

SIP Proxy SIP Phone A SIP Phone B SCCP Phone C

sip_hold_transfer.pcapng

SIP INVITE

Via	SIP/2.0/UDP 10.180.110.58:5060;branch=z9hG4bK2281251
Call-ID	C4D30932-6D0511E9-9794E3AD-C1443EBC@10.180.110.58
UA	Cisco-SIPGateway/IOS-16.9.2
CSeq	101 INVITE
Max-Fwd	70
Contact	<sip:10.180.110.58:5060>
Owner	CiscoSystemsSIP-GW-UserAgent 8506 811 IN IP4 10.180.110.58
Session Name (s)	SIP Call
Connection	IN IP4 10.180.110.58
Media	audio 8382 RTP/AVP 0 19
Connection	IN IP4 10.180.110.58
Attr	rtpmap:0 PCMU/8000
Attr	rtpmap:19 CN/8000
Attr	ptime:20

💡 SIP INVITE initiates a call – carries SDP offer with codec/media proposals; callee responds with 180 Ringing, then 200 OK with SDP answer

SIP 100 Trying

💡 100 Trying – proxy accepted the request and is searching for the callee; stops retransmission timer; no end-to-end significance

SIP 180 Ringing

💡 180 Ringing – callee's phone is alerting; caller hears locally generated ringback; 183 with SDP offers early media (in-band ringback) instead

SIP 200 OK

💡 200 OK – call answered (for INVITE) or registration accepted (for REGISTER); SDP answer completes codec negotiation; caller must send ACK to complete 3-way handshake

Contact	<sip:1234@10.180.110.48:5060>;+u. sip!devicename.ccm.cisco.com= "SEP2C31246A214B"
Connection	IN IP4 10.10.214.57
Media	audio 32518 RTP/AVP 0 101
Attr	rtpmap:0 PCMU/8000
Attr	rtpmap:101 telephone-event/8000
Attr	fntp:101 0-15

SIP ACK

Frame 5 |
2019-05-03T18:12:01.415963Z

Call-ID	C4D30932-6D0511E9-9794E3AD-C1443EBC@10.180.110.58
CSeq	101 ACK

RTP

Frame 6 |
2019-05-03T18:12:01.459967Z

Setup frame	1
Marker	False
Codec	ITU-T G.711 PCMU (0)
Sequence number	5838
Timestamp	4202361243
SSRC	0x00007a88 (31368)

RTP

Frame 12 |
2019-05-03T18:12:01.575958Z

Setup frame	1
Marker	True
Codec	ITU-T G.711 PCMU (0)
Sequence number	20538
Timestamp	824837435
SSRC	0x1304411f (319045919)

SIP INVITE

💡 SIP INVITE initiates a call – carries SDP offer with codec/media proposals; callee responds with 180 Ringing, then 200 OK with SDP answer

Via	SIP/2.0/UDP 10.180.110.48:5060;branch= z9hG4bK1af5711300ee
Call-ID	C4D30932-6D0511E9-9794E3AD-C1443EBC@10.180.110.58
UA	Cisco-CUCM12.5
CSeq	101 INVITE
Max-Fwd	70

SIP Proxy **SIP Phone A**

Contact	<sip:2f231a59-524c-49d3-a058-9d6d4317a18d@10.180.110.48:5060>;+u.sip!devicename.ccm.cisco.com=...
Owner	CiscoSystemsCCM-SIP 149490 2 IN IP4 10.180.110.48
Session Name (s)	SIP Call
Connection	IN IP4 0.0.0.0
Media	audio 32518 RTP/AVP 0 101
Attr	rtpmap:0 PCMU/8000
Attr	inactive
Attr	rtpmap:101 telephone-event/8000
Attr	fntp:101 0-15

SIP 100 Trying

SIP 200 OK

Contact	<sip:10.180.110.58:5060>
Connection	IN IP4 10.180.110.58
Media	audio 8382 RTP/AVP 0
Connection	IN IP4 10.180.110.58
Attr	inactive
Attr	rtpmap:0 PCMU/8000

SIP ACK

Call-ID	C4D30932-6D0511E9-9794E3AD-C1443EBC@10.180.110.58
CSeq	101 ACK

SIP INVITE

Via	SIP/2.0/UDP 10.180.110.48:5060;branch=z9hG4bK1af7a889b97
Call-ID	C4D30932-6D0511E9-9794E3AD-C1443EBC@10.180.110.58
UA	Cisco-CUCM12.5
CSeq	102 INVITE
Max-Fwd	70
Contact	<sip:2f231a59-524c-49d3-a058-9d6d4317a18d@10.180.110.48:5060>;+u.sip!devicename.ccm.cisco.com="SEP2C31246A214B"

SIP 100 Trying

SIP 200 OK

Contact	<sip:10.180.110.58:5060>
Connection	IN IP4 10.180.110.58
Media	audio 8382 RTP/AVP 0 19
Connection	IN IP4 10.180.110.58
Attr	rtpmap:0 PCMU/8000
Attr	rtpmap:19 CN/8000
Attr	ptime:20

SIP ACK

Call-ID	C4D30932-6D0511E9-9794E3AD-C1443EBC@10.180.110.58
CSeq	102 ACK
Owner	CiscoSystemsCCM-SIP 149490 3 IN IP4 10.180.110.48
Connection	IN IP4 10.180.110.48
Media	audio 24648 RTP/AVP 0

RTP

Setup frame	150
Marker	True
Codec	ITU-T G.711 PCMU (0)
Sequence number	1674
Timestamp	160
SSRC	0x0000068a (1674)

SIP Phone B

SCCP Phone C

💡 100 Trying – proxy accepted the request and is searching for the callee; stops retransmission timer; no end-to-end significance

💡 200 OK – call answered (for INVITE) or registration accepted (for REGISTER); SDP answer completes codec negotiation; caller must send ACK to complete 3-way handshake

Frame 147 | 2019-05-03T18:12:03.967937Z

💡 SIP INVITE initiates a call – carries SDP offer with codec/media proposals; callee responds with 180 Ringing, then 200 OK with SDP answer

💡 100 Trying – proxy accepted the request and is searching for the callee; stops retransmission timer; no end-to-end significance

💡 200 OK – call answered (for INVITE) or registration accepted (for REGISTER); SDP answer completes codec negotiation; caller must send ACK to complete 3-way handshake

Frame 151 | 2019-05-03T18:12:03.980936Z

Frame 152 | 2019-05-03T18:12:03.998941Z

SIP Proxy **SIP Phone A**

SIP Phone B

SCCP Phone C

➡ RTP

Setup frame	151
Marker	False
🎵 Codec	ITU-T G.711 PCMU (0)
Sequence number	5857
Timestamp	4202405643
📄 SSRC	0x00007a88 (31368)

← SIP INVITE

📡 Via	SIP/2.0/UDP 10.180.110.48:5060;branch=z9hG4bK1b001a1272fc
🔗 Call-ID	C4D30932-6D0511E9-9794E3AD-C1443EBC@10.180.110.58
🖥️ UA	Cisco-CUCM12.5
📄 CSeq	103 INVITE
📄 Max-Fwd	70
📞 Contact	<sip:2f231a59-524c-49d3-a058-9d6d4317a18d@10.180.110.48:5060>;+u.sip!devicename.ccm.cisco.com=...
👤 Owner	CiscoSystemsCCM-SIP 149490 4 IN IP4 10.180.110.48
Session Name (s)	SIP Call
🌐 Connection	IN IP4 0.0.0.0
🎵 Media	audio 24648 RTP/AVP 0
📄 Attr	X-cisco-media:umoh
📄 Attr	ptime:20
📄 Attr	rtpmap:0 PCMU/8000
📄 Attr	inactive

⌚ SIP 100 Trying

✅ SIP 200 OK

📞 Contact	<sip:10.180.110.58:5060>
🌐 Connection	IN IP4 10.180.110.58
🎵 Media	audio 8382 RTP/AVP 0
🌐 Connection	IN IP4 10.180.110.58
📄 Attr	inactive
📄 Attr	rtpmap:0 PCMU/8000
📄 Attr	ptime:20

✅ SIP ACK

🔗 Call-ID	C4D30932-6D0511E9-9794E3AD-C1443EBC@10.180.110.58
📄 CSeq	103 ACK

↻ SIP UPDATE

🔗 Call-ID	C4D30932-6D0511E9-9794E3AD-C1443EBC@10.180.110.58
📄 CSeq	104 UPDATE

✅ SIP 200 OK

📞 Contact	<sip:10.180.110.58:5060>
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← SIP INVITE

📡 Via	SIP/2.0/UDP 10.180.110.48:5060;branch=z9hG4bK1b0b381fc2e6
🔗 Call-ID	C4D30932-6D0511E9-9794E3AD-C1443EBC@10.180.110.58
🖥️ UA	Cisco-CUCM12.5
📄 CSeq	105 INVITE
📄 Max-Fwd	70
📞 Contact	<sip:c28713b5-c24d-40f2-bca1-cc485c749fdf@10.180.110.48:5060>;video;audio;+u.sip!devicename.ccm.cisco.com="SEP0C75BD110CA4"

⌚ SIP 100 Trying

Frame 303 |
2019-05-03T18:12:07.010985Z

💡 SIP INVITE initiates a call – carries SDP offer with codec/media proposals; callee responds with 180 Ringing, then 200 OK with SDP answer

💡 100 Trying – proxy accepted the request and is searching for the callee; stops retransmission timer; no end-to-end significance

💡 200 OK – call answered (for INVITE) or registration accepted (for REGISTER); SDP answer completes codec negotiation; caller must send ACK to complete 3-way handshake

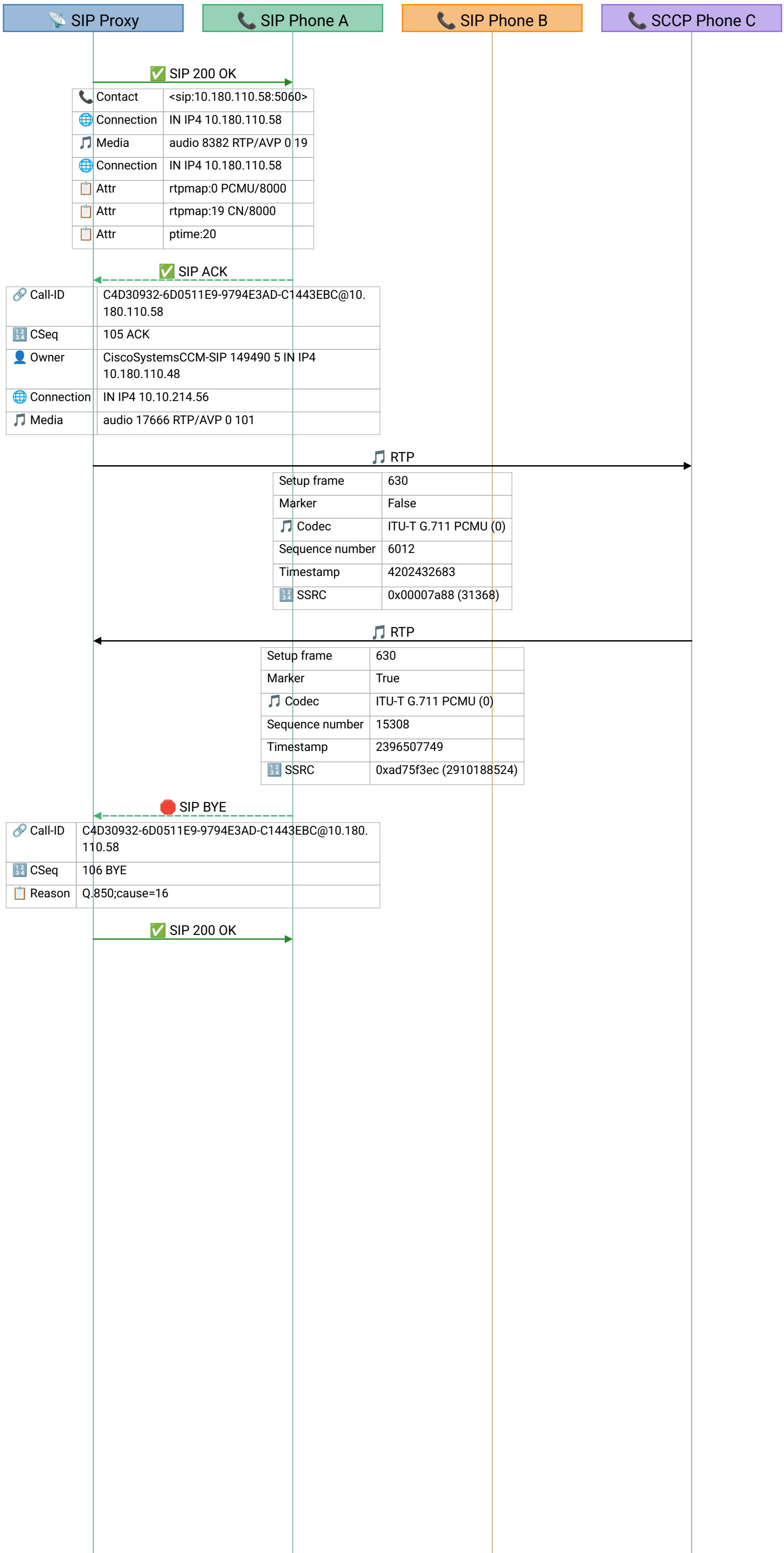
Frame 623 |
2019-05-03T18:12:10.278977Z

Frame 626 |
2019-05-03T18:12:10.336972Z

💡 200 OK – call answered (for INVITE) or registration accepted (for REGISTER); SDP answer completes codec negotiation; caller must send ACK to complete 3-way handshake

💡 SIP INVITE initiates a call – carries SDP offer with codec/media proposals; callee responds with 180 Ringing, then 200 OK with SDP answer

💡 100 Trying – proxy accepted the request and is searching for the callee; stops retransmission timer;



no end-to-end significance
 ⚡ 200 OK – call answered (for INVITE) or registration accepted (for REGISTER); SDP answer completes codec negotiation; caller must send ACK to complete 3-way handshake

Frame 631 |
 2019-05-03T18:12:10.373973Z

Frame 632 |
 2019-05-03T18:12:10.391978Z

Frame 637 |
 2019-05-03T18:12:10.490971Z

⚡ SIP BYE terminates an established dialog – both sides send BYE to release media resources; Reason header explains why (e.g., user hangup)

⚡ 200 OK – call answered (for INVITE) or registration accepted (for REGISTER); SDP answer completes codec negotiation; caller must send ACK to complete 3-way handshake