip:1001@10.10.199.250 SIP/2.0
Call-ID: 1-19864@10.10.200.179
Contact: <sip:9057403000@10.10.200.179>
CSeq: 1 REFER
From: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
To: <sip:1001@10.10.199.250>
Via: SIP/2.0/TCP 10.10.200.179:5060
P-Asserted-Identity: "REFERPAI" <sip:3929980@10.10.200.179>
Privacy: id
Max-Forwards: 70
Refer-To: sip:1003@10.10.199.250
Referred-By:<sip:10.10.200.179>
Content-Length: 0

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 202 Accepted
Date: Thu, 04 Jun 2009 20:59:56 GMT
From: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=447281731
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Call-ID: 1-19864@10.10.200.179
Via: SIP/2.0/TCP 10.10.200.179:5060
CSeq: 1 REFER

[diagram] Call-ID:[prev][next]
[3] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:56 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 20
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=60
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK891722ef56
CSeq: 101 NOTIFY
Max-Forwards: 70

SIP/2.0 100 Trying

[diagram] Call-ID:[prev][next]
[4] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:56 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 20
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=60
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK891722ef56
CSeq: 101 NOTIFY
Max-Forwards: 70

SIP/2.0 100 Trying

[diagram] Call-ID:[prev][next]
[5] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:56 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 20
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=60
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK891722ef56
CSeq: 101 NOTIFY
Max-Forwards: 70

SIP/2.0 100 Trying

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[6] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:56 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 20
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=60
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK891722ef56
CSeq: 101 NOTIFY
Max-Forwards: 70

SIP/2.0 100 Trying

[diagram] Call-ID:[prev][next]
[7] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:59 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 21
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=57
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8a5b22a5aa
CSeq: 102 NOTIFY
Max-Forwards: 70

SIP/2.0 180 Ringing

[diagram] Call-ID:[prev][next]
[8] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:59 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 21
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=57
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8a5b22a5aa
CSeq: 102 NOTIFY
Max-Forwards: 70

SIP/2.0 180 Ringing

[diagram] Call-ID:[prev][next]
[9] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:59 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 21
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=57
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8a5b22a5aa
CSeq: 102 NOTIFY
Max-Forwards: 70

SIP/2.0 180 Ringing

[diagram] Call-ID:[prev][next]
[10] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:00:02 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 16
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1

CISCO CONFIDENTIAL

```
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: terminated
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8b508d0d4e
CSeq: 103 NOTIFY
Max-Forwards: 70

SIP/2.0 200 OK
```

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

```
[11] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:00:02 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 16
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: terminated
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8b508d0d4e
CSeq: 103 NOTIFY
Max-Forwards: 70

SIP/2.0 200 OK
```

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

```
[12] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:59 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 21
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=57
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8a5b22a5aa
CSeq: 102 NOTIFY
Max-Forwards: 70

SIP/2.0 180 Ringing
```

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

```
[13] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:56 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 20
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=60
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK891722ef56
CSeq: 101 NOTIFY
Max-Forwards: 70

SIP/2.0 100 Trying
```

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

```
[14] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:00:02 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 16
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: terminated
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8b508d0d4e
CSeq: 103 NOTIFY
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
SIP/2.0 200 OK

[diagram]   Call-ID:[prev][next]
[15] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:00:02 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 16
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: terminated
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8b508d0d4e
CSeq: 103 NOTIFY
Max-Forwards: 70

SIP/2.0 200 OK

[diagram]   Call-ID:[prev][next]
[16] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:59 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 21
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=57
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8a5b22a5aa
CSeq: 102 NOTIFY
Max-Forwards: 70

SIP/2.0 180 Ringing

[diagram]   Call-ID:[prev][next]
[17] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:56 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 20
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=60
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK891722ef56
CSeq: 101 NOTIFY
Max-Forwards: 70

SIP/2.0 100 Trying

[diagram]   Call-ID:[prev][next]
[18] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:00:02 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 16
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: terminated
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8b508d0d4e
CSeq: 103 NOTIFY
Max-Forwards: 70

SIP/2.0 200 OK

[diagram]   Call-ID:[prev][next]
[19] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:59 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 21
```

CISCO CONFIDENTIAL

```
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=57
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8a5b22a5aa
CSeq: 102 NOTIFY
Max-Forwards: 70

SIP/2.0 180 Ringing
```

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

```
[20] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:56 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 20
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=60
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK891722ef56
CSeq: 101 NOTIFY
Max-Forwards: 70

SIP/2.0 100 Trying
```

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

```
[21] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:00:02 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 16
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: terminated
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8b508d0d4e
CSeq: 103 NOTIFY
Max-Forwards: 70

SIP/2.0 200 OK
```

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

```
[22] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:59 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 21
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=57
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8a5b22a5aa
CSeq: 102 NOTIFY
Max-Forwards: 70

SIP/2.0 180 Ringing
```

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

```
[23] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:56 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 20
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=60
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK891722ef56
CSeq: 101 NOTIFY
```

CISCO CONFIDENTIAL

```
Max-Forwards: 70

SIP/2.0 100 Trying

[diagram]   Call-ID:[prev][next]
[24] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:00:02 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 16
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: terminated
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8b508d0d4e
CSeq: 103 NOTIFY
Max-Forwards: 70

SIP/2.0 200 OK

[diagram]   Call-ID:[prev][next]
[25] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:59 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 21
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=57
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8a5b22a5aa
CSeq: 102 NOTIFY
Max-Forwards: 70

SIP/2.0 180 Ringing

[diagram]   Call-ID:[prev][next]
[26] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:56 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 20
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=60
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK891722ef56
CSeq: 101 NOTIFY
Max-Forwards: 70

SIP/2.0 100 Trying

[diagram]   Call-ID:[prev][next]
[27] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:00:02 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 16
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: terminated
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8b508d0d4e
CSeq: 103 NOTIFY
Max-Forwards: 70

SIP/2.0 200 OK

[diagram]   Call-ID:[prev][next]
[28] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:59 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
```

CISCO CONFIDENTIAL

```
Event: refer
Content-Length: 21
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=57
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8a5b22a5aa
CSeq: 102 NOTIFY
Max-Forwards: 70

SIP/2.0 180 Ringing
```

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

```
[29] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:56 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 20
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=60
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK891722ef56
CSeq: 101 NOTIFY
Max-Forwards: 70

SIP/2.0 100 Trying
```

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

```
[30] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:00:02 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 16
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: terminated
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8b508d0d4e
CSeq: 103 NOTIFY
Max-Forwards: 70

SIP/2.0 200 OK
```

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

```
[31] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:59 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 21
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=57
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8a5b22a5aa
CSeq: 102 NOTIFY
Max-Forwards: 70

SIP/2.0 180 Ringing
```

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

```
[32] NOTIFY sip:90574030000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:56 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 20
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=60
```

CISCO CONFIDENTIAL

```
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK891722ef56
CSeq: 101 NOTIFY
Max-Forwards: 70

SIP/2.0 100 Trying

[diagram]   Call-ID:[prev][next]
[33] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:00:02 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 16
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: terminated
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8b508d0d4e
CSeq: 103 NOTIFY
Max-Forwards: 70

SIP/2.0 200 OK

[diagram]   Call-ID:[prev][next]
[34] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 20:59:59 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 21
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: active;expires=57
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8a5b22a5aa
CSeq: 102 NOTIFY
Max-Forwards: 70

SIP/2.0 180 Ringing

[diagram]   Call-ID:[prev][next]
[35] NOTIFY sip:9057403000@10.10.200.179:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:00:02 GMT
From: <sip:1001@10.10.199.250>;tag=447281731
Event: refer
Content-Length: 16
User-Agent: Cisco-CUCM8.0
To: sipp <sip:9193929980@10.10.200.179:5060>;tag=1
Contact: <sip:1001@10.10.199.250:5060>
Content-Type: message/sipfrag;version=2.0
Call-ID: 1-19864@10.10.200.179
Subscription-State: terminated
Via: SIP/2.0/UDP 10.10.199.250:5060;branch=z9hG4bK8b508d0d4e
CSeq: 103 NOTIFY
Max-Forwards: 70

SIP/2.0 200 OK
```

19.13 Basic Outgoing Call with Asserted-Identity & Privacy:id headers.

Title: Basic Outgoing Call with Asserted-Identity & Privacy:id headers.

Description:

Basic Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [] Asserted-Identity [v] and SIP Privacy=ID configuration

The following basic call flow illustrates the SIP messaging for an outgoing SIP Trunk call from a Unified CM1 to a remote Unified CM2.

The Unified CM1 sends an INVITE over the SIP Trunk for inviting Unified CM2 to the call.

The INVITE request carries an identity in Asserted-Identity header.

Based on SIP Privacy=ID configuration, there is a Privacy:id header sent resulting in restriction of both Display name & Number.

The From header in outgoing INVITE is accordingly changed to From: "Anonymous" <sip:anonymous@anonymous.invalid

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 to Unified CM2 has

a) route pattern 2.XXXX

b) Has destination port configured to be 5060

c) Remote-Party-Id [] Asserted-Identity [v], Asserted-Type=Default, SIP Privacy=ID

Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002

Phone B DN 2002 Alerts

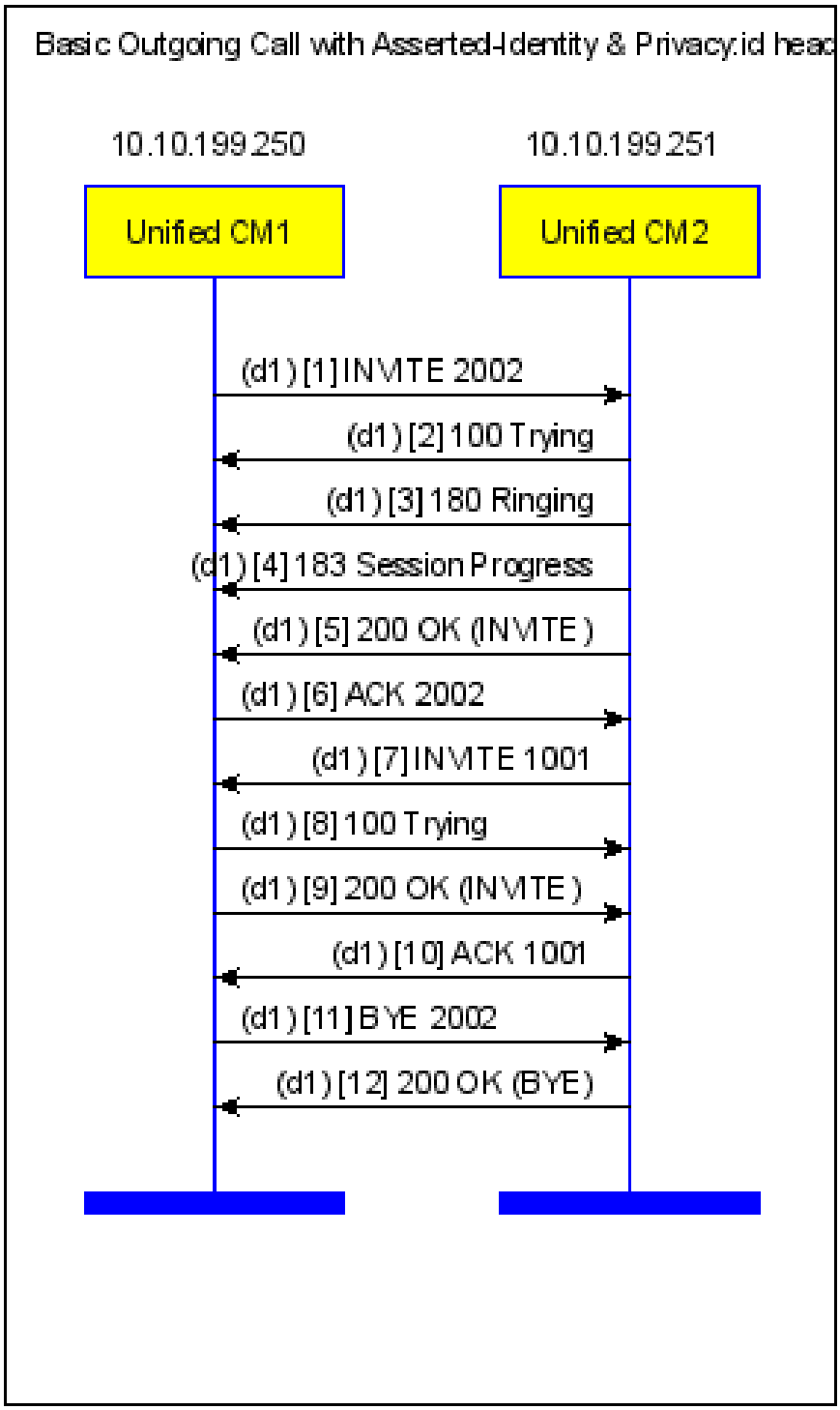
Phone B answers the call

Phone A goes onHook

End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:08:15 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763542
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
Privacy: id
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: d0770f00-a28137bf-27-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8f453ce298
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 21:09:17 GMT
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763542
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: d0770f00-a28137bf-27-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8f453ce298
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 21:09:17 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763542
Allow-Events: presence
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763454
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: d0770f00-a28137bf-27-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8f453ce298
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 21:09:17 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763542
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763454
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: d0770f00-a28137bf-27-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8f453ce298
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:09:17 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763542
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763454
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: d0770f00-a28137bf-27-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8f453ce298
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:08:15 GMT
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763542
Allow-Events: presence, kpml
Content-Length: 228
Privacy: id
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763454
Content-Type: application/sdp
Call-ID: d0770f00-a28137bf-27-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK906081e2a9
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 16712 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:09:19 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763454
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
```

CISCO CONFIDENTIAL

```
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763542
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: d0770f00-a28137bf-27-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK833e6872fc
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 26500 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:08:17 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763454
Allow-Events: presence, kpml
Content-Length: 0
To: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763542
Call-ID: d0770f00-a28137bf-27-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK833e6872fc
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:08:17 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763454
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: replaces
Supported: Geolocation
Content-Length: 216
Require:  timer
Privacy: id
To: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763542
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: d0770f00-a28137bf-27-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK833e6872fc
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 16712 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:09:19 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763454
Allow-Events: presence, kpml
Content-Length: 0
To: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763542
Call-ID: d0770f00-a28137bf-27-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK84147d3b32
CSeq: 101 ACK
Max-Forwards: 70
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:08:17 GMT
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763542
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
Privacy: id
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763454
Call-ID: d0770f00-a28137bf-27-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK912e68ee0f
CSeq: 102 BYE
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:09:24 GMT
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763542
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763454
Call-ID: d0770f00-a28137bf-27-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK912e68ee0f
CSeq: 102 BYE

19.14 Basic Outgoing Call with an identity in Asserted-Identity header & Privacy: id;critical

Title: Basic Outgoing Call with an identity in Asserted-Identity header & Privacy: id;critical

Description:

Basic Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [] Asserted-Identity [v] and SIP Privacy=ID Critical configuration

The following basic call flow illustrates the SIP messaging for an outgoing SIP Trunk call from a Unified CM1 to a remote Unified CM2.

The Unified CM1 sends an INVITE over the SIP Trunk for inviting Unified CM2 to the call.

The INVITE request carries an identity in Asserted-Identity header.

Based on SIP Privacy=ID Critical configuration, there is a Privacy: id;critical header sent resulting in restriction of both Display name & Number.

The From header in ougoing INVITE is accordingly changed to From: "Anonymous" <sip:anonymous@anonymous.invalid

Also a Proxy-Require: privacy header is added.

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 to Unified CM2 has

a) route pattern 2.XXXX

b) Has destination port configured to be 5060

c) Remote-Party-Id [] Asserted-Identity [v], Asserted-Type=Default, SIP Privacy=ID Critical

Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002

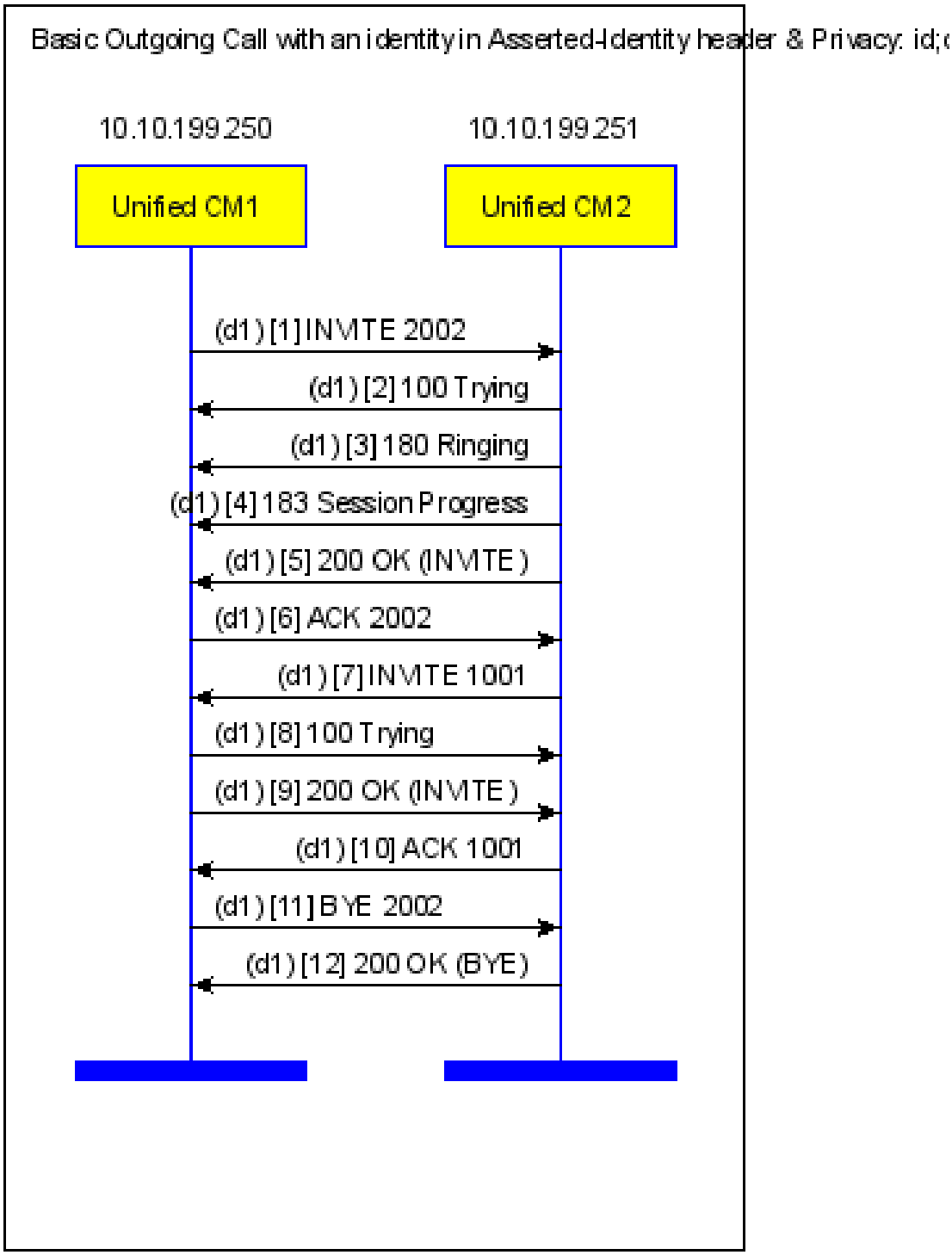
Phone B answers the call

Phone A goes onHook

End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Date: Thu, 04 Jun 2009 21:05:04 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763540
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE:  1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
Privacy: id;critical
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 5e9ec580-a2813700-26-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8c7a27e278
CSeq: 101 INVITE
Session-Expires:  1800
Proxy-Require: privacy
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Date: Thu, 04 Jun 2009 21:06:06 GMT
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763540
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: 5e9ec580-a2813700-26-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8c7a27e278
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Date: Thu, 04 Jun 2009 21:06:06 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763540
Allow-Events: presence
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763452
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 5e9ec580-a2813700-26-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8c7a27e278
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Date: Thu, 04 Jun 2009 21:06:06 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763540
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763452
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 5e9ec580-a2813700-26-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8c7a27e278
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
```

CISCO CONFIDENTIAL

```
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:06:06 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763540
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763452
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 5e9ec580-a2813700-26-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8c7a27e278
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:05:04 GMT
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763540
Allow-Events: presence, kpml
Content-Length: 228
Privacy: id;critical
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763452
Content-Type: application/sdp
Call-ID: 5e9ec580-a2813700-26-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8d78546f0c
CSeq: 101 ACK
Proxy-Require: privacy
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 30410 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:06:08 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763452
```

CISCO CONFIDENTIAL

```
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763540
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 5e9ec580-a2813700-26-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8183bea3f
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 23824 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:05:06 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763452
Allow-Events: presence, kpml
Content-Length: 0
To: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763540
Call-ID: 5e9ec580-a2813700-26-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8183bea3f
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:05:06 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763452
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: replaces
Supported: Geolocation
Content-Length: 216
Require:  timer
Privacy: id
To: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763540
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 5e9ec580-a2813700-26-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8183bea3f
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 30410 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:06:08 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763452
Allow-Events: presence, kpml
Content-Length: 0
To: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763540
Call-ID: 5e9ec580-a2813700-26-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8251537ebf
```

CISCO CONFIDENTIAL

```
CSeq: 101 ACK
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:05:06 GMT
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763540
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
Privacy: id;critical
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763452
Call-ID: 5e9ec580-a2813700-26-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8e3589b6ee
CSeq: 102 BYE
Proxy-Require: privacy
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:06:14 GMT
From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763540
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763452
Call-ID: 5e9ec580-a2813700-26-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK8e3589b6ee
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

19.15 Basic Outgoing Call with identity in Asserted-Identity & Privacy:none

Title: Basic Outgoing Call with identity in Asserted-Identity & Privacy:none

Description:

Basic Unified CM to Unified CM SIP Trunk Call with Remote-Party-Id [] Asserted-Identity [v] and SIP Privacy=None configuration

The following basic call flow illustrates the SIP messaging for an outgoing SIP Trunk call from a Unified CM1 to a remote Unified CM2.

The Unified CM1 sends an INVITE over the SIP Trunk for inviting Unified CM2 to the call.

The INVITE request carries an identity in Asserted-Identity header.

Based on SIP Privacy=None configuration, there is a Privacy:none header sent

Configuration:

Node = Unified CM1, IP = 10.10.199.250

Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP

Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk from Unified CM1 & Unified CM2 has

a) route pattern 2.XXXX

b) Has destination port configured to be 5060

c) Remote-Party-Id [] Asserted-Identity [v], SIP Privacy= None, Asserted-Type=Default

Scenario:

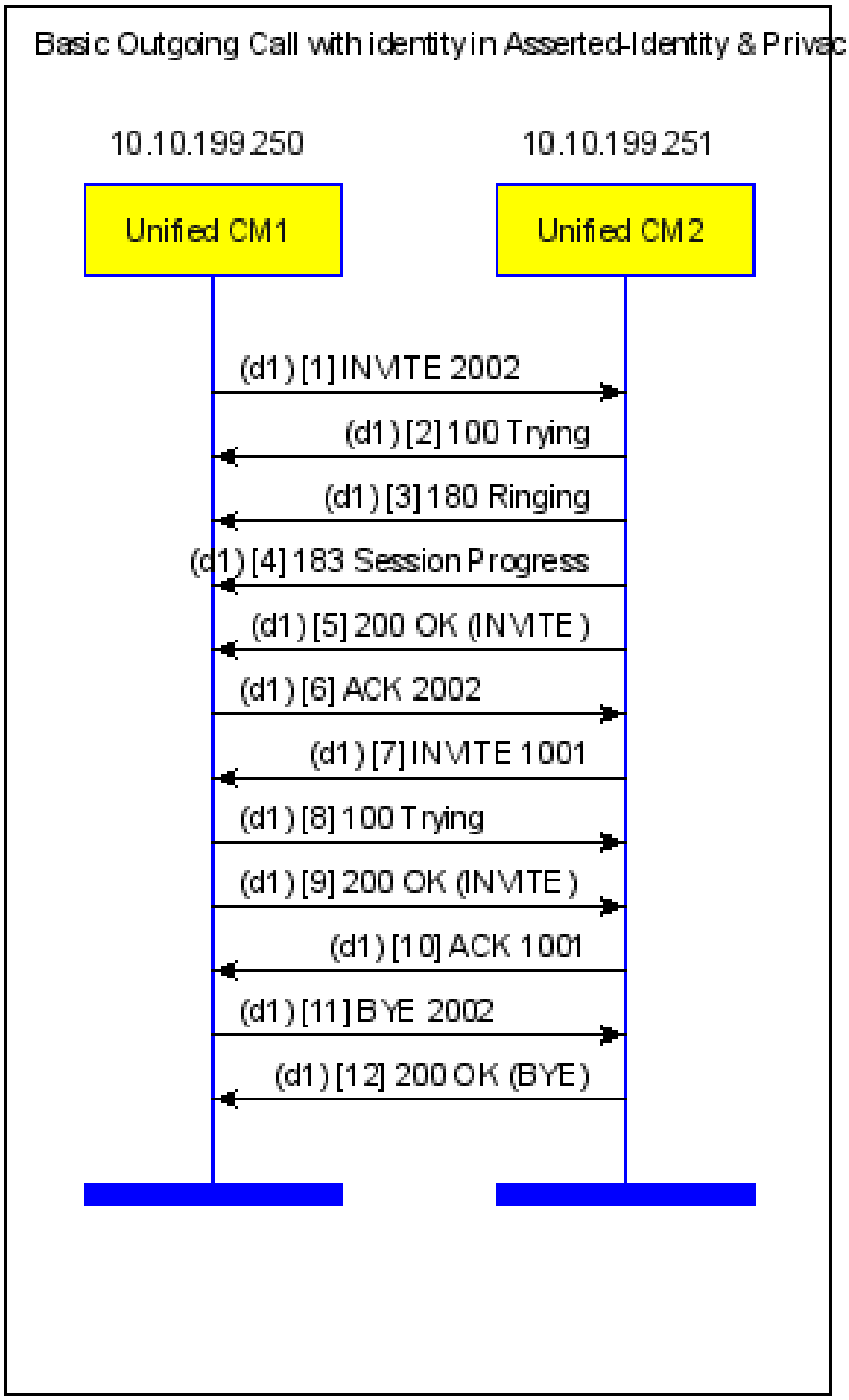
Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002

Phone B answers the call

Phone A goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Thu, 04 Jun 2009 21:10:57 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763544
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Content-Length: 0
User-Agent: Cisco-CUCM8.0
Privacy: none
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 31064c00-a2813861-28-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9260381b05
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Thu, 04 Jun 2009 21:11:59 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763544
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: 31064c00-a2813861-28-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9260381b05
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Thu, 04 Jun 2009 21:11:59 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763544
Allow-Events: presence
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763456
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 31064c00-a2813861-28-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9260381b05
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Thu, 04 Jun 2009 21:11:59 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763544
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Alert" <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: "Bob, Alert" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763456
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 31064c00-a2813861-28-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9260381b05
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:11:59 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763544
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 337
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763456
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 31064c00-a2813861-28-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9260381b05
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:10:57 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763544
Allow-Events: presence, kpml
Content-Length: 228
Privacy: none
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763456
Content-Type: application/sdp
Call-ID: 31064c00-a2813861-28-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9318d7edee
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 16648 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

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

```
Date: Thu, 04 Jun 2009 21:12:02 GMT
Call-Info: <sip:10.10.199.251:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763456
Allow-Events: presence, kpml
P-Asserted-Identity: "Bob, Connect" <sip:2002@10.10.199.251>
```

CISCO CONFIDENTIAL

```
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "Bob, Connect" <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 216
User-Agent: Cisco-CUCM8.0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763544
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 31064c00-a2813861-28-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8555ae104a
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 26434 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Date: Thu, 04 Jun 2009 21:11:00 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763456
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763544
Call-ID: 31064c00-a2813861-28-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8555ae104a
CSeq: 101 INVITE
```

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

[9] SIP/2.0 200 OK

```
Date: Thu, 04 Jun 2009 21:11:00 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763456
Allow-Events: presence, kpml
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Supported: replaces
Supported: Geolocation
Content-Length: 216
Require:  timer
Privacy: none
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763544
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 31064c00-a2813861-28-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK8555ae104a
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 16648 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Thu, 04 Jun 2009 21:12:02 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763456
Allow-Events: presence, kpml
Content-Length: 0
To: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763544
Call-ID: 31064c00-a2813861-28-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK862c1dd457
CSeq: 101 ACK
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Thu, 04 Jun 2009 21:11:00 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763544
P-Asserted-Identity: "Alice, Connect" <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
Privacy: none
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763456
Call-ID: 31064c00-a2813861-28-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9430d51da6
CSeq: 102 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Thu, 04 Jun 2009 21:12:10 GMT
From: "Alice, Connect" <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763544
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-21763456
Call-ID: 31064c00-a2813861-28-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK9430d51da6
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

20. MLPP

20.1 MLPP Basic Call

Title: MLPP Basic Call

Description:

The following basic call flow illustrates the SIP messaging when the MLPP feature is enabled on SIP trunk.

Cisco Unified CM1 is configured to have resource priority namespace network domains and resource priority namespace lists with prioritized order for validating inbound SIP trunk messages. SIP Trunk profile is associated with namespace list and namespace network domains are added to any MLPP translations or route patterns, used for outbound SIP trunk calls.

Cisco Unified CM1 sent out the initial INVITE.

Configuration:

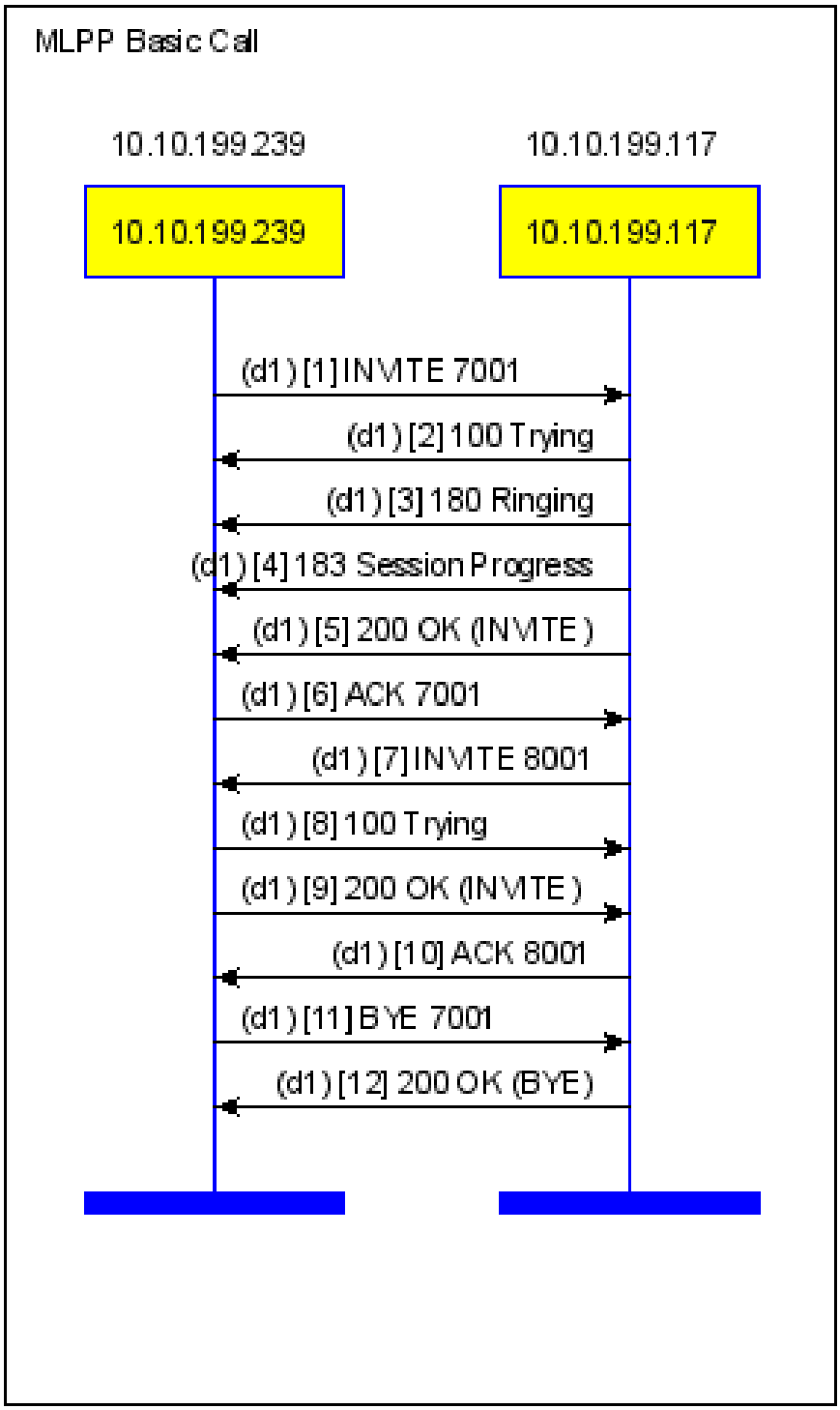
Node = Unified CM1, IP = 10.10.198.239
Node = Unified CM2, IP = 10.10.198.117

Phone = A, Line = 8001, Model = SCCP
Phone = B, Line = 7001, Model = SCCP

Scenario:

Phone A DN 8001 makes a FlashOverride MLPP call to Phone B DN 7001 over the SIP Trunk
Phone B DN 7001 rings with Precedence Ringer and shows Precedence level bubbles on CallerID
Phone A DN 8001 gets Precedence Ringback
Phone B DN 7001 answers
Both talk for 5 seconds
Phone A DN 8001 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:7001@10.10.199.117:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bKc73b94b61
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283638
To: <sip:7001@10.10.199.117>
Date: Tue, 02 Mar 2010 19:28:39 GMT
Call-ID: cc701300-b8d166e7-6-efc712ac@10.10.199.239
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:8001@10.10.199.239:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.239:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Require: resource-priority
Resource-Priority: dsn.8
Cisco-Guid: 3429896960-3100731111-0000000005-4022801068
Session-Expires:  1800
P-Asserted-Identity: <sip:8001@10.10.199.239>
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bKc73b94b61
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283638
To: <sip:7001@10.10.199.117>
Date: Tue, 02 Mar 2010 19:28:39 GMT
Call-ID: cc701300-b8d166e7-6-efc712ac@10.10.199.239
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bKc73b94b61
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283638
To: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546299
Date: Tue, 02 Mar 2010 19:28:39 GMT
Call-ID: cc701300-b8d166e7-6-efc712ac@10.10.199.239
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:7001@10.10.199.117:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:7001@10.10.199.117>
Remote-Party-ID: <sip:7001@10.10.199.117>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bKc73b94b61
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283638
To: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546299
Date: Tue, 02 Mar 2010 19:28:39 GMT
Call-ID: cc701300-b8d166e7-6-efc712ac@10.10.199.239
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:7001@10.10.199.117:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:7001@10.10.199.117>
Remote-Party-ID: <sip:7001@10.10.199.117>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 336

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.117
s=SIP Call
c=IN IP4 10.10.199.37
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
```

CISCO CONFIDENTIAL

```
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bKc73b94b61
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283638
To: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546299
Date: Tue, 02 Mar 2010 19:28:39 GMT
Call-ID: cc701300-b8d166e7-6-efc712ac@10.10.199.239
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:7001@10.10.199.117:5060;transport=tcp>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:7001@10.10.199.117>
Remote-Party-ID: <sip:7001@10.10.199.117>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 336

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.117
s=SIP Call
c=IN IP4 10.10.199.37
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[6] ACK sip:7001@10.10.199.117:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bKd51bcf310
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283638
To: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546299
Date: Tue, 02 Mar 2010 19:28:39 GMT
Call-ID: cc701300-b8d166e7-6-efc712ac@10.10.199.239
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.239
s=SIP Call
c=IN IP4 10.10.199.141
t=0 0
m=audio 19006 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[7] INVITE sip:8001@10.10.199.239:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.117:5060;branch=z9hG4bK135814d361
From: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546299
To: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283638
Date: Tue, 02 Mar 2010 19:28:42 GMT
```

CISCO CONFIDENTIAL

```
Call-ID: cc701300-b8d166e7-6-efc712ac@10.10.199.239
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 3429896960-3100731111-0000000005-4022801068
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:7001@10.10.199.117:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:7001@10.10.199.117>
Remote-Party-ID: <sip:7001@10.10.199.117>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 215

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.117
s=SIP Call
c=IN IP4 10.10.199.37
t=0 0
m=audio 26698 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[8] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.117:5060;branch=z9hG4bK135814d361
From: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546299
To: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283638
Date: Tue, 02 Mar 2010 19:28:42 GMT
Call-ID: cc701300-b8d166e7-6-efc712ac@10.10.199.239
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

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

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.117:5060;branch=z9hG4bK135814d361
From: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546299
To: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283638
Date: Tue, 02 Mar 2010 19:28:42 GMT
Call-ID: cc701300-b8d166e7-6-efc712ac@10.10.199.239
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:8001@10.10.199.239:5060;transport=tcp>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:8001@10.10.199.239>
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.239
s=SIP Call
c=IN IP4 10.10.199.141
t=0 0
m=audio 19006 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

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

[10] ACK sip:8001@10.10.199.239:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.117:5060;branch=z9hG4bK1463ef040e
From: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546299
To: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283638
Date: Tue, 02 Mar 2010 19:28:42 GMT
Call-ID: cc701300-b8d166e7-6-efc712ac@10.10.199.239
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
```

CISCO CONFIDENTIAL

```
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[11] BYE sip:7001@10.10.199.117:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bKe73b4572d
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283638
To: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546299
Date: Tue, 02 Mar 2010 19:28:42 GMT
Call-ID: cc701300-b8d166e7-6-efc712ac@10.10.199.239
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:8001@10.10.199.239>
CSeq: 102 BYE
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bKe73b4572d
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283638
To: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546299
Date: Tue, 02 Mar 2010 19:28:45 GMT
Call-ID: cc701300-b8d166e7-6-efc712ac@10.10.199.239
CSeq: 102 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

21. V.150.1

21.1 Basic Call with V.150.1 virtual codec

Title: Basic Call with V.150.1 virtual codec

Description:

The following basic call flow illustrates the SIP messaging when the virtual codecs are enabled on gateway

and how these capabilities are included in SDP.

Cisco Unified CM1 sent out the initial INVITE.

Note: The IP-STE phonetype (SCCP Secure IP Phone) also supports the virtual codecs required for V.150.1.

Configuration:

Node = Unified CM1, IP = 10.10.10.42

Node = Unified CM3, IP = 10.10.10.122

Phone = A, Line = 1101, IP = 10.10.10.41, Model = SCCP (Analog)

Phone = B, Line = 3101, IP = 10.10.10.121, Model = SCCP (Analog)

Phone A registers on Gateway CM1 to Unified CM1 with certain virtual codecs.

Phone B registers on Gateway CM3 to Unified CM3 with certain virtual codecs.

Scenario:

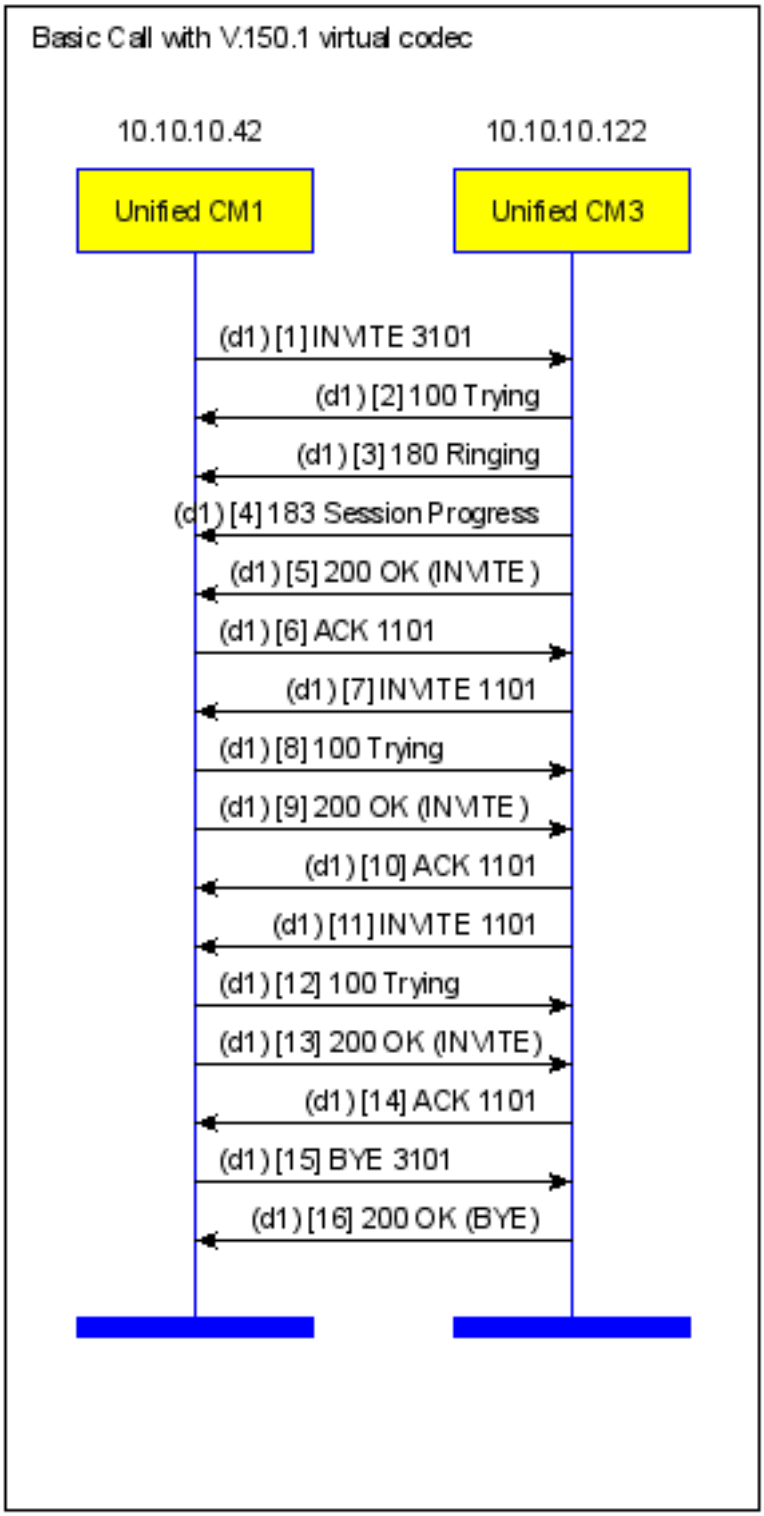
Phone A DN 1101 calls Phone B DN 3101 over the SIP Trunk

Phone B DN 3101 Answers

Phone A DN 1101 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:3101@10.10.10.122:5060 SIP/2.0
```
Date: Tue, 23 Feb 2010 00:03:31 GMT
Call-Info: <sip:10.10.10.42:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1101@10.10.10.42>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1101@10.10.10.42>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
Require: resource-priority
To: <sip:3101@10.10.10.122>
Contact: <sip:1101@10.10.10.42:5060;transport=tcp>
Resource-Priority: dsn.priority
Expires: 180
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.42:5060;branch=z9hG4bK12602ed7d
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Date: Tue, 22 Jul 2008 12:17:17 GMT
From: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Allow-Events: presence
Content-Length: 0
To: <sip:3101@10.10.10.122>
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.42:5060;branch=z9hG4bK12602ed7d
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Date: Tue, 22 Jul 2008 12:17:17 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Allow-Events: presence
P-Asserted-Identity: <sip:3101@10.10.10.122>
Remote-Party-ID: <sip:3101@10.10.10.122>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Contact: <sip:1101@10.10.10.122:5060;transport=tcp>
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.42:5060;branch=z9hG4bK12602ed7d
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Date: Tue, 22 Jul 2008 12:17:17 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:3101@10.10.10.122>
Remote-Party-ID: <sip:3101@10.10.10.122>;party=called;screen=yes;privacy=off
Content-Length: 440
To: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Contact: <sip:1101@10.10.10.122:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.42:5060;branch=z9hG4bK12602ed7d
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.122
s=SIP Call
c=IN IP4 10.10.10.121
t=0 0
m=audio 4000 RTP/AVP 0 8 18 118 100 101
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:0
a=rtpmap:118 v150fw/8000
```

CISCO CONFIDENTIAL

```
a=sqn:0
a=cdsc: 1 audio udpsprt 120
a=cpar: a=sprtmap:120 v150mr/8000
a=rtpmap:100 X-NSE/8000
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[5] SIP/2.0 200 OK

```
Date: Tue, 22 Jul 2008 12:17:17 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:3101@10.10.10.122>
Supported: replaces
Remote-Party-ID: <sip:3101@10.10.10.122>;party=called;screen=yes;privacy=off
Content-Length: 440
Require:  timer
To: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Contact: <sip:1101@10.10.10.122:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.42:5060;branch=z9hG4bK12602ed7d
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.122
s=SIP Call
c=IN IP4 10.10.10.121
t=0 0
m=audio 4000 RTP/AVP 0 8 18 118 100 101
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:0
a=rtpmap:118 v150fw/8000
a=sqn:0
a=cdsc: 1 audio udpsprt 120
a=cpar: a=sprtmap:120 v150mr/8000
a=rtpmap:100 X-NSE/8000
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[6] ACK sip:1101@10.10.10.122:5060;transport=tcp SIP/2.0

```
Date: Tue, 23 Feb 2010 00:03:31 GMT
From: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Allow-Events: presence, kpml
Content-Length: 251
To: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Content-Type: application/sdp
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.42:5060;branch=z9hG4bK377195beb
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.10.42
s=SIP Call
c=IN IP4 10.10.10.41
t=0 0
m=audio 19042 RTP/AVP 0 100 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:100 X-NSE/8000
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[7] INVITE sip:1101@10.10.10.42:5060;transport=tcp SIP/2.0

```
Date: Tue, 22 Jul 2008 12:17:20 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
```

CISCO CONFIDENTIAL

```
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:3101@10.10.10.122>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 514542080-2287062989-2-2047478282
Remote-Party-ID: <sip:3101@10.10.10.122>;party=calling;screen=yes;privacy=off
Content-Length: 252
User-Agent: Cisco-CUCM8.0
To: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Contact: <sip:3101@10.10.10.122:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.122:5060;branch=z9hG4bK122a382eb
CSeq: 102 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.10.122
s=SIP Call
c=IN IP4 10.10.10.121
t=0 0
m=audio 4000 RTP/AVP 0 100 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:100 X-NSE/8000
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[8] SIP/2.0 100 Trying

```
Date: Tue, 23 Feb 2010 00:03:34 GMT
From: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.122:5060;branch=z9hG4bK122a382eb
CSeq: 102 INVITE
```

[diagram] Call-ID:[prev][next]

[9] SIP/2.0 200 OK

```
Date: Tue, 23 Feb 2010 00:03:34 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1101@10.10.10.42>
Supported: replaces
Remote-Party-ID: <sip:1101@10.10.10.42>;party=called;screen=yes;privacy=off
Content-Length: 251
Require:  timer
To: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Contact: <sip:1101@10.10.10.42:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.122:5060;branch=z9hG4bK122a382eb
CSeq: 102 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.10.42
s=SIP Call
c=IN IP4 10.10.10.41
t=0 0
m=audio 19042 RTP/AVP 0 100 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:100 X-NSE/8000
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[10] ACK sip:1101@10.10.10.42:5060;transport=tcp SIP/2.0

```
Date: Tue, 22 Jul 2008 12:17:20 GMT
From: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Allow-Events: presence, kpml
Content-Length: 0
```

CISCO CONFIDENTIAL

```
To: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.122:5060;branch=z9hG4bK2595e7c92
CSeq: 102 ACK
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[11] INVITE sip:1101@10.10.10.42:5060;transport=tcp SIP/2.0

```
Date: Tue, 22 Jul 2008 12:17:20 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:3101@10.10.10.122>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 514542080-2287062989-2-2047478282
Remote-Party-ID: <sip:3101@10.10.10.122>;party=calling;screen=yes;privacy=off
Content-Length: 241
User-Agent: Cisco-CUCM8.0
To: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Contact: <sip:3101@10.10.10.122:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.122:5060;branch=z9hG4bK41463c0c6
CSeq: 104 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.10.122
s=SIP Call
c=IN IP4 10.10.10.121
t=0 0
m=audio 18420 RTP/AVP 0 100 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:100 X-NSE/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[12] SIP/2.0 100 Trying

```
Date: Tue, 23 Feb 2010 00:03:34 GMT
From: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.122:5060;branch=z9hG4bK41463c0c6
CSeq: 104 INVITE
```

[diagram] Call-ID:[prev][next]

[13] SIP/2.0 200 OK

```
Date: Tue, 23 Feb 2010 00:03:34 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1101@10.10.10.42>
Supported: replaces
Remote-Party-ID: <sip:1101@10.10.10.42>;party=called;screen=yes;privacy=off
Content-Length: 239
Require:  timer
To: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Contact: <sip:1101@10.10.10.42:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.122:5060;branch=z9hG4bK41463c0c6
CSeq: 104 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.10.42
s=SIP Call
c=IN IP4 10.10.10.41
t=0 0
m=audio 19042 RTP/AVP 0 100 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:100 X-NSE/8000
```

CISCO CONFIDENTIAL

```
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[14] ACK sip:1101@10.10.10.42:5060;transport=tcp SIP/2.0
Date: Tue, 22 Jul 2008 12:17:20 GMT
From: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.122:5060;branch=z9hG4bK52d8631eb
CSeq: 104 ACK
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[15] BYE sip:3101@10.10.10.122:5060;transport=tcp SIP/2.0
Date: Tue, 23 Feb 2010 00:03:34 GMT
From: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
P-Asserted-Identity: <sip:1101@10.10.10.42>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.42:5060;branch=z9hG4bK5142e396e
CSeq: 104 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[16] SIP/2.0 200 OK
Date: Tue, 22 Jul 2008 12:17:25 GMT
From: <sip:1101@10.10.10.42>;tag=7eaa2e52-1306-4957-a9b9-c07fff28e973-21576784
Content-Length: 0
To: <sip:3101@10.10.10.122>;tag=a7464a9a-c4a4-4983-9e68-99639f28f3cc-18297983
Call-ID: 45425100-892152d3-2-2a0a0a0a@10.10.10.42
Via: SIP/2.0/TCP 10.10.10.42:5060;branch=z9hG4bK5142e396e
CSeq: 104 BYE
```

CISCO CONFIDENTIAL

22. T38Fax-interop-with-MSExchange

22.1 T38 Interop with MS Exchange

Title: T38 Interop with MS Exchange

Description:
The following basic callflow illustrates the SIP messaging over a SIP Trunk when a fax call is initiated.

Fax Machine A first tries to setup a audio call with Fax Machine B which is connected to a Microsoft Exchange Server and then call is switched to T.38 facsimile while faxing the data over.

Note: After switching to T.38 facsimile call, Cisco Call Manager does not allow the call to get downgraded to audio only call.

Configuration:
Node = Unified CM1, IP = 10.10.199.250
Node = RemoteUA1, IP = 10.10.200.179
Node = RemoteUA2, IP = 10.10.200.227

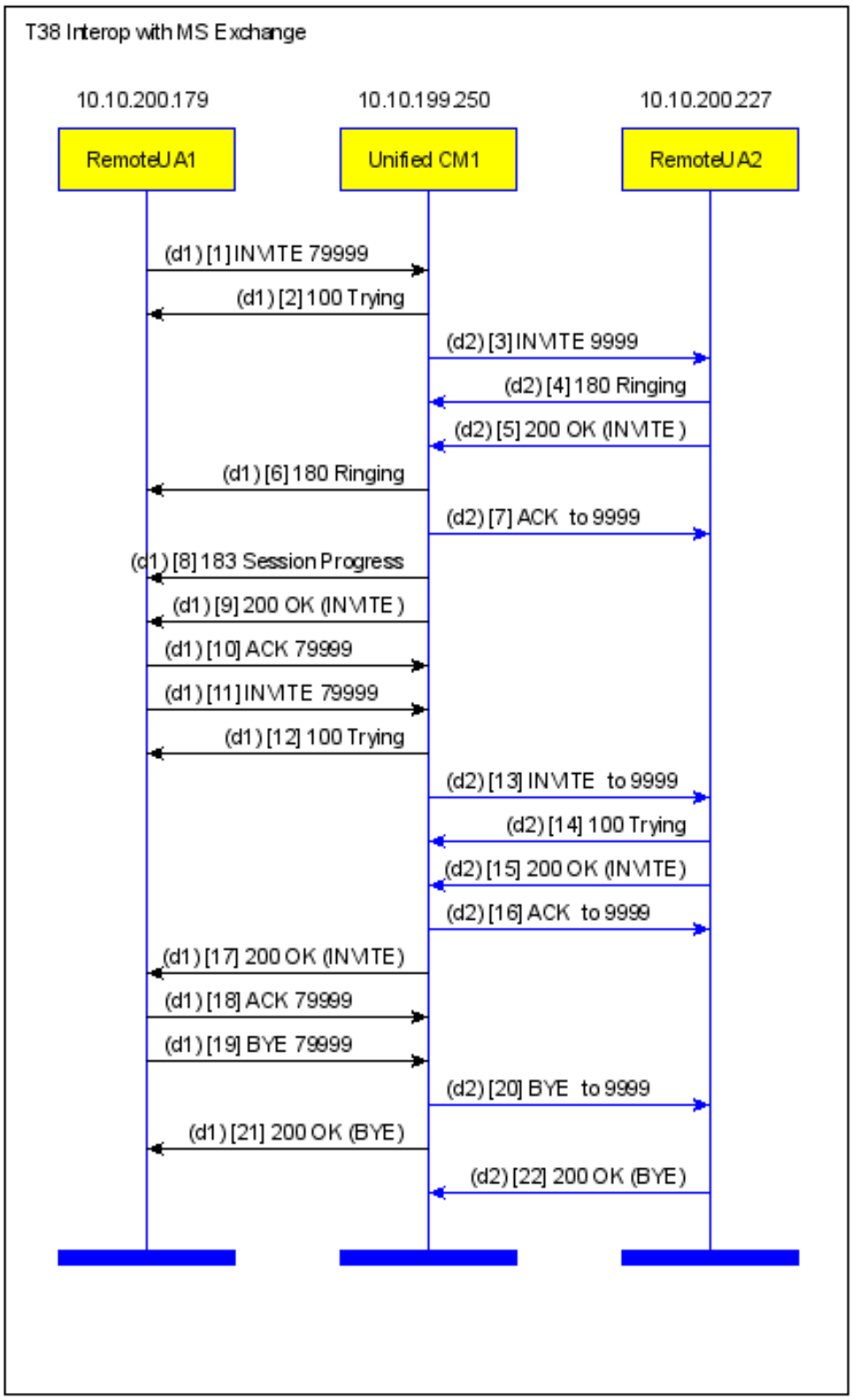
Fax = A, DN = 2020
Fax = B, DN = 9999

SIP Trunk between RemoteUA1 & Unified CM1 has route pattern 6.XXXX
SIP Trunk between Unified CM2 & RemoteUA2 has
a) route pattern 7.XXXX
b) SIP Profile has "Outgoing T.38 INVITE include audio mline" checked.

Scenario:
Fax A DN 2020 calls Fax B DN 9999 over the SIP Trunk by dialing 79999
Fax B DN 9999 Answers
Fax A DN 2020 goes onHook
End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] INVITE sip:79999@10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/UDP 10.10.200.179:5060
From: 2020 <sip:2020@10.10.200.179:5060>;tag=1
To: sut <sip:79999@10.10.199.250:5060>
Call-ID: 1-30966@10.10.200.179
CSeq: 1 INVITE
Contact: sip:2020@10.10.200.179:5060
Max-Forwards: 70
Subject: Performance Test
Content-Type: application/sdp
Content-Length:  140

v=0
o=user1 53655765 2353687637 IN IP4 10.10.200.179
s=-
c=IN IP4 10.10.200.179
t=0 0
m=audio 10000 RTP/AVP 0
a=rtpmap:0 PCMU/8000

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Mon, 08 Jun 2009 15:39:34 GMT
From: 2020 <sip:2020@10.10.200.179:5060>;tag=1
Allow-Events: presence
Content-Length: 0
To: sut <sip:79999@10.10.199.250:5060>
Call-ID: 1-30966@10.10.200.179
Via: SIP/2.0/UDP 10.10.200.179:5060
CSeq: 1 INVITE

[diagram]   Call-ID:[prev][next]
[3] INVITE sip:9999@10.10.200.227:5060 SIP/2.0
Date: Mon, 08 Jun 2009 15:39:34 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "2020 " <sip:2020@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763677
Allow-Events: presence, kpml
P-Asserted-Identity: "2020 " <sip:2020@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE:  1800
Remote-Party-ID: "2020 " <sip:2020@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:9999@10.10.200.227>
Contact: <sip:2020@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 8f7c4480-a2d130b6-4d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17a7d53aa98
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 69

[diagram]   Call-ID:[prev][next]
[4] SIP/2.0 180 Ringing
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17a7d53aa98
From: "2020 " <sip:2020@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763677
To: <sip:9999@10.10.200.227>;tag=1
Call-ID: 8f7c4480-a2d130b6-4d-fac712ac@10.10.199.250
CSeq: 101 INVITE
Contact: <sip:10.10.200.227:5060;transport=TCP>
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[5] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17a7d53aa98
From: "2020 " <sip:2020@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763677
To: <sip:9999@10.10.200.227>;tag=1
Call-ID: 8f7c4480-a2d130b6-4d-fac712ac@10.10.199.250
CSeq: 101 INVITE
Contact: <sip:10.10.200.227:5060;transport=TCP>
Content-Type: application/sdp
Content-Length:  140

v=0
o=user1 53655765 2353687637 IN IP4 10.10.200.227
s=-
t=0 0
```

CISCO CONFIDENTIAL

```
c=IN IP4 10.10.200.227
m=audio 10000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
```

[diagram] Call-ID:[prev][next]

[6] SIP/2.0 180 Ringing

```
Date: Mon, 08 Jun 2009 15:39:34 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: 2020 <sip:2020@10.10.200.179:5060>;tag=1
Allow-Events: presence
P-Asserted-Identity: <sip:9999@10.10.199.250>
Supported: Geolocation
Remote-Party-ID: <sip:9999@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 0
To: sut <sip:79999@10.10.199.250:5060>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763676
Contact: <sip:79999@10.10.199.250:5060>
Call-ID: 1-30966@10.10.200.179
Via: SIP/2.0/UDP 10.10.200.179:5060
CSeq: 1 INVITE
```

[diagram] Call-ID:[prev][next]

[7] ACK sip:10.10.200.227:5060;transport=TCP SIP/2.0

```
Date: Mon, 08 Jun 2009 15:39:34 GMT
From: "2020 " <sip:2020@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763677
Allow-Events: presence, kpml
Content-Length: 160
To: <sip:9999@10.10.200.227>;tag=1
Content-Type: application/sdp
Call-ID: 8f7c4480-a2d130b6-4d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17b4550505c
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.200.179
t=0 0
m=audio 10000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

[diagram] Call-ID:[prev][next]

[8] SIP/2.0 183 Session Progress

```
Date: Mon, 08 Jun 2009 15:39:34 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: 2020 <sip:2020@10.10.200.179:5060>;tag=1
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:9999@10.10.199.250>
Supported: Geolocation
Remote-Party-ID: <sip:9999@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 160
To: sut <sip:79999@10.10.199.250:5060>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763676
Contact: <sip:79999@10.10.199.250:5060>
Content-Type: application/sdp
Call-ID: 1-30966@10.10.200.179
Via: SIP/2.0/UDP 10.10.200.179:5060
CSeq: 1 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.200.227
t=0 0
m=audio 10000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

[diagram] Call-ID:[prev][next]

[9] SIP/2.0 200 OK

```
Date: Mon, 08 Jun 2009 15:39:34 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: 2020 <sip:2020@10.10.200.179:5060>;tag=1
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:9999@10.10.199.250>;party=called;screen=no;privacy=off
```

CISCO CONFIDENTIAL

```
Content-Length: 160
To: sut <sip:79999@10.10.199.250:5060>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763676
Contact: <sip:79999@10.10.199.250:5060>
Content-Type: application/sdp
Call-ID: 1-30966@10.10.200.179
Via: SIP/2.0/UDP 10.10.200.179:5060
CSeq: 1 INVITE
P-Preferred-Identity: <sip:9999@10.10.199.250>

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.200.227
t=0 0
m=audio 10000 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

[diagram] Call-ID:[prev][next]

[10] ACK sip:79999@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.200.179:5060
From: 2020 <sip:2020@10.10.200.179:5060>;tag=1
To: sut <sip:79999@10.10.199.250:5060>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763676
Call-ID: 1-30966@10.10.200.179
CSeq: 1 ACK
Contact: sip:2020@10.10.200.179:5060
Max-Forwards: 70
Subject: Performance Test
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[11] INVITE sip:79999@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.200.179:5060
From: 2020 <sip:2020@10.10.200.179:5060>;tag=1
To: sut <sip:79999@10.10.199.250:5060>
Call-ID: 1-30966@10.10.200.179
CSeq: 1 INVITE
Contact: sip:2020@10.10.200.179:5060
Max-Forwards: 70
Subject: T.38 fax Test
Content-Type: application/sdp
Content-Length:  401

v=0
o=user1 53655765 2353687637 IN IP4 10.10.200.179
s=-
c=IN IP4 10.10.200.179
t=0 0
m=audio 0  RTP/AVP 0
a=rtpmap:0 PCMU/8000
m=image 17678 udptl t38
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
```

[diagram] Call-ID:[prev][next]

[12] SIP/2.0 100 Trying

```
Date: Mon, 08 Jun 2009 15:39:40 GMT
From: 2020 <sip:2020@10.10.200.179:5060>;tag=1
Allow-Events: presence, kpml
Content-Length: 0
To: sut <sip:79999@10.10.199.250:5060>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763676
Call-ID: 1-30966@10.10.200.179
Via: SIP/2.0/UDP 10.10.200.179:5060
CSeq: 1 INVITE
```

[diagram] Call-ID:[prev][next]

[13] INVITE sip:10.10.200.227:5060;transport=TCP SIP/2.0

```
Date: Mon, 08 Jun 2009 15:39:40 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: "2020 " <sip:2020@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763677
Allow-Events: presence, kpml
P-Asserted-Identity: "2020 " <sip:2020@10.10.199.250>
```

CISCO CONFIDENTIAL

```
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: "2020 " <sip:2020@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 420
User-Agent: Cisco-CUCM8.0
To: <sip:9999@10.10.200.227>;tag=1
Contact: <sip:2020@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 8f7c4480-a2d130b6-4d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17c44c2509b
CSeq: 102 INVITE
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.200.179
t=0 0
m=audio 0 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
m=image 17678 udptl t38
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

[diagram]   Call-ID:[prev][next]
[14] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17c44c2509b
From: "2020 " <sip:2020@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763677
To: <sip:9999@10.10.200.227>;tag=1;tag=1
Call-ID: 8f7c4480-a2d130b6-4d-fac712ac@10.10.199.250
CSeq: 102 INVITE
Contact: <sip:10.10.200.227:5060;transport=TCP>
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[15] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17c44c2509b
From: "2020 " <sip:2020@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763677
To: <sip:9999@10.10.200.227>;tag=1;tag=1
Call-ID: 8f7c4480-a2d130b6-4d-fac712ac@10.10.199.250
CSeq: 102 INVITE
Contact: <sip:10.10.200.227:5060;transport=TCP>
Content-Type: application/sdp
Content-Length:  150

v=0
o=user1 53655765 2353687637 IN IP4 10.10.200.227
s=SIP Call
c=IN IP4 10.10.200.227
t=0 0
m=image 10000 udptl t38
c=IN IP4 10.10.200.227

[diagram]   Call-ID:[prev][next]
[16] ACK sip:10.10.200.227:5060;transport=TCP SIP/2.0
Date: Mon, 08 Jun 2009 15:39:40 GMT
From: "2020 " <sip:2020@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763677
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:9999@10.10.200.227>;tag=1;tag=1
Call-ID: 8f7c4480-a2d130b6-4d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17d66e09cc0
CSeq: 102 ACK
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[17] SIP/2.0 200 OK
Date: Mon, 08 Jun 2009 15:39:40 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: 2020 <sip:2020@10.10.200.179:5060>;tag=1
```

CISCO CONFIDENTIAL

```
Allow-Events: presence, kpml
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:9999@10.10.199.250>;party=called;screen=no;privacy=off
Content-Length: 283
To: sut <sip:79999@10.10.199.250:5060>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763676
Contact: <sip:79999@10.10.199.250:5060>
Content-Type: application/sdp
Call-ID: 1-30966@10.10.200.179
Via: SIP/2.0/UDP 10.10.200.179:5060
CSeq: 1 INVITE
P-Preferred-Identity: <sip:9999@10.10.199.250>

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.200.227
t=0 0
m=audio 0 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
m=image 10000 udptl t38
a=T38MaxBitRate:14400
a=T38FaxFillBitRemoval:0
a=T38FaxTranscodingMMR:0
a=T38FaxTranscodingJBIG:0
```

[diagram] Call-ID:[prev][next]

[18] ACK sip:79999@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.200.179:5060
From: 2020 <sip:2020@10.10.200.179:5060>;tag=1
To: sut <sip:79999@10.10.199.250:5060>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763676
Call-ID: 1-30966@10.10.200.179
CSeq: 1 ACK
Contact: sip:2020@10.10.200.179:5060
Max-Forwards: 70
Subject: T38 Fax Test
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[19] BYE sip:79999@10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/UDP 10.10.200.179:5060
From: 2020 <sip:2020@10.10.200.179:5060>;tag=1
To: sut <sip:79999@10.10.199.250:5060>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763676
Call-ID: 1-30966@10.10.200.179
CSeq: 2 BYE
Contact: sip:2020@10.10.200.179:5060
Max-Forwards: 70
Subject: Performance Test
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[20] BYE sip:10.10.200.227:5060;transport=TCP SIP/2.0

```
Date: Mon, 08 Jun 2009 15:39:40 GMT
From: "2020 " <sip:2020@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763677
P-Asserted-Identity: "2020 " <sip:2020@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:9999@10.10.200.227>;tag=1;tag=1
Call-ID: 8f7c4480-a2d130b6-4d-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17e6209bbea
CSeq: 103 BYE
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[21] SIP/2.0 200 OK

```
Date: Mon, 08 Jun 2009 15:39:45 GMT
From: 2020 <sip:2020@10.10.200.179:5060>;tag=1
Content-Length: 0
To: sut <sip:79999@10.10.199.250:5060>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763676
Call-ID: 1-30966@10.10.200.179
Via: SIP/2.0/UDP 10.10.200.179:5060
CSeq: 2 BYE
```

[diagram] Call-ID:[prev][next]

[22] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK17e6209bbea
From: "2020 " <sip:2020@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-21763677
To: <sip:9999@10.10.200.227>;tag=1;tag=1;tag=1
Call-ID: 8f7c4480-a2d130b6-4d-fac712ac@10.10.199.250
```

CISCO CONFIDENTIAL

```
CSeq: 103 BYE
Contact: <sip:10.10.200.227:5060;transport=TCP>
Content-Length: 0
```

23. MMoH

23.1 Basic Hold-resume Call via an SIP ICT with MMOH enabled

Title: Basic Hold-resume Call via an SIP ICT with MMOH enabled

Description:

The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk which has MMOH (Multicast Music On Hold) feature enabled.

Cisco IP PhoneA registered to Cisco Unified CM1 calls Cisco IP PhoneB which is registered to Cisco Unified CM2.

Cisco Unified CM2 PhoneB initiated the "hold" and then resumed the call.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = SCCP
Phone = B, Line = 2001, IP = 10.10.199.171, Model = SIP TNP

Mmoh configuration steps:
1. configure a SIPICT trunk between two UCM clusters.
2. go to Media Resources -> Music On Hold Audio Source. Select MOH Audio Stream Number. Select "Allow Multicasting" and save.
3. go to Media Resources -> Fixed MoH Audio Source. Select "Allow Multicasting" and save.
4. go to Media Resources -> Music on Hold Server. Click the MoH server that is going to be used for MMoH.
Select "Enable Multicast Audio Sources on this MoH server". Save and reset.
5. Create a new MRG. Select "Use Multicast for MoH Audio". Move the MoH server in step 3 into this MRG.
6. Create a new MRGL. Move the MRG in step 4 into this MRGL.
7. Assign the MRGL to SIPICT trunk.

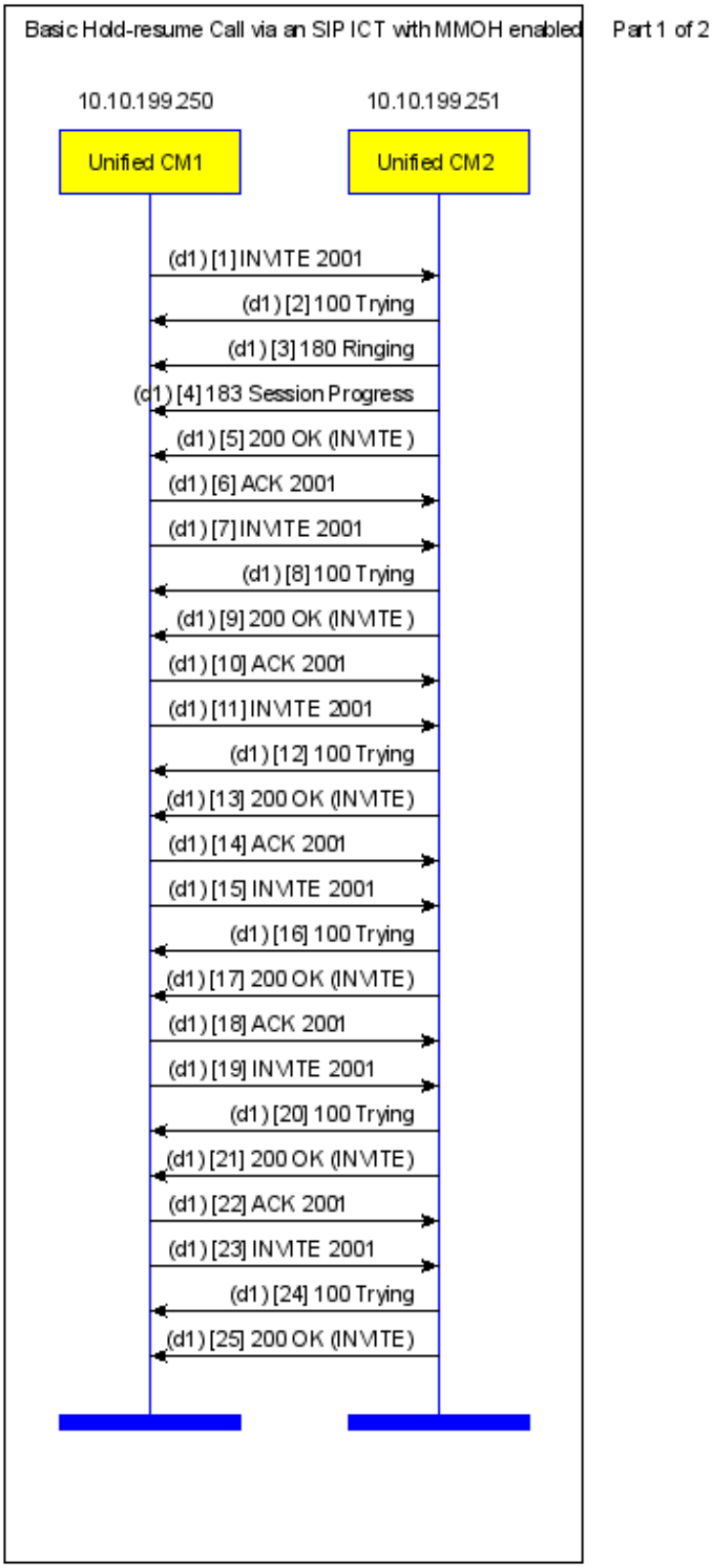
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

CISCO CONFIDENTIAL

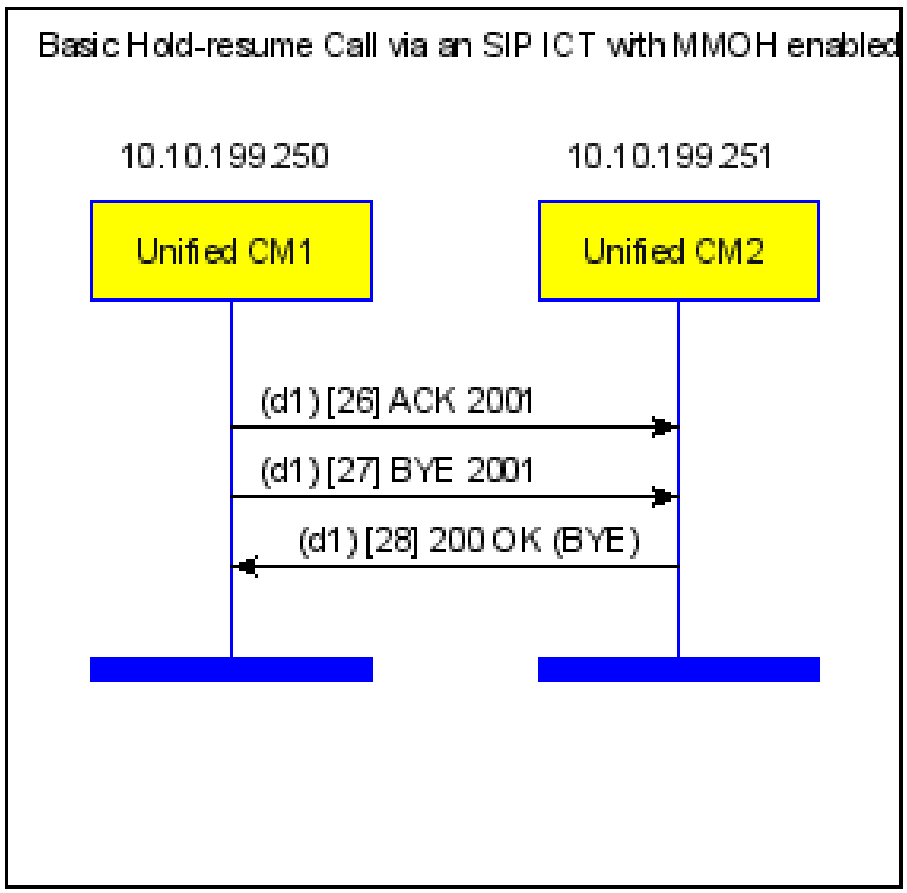
Scenario:

Phone A DN 1001 calls Phone B DN 2001 over the SIP Trunk by dialing 22001
Phone B DN 2001 Answers
Phone B DN 1001 presses hold softkey
Phone A DN 2001 hears music on hold (MOH)
Duration short
Phone B DN 1001 presses resume softkey
Phone A DN 1001 and Phone B DN 2001 have two-way speech
Phone A DN 1001 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2001@10.10.199.251:5060 SIP/2.0
Date: Tue, 30 Sep 2008 20:46:41 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Supported: timer,replaces
Min-SE: 1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2001@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK23699f460c
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Tue, 30 Sep 2008 20:47:59 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Content-Length: 0
To: <sip:2001@10.10.199.251>
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK23699f460c
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Tue, 30 Sep 2008 20:47:59 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK23699f460c
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Tue, 30 Sep 2008 20:47:59 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 347
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK23699f460c
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 27584 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 200 OK

CISCO CONFIDENTIAL

```
Date: Tue, 30 Sep 2008 20:47:59 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Supported: replaces
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 347
Require:  timer
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK23699f460c
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 27584 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[6] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 30 Sep 2008 20:46:41 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Content-Length: 216
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK24404d5ee7
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 27848 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[7] INVITE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 30 Sep 2008 20:46:52 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Supported: timer,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 221
User-Agent: Cisco-CUCM8.0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK25239303c8
CSeq: 102 INVITE
Session-Expires:  1800;refresher=uas
Max-Forwards: 70

v=0
```

CISCO CONFIDENTIAL

```
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 27848 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[8] SIP/2.0 100 Trying

```
Date: Tue, 30 Sep 2008 20:48:09 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Content-Length: 0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK25239303c8
CSeq: 102 INVITE
```

[diagram] Call-ID:[prev][next]

[9] SIP/2.0 200 OK

```
Date: Tue, 30 Sep 2008 20:48:09 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Supported: replaces
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 228
Require:  timer
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK25239303c8
CSeq: 102 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 27584 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[10] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 30 Sep 2008 20:46:52 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Content-Length: 0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK265fc4fd99
CSeq: 102 ACK
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[11] INVITE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 30 Sep 2008 20:46:52 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Supported: timer,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2779f6b23a
```

CISCO CONFIDENTIAL

```
CSeq: 103 INVITE
Session-Expires:  1800;refresher=uas
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[12] SIP/2.0 100 Trying

```
Date: Tue, 30 Sep 2008 20:48:09 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Content-Length: 0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2779f6b23a
CSeq: 103 INVITE
```

[diagram] Call-ID:[prev][next]

[13] SIP/2.0 200 OK

```
Date: Tue, 30 Sep 2008 20:48:09 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Supported: replaces
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 347
Require:  timer
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2779f6b23a
CSeq: 103 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 27584 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[14] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 30 Sep 2008 20:46:52 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Content-Length: 354
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK28249fcdb4
CSeq: 103 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 3 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 239.1.1.1
t=0 0
m=audio 16392 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=inactive
```

CISCO CONFIDENTIAL

```
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[15] INVITE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Tue, 30 Sep 2008 20:46:52 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Supported: timer,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 167
User-Agent: Cisco-CUCM8.0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK292e16a397
CSeq: 104 INVITE
Session-Expires:  1800;refresher=uas
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 239.1.1.1
t=0 0
m=audio 16392 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:80
a=recvonly

[diagram]   Call-ID:[prev][next]
[16] SIP/2.0 100 Trying
Date: Tue, 30 Sep 2008 20:48:09 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Content-Length: 0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK292e16a397
CSeq: 104 INVITE

[diagram]   Call-ID:[prev][next]
[17] SIP/2.0 200 OK
Date: Tue, 30 Sep 2008 20:48:09 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Supported: replaces
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 223
Require:  timer
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK292e16a397
CSeq: 104 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 4 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 239.1.1.1
t=0 0
m=audio 16392 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=inactive
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram]   Call-ID:[prev][next]
[18] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Tue, 30 Sep 2008 20:46:52 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
```

CISCO CONFIDENTIAL

```
Content-Length: 0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2a194eeb6
CSeq: 104 ACK
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[19] INVITE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Tue, 30 Sep 2008 20:47:04 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Supported: timer,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 165
User-Agent: Cisco-CUCM8.0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2b137c6522
CSeq: 105 INVITE
Session-Expires:  1800;refresher=uas
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 0.0.0.0
t=0 0
m=audio 16392 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:80
a=inactive
```

[diagram] Call-ID:[prev][next]

[20] SIP/2.0 100 Trying

```
Date: Tue, 30 Sep 2008 20:48:21 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Content-Length: 0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2b137c6522
CSeq: 105 INVITE
```

[diagram] Call-ID:[prev][next]

[21] SIP/2.0 200 OK

```
Date: Tue, 30 Sep 2008 20:48:21 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Supported: replaces
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 228
Require:  timer
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2b137c6522
CSeq: 105 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 5 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 27584 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
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[22] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Tue, 30 Sep 2008 20:47:04 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Content-Length: 0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2c268cddd3
CSeq: 105 ACK
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[23] INVITE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Tue, 30 Sep 2008 20:47:04 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Supported: timer,replaces
Min-SE: 1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2d1798cd4b
CSeq: 106 INVITE
Session-Expires: 1800;refresher=uas
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[24] SIP/2.0 100 Trying
Date: Tue, 30 Sep 2008 20:48:22 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Content-Length: 0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2d1798cd4b
CSeq: 106 INVITE

[diagram] Call-ID:[prev][next]
[25] SIP/2.0 200 OK
Date: Tue, 30 Sep 2008 20:48:22 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY, PUBLISH
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Supported: replaces
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 347
Require: timer
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2d1798cd4b
CSeq: 106 INVITE
Session-Expires: 1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 27584 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[26] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Tue, 30 Sep 2008 20:47:04 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Allow-Events: presence
Content-Length: 216
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Content-Type: application/sdp
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2e7b54b359
CSeq: 106 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 6 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 29840 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15

[diagram] Call-ID:[prev][next]
[27] BYE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Tue, 30 Sep 2008 20:47:04 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f3d6aa7ec
CSeq: 107 BYE
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[28] SIP/2.0 200 OK
Date: Tue, 30 Sep 2008 20:48:33 GMT
From: <sip:1001@10.10.199.250>;tag=4f442ca1-f40f-4451-b4ee-b5003b007ae8-25807203
Content-Length: 0
To: <sip:2001@10.10.199.251>;tag=1db10cf2-da9e-4aa2-b392-2d7fa9df684a-25541725
Call-ID: e1261400-8e219031-4b-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK2f3d6aa7ec
CSeq: 107 BYE

CISCO CONFIDENTIAL

24. IPv6

24.1 Outbound Delayed media call using Dual Mode SIP Trunk with signaling preference IPv4

Title: Outbound Delayed media call using Dual Mode SIP Trunk with signaling preference IPv4

Description:

This flow shows a basic delayed media call from an IPv4 only SCCP Phone to a IPv4 only SIP Phone via a Dual Mode SIP Trunk with signaling preference set to IPv4. The call is setup using IPv4 for signaling, and IPv4 for media.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = IPv4 SCCP
Phone = B, Line = 2001, IP = 10.10.199.171, Model = IPv4 SIP TNP

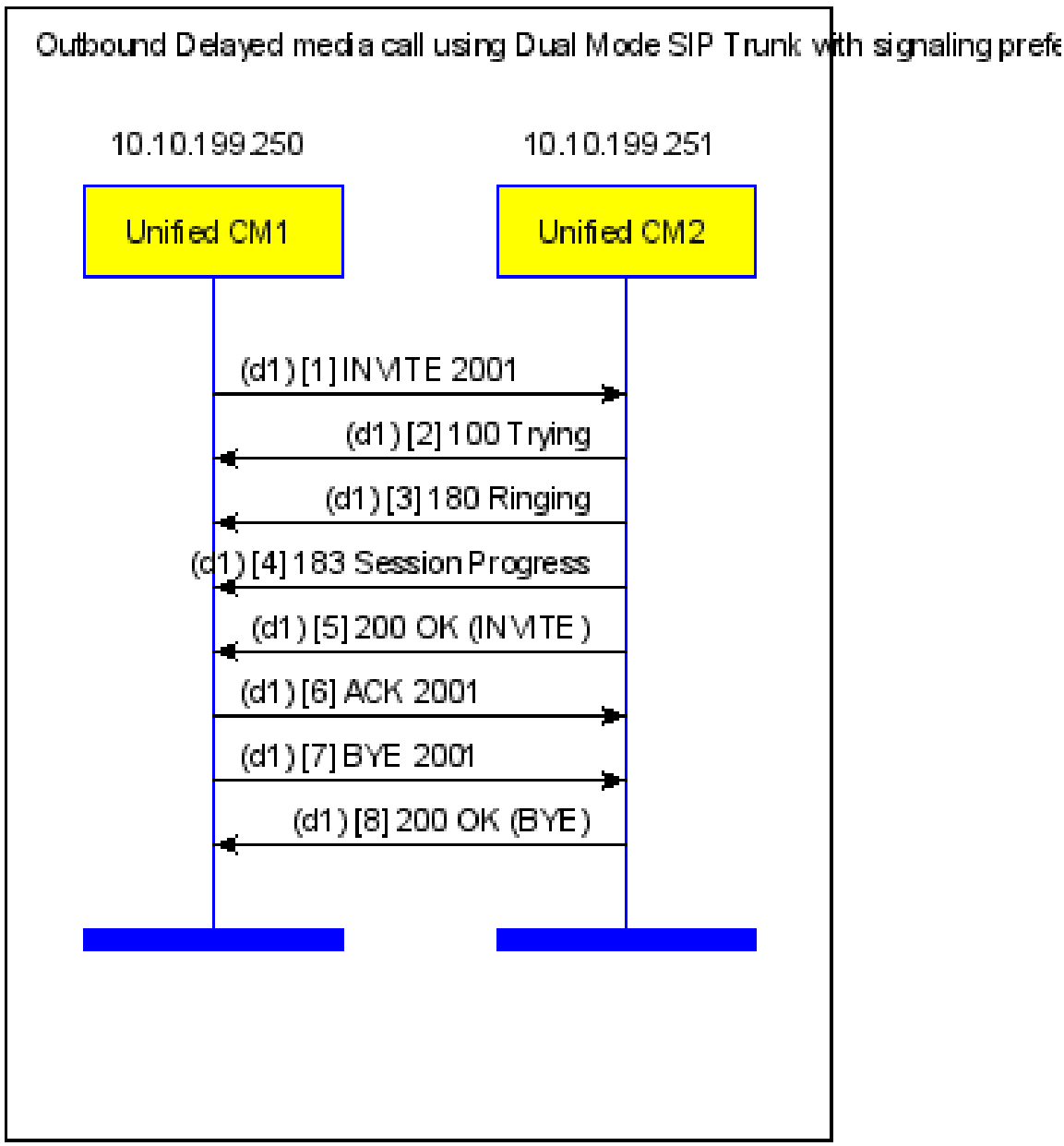
SIP Trunk between Unified CM1 & Unified CM2 has
a) route pattern 2.XXXX
b) The common device configuration associated to the trunk has
IP Addressing Mode set to IPv4 & IPv6, and the IP Addressing Mode for Signaling set to IPv4

Phone A, Phone B are configured with a common device configuration with IP Addressing Mode set to IPv4 so that they behave in IPv4 only mode.

Scenario:

Phone A DN 1001 calls Phone B DN 2001 over the SIP Trunk by dialing 22001
Phone B DN 2001 Answers
Phone A DN 1001 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2001@10.10.199.251:5060 SIP/2.0
Date: Wed, 03 Mar 2010 19:21:58 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091052
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2001@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: ca055480-a3619f56-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc256ecca9
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Wed, 03 Mar 2010 19:23:28 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091052
Allow-Events: presence
Content-Length: 0
To: <sip:2001@10.10.199.251>
Call-ID: ca055480-a3619f56-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc256ecca9
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Wed, 03 Mar 2010 19:23:28 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091052
Allow-Events: presence
P-Asserted-Identity: <sip:2001@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2001@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091571
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Call-ID: ca055480-a3619f56-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc256ecca9
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Wed, 03 Mar 2010 19:23:28 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091052
Allow-Events: presence
P-Asserted-Identity: <sip:2001@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 347
To: <sip:2001@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091571
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: ca055480-a3619f56-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc256ecca9
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 18458 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000

CISCO CONFIDENTIAL

```
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[5] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 19:23:28 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091052
Allow-Events: presence
P-Asserted-Identity: <sip:2001@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:2001@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 347
Require:  timer
To: <sip:2001@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091571
Contact: <sip:2001@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: ca055480-a3619f56-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc256ecca9
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 18458 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[6] ACK sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 19:21:58 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091052
Allow-Events: presence, kpml
Content-Length: 216
To: <sip:2001@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091571
Content-Type: application/sdp
Call-ID: ca055480-a3619f56-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd4ef56d21
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 17038 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[7] BYE sip:2001@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 19:21:58 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091052
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2001@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091571
Call-ID: ca055480-a3619f56-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKeb3ecd1
CSeq: 102 BYE
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[8] SIP/2.0 200 OK
Date: Wed, 03 Mar 2010 19:23:36 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091052
Content-Length: 0
To: <sip:2001@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091571
Call-ID: ca055480-a3619f56-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKeb3ecd1
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

24.2 Outbound Delayed media call using Dual Mode SIP Trunk with signaling preference IPv6

Title: Outbound Delayed media call using Dual Mode SIP Trunk with signaling preference IPv6

Description:

This flow shows a basic delayed media call from an IPv6 only SCCP Phone to a IPv6 only SCCP

Phone via a Dual Mode SIP Trunk with signaling preference set to IPv6. The

call is setup using IPv6 for signaling, and IPv6 for media.

Configuration:

Node = Unified CM1, IP = 2001:db8:c18:1:20e:7fff:fef0:8af7

Node = Unified CM2, IP = 2001:db8:c18:1:214:c2ff:fec0:b4d7

Phone = A, Line = 1003, IP = 10.10.199.130, Model = IPv6 SCCP

Phone = B, Line = 2002, IP = 10.10.199.171, Model = IPv6 SCCP

SIP Trunk between Unified CM1 & Unified CM2 has

a) route pattern 2.XXXX

b) The common device configuration associated to the trunk has

IP Addressing Mode set to IPv4 & IPv6, and the IP Addressing Mode for Signaling set to IPv6

Phone A, Phone B are configured with a common device configuration with

IP Addressing Mode set to IPv6 so that they behave in IPv6 only mode.

Scenario:

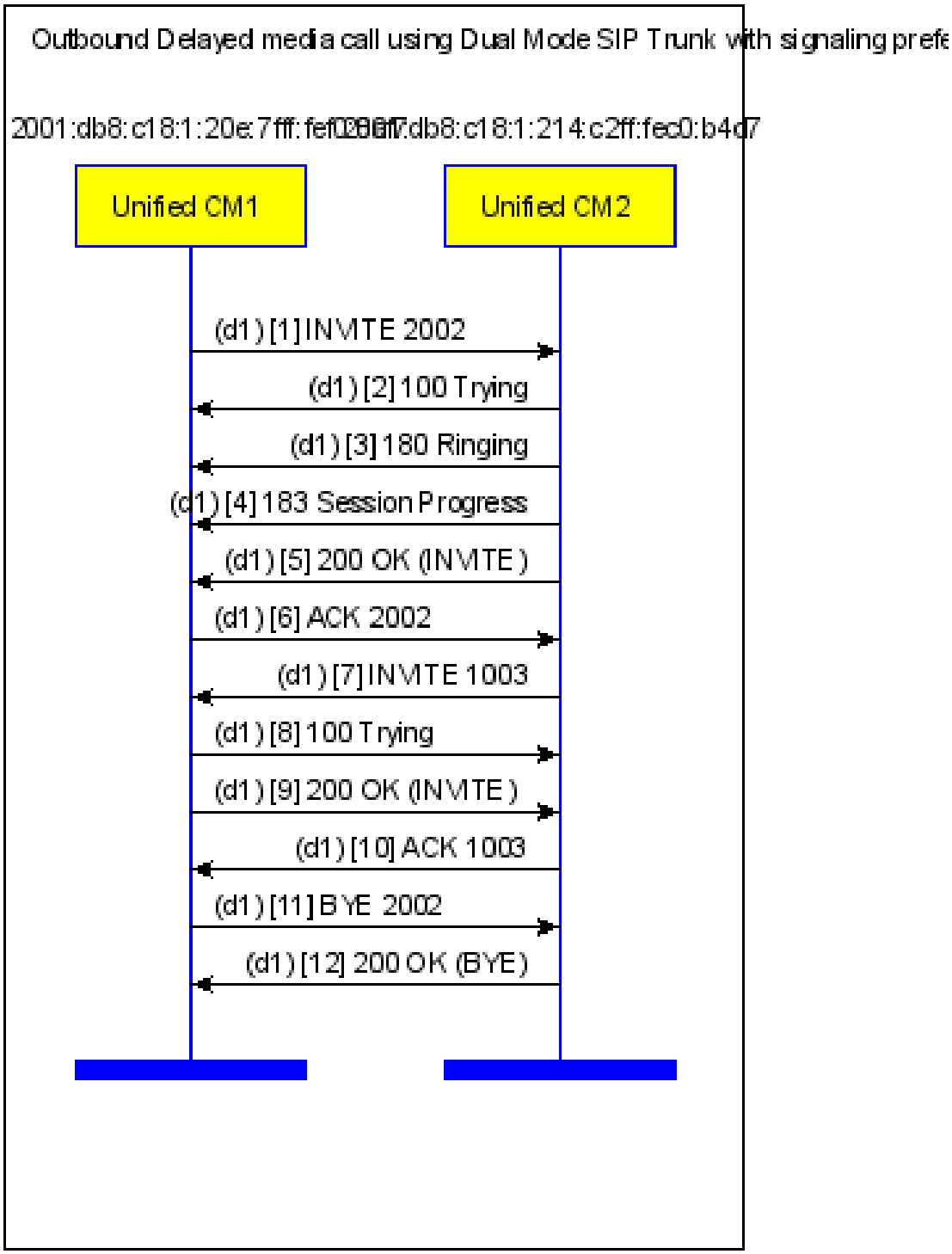
Phone A DN 1003 calls Phone B DN 2002 over the SIP Trunk by dialing 22002

Phone B DN 2002 Answers

Phone A DN 1003 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060 SIP/2.0
Date: Wed, 03 Mar 2010 19:27:57 GMT
Call-Info: <sip:[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091054
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Contact: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;transport=tcp>
Expires: 180
Call-ID: a0006200-a361a0bd-b-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK107907f12c
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Wed, 03 Mar 2010 19:29:27 GMT
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091054
Allow-Events: presence
Content-Length: 0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Call-ID: a0006200-a361a0bd-b-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK107907f12c
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Wed, 03 Mar 2010 19:29:27 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091054
Allow-Events: presence
P-Asserted-Identity: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Supported: Geolocation
Remote-Party-ID: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091573
Contact: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp>
Call-ID: a0006200-a361a0bd-b-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK107907f12c
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Wed, 03 Mar 2010 19:29:27 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091054
Allow-Events: presence
P-Asserted-Identity: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Supported: Geolocation
Remote-Party-ID: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;party=called;screen=yes;privacy=off
Content-Length: 375
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091573
Contact: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: a0006200-a361a0bd-b-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK107907f12c
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP6 2001:db8:c18:1:214:c2ff:fec0:b4d7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21c:58ff:fef0:70df
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000

CISCO CONFIDENTIAL

```
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[5] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 19:29:27 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091054
Allow-Events: presence
P-Asserted-Identity: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;party=called;screen=yes;privacy=off
Content-Length: 375
Require:  timer
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091573
Contact: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: a0006200-a361a0bd-b-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK107907f12c
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP6 2001:db8:c18:1:214:c2ff:fec0:b4d7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21c:58ff:fef0:70df
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[6] ACK sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 19:27:57 GMT
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091054
Allow-Events: presence, kpml
Content-Length: 266
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091573
Content-Type: application/sdp
Call-ID: a0006200-a361a0bd-b-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK112fc33e0c
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP6 2001:db8:c18:1:20e:7fff:fef0:8af7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21d:a2ff:fe1a:731c
t=0 0
m=audio 32328 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[7] INVITE sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 19:29:33 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091573
Allow-Events: presence
P-Asserted-Identity: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;party=calling;screen=yes;privacy=off
Content-Length: 254
User-Agent: Cisco-CUCM8.0
```

CISCO CONFIDENTIAL

```
To: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091054
Contact: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: a0006200-a361a0bd-b-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;branch=z9hG4bKc5bdedc7a
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP6 2001:db8:c18:1:214:c2ff:fec0:b4d7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21c:58ff:fef0:70df
t=0 0
m=audio 30134 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[8] SIP/2.0 100 Trying

```
Date: Wed, 03 Mar 2010 19:28:02 GMT
From: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091573
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091054
Call-ID: a0006200-a361a0bd-b-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;branch=z9hG4bKc5bdedc7a
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]

[9] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 19:28:02 GMT
Call-Info: <sip:[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091573
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;party=called;screen=yes;privacy=off
Content-Length: 254
Require:  timer
To: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091054
Contact: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: a0006200-a361a0bd-b-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;branch=z9hG4bKc5bdedc7a
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP6 2001:db8:c18:1:20e:7fff:fef0:8af7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21d:a2ff:fe1a:731c
t=0 0
m=audio 32328 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[10] ACK sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 19:29:33 GMT
From: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091573
Allow-Events: presence
Content-Length: 0
To: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091054
Call-ID: a0006200-a361a0bd-b-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;branch=z9hG4bKd7d926082
CSeq: 101 ACK
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[11] BYE sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 19:28:02 GMT
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091054
```

CISCO CONFIDENTIAL

```
P-Asserted-Identity: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091573
Call-ID: a0006200-a361a0bd-b-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK123ae68ae6
CSeq: 102 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Wed, 03 Mar 2010 19:29:37 GMT
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091054
Content-Length: 0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091573
Call-ID: a0006200-a361a0bd-b-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK123ae68ae6
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

24.3 Outbound Delayed media call using Dual Mode SIP Trunk with signaling preference IPv6, media IPv4

Title: Outbound Delayed media call using Dual Mode SIP Trunk with signaling preference IPv6, media IPv4

Description:

This flow shows a basic delayed media call from an IPv4 only SCCP Phone to a IPv4 only SIP Phone via a Dual Mode SIP Trunk with signaling preference set to IPv6. The call is setup using IPv6 for signaling, and IPv4 for media.

Configuration:

Node = Unified CM1, IP = 2001:db8:c18:1:20e:7fff:fef0:8af7
Node = Unified CM2, IP = 2001:db8:c18:1:214:c2ff:fec0:b4d7

Phone = A, Line = 1001, IP = 10.10.199.130, Model = IPv4 SCCP
Phone = B, Line = 2001, IP = 10.10.199.171, Model = IPv4 SIP TNP

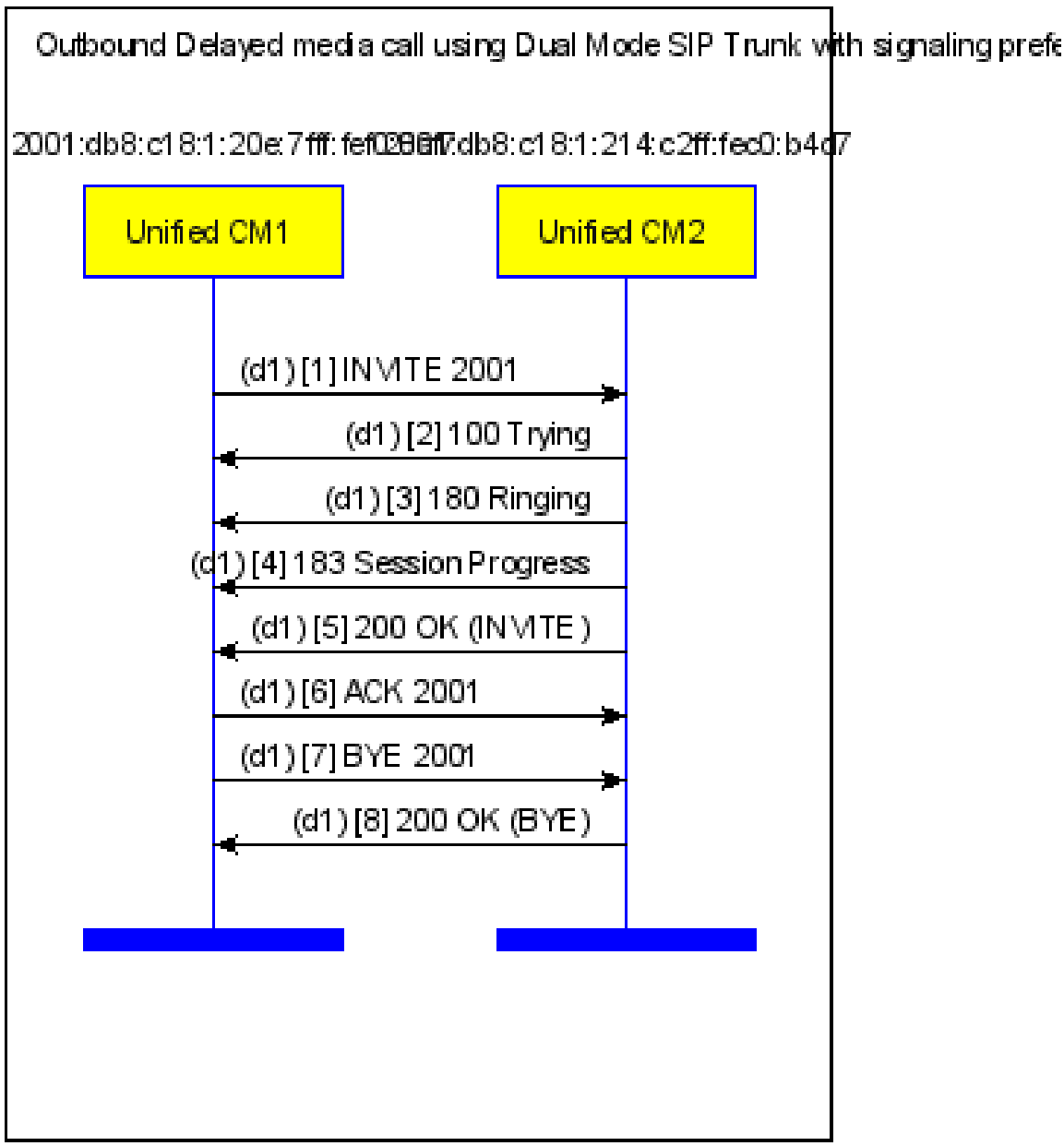
SIP Trunk between Unified CM1 & Unified CM2 has
a) route pattern 2.XXXX
b) The common device configuration associated to the trunk has
IP Addressing Mode set to IPv4 & IPv6, and the IP Addressing Mode for Signaling set to IPv6

Phone A, Phone B are configured with a common device configuration with IP Addressing Mode set to IPv4 so that they behave in IPv4 only mode.

Scenario:

Phone A DN 1001 calls Phone B DN 2001 over the SIP Trunk by dialing 22001
Phone B DN 2001 Answers
Phone A DN 1001 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060 SIP/2.0
Date: Wed, 03 Mar 2010 19:30:58 GMT
Call-Info: <sip:[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091056
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Contact: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;transport=tcp>
Expires: 180
Call-ID: be2ca80-a361a172-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK1337e11c6d
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Wed, 03 Mar 2010 19:32:28 GMT
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091056
Allow-Events: presence
Content-Length: 0
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Call-ID: be2ca80-a361a172-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK1337e11c6d
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Wed, 03 Mar 2010 19:32:28 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091056
Allow-Events: presence
P-Asserted-Identity: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Supported: Geolocation
Remote-Party-ID: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091575
Contact: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp>
Call-ID: be2ca80-a361a172-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK1337e11c6d
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Wed, 03 Mar 2010 19:32:28 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091056
Allow-Events: presence
P-Asserted-Identity: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Supported: Geolocation
Remote-Party-ID: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;party=called;screen=yes;privacy=off
Content-Length: 347
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091575
Contact: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: be2ca80-a361a172-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK1337e11c6d
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 21492 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000

CISCO CONFIDENTIAL

```
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[5] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 19:32:28 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091056
Allow-Events: presence
P-Asserted-Identity: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;party=called;screen=yes;privacy=off
Content-Length: 347
Require:  timer
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091575
Contact: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: be2ca80-a361a172-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK1337e11c6d
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.171
t=0 0
m=audio 21492 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[6] ACK sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 19:30:58 GMT
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091056
Allow-Events: presence, kpml
Content-Length: 216
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091575
Content-Type: application/sdp
Call-ID: be2ca80-a361a172-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK145d6290b7
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 21876 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[7] BYE sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 19:30:58 GMT
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091056
P-Asserted-Identity: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091575
Call-ID: be2ca80-a361a172-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK153d896ad3
CSeq: 102 BYE
Max-Forwards: 70
```

CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[8] SIP/2.0 200 OK
Date: Wed, 03 Mar 2010 19:32:37 GMT
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31091056
Content-Length: 0
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091575
Call-ID: be2ca80-a361a172-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK153d896ad3
CSeq: 102 BYE
```

24.4 Inbound Delayed media call using IPv6 only SIP Trunk

Title: Inbound Delayed media call using IPv6 only SIP Trunk

Description:
This flow shows a basic delayed media call from an IPv6 only SCCP Phone to a IPv4 only SCCP
Phone via a IPv6 only SIP Trunk. The call is setup using IPv6 for signaling, and IPv6 for media.
A dual stack MTP that supports conversion between IPv4 and IPv6 will be allocated on Unified CM1

Configuration:
Node = Unified CM1, IP = 2001:db8:c18:1:20e:7fff:fef0:8af7
Node = Unified CM2, IP = 2001:db8:c18:1:214:c2ff:fec0:b4d7

Phone = A, Line = 1001, IP = 10.10.199.130, Model = IPv4 SCCP
Phone = B, Line = 2002, IP = 10.10.199.171, Model = IPv6 SCCP

SIP Trunk between Unified CM1 & Unified CM2 has
a) route pattern 2.XXXX
b) The common device configuration associated to the trunk has
IP Addressing Mode set to IPv6

Phone A is configured with a common device configuration with
IP Addressing Mode set to IPv4 so that it behaves in IPv4 only mode.

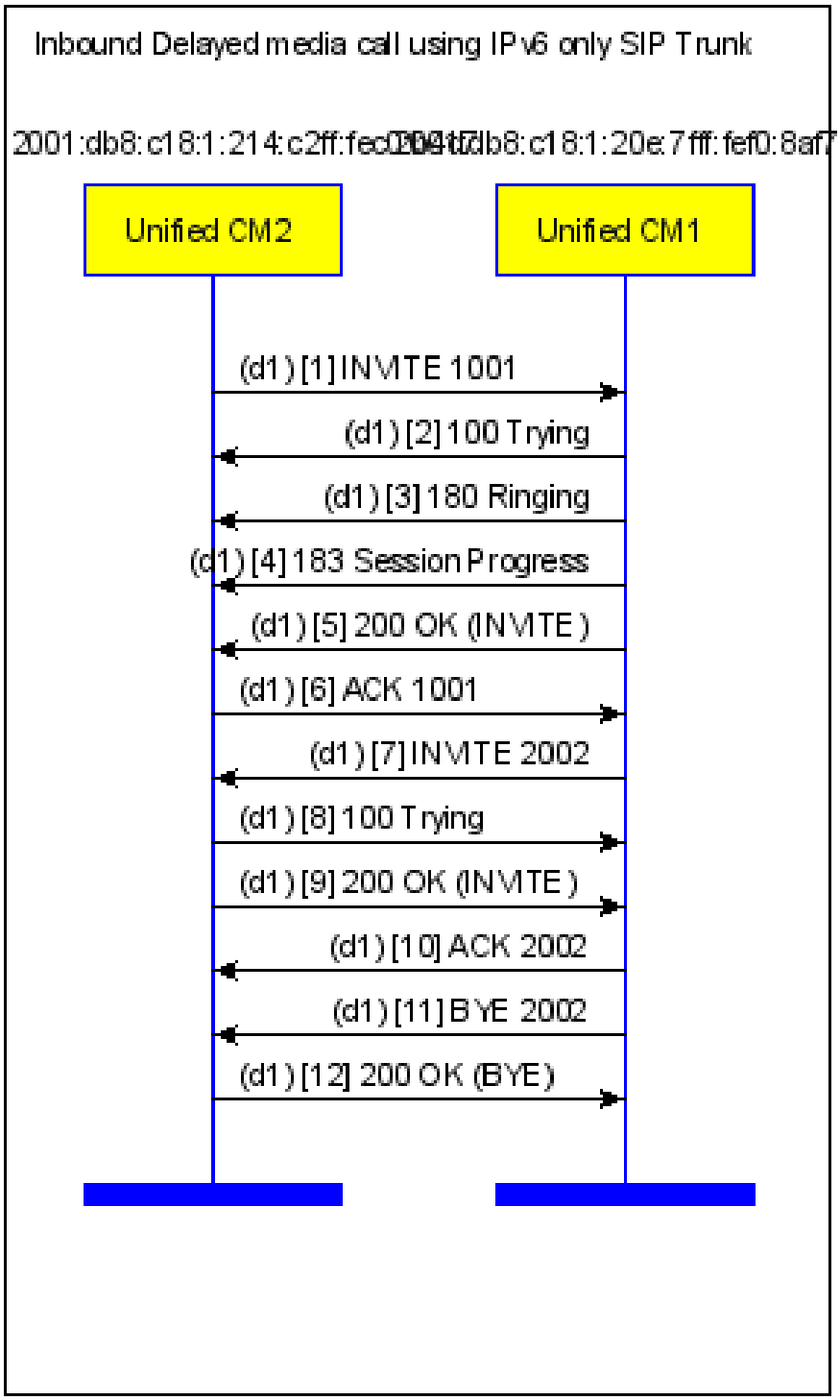
Phone B is configured with a common device configuration with
IP Addressing Mode set to IPv6 so that it behaves in IPv6 only mode.

Configure a Dual Stack MTP that supports IPv4/IPv6 conversion on Unified CM1

Scenario:
Phone B DN 2002 calls Phone A DN 1001 over the SIP Trunk by dialing 11001
Phone A DN 1001 Answers
Phone A DN 1001 goes onHook
End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

```
[diagram]   Call-ID:[prev][next]
[1] INVITE sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060 SIP/2.0
Date: Wed, 03 Mar 2010 18:55:58 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491054
Allow-Events: presence
P-Asserted-Identity: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Supported: timer,resource-priority,replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Min-SE:  1800
Remote-Party-ID: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Contact: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp>
Expires: 180
Call-ID: 51147880-a3f1d3be-6-fbc712ac@2001:db8:c18:1:214:c2ff:fec0:b4d7
Via: SIP/2.0/TCP [2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;branch=z9hG4bK7299dcbcc
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Wed, 03 Mar 2010 18:54:09 GMT
From: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491054
Allow-Events: presence
Content-Length: 0
To: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Call-ID: 51147880-a3f1d3be-6-fbc712ac@2001:db8:c18:1:214:c2ff:fec0:b4d7
Via: SIP/2.0/TCP [2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;branch=z9hG4bK7299dcbcc
CSeq: 101 INVITE

[diagram]   Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Wed, 03 Mar 2010 18:54:09 GMT
Call-Info: <sip:[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491054
Allow-Events: presence
P-Asserted-Identity: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Remote-Party-ID: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501578
Contact: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;transport=tcp>
Call-ID: 51147880-a3f1d3be-6-fbc712ac@2001:db8:c18:1:214:c2ff:fec0:b4d7
Via: SIP/2.0/TCP [2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;branch=z9hG4bK7299dcbcc
CSeq: 101 INVITE

[diagram]   Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Wed, 03 Mar 2010 18:54:09 GMT
Call-Info: <sip:[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491054
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Remote-Party-ID: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;party=called;screen=yes;privacy=off
Content-Length: 265
To: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501578
Contact: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 51147880-a3f1d3be-6-fbc712ac@2001:db8:c18:1:214:c2ff:fec0:b4d7
Via: SIP/2.0/TCP [2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;branch=z9hG4bK7299dcbcc
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP6 2001:db8:c18:1:20e:7fff:fef0:8af7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21f:9eff:fe57:8920
t=0 0
m=audio 4000 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=sendonly
```

CISCO CONFIDENTIAL

```
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[5] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 18:54:09 GMT
Call-Info: <sip:[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491054
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Remote-Party-ID: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;party=called;screen=yes;privacy=off
Content-Length: 265
Require:  timer
To: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501578
Contact: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 51147880-a3f1d3be-6-fbc712ac@2001:db8:c18:1:214:c2ff:fec0:b4d7
Via: SIP/2.0/TCP [2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;branch=z9hG4bK7299dcbcc
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP6 2001:db8:c18:1:20e:7fff:fef0:8af7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21f:9eff:fe57:8920
t=0 0
m=audio 4000 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[6] ACK sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 18:55:58 GMT
From: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491054
Allow-Events: presence
Content-Length: 266
To: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501578
Content-Type: application/sdp
Call-ID: 51147880-a3f1d3be-6-fbc712ac@2001:db8:c18:1:214:c2ff:fec0:b4d7
Via: SIP/2.0/TCP [2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;branch=z9hG4bK829b73ca
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP6 2001:db8:c18:1:214:c2ff:fec0:b4d7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21c:58ff:fef0:70df
t=0 0
m=audio 18238 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[7] INVITE sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 18:54:11 GMT
Call-Info: <sip:[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501578
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;party=calling;screen=yes;privacy=off
Content-Length: 254
User-Agent: Cisco-CUCM8.0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491054
Contact: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 51147880-a3f1d3be-6-fbc712ac@2001:db8:c18:1:214:c2ff:fec0:b4d7
```

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bKe5bac1f67
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP6 2001:db8:c18:1:20e:7fff:fef0:8af7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21f:9eff:fe57:8920
t=0 0
m=audio 16704 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[8] SIP/2.0 100 Trying

```
Date: Wed, 03 Mar 2010 18:55:59 GMT
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501578
Allow-Events: presence
Content-Length: 0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491054
Call-ID: 51147880-a3f1d3be-6-fbc712ac@2001:db8:c18:1:214:c2ff:fec0:b4d7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bKe5bac1f67
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]

[9] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 18:55:59 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501578
Allow-Events: presence
P-Asserted-Identity: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Remote-Party-ID: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;party=called;screen=yes;privacy=off
Content-Length: 254
Require:  timer
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491054
Contact: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 51147880-a3f1d3be-6-fbc712ac@2001:db8:c18:1:214:c2ff:fec0:b4d7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bKe5bac1f67
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP6 2001:db8:c18:1:214:c2ff:fec0:b4d7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21c:58ff:fef0:70df
t=0 0
m=audio 18238 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[10] ACK sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 18:54:11 GMT
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501578
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491054
Call-ID: 51147880-a3f1d3be-6-fbc712ac@2001:db8:c18:1:214:c2ff:fec0:b4d7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bKf3180e179
CSeq: 101 ACK
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[11] BYE sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 18:54:11 GMT
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501578
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491054
Call-ID: 51147880-a3f1d3be-6-fbc712ac@2001:db8:c18:1:214:c2ff:fec0:b4d7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK1023dbcae2
```

CISCO CONFIDENTIAL

```
CSeq: 102 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Wed, 03 Mar 2010 18:56:03 GMT
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501578
Content-Length: 0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491054
Call-ID: 51147880-a3f1d3be-6-fbc712ac@2001:db8:c18:1:214:c2ff:fec0:b4d7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK1023dbcae2
CSeq: 102 BYE
```

24.5 Outbound early offer call using IPv6 only SIP Trunk

Title: Outbound early offer call using IPv6 only SIP Trunk

Description:

This flow shows a basic early offer call from an IPv6 only SCCP Phone to a IPv4 only SIP Phone via a IPv6 only SIP Trunk. The call is setup using IPv6 for signaling, and IPv6 for media.

A dual stack MTP that support IPv6 will be allocated for sending SDP in the INVITE on unified CM1.

A dual stack MTP that supports conversion between IPv4 and IPv6 will be allocated on Unified CM2

Configuration:

Node = Unified CM1, IP = 2001:db8:c18:1:20e:7fff:fef0:8af7

Node = Unified CM2, IP = 2001:db8:c18:1:214:c2ff:fec0:b4d7

Phone = A, Line = 1003, IP = 10.10.199.66, Model = IPv6 SCCP

Phone = B, Line = 2001, IP = 10.10.199.171, Model = IPv4 SIP TNP

SIP Trunk between Unified CM1 & Unified CM2 has

a) route pattern 2.XXXX

b) The common device configuration associated to the trunk has

IP Addressing Mode set to IPv6

Phone A is configured with a common device configuration with

IP Addressing Mode set to IPv6 so that it behaves in IPv6 only mode.

Phone B is configured with a common device configuration with

IP Addressing Mode set to IPv4 so that it behaves in IPv4 only mode.

Configure a Dual Stack MTP that supports IPv4/IPv6 conversion on Unified CM1 and CM2

Scenario:

Phone A DN 1003 calls Phone B DN 2001 over the SIP Trunk by dialing 22001

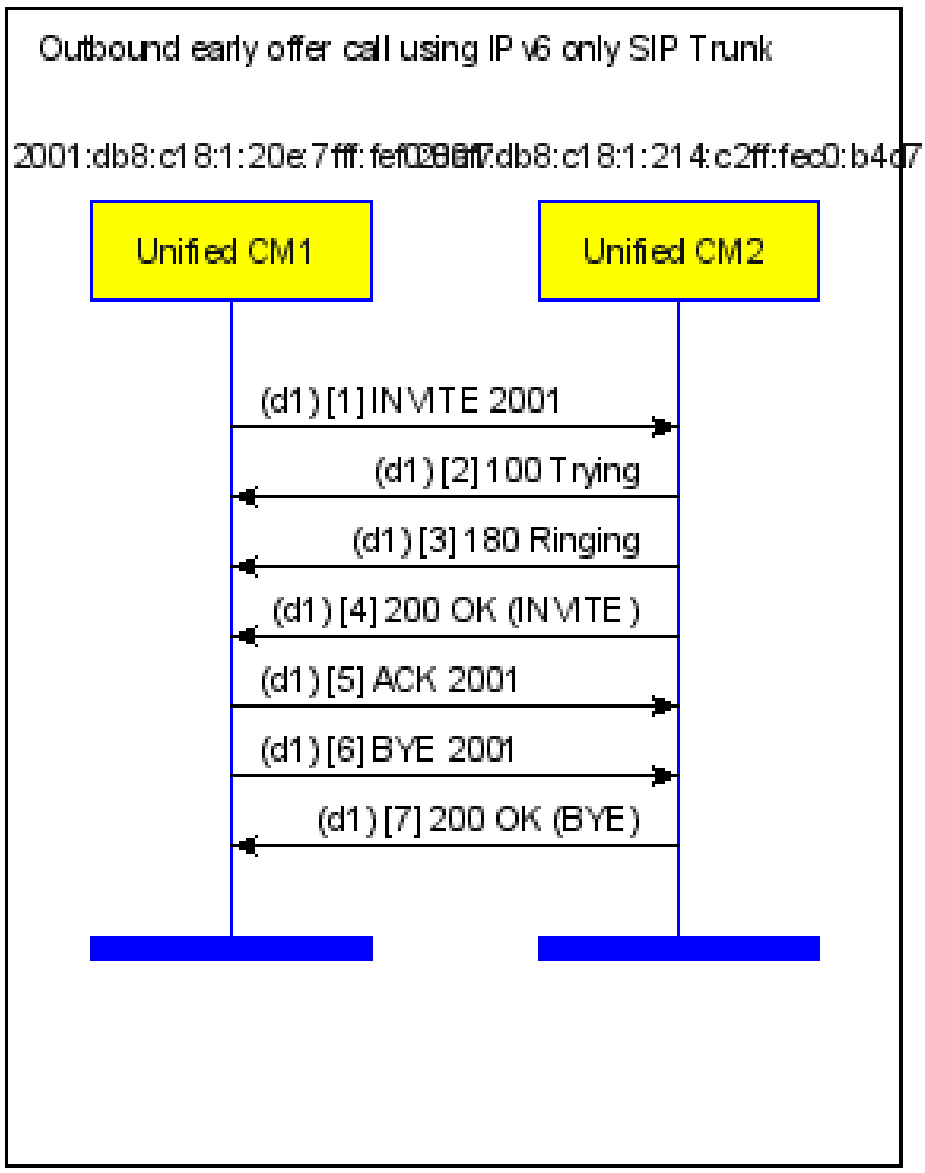
Phone B DN 2001 Answers

Phone A DN 1003 goes onHook

End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060 SIP/2.0
```
Date: Wed, 03 Mar 2010 19:13:33 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501591
Allow-Events: presence
P-Asserted-Identity: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Supported: timer,resource-priority,replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Min-SE:  1800
Remote-Party-ID: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;party=calling;screen=yes;privacy=off
Content-Length: 254
User-Agent: Cisco-CUCM8.0
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Contact: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: c5e8b200-a3f1d7dd-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK2312aa1096
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP6 2001:db8:c18:1:20e:7fff:fef0:8af7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21f:9eff:fe57:8920
t=0 0
m=audio 18202 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Date: Wed, 03 Mar 2010 19:15:22 GMT
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501591
Allow-Events: presence
Content-Length: 0
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Call-ID: c5e8b200-a3f1d7dd-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK2312aa1096
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Date: Wed, 03 Mar 2010 19:15:22 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501591
Allow-Events: presence
P-Asserted-Identity: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Remote-Party-ID: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491064
Contact: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp>
Call-ID: c5e8b200-a3f1d7dd-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK2312aa1096
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 200 OK
```
Date: Wed, 03 Mar 2010 19:15:22 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501591
Allow-Events: presence
P-Asserted-Identity: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Remote-Party-ID: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;party=called;screen=yes;privacy=off
Content-Length: 254
Require:  timer
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491064
Contact: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: c5e8b200-a3f1d7dd-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
```

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK2312aa1096
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP6 2001:db8:c18:1:214:c2ff:fec0:b4d7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21f:9eff:fe57:8920
t=0 0
m=audio 19554 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[5] ACK sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 19:13:33 GMT
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501591
Allow-Events: presence
Content-Length: 0
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491064
Call-ID: c5e8b200-a3f1d7dd-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK24f368bfe
CSeq: 101 ACK
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[6] BYE sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 19:13:33 GMT
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501591
P-Asserted-Identity: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491064
Call-ID: c5e8b200-a3f1d7dd-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK25356957b0
CSeq: 102 BYE
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[7] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 19:15:29 GMT
From: <sip:1003@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-33501591
Content-Length: 0
To: <sip:2001@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-33491064
Call-ID: c5e8b200-a3f1d7dd-c-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK25356957b0
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

24.6 Outbound delayed offer call using ANAT over Dual Mode SIP Trunk with

Title: Outbound delayed offer call using ANAT over Dual Mode SIP Trunk with Signaling preference set to IPv4

Description:

This flow shows a delayed offer call from a IPv4_IPv6 SCCP Phone (Media preference IPv4) to a IPv4_IPv6 SCCP Phone via a Dual Mode SIP Trunk with ANAT enabled.

Since ANAT is enabled, CM2, will offer both IPv4 and IPv6 in the Offer, and since the media preference is IPv4 for the originating phone, IPv4 will be used for media.

The call is setup using IPv4 for signaling, and IPv4 for media.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = IPv4_IPv6 SCCP
Phone = B, Line = 2002, IP = 10.10.199.171, Model = IPv4_IPv6 SCCP

SIP Trunk between Unified CM1 & Unified CM2 has
a) route pattern 2.XXXX
b) The common device configuration associated to the trunk has
IP Addressing Mode set to IPv4 & IPv6, IP Addressing Mode Signaling Preference is set to IPv4
c) SIP Trunk has a SIP Profile associated with the "Enable ANAT" checkbox checked

Phone A, Phone B are configured with a common device configuration with IP Addressing Mode set to IPv4_IPv6 so that they behave in dual mode.

Enterprise parameter, IP Address Mode preference for Media is set to IPv4

Scenario:

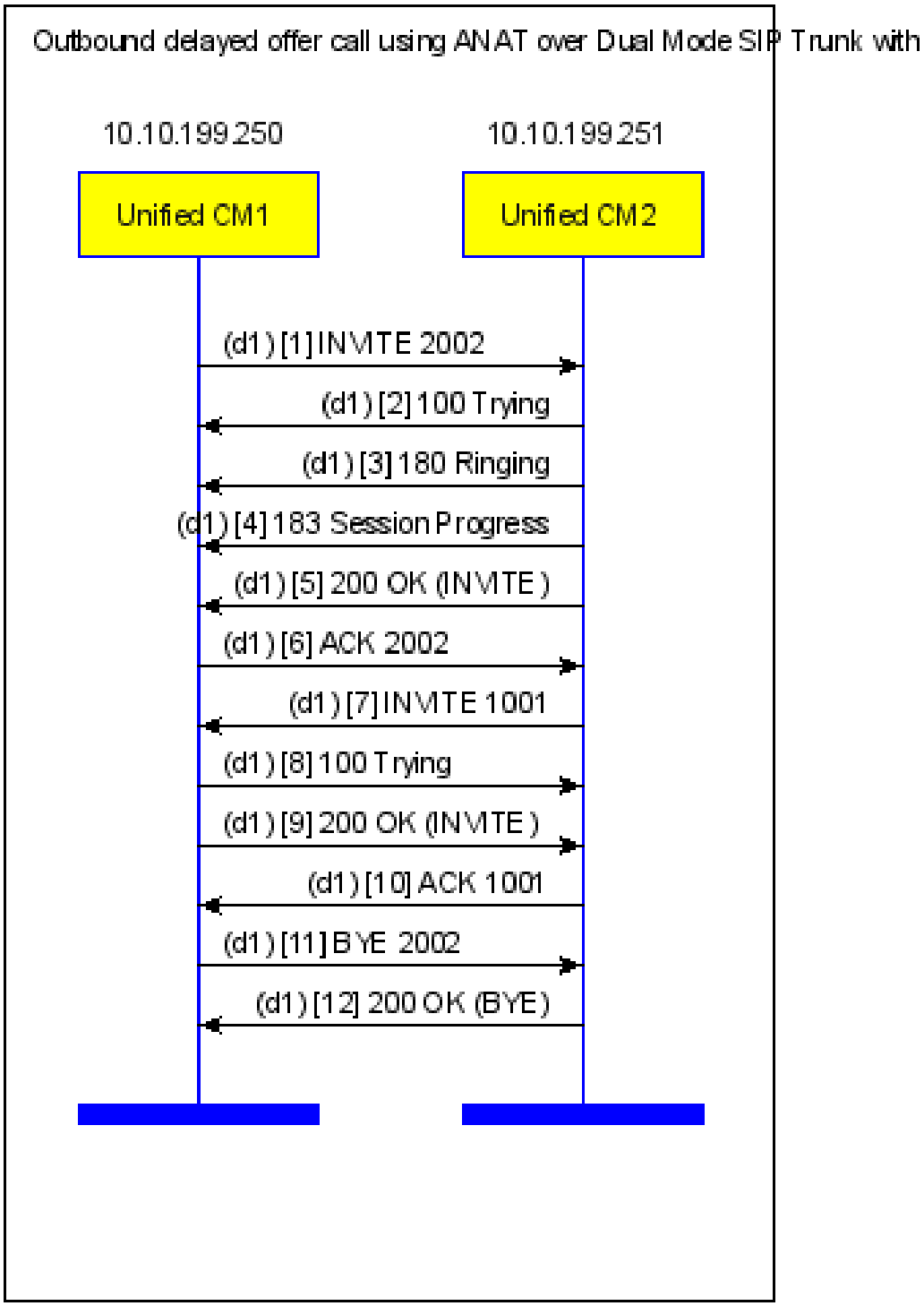
Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers

CISCO CONFIDENTIAL

Phone A DN 1001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Wed, 03 Mar 2010 15:11:28 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236755
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces,sdp-anat
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: f5db1580-a371b620-5-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa15addcc2
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Wed, 03 Mar 2010 15:13:01 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236755
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: f5db1580-a371b620-5-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa15addcc2
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Wed, 03 Mar 2010 15:13:01 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236755
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091607
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: f5db1580-a371b620-5-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa15addcc2
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Wed, 03 Mar 2010 15:13:01 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236755
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 653
Require: sdp-anat
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091607
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: f5db1580-a371b620-5-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa15addcc2
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
t=0 0
a=group:ANAT 1 2
m=audio 4000 RTP/AVP 9 0 8 18 101
c=IN IP4 10.10.199.179
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:1
m=audio 4000 RTP/AVP 9 0 8 18 101
c=IN IP6 2001:db8:c18:1:21c:58ff:fef0:70df
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:2
```

[diagram] Call-ID:[prev][next]

[5] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 15:13:01 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236755
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 653
Require: sdp-anat
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091607
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: f5db1580-a371b620-5-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKa15addcc2
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
t=0 0
a=group:ANAT 1 2
m=audio 4000 RTP/AVP 9 0 8 18 101
c=IN IP4 10.10.199.179
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:1
m=audio 4000 RTP/AVP 9 0 8 18 101
c=IN IP6 2001:db8:c18:1:21c:58ff:fef0:70df
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:2
```

[diagram] Call-ID:[prev][next]

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 15:11:28 GMT
```

CISCO CONFIDENTIAL

```
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236755
Allow-Events: presence, kpml
Content-Length: 539
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091607
Content-Type: application/sdp
Call-ID: f5db1580-a371b620-5-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKb2d84113a
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
t=0 0
a=group:ANAT 1
m=audio 22584 RTP/AVP 9 101
c=IN IP4 10.10.199.130
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:1
m=audio 0 RTP/AVP 9 0 8 18 101
c=IN IP6 2001:db8:c18:1:21c:58ff:fef0:70df
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:2
```

[diagram] Call-ID:[prev][next]

[7] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 15:13:04 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091607
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces
Min-SE:  1800
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 237
Require: sdp-anat
User-Agent: Cisco-CUCM8.0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236755
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: f5db1580-a371b620-5-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK5d3c4f6415
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 17836 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
m=audio 0 RTP/AVP 9
```

[diagram] Call-ID:[prev][next]

[8] SIP/2.0 100 Trying

```
Date: Wed, 03 Mar 2010 15:11:32 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091607
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236755
```

CISCO CONFIDENTIAL

```
Call-ID: f5db1580-a371b620-5-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK5d3c4f6415
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]

[9] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 15:11:32 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091607
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: replaces
Supported: sdp-anat
Supported: Geolocation
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 237
Require:  timer
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236755
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: f5db1580-a371b620-5-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK5d3c4f6415
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.130
t=0 0
m=audio 22584 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
m=audio 0 RTP/AVP 9
```

[diagram] Call-ID:[prev][next]

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 15:13:04 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091607
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236755
Call-ID: f5db1580-a371b620-5-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK5e4dbe8b94
CSeq: 101 ACK
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 15:11:32 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236755
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091607
Call-ID: f5db1580-a371b620-5-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc2d432a77
CSeq: 102 BYE
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[12] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 15:13:09 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236755
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091607
Call-ID: f5db1580-a371b620-5-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKc2d432a77
CSeq: 102 BYE
```

24.7 Outbound delayed offer call using ANAT over Dual Mode SIP Trunk with

Title: Outbound delayed offer call using ANAT over Dual Mode SIP Trunk with Signaling preference set to IPv4, terminating phone IPv6 only

Description:

This flow shows a delayed offer call from a IPv4_IPv6 SCCP Phone to a IPv6 SCCP Phone via a Dual Mode SIP Trunk with ANAT enabled.

Eventhough ANAT is enabled, since the sdp-anat tag is received in the SUPPORTED header, CM2 will only offer IPv6 SDP from its endpoint, and the call will be setup using IPv4 signaling and IPv6 media.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = IPv4_IPv6 SCCP
Phone = B, Line = 2002, IP = 10.10.199.171, Model = IPv6 only SCCP

SIP Trunk between Unified CM1 & Unified CM2 has
a) route pattern 2.XXXX
b) The common device configuration associated to the trunk has
IP Addressing Mode set to IPv4 & IPv6, IP Addressing Mode Signaling Preference is set to IPv4
c) SIP Trunk has a SIP Profile associated with the "Enable ANAT" checkbox checked

Phone A is configured with a common device configuration with IP Addressing Mode set to IPv4_IPv6 so that it behaves in IPv4_IPv6 mode.

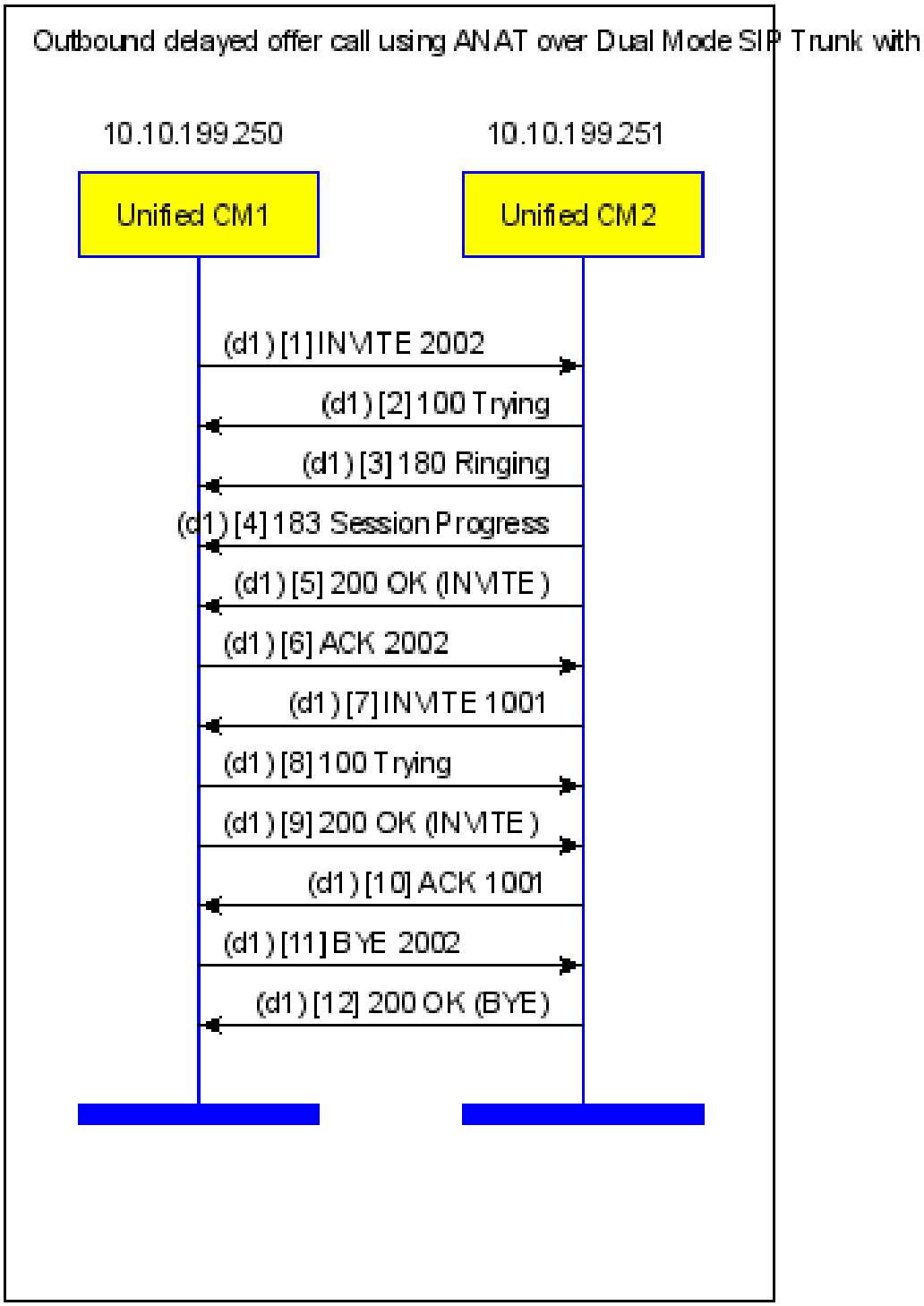
Phone B is configured with a common device configuration with IP Addressing Mode set to IPv6 so that it behaves in IPv6 only mode.

Scenario:

Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002
Phone B DN 2002 Answers
Phone A DN 1001 goes onHook
End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Wed, 03 Mar 2010 15:22:27 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236757
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces,sdp-anat
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 7ea68100-a371b8b3-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd26088905
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Wed, 03 Mar 2010 15:24:00 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236757
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: 7ea68100-a371b8b3-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd26088905
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
Date: Wed, 03 Mar 2010 15:24:00 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236757
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091609
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: 7ea68100-a371b8b3-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd26088905
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
Date: Wed, 03 Mar 2010 15:24:00 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236757
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: sdp-anat
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 384
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091609
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 7ea68100-a371b8b3-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd26088905
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP6 2001:db8:c18:1:214:c2ff:fec0:b4d7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21c:58ff:fef0:70df
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20

CISCO CONFIDENTIAL

```
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:1
```

[diagram] Call-ID:[prev][next]

[5] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 15:24:00 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236757
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: replaces
Supported: sdp-anat
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 384
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091609
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 7ea68100-a371b8b3-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd26088905
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP6 2001:db8:c18:1:214:c2ff:fec0:b4d7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21c:58ff:fef0:70df
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:1
```

[diagram] Call-ID:[prev][next]

[6] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 15:22:27 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236757
Allow-Events: presence, kpml
Content-Length: 266
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091609
Content-Type: application/sdp
Call-ID: 7ea68100-a371b8b3-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe255e9773
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP6 2001:db8:c18:1:20e:7fff:fef0:8af7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21d:45ff:feb5:e4f3
t=0 0
m=audio 22932 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[7] INVITE sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 15:24:03 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091609
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: timer,resource-priority,replaces,sdp-anat
```

CISCO CONFIDENTIAL

```
Min-SE:  1800
Remote-Party-ID: <sip:2002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 254
User-Agent: Cisco-CUCM8.0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236757
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: 7ea68100-a371b8b3-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK5f70b2aae3
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP6 2001:db8:c18:1:214:c2ff:fec0:b4d7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21c:58ff:fef0:70df
t=0 0
m=audio 18656 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[8] SIP/2.0 100 Trying

```
Date: Wed, 03 Mar 2010 15:22:30 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091609
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236757
Call-ID: 7ea68100-a371b8b3-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK5f70b2aae3
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]

[9] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 15:22:30 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091609
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: replaces
Supported: sdp-anat
Supported: Geolocation
Remote-Party-ID: <sip:1001@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 254
Require:  timer
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236757
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 7ea68100-a371b8b3-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK5f70b2aae3
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uac

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP6 2001:db8:c18:1:20e:7fff:fef0:8af7
s=SIP Call
c=IN IP6 2001:db8:c18:1:21d:45ff:feb5:e4f3
t=0 0
m=audio 22932 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[10] ACK sip:1001@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 15:24:03 GMT
From: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091609
Allow-Events: presence
Content-Length: 0
To: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236757
Call-ID: 7ea68100-a371b8b3-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bK60bed2f26
CSeq: 101 ACK
Max-Forwards: 70
```

CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[11] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Wed, 03 Mar 2010 15:22:30 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236757
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091609
Call-ID: 7ea68100-a371b8b3-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKf464863bd
CSeq: 102 BYE
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Date: Wed, 03 Mar 2010 15:24:08 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236757
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091609
Call-ID: 7ea68100-a371b8b3-6-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKf464863bd
CSeq: 102 BYE

24.8 Outbound early offer call using ANAT over Dual Mode SIP Trunk with

Title: Outbound early offer call using ANAT over Dual Mode SIP Trunk with Signaling preference set to IPv4

Description:

This flow shows a early offer call from a IPv4_IPv6 SCCP Phone to a IPv6 SCCP Phone via a Dual Mode SIP Trunk with ANAT enabled.

Since ANAT is enabled, CM1 will allocate MTP, and offer both IPv4 and IPv6 in the ANAT SDP, CM2 will pick IPv6, since the endpoint only supports IPv6, and the call will be setup using IPv4 for signaling and IPv6 for media

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = IPv4_IPv6 SCCP
Phone = B, Line = 2002, IP = 10.10.199.171, Model = IPv6 only SCCP

SIP Trunk between Unified CM1 & Unified CM2 has
a) route pattern 2.XXXX
b) The common device configuration associated to the trunk has
IP Addressing Mode set to IPv4 & IPv6, IP Addressing Mode Signaling Preference is set to IPv4
c) SIP Trunk has a SIP Profile associated with the "Enable ANAT" checkbox checked
d) SIP Trunk has "Media Termination Point Required" Checkbox checked

Phone A is configured with a common device configuration with IP Addressing Mode set to IPv4_IPv6 so that it behaves in IPv4_IPv6 mode.

Phone B is configured with a common device configuration with IP Addressing Mode set to IPv6 so that it behaves in IPv6 only mode.

Configure a Dual Stack MTP that supports IPv4/IPv6 conversion on Unified CM1

Scenario:

CISCO CONFIDENTIAL

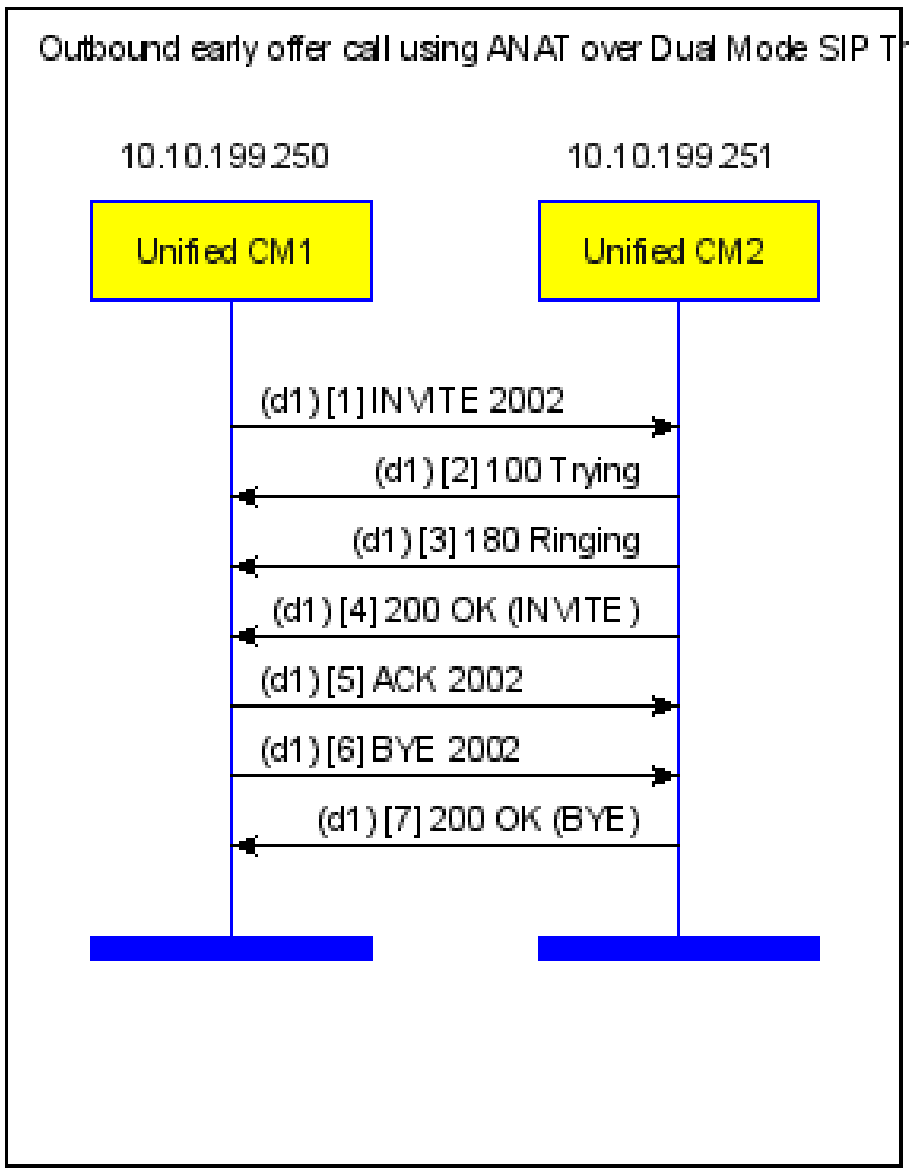
Phone A DN 1001 calls Phone B DN 2002 over the SIP Trunk by dialing 22002

Phone B DN 2002 Answers

Phone A DN 1001 goes onHook

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
```
Date: Wed, 03 Mar 2010 15:30:34 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236759
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE:  1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 411
Require: sdp-anat
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Content-Type: application/sdp
Call-ID: a0ecce80-a371ba9a-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10455d1b04
CSeq: 101 INVITE
Session-Expires:  1800
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
t=0 0
a=group:ANAT 1 2
m=audio 18822 RTP/AVP 0 101
c=IN IP4 10.10.199.164
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:1
m=audio 17572 RTP/AVP 0 101
c=IN IP6 2001:db8:c18:1:21f:9eff:fe57:8920
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:2
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Date: Wed, 03 Mar 2010 15:32:07 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236759
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: a0ecce80-a371ba9a-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10455d1b04
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Date: Wed, 03 Mar 2010 15:32:07 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236759
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091611
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Call-ID: a0ecce80-a371ba9a-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10455d1b04
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 200 OK
```
Date: Wed, 03 Mar 2010 15:32:07 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236759
Allow-Events: presence
P-Asserted-Identity: <sip:2002@10.10.199.251>
Supported: replaces
```

CISCO CONFIDENTIAL

```
Supported: Geolocation
Remote-Party-ID: <sip:2002@10.10.199.251>;party=called;screen=yes;privacy=off
Content-Length: 405
Require: sdp-anat
Require:  timer
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091611
Contact: <sip:2002@10.10.199.251:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: a0ecce80-a371ba9a-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK10455d1b04
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
t=0 0
a=group:ANAT 2
m=audio 0 RTP/AVP 0 101
c=IN IP4 10.10.199.164
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:1
m=audio 18146 RTP/AVP 0 101
c=IN IP6 2001:db8:c18:1:21c:58ff:fef0:70df
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=mid:2
```

[diagram] Call-ID:[prev][next]

[5] ACK sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 15:30:34 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236759
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091611
Call-ID: a0ecce80-a371ba9a-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1113f01b75
CSeq: 101 ACK
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[6] BYE sip:2002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Wed, 03 Mar 2010 15:30:34 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236759
P-Asserted-Identity: <sip:1001@10.10.199.250>
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091611
Call-ID: a0ecce80-a371ba9a-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1251e66cfe
CSeq: 102 BYE
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[7] SIP/2.0 200 OK

```
Date: Wed, 03 Mar 2010 15:32:14 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236759
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091611
Call-ID: a0ecce80-a371ba9a-7-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1251e66cfe
CSeq: 102 BYE
```

CISCO CONFIDENTIAL

24.9 Outbound IPv4 call to an IPv6 trunk results in a 503

Title: Outbound IPv4 call to an IPv6 trunk results in a 503

Description:

This flow shows an IPv4 call destined to an IPv6 only SIP Trunk will result in a call failure.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1001, IP = 10.10.199.130, Model = IPv4 SCCP
Phone = B, Line = 2001, IP = 10.10.199.171, Model = IPv4 SIP TNP

SIP Trunk on Unified CM1 pointing to CM2
a) route pattern 2.XXXX
b) The common device configuration associated to the trunk has
IP Addressing Mode set to IPv4

SIP Trunk on Unified CM2 pointing to CM1
a) route pattern 2.XXXX
b) The common device configuration associated to the trunk has
IP Addressing Mode set to IPv6

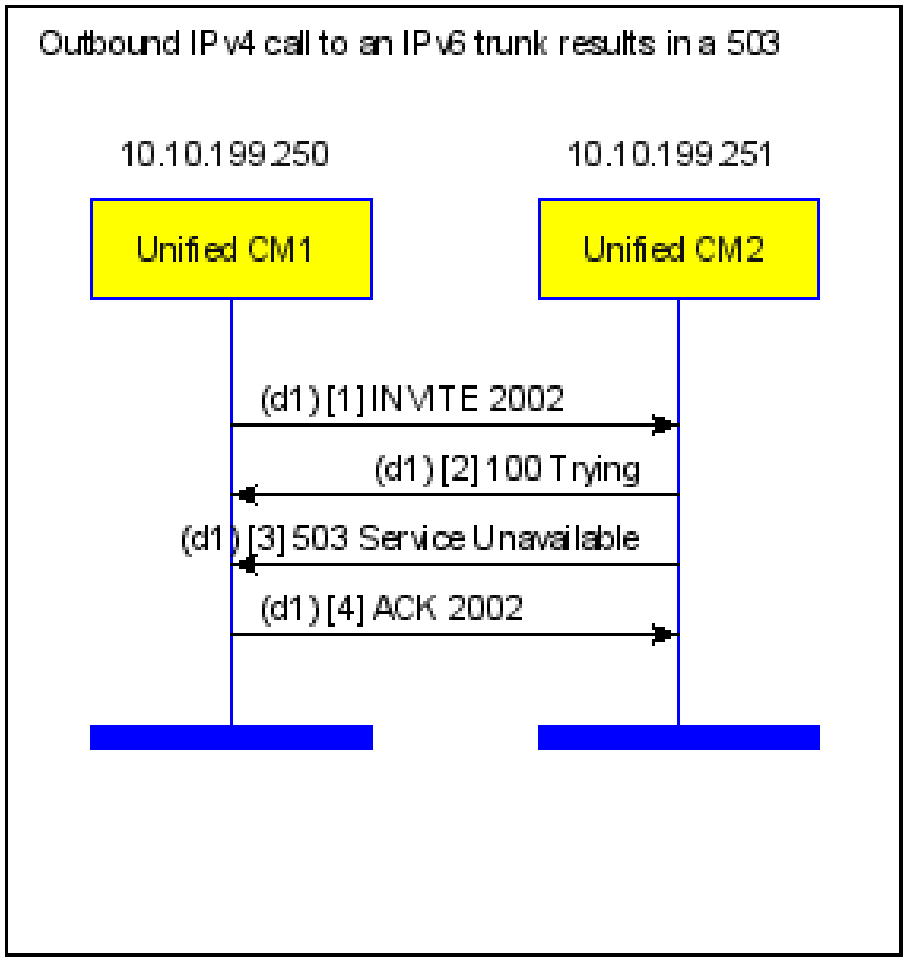
Phone A, Phone B are configured with a common device configuration with
IP Addressing Mode set to IPv4 so that they behave in IPv4 only mode.

Configure a dual mode SIP Trunk on both Unified CM1 and CM2, pointing to
an another CM, so that CUCM is listening on both IPv4 and IPv6 interface

Scenario:

Phone A DN 1001 calls Phone B DN 2001 over the SIP Trunk by dialing 22001
Phone A hears reorder tone
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@10.10.199.251:5060 SIP/2.0
Date: Wed, 03 Mar 2010 16:14:32 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236765
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@10.10.199.250>
Supported: timer,resource-priority,replaces,sdp-anat
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:1001@10.10.199.250>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@10.10.199.251>
Contact: <sip:1001@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: c54ba980-a371c4e8-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1467cd1813
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Wed, 03 Mar 2010 16:16:04 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236765
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>
Call-ID: c54ba980-a371c4e8-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1467cd1813
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 503 Service Unavailable
Date: Wed, 03 Mar 2010 16:16:04 GMT
Warning: 399 "Unable to find a device handler for the request received on port 5060 from 10.10.199.250"
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236765
Allow-Events: presence
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=984878989
Call-ID: c54ba980-a371c4e8-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1467cd1813
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] ACK sip:2002@10.10.199.251:5060 SIP/2.0
Date: Wed, 03 Mar 2010 16:14:32 GMT
From: <sip:1001@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236765
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@10.10.199.251>;tag=984878989
Call-ID: c54ba980-a371c4e8-9-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bK1467cd1813
CSeq: 101 ACK
Max-Forwards: 70

CISCO CONFIDENTIAL

24.10 Outbound IPv6 call to an IPv4 trunk results in a 503

Title: Outbound IPv6 call to an IPv4 trunk results in a 503

Description:

This flow shows an IPv6 call destined to an IPv4 only SIP Trunk will result in a call failure.

Configuration:

Node = Unified CM1, IP = 2001:db8:c18:1:20e:7fff:fef0:8af7
Node = Unified CM2, IP = 2001:db8:c18:1:214:c2ff:fec0:b4d7

Phone = A, Line = 1001, IP = 10.10.199.130, Model = IPv4 SCCP
Phone = B, Line = 2001, IP = 10.10.199.171, Model = IPv4 SIP TNP

SIP Trunk on Unified CM1 pointing to CM2
a) route pattern 2.XXXX
b) The common device configuration associated to the trunk has
IP Addressing Mode set to IPv6

SIP Trunk on Unified CM2 pointing to CM1
a) route pattern 2.XXXX
b) The common device configuration associated to the trunk has
IP Addressing Mode set to IPv4

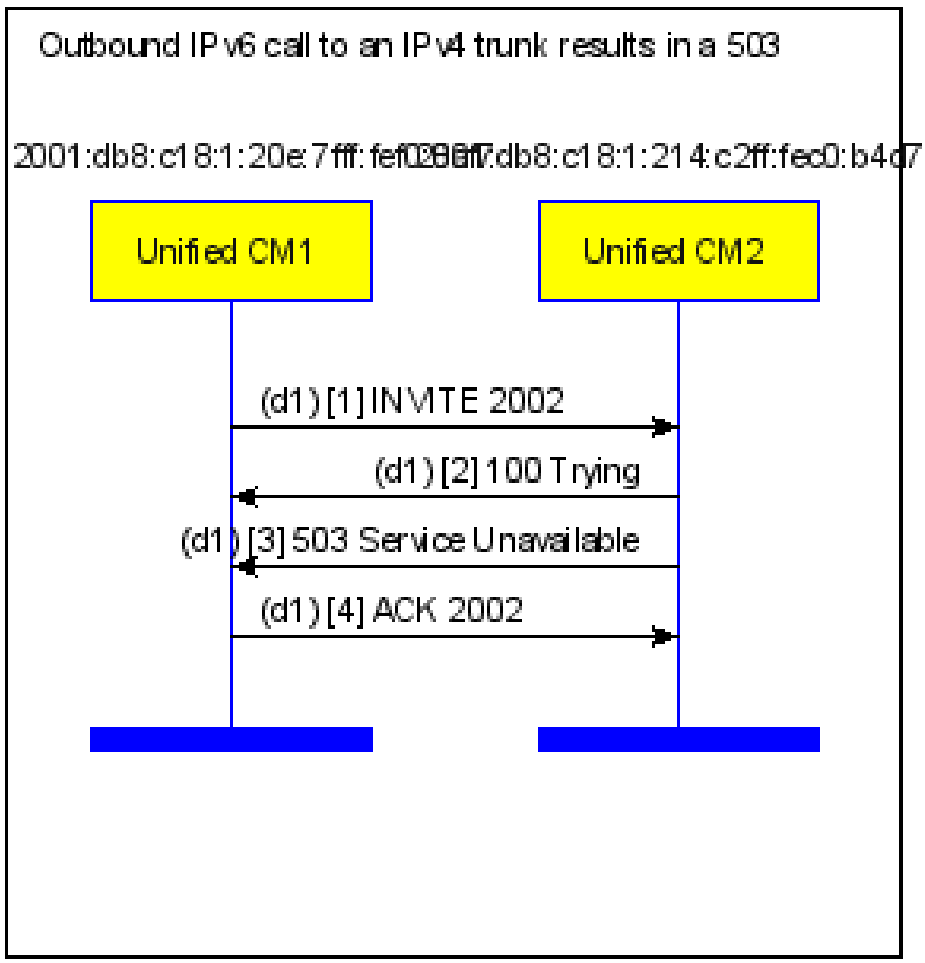
Phone A, Phone B are configured with a common device configuration with
IP Addressing Mode set to IPv4 so that they behave in IPv4 only mode.

Configure a dual mode SIP Trunk on both Unified CM1 and CM2, pointing to
an another CM, so that CUCM is listening on both IPv4 and IPv6 interface

Scenario:

Phone A DN 1001 calls Phone B DN 2001 over the SIP Trunk by dialing 22001
Phone A hears reorder tone
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060 SIP/2.0
Date: Wed, 03 Mar 2010 16:16:32 GMT
Call-Info: <sip:[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236767
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>
Supported: timer,resource-priority,replaces,sdp-anat
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Contact: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;transport=tcp>
Expires: 180
Call-ID: cd23580-a371c560-a-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK154c3c2009
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Wed, 03 Mar 2010 16:18:04 GMT
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236767
Allow-Events: presence
Content-Length: 0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>
Call-ID: cd23580-a371c560-a-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK154c3c2009
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 503 Service Unavailable
Date: Wed, 03 Mar 2010 16:18:04 GMT
Warning: 399 "Unable to find a device handler for the request received on port 5060 from
2001:db8:c18:1:20e:7fff:fef0:8af7"
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236767
Allow-Events: presence
Content-Length: 0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=830217139
Call-ID: cd23580-a371c560-a-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK154c3c2009
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[4] ACK sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]:5060 SIP/2.0
Date: Wed, 03 Mar 2010 16:16:32 GMT
From: <sip:1001@[2001:db8:c18:1:20e:7fff:fef0:8af7]>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31236767
Allow-Events: presence, kpml
Content-Length: 0
To: <sip:2002@[2001:db8:c18:1:214:c2ff:fec0:b4d7]>;tag=830217139
Call-ID: cd23580-a371c560-a-fac712ac@2001:db8:c18:1:20e:7fff:fef0:8af7
Via: SIP/2.0/TCP [2001:db8:c18:1:20e:7fff:fef0:8af7]:5060;branch=z9hG4bK154c3c2009
CSeq: 101 ACK
Max-Forwards: 70

CISCO CONFIDENTIAL

25. CallingPartyTransformations

25.1 Define number of digits to be prefixed, stripped for Unknown Number Type on Service Parameter page

Title: Define number of digits to be prefixed, stripped for Unknown Number Type on Service Parameter page

Description:

The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk, and between the UAS side SIP trunk and the terminating side SIP phone.

Cisco IP PhoneB registered to Cisco Unified CM2 calls Cisco IP PhoneA which is registered to Cisco Unified CM1.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1002, IP = 10.10.199.238, Model = SIP TNP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM2 & Unified CM1 has route pattern 1.XXXX
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Calling party transformation configuration steps:

1. CCM1 configuration:
   1) Service Parameter for Incoming Calling Party Unknown Number Prefix - SIP: +919392:2
   2) Trunk Device Page - Incoming Calling Party Unknown Number Prefix: default
   3) Trunk Device Page - Incoming Calling Party Unknown Digits to Strip: empty
   4) Default Device Pool Page - Incoming Calling Party Unknown Number Prefix: default
   5) Default Device Pool Page - Incoming Calling Party Unknown Digits to Strip: empty

2. CCM2 configuration:
   1) Prefix Digits (Outgoing Calls): 00

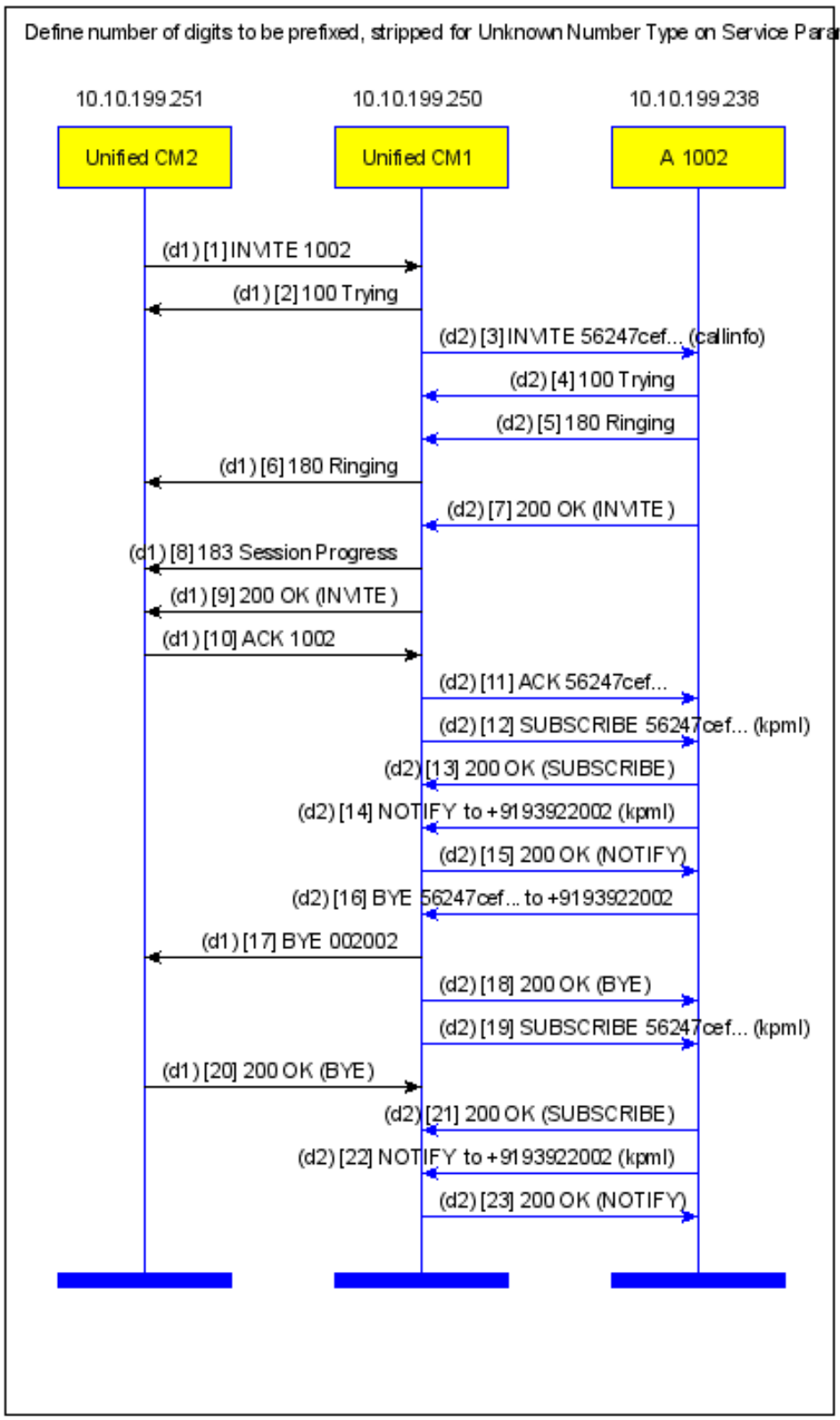
CISCO CONFIDENTIAL

2) Calling Party Number Type: Unknown
3) Calling Party Numbering Plan: Unknown
4) Discard Predot

Scenario:

Phone B DN 2002 calls Phone A DN 1002 over the SIP Trunk by dialing 11002
Phone A DN 1002 Answers
Duration short
Phone A DN 1002 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:1002@10.10.199.250:5060 SIP/2.0
Date: Wed, 17 Jun 2009 19:24:41 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091654
Allow-Events: presence
P-Asserted-Identity: <sip:002002@10.10.199.251>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:002002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:1002@10.10.199.250>
Contact: <sip:002002@10.10.199.251:5060;transport=tcp>
Expires: 180
Call-ID: 8000a800-a39142f9-31-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc539763cf2
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Wed, 17 Jun 2009 19:23:06 GMT
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091654
Allow-Events: presence
Content-Length: 0
To: <sip:1002@10.10.199.250>
Call-ID: 8000a800-a39142f9-31-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc539763cf2
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] INVITE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp SIP/2.0
Date: Wed, 17 Jun 2009 19:23:06 GMT
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= from; gci= 1-10034;
call-instance= 1
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
Allow-Events: presence
Supported: timer,resource-priority,replaces
Min-SE: 1800
Remote-Party-ID: <sip:+9193922002@10.10.199.250;x-cisco-callback-
number=+9193922002>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd1106ce43f
CSeq: 101 INVITE
Send-Info: conference
Max-Forwards: 69
Alert-Info: <file://Bellcore-dr2/>

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd1106ce43f
From: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:23:05 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Allow-Events: kpml,dialog
Content-Length: 0

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 180 Ringing
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd1106ce43f
From: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:23:05 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.5.2

CISCO CONFIDENTIAL

```
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[6] SIP/2.0 180 Ringing

```
Date: Wed, 17 Jun 2009 19:23:06 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091654
Allow-Events: presence
P-Asserted-Identity: <sip:1002@10.10.199.250>
Supported: Geolocation
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411499
Contact: <sip:1002@10.10.199.250:5060;transport=tcp>
Call-ID: 8000a800-a39142f9-31-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc539763cf2
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]

[7] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd1106ce43f
From: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:23:06 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 304
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 17797 0 IN IP4 10.10.199.238
s=SIP Call
t=0 0
m=audio 17442 RTP/AVP 0 8 18 9 101
c=IN IP4 10.10.199.238
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:9 G722/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

[diagram] Call-ID:[prev][next]

[8] SIP/2.0 183 Session Progress

```
Date: Wed, 17 Jun 2009 19:23:06 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091654
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1002@10.10.199.250>
Supported: Geolocation
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 347
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411499
Contact: <sip:1002@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 8000a800-a39142f9-31-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc539763cf2
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 17442 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[9] SIP/2.0 200 OK

```
Date: Wed, 17 Jun 2009 19:23:06 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091654
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1002@10.10.199.250>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 347
Require:  timer
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411499
Contact: <sip:1002@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 8000a800-a39142f9-31-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc539763cf2
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 17442 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[10] ACK sip:1002@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:24:41 GMT
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091654
Allow-Events: presence
Content-Length: 216
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411499
Content-Type: application/sdp
Call-ID: 8000a800-a39142f9-31-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc618fbadfd
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 20382 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[11] ACK sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:23:06 GMT
From: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
Allow-Events: presence
Content-Length: 216
```

CISCO CONFIDENTIAL

```
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
Content-Type: application/sdp
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd21adb4376
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 20382 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[12] SUBSCRIBE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:23:07 GMT
From: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
Event: kpml
Content-Length: 370
User-Agent: Cisco-CUCM8.0
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
Contact: <sip:10.10.199.250:5060;transport=tcp>
Expires: 7200
Content-Type: application/kpml-request+xml
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Accept: application/kpml-response+xml
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd31bd5c1eb
CSeq: 102 SUBSCRIBE
Max-Forwards: 70

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-request kpml-request.xsd" version="1.0">

  <pattern interdigittimer="7260000" persist="persist">
    <regex tag="dtmf">[x*#ABCD]</regex>
  </pattern>

</kpml-request>
```

[diagram] Call-ID:[prev][next]

[13] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd31bd5c1eb
From: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:23:07 GMT
CSeq: 102 SUBSCRIBE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP>
Expires: 7200
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[14] NOTIFY sip:10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bK5e5b6a91
To: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:23:07 GMT
CSeq: 101 NOTIFY
Event: kpml
Subscription-State: active; expires=7200
Max-Forwards: 70
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[15] SIP/2.0 200 OK

```
Date: Wed, 17 Jun 2009 19:23:07 GMT
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
Content-Length: 0
To: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
```

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bK5e5b6a91
CSeq: 101 NOTIFY

[diagram]   Call-ID:[prev][next]
[16] BYE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bKfd1ddd63
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
To: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Max-Forwards: 70
Date: Wed, 17 Jun 2009 19:23:12 GMT
CSeq: 102 BYE
User-Agent: Cisco-CP7970G/8.5.2
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[17] BYE sip:002002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Wed, 17 Jun 2009 19:23:07 GMT
From: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411499
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091654
Call-ID: 8000a800-a39142f9-31-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd44bb10e7b
CSeq: 101 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[18] SIP/2.0 200 OK
Date: Wed, 17 Jun 2009 19:23:12 GMT
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
Content-Length: 0
To: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bKfd1ddd63
CSeq: 102 BYE

[diagram]   Call-ID:[prev][next]
[19] SUBSCRIBE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP SIP/2.0
Date: Wed, 17 Jun 2009 19:23:12 GMT
From: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
Event: kpml
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
Contact: <sip:10.10.199.250:5060;transport=tcp>
Expires: 0
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd557bc7aab
CSeq: 103 SUBSCRIBE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[20] SIP/2.0 200 OK
Date: Wed, 17 Jun 2009 19:24:48 GMT
From: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411499
Content-Length: 0
To: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091654
Call-ID: 8000a800-a39142f9-31-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd44bb10e7b
CSeq: 101 BYE

[diagram]   Call-ID:[prev][next]
[21] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd557bc7aab
From: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:23:12 GMT
CSeq: 103 SUBSCRIBE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP>
Expires: 0
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[22] NOTIFY sip:10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bK852afdf5
To: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
```

CISCO CONFIDENTIAL

```
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:23:12 GMT
CSeq: 103 NOTIFY
Event: kpml
Subscription-State: terminated; reason=timeout
Max-Forwards: 70
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Content-Length: 214
Content-Type: application/kpml-response+xml
Content-Disposition: session;handling=required

<?xml version="1.0" encoding="UTF-8"?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" version="1.0" code="487" text="Subscription Exp"
suppressed="false" forced_flush="false" digits="" tag="dtmf"/>

[diagram]   Call-ID:[prev][next]
[23] SIP/2.0 200 OK
Date: Wed, 17 Jun 2009 19:23:12 GMT
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1221a9725acd-73b5143b
Content-Length: 0
To: <sip:+9193922002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411500
Call-ID: 4760ce80-a391429a-2f-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bK852afdf5
CSeq: 103 NOTIFY
```

25.2 Define number of digits to be prefixed, stripped for Unknown Number Type on trunk device page

Title: Define number of digits to be prefixed, stripped for Unknown Number Type on trunk device page

Description:

The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk, and between the UAS side SIP trunk and the terminating side SIP phone.

Cisco IP PhoneB registered to Cisco Unified CM2 calls Cisco IP PhoneA which is registered to Cisco Unified CM1.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1002, IP = 10.10.199.238, Model = SIP TNP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM2 & Unified CM1 has route pattern 1.XXXX
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Calling party transformation configuration steps:

1. CCM1 configuration:
   1) Service Parameter for Incoming Calling Party Unknown Number Prefix - SIP: +919392:1
   2) Trunk Device Page - Incoming Calling Party Unknown Number Prefix: +919391
   3) Trunk Device Page - Incoming Calling Party Unknown Digits to Strip: 2
   4) Default Device Pool Page - Incoming Calling Party Unknown Number Prefix: default
   5) Default Device Pool Page - Incoming Calling Party Unknown Digits to Strip: empty

2. CCM2 configuration:
   1) Prefix Digits (Outgoing Calls): 00
   2) Calling Party Number Type: Unknown

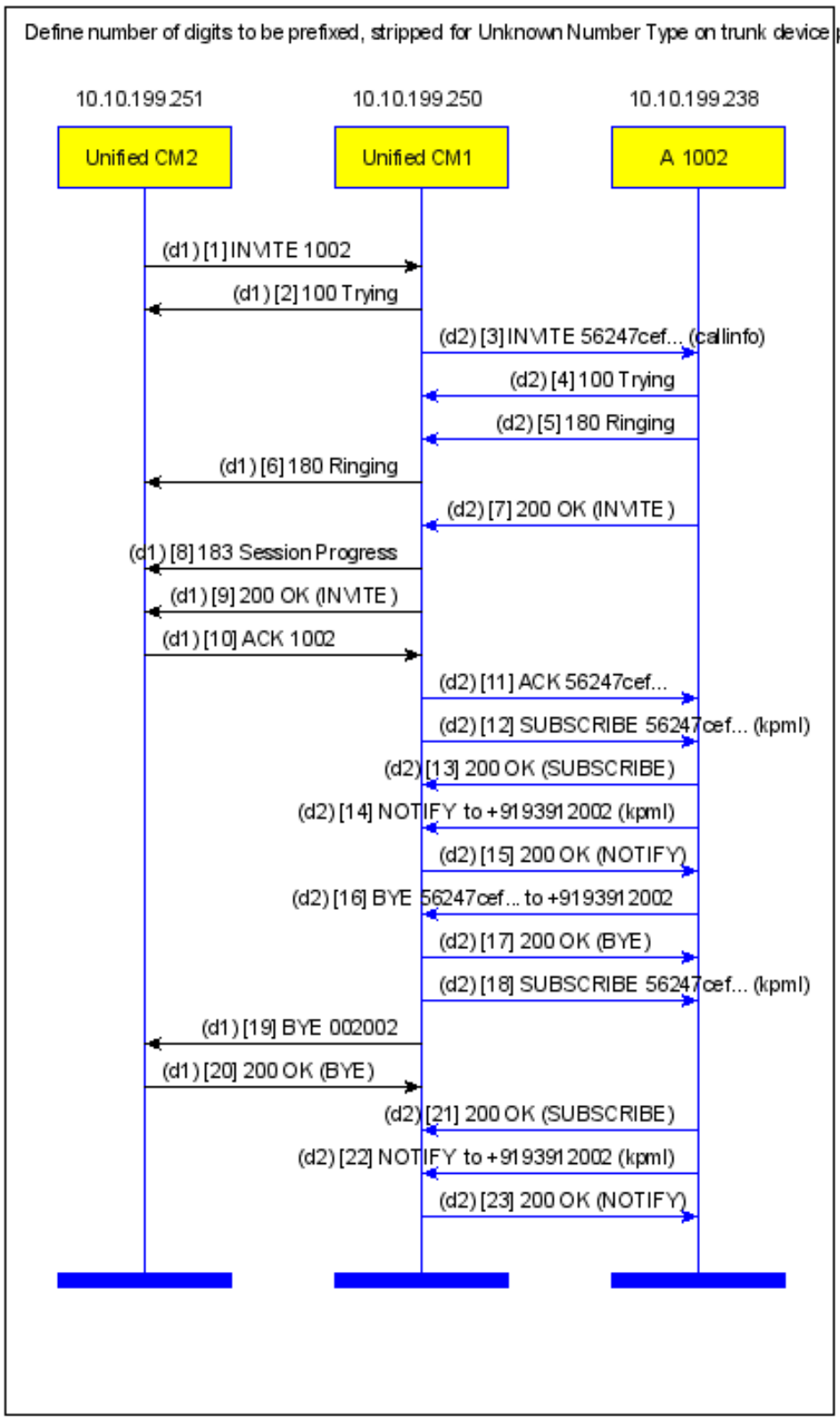
CISCO CONFIDENTIAL

3) Calling Party Numbering Plan: Unknown
4) Discard Predot

Scenario:

Phone B DN 2002 calls Phone A DN 1002 over the SIP Trunk by dialing 11002
Phone A DN 1002 Answers
Duration short
Phone A DN 1002 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:1002@10.10.199.250:5060 SIP/2.0
Date: Wed, 17 Jun 2009 19:31:16 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091656
Allow-Events: presence
P-Asserted-Identity: <sip:002002@10.10.199.251>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:002002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:1002@10.10.199.250>
Contact: <sip:002002@10.10.199.251:5060;transport=tcp>
Expires: 180
Call-ID: 6b70df80-a3914484-32-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc7fb59ed7
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Wed, 17 Jun 2009 19:29:40 GMT
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091656
Allow-Events: presence
Content-Length: 0
To: <sip:1002@10.10.199.250>
Call-ID: 6b70df80-a3914484-32-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc7fb59ed7
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] INVITE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp SIP/2.0
Date: Wed, 17 Jun 2009 19:29:40 GMT
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= from; gci= 1-10035;
call-instance= 1
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
Allow-Events: presence
Supported: timer,resource-priority,replaces
Min-SE: 1800
Remote-Party-ID: <sip:+9193912002@10.10.199.250;x-cisco-callback-
number=+9193912002>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd61435dc2c
CSeq: 101 INVITE
Send-Info: conference
Max-Forwards: 69
Alert-Info: <file://Bellcore-dr2/>

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd61435dc2c
From: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:29:40 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Allow-Events: kpml,dialog
Content-Length: 0

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 180 Ringing
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd61435dc2c
From: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:29:40 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.5.2

CISCO CONFIDENTIAL

```
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[6] SIP/2.0 180 Ringing

```
Date: Wed, 17 Jun 2009 19:29:40 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091656
Allow-Events: presence
P-Asserted-Identity: <sip:1002@10.10.199.250>
Supported: Geolocation
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411501
Contact: <sip:1002@10.10.199.250:5060;transport=tcp>
Call-ID: 6b70df80-a3914484-32-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc7fb59ed7
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]

[7] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd61435dc2c
From: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:29:41 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 303
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 1931 0 IN IP4 10.10.199.238
s=SIP Call
t=0 0
m=audio 20594 RTP/AVP 0 8 18 9 101
c=IN IP4 10.10.199.238
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:9 G722/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

[diagram] Call-ID:[prev][next]

[8] SIP/2.0 183 Session Progress

```
Date: Wed, 17 Jun 2009 19:29:40 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091656
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1002@10.10.199.250>
Supported: Geolocation
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 347
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411501
Contact: <sip:1002@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 6b70df80-a3914484-32-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc7fb59ed7
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 20594 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[9] SIP/2.0 200 OK

```
Date: Wed, 17 Jun 2009 19:29:40 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091656
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1002@10.10.199.250>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 347
Require:  timer
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411501
Contact: <sip:1002@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 6b70df80-a3914484-32-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc7fb59ed7
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 20594 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[10] ACK sip:1002@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:31:16 GMT
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091656
Allow-Events: presence
Content-Length: 216
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411501
Content-Type: application/sdp
Call-ID: 6b70df80-a3914484-32-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc81d824053
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 27084 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[11] ACK sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:29:40 GMT
From: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
Allow-Events: presence
Content-Length: 216
```

CISCO CONFIDENTIAL

```
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
Content-Type: application/sdp
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd742b2172f
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 27084 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[12] SUBSCRIBE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:29:42 GMT
From: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
Event: kpml
Content-Length: 370
User-Agent: Cisco-CUCM8.0
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
Contact: <sip:10.10.199.250:5060;transport=tcp>
Expires: 7200
Content-Type: application/kpml-request+xml
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Accept: application/kpml-response+xml
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd82636b7fa
CSeq: 102 SUBSCRIBE
Max-Forwards: 70

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-request kpml-request.xsd" version="1.0">

  <pattern interdigittimer="7260000" persist="persist">
    <regex tag="dtmf">[x*#ABCD]</regex>
  </pattern>

</kpml-request>
```

[diagram] Call-ID:[prev][next]

[13] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd82636b7fa
From: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:29:41 GMT
CSeq: 102 SUBSCRIBE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP>
Expires: 7200
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[14] NOTIFY sip:10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bK91b696a6
To: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:29:41 GMT
CSeq: 101 NOTIFY
Event: kpml
Subscription-State: active; expires=7200
Max-Forwards: 70
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[15] SIP/2.0 200 OK

```
Date: Wed, 17 Jun 2009 19:29:42 GMT
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
Content-Length: 0
To: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
```

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bK91b696a6
CSeq: 101 NOTIFY
```

[diagram] Call-ID:[prev][next]

[16] BYE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bK6615a428
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
To: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Max-Forwards: 70
Date: Wed, 17 Jun 2009 19:29:45 GMT
CSeq: 102 BYE
User-Agent: Cisco-CP7970G/8.5.2
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[17] SIP/2.0 200 OK

```
Date: Wed, 17 Jun 2009 19:29:45 GMT
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
Content-Length: 0
To: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bK6615a428
CSeq: 102 BYE
```

[diagram] Call-ID:[prev][next]

[18] SUBSCRIBE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP SIP/2.0

```
Date: Wed, 17 Jun 2009 19:29:45 GMT
From: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
Event: kpml
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
Contact: <sip:10.10.199.250:5060;transport=tcp>
Expires: 0
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKda47dafb39
CSeq: 103 SUBSCRIBE
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[19] BYE sip:002002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:29:42 GMT
From: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411501
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091656
Call-ID: 6b70df80-a3914484-32-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd9281d02d3
CSeq: 101 BYE
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[20] SIP/2.0 200 OK

```
Date: Wed, 17 Jun 2009 19:31:21 GMT
From: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411501
Content-Length: 0
To: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091656
Call-ID: 6b70df80-a3914484-32-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKd9281d02d3
CSeq: 101 BYE
```

[diagram] Call-ID:[prev][next]

[21] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKda47dafb39
From: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:29:45 GMT
CSeq: 103 SUBSCRIBE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP>
Expires: 0
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[22] NOTIFY sip:10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bK1f36098e
To: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
```

CISCO CONFIDENTIAL

```
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:29:45 GMT
CSeq: 103 NOTIFY
Event: kpml
Subscription-State: terminated; reason=timeout
Max-Forwards: 70
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Content-Length: 214
Content-Type: application/kpml-response+xml
Content-Disposition: session;handling=required

<?xml version="1.0" encoding="UTF-8"?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" version="1.0" code="487" text="Subscription Exp"
suppressed="false" forced_flush="false" digits="" tag="dtmf"/>

[diagram]   Call-ID:[prev][next]
[23] SIP/2.0 200 OK
Date: Wed, 17 Jun 2009 19:29:45 GMT
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1225d0e5cb88-149bd483
Content-Length: 0
To: <sip:+9193912002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411502
Call-ID: 32386f80-a3914424-30-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bK1f36098e
CSeq: 103 NOTIFY
```

25.3 Define Calling Party Transformation CSS for Unknown Number on Trunk Device Page

Title: Define Calling Party Transformation CSS for Unknown Number on Trunk Device Page

Description:

The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk, and between the UAS side SIP trunk and the terminating side SIP phone.

Cisco IP PhoneB registered to Cisco Unified CM2 calls Cisco IP PhoneA which is registered to Cisco Unified CM1.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1002, IP = 10.10.199.238, Model = SIP TNP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM2 & Unified CM1 has route pattern 1.XXXX
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Calling party transformation configuration steps:

1. CCM1 configuration:
   1) Configure a CSS rtpCSS1 with partition rtpp1
   2) Configure a Calling Party Transformation with
      Pattern = 00XXXX
      Partition = rtpp1
      Calling Party Tranformation Mask - 47XX
      Prefix Digits +919392
   3) Trunk Device Page - Incoming Calling Party Transformation CSS for Unknown Number: rtpCSS1
   4) Service Parameter for Incoming Calling Party Unknown Number Prefix - SIP: empty
   5) Trunk Device Page - Incoming Calling Party Unknown Number Prefix: default
   6) Trunk Device Page - Incoming Calling Party Unknown Digits to Strip: empty
   7) Default Device Pool Page - Incoming Calling Party Unknown Number Prefix: default

CISCO CONFIDENTIAL

8) Default Device Pool Page - Incoming Calling Party Unknown Digits to Strip: empty

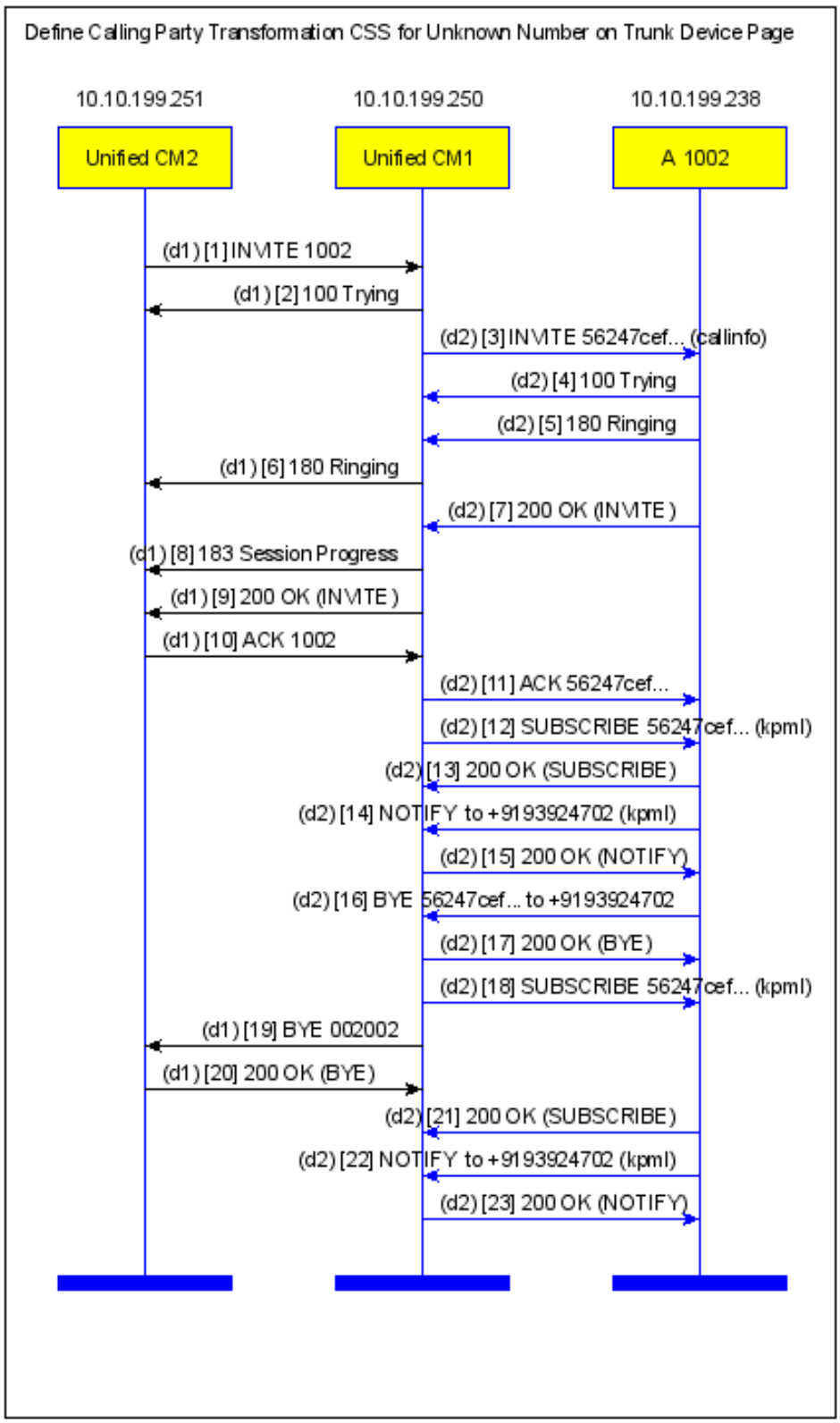
2. CCM2 configuration:

1) Prefix Digits (Outgoing Calls): 00
2) Calling Party Number Type: Unknown
3) Calling Party Numbering Plan: Unknown
4) Discard Predot

Scenario:

Phone B DN 2002 calls Phone A DN 1002 over the SIP Trunk by dialing 11002
Phone A DN 1002 Answers
Duration short
Phone A DN 1002 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:1002@10.10.199.250:5060 SIP/2.0
Date: Wed, 17 Jun 2009 19:41:20 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091658
Allow-Events: presence
P-Asserted-Identity: <sip:002002@10.10.199.251>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:002002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:1002@10.10.199.250>
Contact: <sip:002002@10.10.199.251:5060;transport=tcp>
Expires: 180
Call-ID: d373f580-a39146e0-33-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc92eb49e92
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Wed, 17 Jun 2009 19:39:44 GMT
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091658
Allow-Events: presence
Content-Length: 0
To: <sip:1002@10.10.199.250>
Call-ID: d373f580-a39146e0-33-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc92eb49e92
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] INVITE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp SIP/2.0
Date: Wed, 17 Jun 2009 19:39:44 GMT
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= from; gci= 1-10036;
call-instance= 1
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
Allow-Events: presence
Supported: timer,resource-priority,replaces
Min-SE: 1800
Remote-Party-ID: <sip:+9193924702@10.10.199.250;x-cisco-callback-
number=+9193924702>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdb238dce71
CSeq: 101 INVITE
Send-Info: conference
Max-Forwards: 69
Alert-Info: <file://Bellcore-dr2/>

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdb238dce71
From: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:39:44 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Allow-Events: kpml,dialog
Content-Length: 0

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 180 Ringing
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdb238dce71
From: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:39:44 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.5.2

CISCO CONFIDENTIAL

```
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[6] SIP/2.0 180 Ringing

```
Date: Wed, 17 Jun 2009 19:39:44 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091658
Allow-Events: presence
P-Asserted-Identity: <sip:1002@10.10.199.250>
Supported: Geolocation
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411503
Contact: <sip:1002@10.10.199.250:5060;transport=tcp>
Call-ID: d373f580-a39146e0-33-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc92eb49e92
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]

[7] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdb238dce71
From: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:39:45 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 304
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 22197 0 IN IP4 10.10.199.238
s=SIP Call
t=0 0
m=audio 22494 RTP/AVP 0 8 18 9 101
c=IN IP4 10.10.199.238
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:9 G722/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

[diagram] Call-ID:[prev][next]

[8] SIP/2.0 183 Session Progress

```
Date: Wed, 17 Jun 2009 19:39:44 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091658
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1002@10.10.199.250>
Supported: Geolocation
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 347
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411503
Contact: <sip:1002@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: d373f580-a39146e0-33-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc92eb49e92
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 22494 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[9] SIP/2.0 200 OK

```
Date: Wed, 17 Jun 2009 19:39:44 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091658
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1002@10.10.199.250>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 347
Require:  timer
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411503
Contact: <sip:1002@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: d373f580-a39146e0-33-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKc92eb49e92
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 22494 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[10] ACK sip:1002@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:41:20 GMT
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091658
Allow-Events: presence
Content-Length: 216
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411503
Content-Type: application/sdp
Call-ID: d373f580-a39146e0-33-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKca960c3ae
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 21922 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[11] ACK sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:39:44 GMT
From: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
Allow-Events: presence
Content-Length: 216
```

CISCO CONFIDENTIAL

```
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
Content-Type: application/sdp
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdc43beb393
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 21922 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[12] SUBSCRIBE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:39:45 GMT
From: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
Event: kpml
Content-Length: 370
User-Agent: Cisco-CUCM8.0
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
Contact: <sip:10.10.199.250:5060;transport=tcp>
Expires: 7200
Content-Type: application/kpml-request+xml
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Accept: application/kpml-response+xml
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdd36205e6e
CSeq: 102 SUBSCRIBE
Max-Forwards: 70

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-request kpml-request.xsd" version="1.0">

  <pattern interdigittimer="7260000" persist="persist">
    <regex tag="dtmf">[x*#ABCD]</regex>
  </pattern>

</kpml-request>
```

[diagram] Call-ID:[prev][next]

[13] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdd36205e6e
From: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:39:45 GMT
CSeq: 102 SUBSCRIBE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP>
Expires: 7200
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[14] NOTIFY sip:10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bKef31b8d2
To: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:39:45 GMT
CSeq: 101 NOTIFY
Event: kpml
Subscription-State: active; expires=7200
Max-Forwards: 70
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[15] SIP/2.0 200 OK

```
Date: Wed, 17 Jun 2009 19:39:46 GMT
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
Content-Length: 0
To: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
```

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bKef31b8d2
CSeq: 101 NOTIFY
```

[diagram] Call-ID:[prev][next]

[16] BYE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.250:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bK3b0d5bab
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
To: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Max-Forwards: 70
Date: Wed, 17 Jun 2009 19:39:52 GMT
CSeq: 102 BYE
User-Agent: Cisco-CP7970G/8.5.2
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[17] SIP/2.0 200 OK

```
Date: Wed, 17 Jun 2009 19:39:53 GMT
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
Content-Length: 0
To: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bK3b0d5bab
CSeq: 102 BYE
```

[diagram] Call-ID:[prev][next]

[18] SUBSCRIBE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP SIP/2.0

```
Date: Wed, 17 Jun 2009 19:39:53 GMT
From: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
Event: kpml
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
Contact: <sip:10.10.199.250:5060;transport=tcp>
Expires: 0
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdf3732bbc6
CSeq: 103 SUBSCRIBE
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[19] BYE sip:002002@10.10.199.251:5060;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:39:45 GMT
From: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411503
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091658
Call-ID: d373f580-a39146e0-33-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKde5dddc98f
CSeq: 101 BYE
Max-Forwards: 70
```

[diagram] Call-ID:[prev][next]

[20] SIP/2.0 200 OK

```
Date: Wed, 17 Jun 2009 19:41:29 GMT
From: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411503
Content-Length: 0
To: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091658
Call-ID: d373f580-a39146e0-33-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKde5dddc98f
CSeq: 101 BYE
```

[diagram] Call-ID:[prev][next]

[21] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKdf3732bbc6
From: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:39:52 GMT
CSeq: 103 SUBSCRIBE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP>
Expires: 0
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[22] NOTIFY sip:10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bKdea25dfd
To: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
```

CISCO CONFIDENTIAL

```
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:39:52 GMT
CSeq: 103 NOTIFY
Event: kpml
Subscription-State: terminated; reason=timeout
Max-Forwards: 70
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:40283;transport=TCP>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Content-Length: 214
Content-Type: application/kpml-response+xml
Content-Disposition: session;handling=required

<?xml version="1.0" encoding="UTF-8"?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" version="1.0" code="487" text="Subscription Exp"
suppressed="false" forced_flush="false" digits="" tag="dtmf"/>

[diagram]   Call-ID:[prev][next]
[23] SIP/2.0 200 OK
Date: Wed, 17 Jun 2009 19:39:53 GMT
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d122b72294434-4bda89c7
Content-Length: 0
To: <sip:+9193924702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411504
Call-ID: 9a3b8580-a3914680-31-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.238:40283;branch=z9hG4bKdea25dfd
CSeq: 103 NOTIFY
```

25.4 Define both Stripping/Prefixing and Calling Party Transformation CSS for Unknown Number on Device Pool Page

Title: Define both Stripping/Prefixing and Calling Party Transformation CSS for Unknown Number on Device Pool Page

Description:

The following call flow illustrates the SIP messaging that takes place between two Cisco Unified CMs via an inter cluster SIP trunk, and between the UAS side SIP trunk and the terminating side SIP phone.

Cisco IP PhoneB registered to Cisco Unified CM2 calls Cisco IP PhoneA which is registered to Cisco Unified CM1.

Configuration:

Node = Unified CM1, IP = 10.10.199.250
Node = Unified CM2, IP = 10.10.199.251

Phone = A, Line = 1002, IP = 10.10.199.238, Model = SIP TNP
Phone = B, Line = 2002, IP = 10.10.199.179, Model = SCCP

SIP Trunk between Unified CM2 & Unified CM1 has route pattern 1.XXXX
SIP Trunk between Unified CM1 & Unified CM2 has route pattern 2.XXXX

Calling party transformation configuration steps:

1. CCM1 configuration:
   1) Configure a CSS rtpCSS1 with partition rtpp1
   2) Configure a Calling Party Transformation with
      Pattern = \+91!
      Partition = rtpp1
      Calling Party Tranformation Mask - 47XX
      Prefix Digits +408804
   3) Trunk Device Page - Incoming Calling Party Transformation CSS for Unknown Number: None

      Check the "Use Device Pool CSS" checkbox
   4) Default Device Pool Page - Incoming Calling Party Transformation CSS for Unknown

CISCO CONFIDENTIAL

Number: rtpCSS1

5) Service Parameter for Incoming Calling Party Unknown Number Prefix - SIP: empty
6) Trunk Device Page - Incoming Calling Party Unknown Number Prefix: +919392
7) Trunk Device Page - Incoming Calling Party Unknown Digits to Strip: 2
8) Default Device Pool Page - Incoming Calling Party Unknown Number Prefix: default
9) Default Device Pool Page - Incoming Calling Party Unknown Digits to Strip: empty

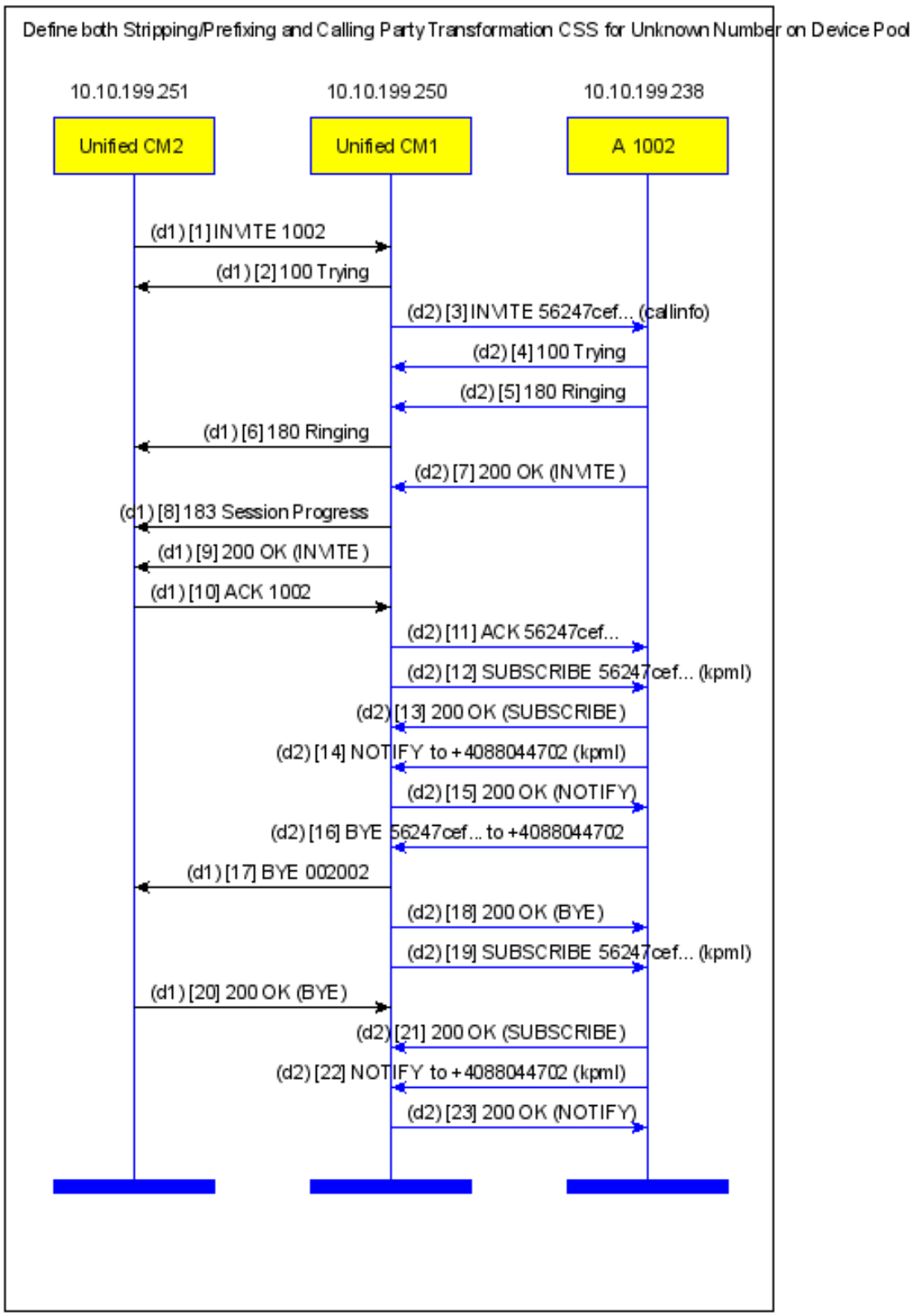
2. CCM2 configuration:

1) Prefix Digits (Outgoing Calls): 00
2) Calling Party Number Type: Unknown
3) Calling Party Numbering Plan: Unknown
4) Discard Predot

Scenario:

Phone B DN 2002 calls Phone A DN 1002 over the SIP Trunk by dialing 11002
Phone A DN 1002 Answers
Duration short
Phone A DN 1002 goes onHook
End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:1002@10.10.199.250:5060 SIP/2.0
Date: Wed, 17 Jun 2009 19:52:23 GMT
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091662
Allow-Events: presence
P-Asserted-Identity: <sip:002002@10.10.199.251>
Supported: timer,resource-priority,replaces
Supported: Geolocation
Min-SE: 1800
Remote-Party-ID: <sip:002002@10.10.199.251>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:1002@10.10.199.250>
Contact: <sip:002002@10.10.199.251:5060;transport=tcp>
Expires: 180
Call-ID: 5ea1bb00-a3914977-35-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKcd391a9ebd
CSeq: 101 INVITE
Session-Expires: 1800
Max-Forwards: 70

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
Date: Wed, 17 Jun 2009 19:50:47 GMT
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091662
Allow-Events: presence
Content-Length: 0
To: <sip:1002@10.10.199.250>
Call-ID: 5ea1bb00-a3914977-35-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKcd391a9ebd
CSeq: 101 INVITE

[diagram] Call-ID:[prev][next]
[3] INVITE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:12853;transport=tcp SIP/2.0
Date: Wed, 17 Jun 2009 19:50:47 GMT
Call-Info: <urn:x-cisco-remotecc:callinfo>; security= NotAuthenticated; orientation= from; gci= 1-10038;
call-instance= 1
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
Allow-Events: presence
Supported: timer,resource-priority,replaces
Min-SE: 1800
Remote-Party-ID: <sip:+4088044702@10.10.199.250;x-cisco-callback-
number=+4088044702>;party=calling;screen=yes;privacy=off
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.250:5060;transport=tcp>
Expires: 180
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe766cedbec
CSeq: 101 INVITE
Send-Info: conference
Max-Forwards: 69
Alert-Info: <file://Bellcore-dr2/>

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe766cedbec
From: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:50:47 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:12853;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Allow-Events: kpml,dialog
Content-Length: 0

[diagram] Call-ID:[prev][next]
[5] SIP/2.0 180 Ringing
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe766cedbec
From: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:50:47 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.5.2

CISCO CONFIDENTIAL

```
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:12853;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[6] SIP/2.0 180 Ringing

```
Date: Wed, 17 Jun 2009 19:50:47 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091662
Allow-Events: presence
P-Asserted-Identity: <sip:1002@10.10.199.250>
Supported: Geolocation
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 0
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411507
Contact: <sip:1002@10.10.199.250:5060;transport=tcp>
Call-ID: 5ea1bb00-a3914977-35-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKcd391a9ebd
CSeq: 101 INVITE
```

[diagram] Call-ID:[prev][next]

[7] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe766cedbec
From: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:50:48 GMT
CSeq: 101 INVITE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:12853;transport=tcp>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Remote-Party-ID: "1002" <sip:1002@10.10.199.250>;party=called;id-type=subscriber;privacy=off;screen=yes
Allow-Events: kpml,dialog
Content-Length: 304
Content-Type: application/sdp
Content-Disposition: session;handling=optional

v=0
o=Cisco-SIPUA 24433 0 IN IP4 10.10.199.238
s=SIP Call
t=0 0
m=audio 32146 RTP/AVP 0 8 18 9 101
c=IN IP4 10.10.199.238
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:9 G722/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
```

[diagram] Call-ID:[prev][next]

[8] SIP/2.0 183 Session Progress

```
Date: Wed, 17 Jun 2009 19:50:47 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091662
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1002@10.10.199.250>
Supported: Geolocation
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 347
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411507
Contact: <sip:1002@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 5ea1bb00-a3914977-35-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKcd391a9ebd
CSeq: 101 INVITE

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 32146 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
```

CISCO CONFIDENTIAL

```
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[9] SIP/2.0 200 OK

```
Date: Wed, 17 Jun 2009 19:50:47 GMT
Call-Info: <sip:10.10.199.250:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091662
Allow-Events: presence, kpml
P-Asserted-Identity: <sip:1002@10.10.199.250>
Supported: replaces
Supported: Geolocation
Remote-Party-ID: <sip:1002@10.10.199.250>;party=called;screen=yes;privacy=off
Content-Length: 347
Require:  timer
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411507
Contact: <sip:1002@10.10.199.250:5060;transport=tcp>
Content-Type: application/sdp
Call-ID: 5ea1bb00-a3914977-35-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKcd391a9ebd
CSeq: 101 INVITE
Session-Expires:  1800;refresher=uas

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.238
t=0 0
m=audio 32146 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[10] ACK sip:1002@10.10.199.250:5060;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:52:23 GMT
From: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091662
Allow-Events: presence
Content-Length: 216
To: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411507
Content-Type: application/sdp
Call-ID: 5ea1bb00-a3914977-35-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.251:5060;branch=z9hG4bKce7ab241ac
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.251
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 22682 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[11] ACK sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:12853;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:50:47 GMT
From: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
Allow-Events: presence
Content-Length: 216
```

CISCO CONFIDENTIAL

```
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
Content-Type: application/sdp
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe86230bbaf
CSeq: 101 ACK
Max-Forwards: 70

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.250
s=SIP Call
c=IN IP4 10.10.199.179
t=0 0
m=audio 22682 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[12] SUBSCRIBE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:12853;transport=tcp SIP/2.0

```
Date: Wed, 17 Jun 2009 19:50:48 GMT
From: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
Event: kpml
Content-Length: 370
User-Agent: Cisco-CUCM8.0
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
Contact: <sip:10.10.199.250:5060;transport=tcp>
Expires: 7200
Content-Type: application/kpml-request+xml
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Accept: application/kpml-response+xml
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe92b43b419
CSeq: 102 SUBSCRIBE
Max-Forwards: 70

<?xml version="1.0" encoding="UTF-8" ?>
<kpml-request xmlns="urn:ietf:params:xml:ns:kpml-request" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="urn:ietf:params:xml:ns:kpml-request kpml-request.xsd" version="1.0">

  <pattern interdigittimer="7260000" persist="persist">
    <regex tag="dtmf">[x*#ABCD]</regex>
  </pattern>

</kpml-request>
```

[diagram] Call-ID:[prev][next]

[13] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKe92b43b419
From: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:50:48 GMT
CSeq: 102 SUBSCRIBE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:12853;transport=TCP>
Expires: 7200
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[14] NOTIFY sip:10.10.199.250:5060 SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.238:12853;branch=z9hG4bK02c10263
To: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:50:48 GMT
CSeq: 101 NOTIFY
Event: kpml
Subscription-State: active; expires=7200
Max-Forwards: 70
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:12853;transport=TCP>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[15] SIP/2.0 200 OK

```
Date: Wed, 17 Jun 2009 19:50:49 GMT
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
Content-Length: 0
To: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
```

CISCO CONFIDENTIAL

```
Via: SIP/2.0/TCP 10.10.199.238:12853;branch=z9hG4bK02c10263
CSeq: 101 NOTIFY

[diagram]   Call-ID:[prev][next]
[16] BYE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.250:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.238:12853;branch=z9hG4bK0b780098
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
To: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Max-Forwards: 70
Date: Wed, 17 Jun 2009 19:50:52 GMT
CSeq: 102 BYE
User-Agent: Cisco-CP7970G/8.5.2
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[17] BYE sip:002002@10.10.199.251:5060;transport=tcp SIP/2.0
Date: Wed, 17 Jun 2009 19:50:48 GMT
From: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411507
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091662
Call-ID: 5ea1bb00-a3914977-35-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKea1d7d3830
CSeq: 101 BYE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[18] SIP/2.0 200 OK
Date: Wed, 17 Jun 2009 19:50:53 GMT
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
Content-Length: 0
To: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.238:12853;branch=z9hG4bK0b780098
CSeq: 102 BYE

[diagram]   Call-ID:[prev][next]
[19] SUBSCRIBE sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:12853;transport=TCP SIP/2.0
Date: Wed, 17 Jun 2009 19:50:53 GMT
From: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
Event: kpml
Content-Length: 0
User-Agent: Cisco-CUCM8.0
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
Contact: <sip:10.10.199.250:5060;transport=tcp>
Expires: 0
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKeb7859a3e5
CSeq: 103 SUBSCRIBE
Max-Forwards: 70

[diagram]   Call-ID:[prev][next]
[20] SIP/2.0 200 OK
Date: Wed, 17 Jun 2009 19:52:29 GMT
From: <sip:1002@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411507
Content-Length: 0
To: <sip:002002@10.10.199.251>;tag=5e4c9677-e740-401a-9bc2-53575dffec2a-31091662
Call-ID: 5ea1bb00-a3914977-35-fbc712ac@10.10.199.251
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKea1d7d3830
CSeq: 101 BYE

[diagram]   Call-ID:[prev][next]
[21] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.250:5060;branch=z9hG4bKeb7859a3e5
From: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
To: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:50:52 GMT
CSeq: 103 SUBSCRIBE
Server: Cisco-CP7970G/8.5.2
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:12853;transport=TCP>
Expires: 0
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[22] NOTIFY sip:10.10.199.250:5060 SIP/2.0
Via: SIP/2.0/TCP 10.10.199.238:12853;branch=z9hG4bK82d49e09
To: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
```

CISCO CONFIDENTIAL

```
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Date: Wed, 17 Jun 2009 19:50:52 GMT
CSeq: 103 NOTIFY
Event: kpml
Subscription-State: terminated; reason=timeout
Max-Forwards: 70
Contact: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238:12853;transport=TCP>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Content-Length: 214
Content-Type: application/kpml-response+xml
Content-Disposition: session;handling=required

<?xml version="1.0" encoding="UTF-8"?>
<kpml-response xmlns="urn:ietf:params:xml:ns:kpml-response" version="1.0" code="487" text="Subscription Exp"
suppressed="false" forced_flush="false" digits="" tag="dtmf"/>

[diagram]   Call-ID:[prev][next]
[23] SIP/2.0 200 OK
Date: Wed, 17 Jun 2009 19:50:53 GMT
From: <sip:56247cef-6c2b-ad4c-54db-0514adea553a@10.10.199.238>;tag=001d45e8aa3d1235fd0436dd-34d3cc1c
Content-Length: 0
To: <sip:+4088044702@10.10.199.250>;tag=66b5a315-cc63-4973-bca9-40b9ea58568f-31411508
Call-ID: 25694b00-a3914917-35-fac712ac@10.10.199.250
Via: SIP/2.0/TCP 10.10.199.238:12853;branch=z9hG4bK82d49e09
CSeq: 103 NOTIFY
```

26. MLPP Q735

26.1 MLPP Q735 Namespace Call

Title: MLPP Q735 Namespace Call

Description:

The following basic call flow illustrates the SIP messaging when the MLPP feature is enabled on SIP trunk with the Q735 namespace.

Cisco Unified CM1 is configured to have resource priority namespace network domain (Q735) and resource priority namespace lists with prioritized order for validating inbound SIP trunk messages. SIP Trunk profile is associated with namespace list and namespace network domains are added to any MLPP translations or route patterns, used for outbound SIP trunk calls.

Cisco Unified CM1 sent out the initial INVITE.

Configuration:

Node = Unified CM1, IP = 10.10.199.239
Node = Unified CM2, IP = 10.10.199.117

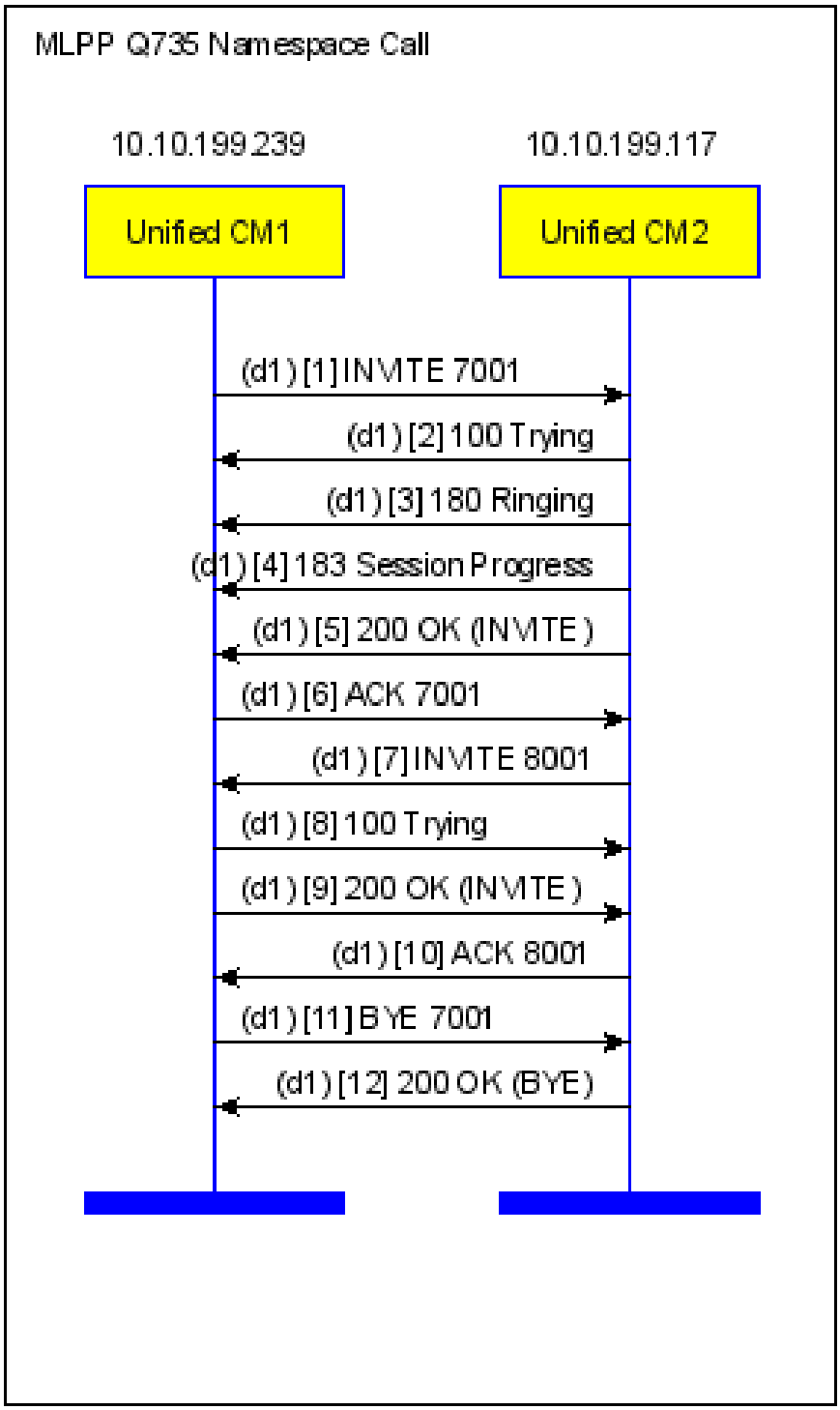
Phone = A, Line = 8001, Model = SCCP
Phone = B, Line = 7001, Model = SCCP

Scenario:

Phone A DN 8001 makes a FlashOverride MLPP call to Phone B DN 7001 over the SIP Trunk
Phone B DN 7001 rings with Precedence Ringer and shows Precedence level bubbles on CallerID
Phone A DN 8001 gets Precedence Ringback
Phone B DN 7001 answers
Both talk for 5 seconds
Phone A DN 8001 goes onHook
End of Scenario

CISCO CONFIDENTIAL

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:7001@10.10.199.117:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bK94e2914f4
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283636
To: <sip:7001@10.10.199.117>
Date: Tue, 02 Mar 2010 19:24:36 GMT
Call-ID: 3b993780-b8d165f4-5-efc712ac@10.10.199.239
Supported: 100rel,timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:8001@10.10.199.239:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.10.199.239:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Require: resource-priority
Resource-Priority: q735.0
Cisco-Guid: 0999896960-3100730868-0000000004-4022801068
Session-Expires:  1800
P-Asserted-Identity: <sip:8001@10.10.199.239>
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bK94e2914f4
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283636
To: <sip:7001@10.10.199.117>
Date: Tue, 02 Mar 2010 19:24:36 GMT
Call-ID: 3b993780-b8d165f4-5-efc712ac@10.10.199.239
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bK94e2914f4
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283636
To: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546297
Date: Tue, 02 Mar 2010 19:24:36 GMT
Call-ID: 3b993780-b8d165f4-5-efc712ac@10.10.199.239
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:7001@10.10.199.117:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:7001@10.10.199.117>
Remote-Party-ID: <sip:7001@10.10.199.117>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bK94e2914f4
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283636
To: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546297
Date: Tue, 02 Mar 2010 19:24:36 GMT
Call-ID: 3b993780-b8d165f4-5-efc712ac@10.10.199.239
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:7001@10.10.199.117:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:7001@10.10.199.117>
Remote-Party-ID: <sip:7001@10.10.199.117>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 336

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.117
s=SIP Call
c=IN IP4 10.10.199.37
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
```

CISCO CONFIDENTIAL

```
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bK94e2914f4
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283636
To: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546297
Date: Tue, 02 Mar 2010 19:24:36 GMT
Call-ID: 3b993780-b8d165f4-5-efc712ac@10.10.199.239
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:7001@10.10.199.117:5060;transport=tcp>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:7001@10.10.199.117>
Remote-Party-ID: <sip:7001@10.10.199.117>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 336

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.117
s=SIP Call
c=IN IP4 10.10.199.37
t=0 0
m=audio 4000 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=sendonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[6] ACK sip:7001@10.10.199.117:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bKa4962dd91
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283636
To: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546297
Date: Tue, 02 Mar 2010 19:24:36 GMT
Call-ID: 3b993780-b8d165f4-5-efc712ac@10.10.199.239
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 228

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.10.199.239
s=SIP Call
c=IN IP4 10.10.199.141
t=0 0
m=audio 27674 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=recvonly
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[7] INVITE sip:8001@10.10.199.239:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.117:5060;branch=z9hG4bK117905b08b
From: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546297
To: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283636
Date: Tue, 02 Mar 2010 19:24:40 GMT
```

CISCO CONFIDENTIAL

```
Call-ID: 3b993780-b8d165f4-5-efc712ac@10.10.199.239
Supported: timer,resource-priority,replaces
Min-SE:  1800
Cisco-Guid: 0999896960-3100730868-0000000004-4022801068
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Max-Forwards: 70
Contact: <sip:7001@10.10.199.117:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Session-Expires:  1800;refresher=uac
P-Asserted-Identity: <sip:7001@10.10.199.117>
Remote-Party-ID: <sip:7001@10.10.199.117>;party=calling;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 215

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.117
s=SIP Call
c=IN IP4 10.10.199.37
t=0 0
m=audio 18974 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[8] SIP/2.0 100 Trying

```
Via: SIP/2.0/TCP 10.10.199.117:5060;branch=z9hG4bK117905b08b
From: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546297
To: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283636
Date: Tue, 02 Mar 2010 19:24:40 GMT
Call-ID: 3b993780-b8d165f4-5-efc712ac@10.10.199.239
CSeq: 101 INVITE
Allow-Events: presence, kpml
Content-Length: 0
```

[diagram] Call-ID:[prev][next]

[9] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.10.199.117:5060;branch=z9hG4bK117905b08b
From: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546297
To: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283636
Date: Tue, 02 Mar 2010 19:24:40 GMT
Call-ID: 3b993780-b8d165f4-5-efc712ac@10.10.199.239
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:8001@10.10.199.239:5060;transport=tcp>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uac
Require:  timer
P-Asserted-Identity: <sip:8001@10.10.199.239>
Content-Type: application/sdp
Content-Length: 216

v=0
o=CiscoSystemsCCM-SIP 2000 2 IN IP4 10.10.199.239
s=SIP Call
c=IN IP4 10.10.199.141
t=0 0
m=audio 27674 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[10] ACK sip:8001@10.10.199.239:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.10.199.117:5060;branch=z9hG4bK12be51ce2
From: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546297
To: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283636
Date: Tue, 02 Mar 2010 19:24:40 GMT
Call-ID: 3b993780-b8d165f4-5-efc712ac@10.10.199.239
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
```

CISCO CONFIDENTIAL

```
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[11] BYE sip:7001@10.10.199.117:5060;transport=tcp SIP/2.0
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bKb512f8c02
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283636
To: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546297
Date: Tue, 02 Mar 2010 19:24:40 GMT
Call-ID: 3b993780-b8d165f4-5-efc712ac@10.10.199.239
User-Agent: Cisco-CUCM8.0
Max-Forwards: 70
P-Asserted-Identity: <sip:8001@10.10.199.239>
CSeq: 102 BYE
Content-Length: 0

[diagram]   Call-ID:[prev][next]
[12] SIP/2.0 200 OK
Via: SIP/2.0/TCP 10.10.199.239:5060;branch=z9hG4bKb512f8c02
From: <sip:8001@10.10.199.239>;tag=70da06a0-7247-40c0-b5d3-0d1deb58a9f4-20283636
To: <sip:7001@10.10.199.117>;tag=78667332-d8eb-4fc7-86a5-467d97ba8f1b-19546297
Date: Tue, 02 Mar 2010 19:24:43 GMT
Call-ID: 3b993780-b8d165f4-5-efc712ac@10.10.199.239
CSeq: 102 BYE
Content-Length: 0
```

CISCO CONFIDENTIAL

27. ConnectedPartyTransformations

27.1 Connected Party number trasformation

Title: Connected Party number trasformation

Scenario:

9764142001 calls 9194142001 via ime trunk

9764142001 exists on enterprise B

9194142001 exists on enterprise A

Connected number transformation is configured for 9194142001 (to transform it as +9194142001) on

the ime trunk on enterprise A--->B.

If above is not configured, then as the call gets connected, number changes from E.164 i.e +9194142001 to 9194142001.

P-asserted-identity, and

Remote-party-id, carries the connected number transformation via 180 Ringing.

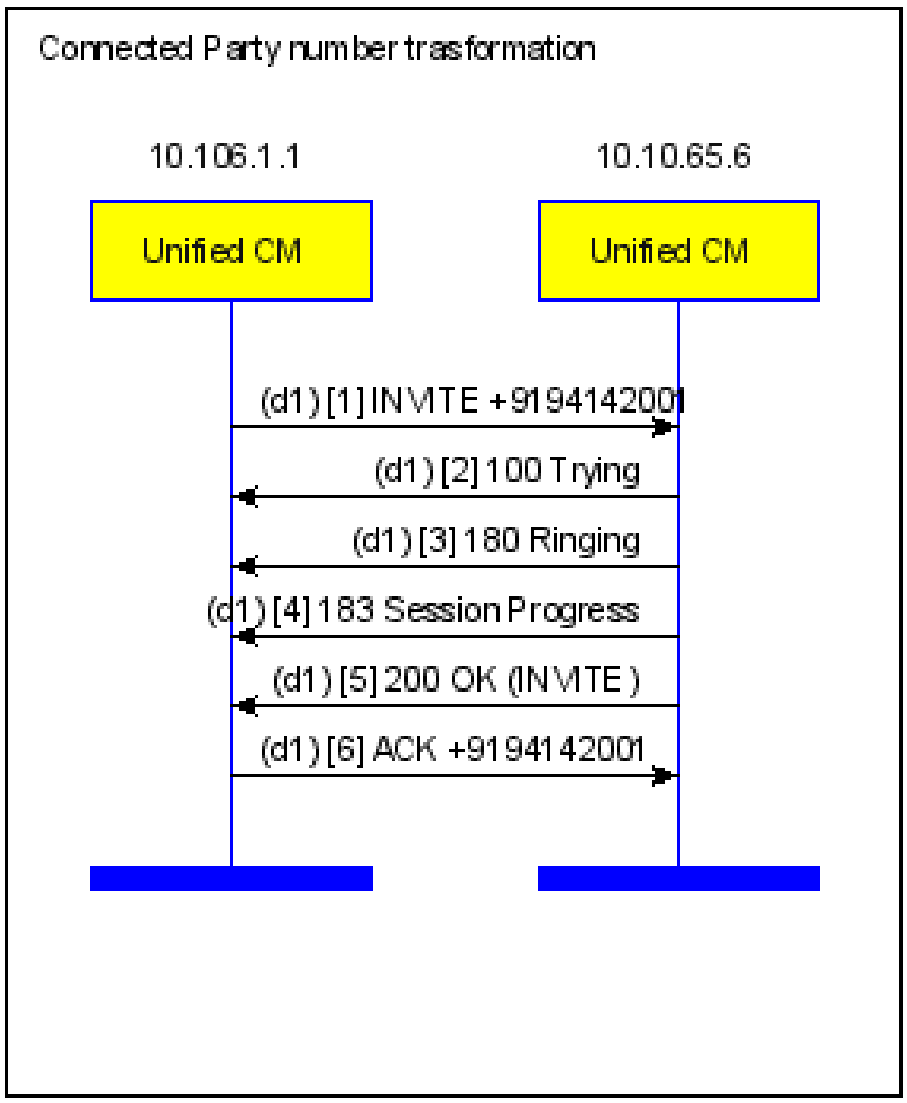
Configuration:

Node = Unified CM, IP = 10.106.1.1

Node = Unified CM, IP = 10.10.65.6

End of Scenario

CISCO CONFIDENTIAL



CISCO CONFIDENTIAL

[diagram] Call-ID:[prev][next]
[1] INVITE sip:+9194142001@10.10.65.6:5060 SIP/2.0
```
Via: SIP/2.0/TCP 10.106.1.1:5060;branch=z9hG4bK1254460f8a
From: <sip:+9764142001@10.106.1.1>;tag=e3808f77-2703-46dc-a8db-8b6f5026eba5-20640756
To: <sip:+9194142001@10.10.65.6:5060>
Date: Wed, 03 Mar 2010 19:56:40 GMT
Call-ID: e0ce1180-b8e1bef8-9-1016a0a@10.106.1.1
Supported: timer,resource-priority,replaces
Min-SE:  1800
User-Agent: Cisco-CUCM8.0
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
CSeq: 101 INVITE
Contact: <sip:+9764142001@10.106.1.1:5060;transport=tcp>
Expires: 180
Allow-Events: presence, kpml
Route: sip:1d11e676-1c11-ed40-c8ad-7f84249de1ea@10.10.65.6:5060;maddr=2.2.104.18;transport=tcp
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Call-Info: <sip:10.106.1.1:5060>;method="NOTIFY;Event=telephone-event;Duration=500"
Cisco-Guid: 3771601280-3101802232-0000000003-0016869898
Session-Expires:  1800
X-Cisco-ViPR-Ticket:
AAEAELQaCtom/hHfgAAAFjVcYZAAAgAERga+7wADABDPOT0qAA6Vs886jqoADpWzAAQACys5MTk0MTQyMDAxAAUAENwHnlTvVwEFDHcJ/Qqg
rhQABgAMY2x1c3RlcjEuY29tAAcADGNsdXN0ZXIyLmNvbQAIAAIAAQAJABQjaRGh2xdLRLTx+QkHCtlaVY9Y4w..
X-Cisco-SessionID: 17-20640756-0@60044de7-97c6-a1b2-4bd6-e77f83a12b48
X-Cisco-ViPR-SIPTrunk: 60044de7-97c6-a1b2-4bd6-e77f83a12b48@tbd6-pub-7845;maddr=10.106.1.1
X-Cisco-FBSensitivity: 3
P-Asserted-Identity: <sip:+9764142001@10.106.1.1>
Remote-Party-ID: <sip:+9764142001@10.106.1.1>;party=calling;screen=yes;privacy=off
Max-Forwards: 70
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[2] SIP/2.0 100 Trying
```
Via: SIP/2.0/TCP 10.106.1.1:5060;branch=z9hG4bK1254460f8a
From: <sip:+9764142001@10.106.1.1>;tag=e3808f77-2703-46dc-a8db-8b6f5026eba5-20640756
To: <sip:+9194142001@10.10.65.6:5060>
Date: Wed, 03 Mar 2010 19:56:40 GMT
Call-ID: e0ce1180-b8e1bef8-9-1016a0a@10.106.1.1
CSeq: 101 INVITE
Allow-Events: presence
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[3] SIP/2.0 180 Ringing
```
Via: SIP/2.0/TCP 10.106.1.1:5060;branch=z9hG4bK1254460f8a
From: <sip:+9764142001@10.106.1.1>;tag=e3808f77-2703-46dc-a8db-8b6f5026eba5-20640756
To: <sip:+9194142001@10.10.65.6:5060>;tag=47ba3288-07f3-44fb-8cd7-80b257a95f4d-32229468
Date: Wed, 03 Mar 2010 19:56:40 GMT
Call-ID: e0ce1180-b8e1bef8-9-1016a0a@10.106.1.1
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence
Contact: <sip:+9194142001@2.2.104.18:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:+9194142001@2.2.104.18>
Remote-Party-ID: <sip:+9194142001@2.2.104.18>;party=called;screen=yes;privacy=off
Content-Length: 0
```

[diagram] Call-ID:[prev][next]
[4] SIP/2.0 183 Session Progress
```
Via: SIP/2.0/TCP 10.106.1.1:5060;branch=z9hG4bK1254460f8a
From: <sip:+9764142001@10.106.1.1>;tag=e3808f77-2703-46dc-a8db-8b6f5026eba5-20640756
To: <sip:+9194142001@10.10.65.6:5060>;tag=47ba3288-07f3-44fb-8cd7-80b257a95f4d-32229468
Date: Wed, 03 Mar 2010 19:56:40 GMT
Call-ID: e0ce1180-b8e1bef8-9-1016a0a@10.106.1.1
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:+9194142001@2.2.104.18:5060;transport=tcp>
Supported: X-cisco-srtp-fallback
Supported: Geolocation
P-Asserted-Identity: <sip:+9194142001@2.2.104.18>
Remote-Party-ID: <sip:+9194142001@2.2.104.18>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.106.100.100
```

CISCO CONFIDENTIAL

```
s=SIP Call
c=IN IP4 10.106.100.100
t=0 0
m=audio 27486 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[5] SIP/2.0 200 OK

```
Via: SIP/2.0/TCP 10.106.1.1:5060;branch=z9hG4bK1254460f8a
From: <sip:+9764142001@10.106.1.1>;tag=e3808f77-2703-46dc-a8db-8b6f5026eba5-20640756
To: <sip:+9194142001@10.10.65.6:5060>;tag=47ba3288-07f3-44fb-8cd7-80b257a95f4d-32229468
Date: Wed, 03 Mar 2010 19:56:40 GMT
Call-ID: e0ce1180-b8e1bef8-9-1016a0a@10.106.1.1
CSeq: 101 INVITE
Allow: INVITE, OPTIONS, INFO, BYE, CANCEL, ACK, PRACK, UPDATE, REFER, SUBSCRIBE, NOTIFY
Allow-Events: presence, kpml
Contact: <sip:+9194142001@2.2.104.18:5060;transport=tcp>
Supported: replaces
Supported: X-cisco-srtp-fallback
Supported: Geolocation
Session-Expires:  1800;refresher=uas
Require:  timer
P-Asserted-Identity: <sip:+9194142001@2.2.104.18>
Remote-Party-ID: <sip:+9194142001@2.2.104.18>;party=called;screen=yes;privacy=off
Content-Type: application/sdp
Content-Length: 347

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.106.100.100
s=SIP Call
c=IN IP4 10.106.100.100
t=0 0
m=audio 27486 RTP/AVP 9 0 8 18 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:0 PCMU/8000
a=ptime:20
a=rtpmap:8 PCMA/8000
a=ptime:20
a=rtpmap:18 G729/8000
a=ptime:20
a=fmtp:18 annexb=no
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```

[diagram] Call-ID:[prev][next]

[6] ACK sip:+9194142001@2.2.104.18:5060;transport=tcp SIP/2.0

```
Via: SIP/2.0/TCP 10.106.1.1:5060;branch=z9hG4bK1642b35e3
From: <sip:+9764142001@10.106.1.1>;tag=e3808f77-2703-46dc-a8db-8b6f5026eba5-20640756
To: <sip:+9194142001@10.10.65.6:5060>;tag=47ba3288-07f3-44fb-8cd7-80b257a95f4d-32229468
Date: Wed, 03 Mar 2010 19:56:40 GMT
Call-ID: e0ce1180-b8e1bef8-9-1016a0a@10.106.1.1
Max-Forwards: 70
CSeq: 101 ACK
Allow-Events: presence, kpml
Content-Type: application/sdp
Content-Length: 210

v=0
o=CiscoSystemsCCM-SIP 2000 1 IN IP4 10.106.1.1
s=SIP Call
c=IN IP4 10.106.150.1
t=0 0
m=audio 22686 RTP/AVP 9 101
a=rtpmap:9 G722/8000
a=ptime:20
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
```