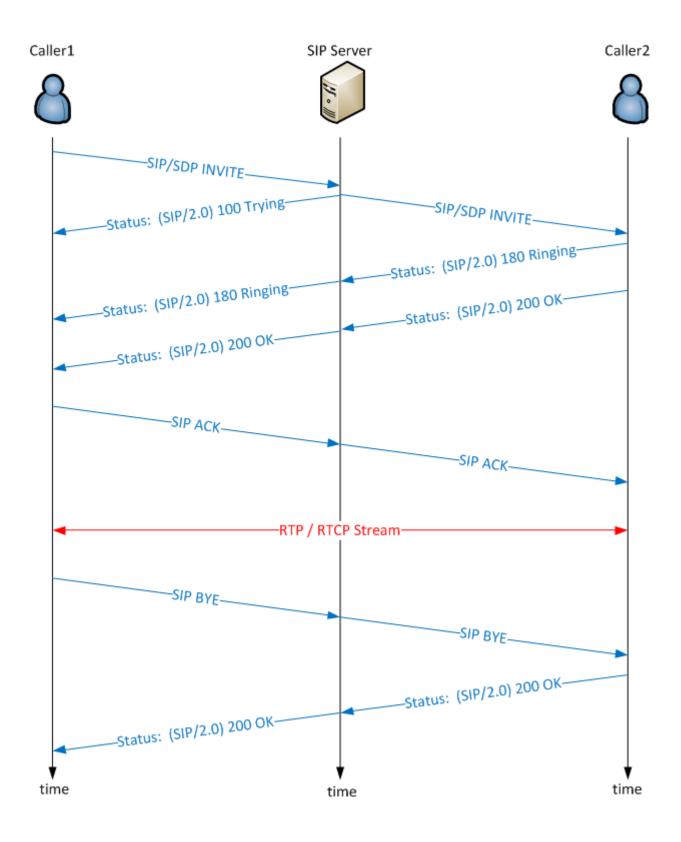
SIP (Session Initiation Protocol)

• Responsible for Session Setup/Modifying/Teardown of a RTP Stream.



SIP Packet Capture

NOTE: The following is packet capture from an Active VoIP Test Traffic Generator. These probes do not require a SIP server, hence some of the transmissions to the SIP server will be transmitted directly to between the end devices.

SIP Call Setup

France and		0	De effectiv	Dente: 1	C	
From Time		Source	Destination	Protocol	Summary	
User 10:39:15. Net 10:39:15.		192.169.223.70 192.169.230.1	192.169.230.1 192.169.223.70	SIP	INVITE sip:tcmyua1@192.169.230.1 SIP/2.0 SIP/2.0 100 Trying	
Net 10:39:15.		192.169.230.1	192.169.223.70	SIP	SIP/2.0 100 Trying SIP/2.0 180 Ringing	
Net 10:39:15.		192.169.230.1	192.169.223.70	SIP	SIP/2.0 200 OK	
User 10:39:15.		192.169.223.70	192.169.230.1	SIP	ACK sip:tcmyua1@192.169.230.1:5060 SIP/	2.0
Net 10:39:15.		192.169.230.1	192.169.223.70	RTP Audio	SSRC=1357833597 Seq=15691	
User 10:39:15.		192.169.223.70	192.169.230.1	RTP Audio	SSRC=4008740144 Seq=47168	
Net 10:39:15.		192.169.230.1	192.169.223.70	RTP Audio	SSRC=1357833597 Seq=15692	
thernet nternet Protocol ser Datagram Pr Source Port Destination Data Length: Checksum: 0) ession Initiati INVITE sip: To: <sip:tor CSeq: 1 INVI Call-ID: 69] Conteat: <si Allow: INVIT Max-Forwards Content-Type Content-Leng \r\n v=0 0=- 29507466 s=SIP Call i=YXBwWTAgMI c=IN IP4 192 t=0 0</si </sip:tor 	39:15.820 Pa (IP) tocol (UDP) : 5060 SIP Port: 5060 S 8813 n Protocol (cmyual092.15 9192.169.223 yual092.169.223 yual092.169.225 F. ACK, CAWC : 70 : applicatio th: 272 S8 1 IN IP4 ASMEZCHUEZM ,169.223.70 9HNZEXIDU4WI 0 RTP/AVF 0	SIP) 69.230.1 SIP/2.0 .223.70:5060;bra 70>;tag=41954649 .230.1> 23.70:5060;trans EL, BYE, MESSAGE n/sdp 192.169.223.70	nch=z9hG4bKc6e27 38 port=udp> YgYzBhOWU2MDEgMC		rτ	Hex Decode 00: 00 17 df ba d4 00 00 03
Image: Non-Amplitude Image: Non-Amplitude Image: Non-Amplitude Net 10:39:		 Source 192.169.223.70 192.169.230.1 	Destination 192.169.230.1 192.169.223.70	Protocol SIP SIP	Summary INVITE sip:tcmyua1@192.169.230.1 SIP/: SIP/2.0 100 Trying	-
O Net 10:39:		192.169.230.1	192.169.223.70	SIP	SIP/2.0 180 Ringing	
O Net 10:39:	5.821 679	192.169.230.1	192.169.223.70	SIP	SIP/2.0 200 OK	
O User 10:39:	5.822 335	192.169.223.70	192.169.230.1	SIP	ACK sip:tcmyua1@192.169.230.1:5060 S	SIP/2.0
C Net 10:39:	5.857 218	192.169.230.1	192.169.223.70	RTP Audio	SSRC=1357833597 Seq=15691	
C User 10:39:	5.860 218	192.169.223.70	192.169.230.1	RTP Audio	SSRC=4008740144 Seq=47168	
C Net 10:39:	5.876 218	192.169.230.1	192.169.223.70	RTP Audio	SSRC=1357833597 Seq=15692	
Ethernet Internet Proto User Datagram Source Po: Destinati Data Leng Checksum: Session Initia SIP/2.0 1 Via: SIP/ .70 From: <sip: Cseq: 1 1 Call-ID:0 Allow: IN</sip: 	0:39:15.821 'rotocol (UD) t: 5060 SIH n Pott: 5060 h: 314 0x3dc4 ion Protocol 0 Trying .0/UDP 192.1 :8192.169.22 cmyual@192.1 VITE 91955178@app) SIP (SIP) (69.223.70:5060;1 (3.70>;tag=419546 (69.230.1>	ranch=z9hG4bKc6e	=2773c833a364c;1	port=5060;received=192.169.223	08: df ba d4 00 08 00 45 00 E 10: 01 4e 00 00 40 00 3d 11 E 10: 01 4e 00 04 00 3d 11 E 20: df 46 13 c4 13 c4 01 3a .F 20: df 46 13 c4 13 c4 01 3a .F 20: df 46 13 c4 13 c4 01 3a .F 20: 30 30 20 54 72 0.100.T 38: 79 69 6e 67 0d 0a 56 69 ying.V 40: 61 3a 20 53 49 50 21 32. 22.151. 50: 39 32 2e 31<

SIP Call Setup (continued)

C Use C Net	m Time															
C Net	40.00.000	-	h Source	Destination	Protocol	Summary	1000									
			192.169.223.70 192.169.230.1	192.169.230.1 192.169.223.70	SIP SIP	INVITE sip:tcmyua1@192.169.230.1 S SIP/2.0 100 Trying	IP72.0									
 Net 			192.169.230.1	192.169.223.70		SIP/2.0 100 Trying SIP/2.0 180 Ringing										
C Net			192.169.230.1	192.169.223.70		SIP/2.0 200 OK										
C Use			192.169.223.70	192.169.230.1	SIP	ACK sip:tcmyua1@192.169.230.1:506	0 SIP/2.0									
C Net			192.169.230.1	192.169.223.70		SSRC=1357833597 Seq=15691										
O Use			192.169.223.70		RTP Audio	SSRC=4008740144 Seq=47168										
C Net	10:39:15.87	o 218	192.169.230.1	192.169.223.70) RTP Audio	SSRC=1357833597 Seq=15692										
Detail Dec Packet 1	ode Number: 3						Hex Deco	de 00	03	e4	b8	e4	19	00	17	
Length:							08:	df	ba	d4 00	00	08 40	00	45	00 11	R
Frame so Length: Time: 0 Ethern Dusc D C Sessio Sessio S V C Sessio C C C C A C C	<pre>vource: (Netwo 425 7/28/11 10:39 et et Protocol atagram Frott ource Port : estimation Pr ata Length: 3 hecksum: 0x86 n Initiation IF/2.0 180 Rs in: SIP/2.0/U 70 rom: <sip:81 c: <sip:temyo Seq: 1 INVITE all-ID: 69195 ontact: <sip:< pre=""></sip:<></sip:temyo </sip:81 </pre>	:15.821 (IP) (UD) 5060 SI (S) (S) (S) (S) (S) (S) (S) (S) (S) (S)	P) SIP 1 (SIP) 169.223.70:5060, 23.70>;tag=4195 169.230.1>;tag=2 250	branch=z9h04bKc6 454938 2226374547 3060;transport=ud		rport=5060;received=192.169.223	06: 10: 10: 20: 20: 20: 20: 20: 20: 20: 20: 20: 50: 50: 50: 50: 50: 60: 60: 60: 60: 60: 60: 60: 60: 60: 6	df df 011 f5 8d df 69 322 30 322 30 322 30 322 30 322 30 322 30 322 30 3334 433 34 35 727 70 36 30 31 38 837770 36 837770 36 837770 36 8377700 36 83777000 37 837700000000000000000000000	ba 97 ba 35 20 67 20 67 22 39 32 26 39 36 63 36 63 35 55 55 32 33 36 55 33 39 39 39 39 39 30 67 55 55 55 55 56 57 57 56 57 57 57 57 57 57 57 57 57 57 57 57 57	d4 00 c0 13 53 31 69 33 30 32 33 30 34 63 30 30 34 63 30 30 20 69 22 22 64 40 20 35 35 00 70 03 1	00 00 a9 c4 49 38 6e 20 2f 2e 3b 7a 36 76 31 37 36 76 31 37 38 37 37 34 34 34 34 40	08 40 e6 13 50 50 67 53 31 37 62 9 33 70 30 65 33 70 30 65 30 20 9 32 61 36 61 36 61 36 74 31	00 00 01 c4 2f 20 0d 49 44 46 30 72 88 32 61 6f 32 61 6f 32 33 33 67 34 33 67 34 33 9	45 3d c0 32 52 0a 50 39 3a 61 72 72 26 0a 73 22 0a 20 33 22 0a 33 22 0a 33 22 0a 33 22 0a 33 22 0a 33 22 33 23 22 33 23 23 23 24 20 20 23 23 23 23 23 23 23 23 23 23 23 23 23	00 11 a9 2e 69 56 2f 20 2e 34 37 36 65 31 32 46 69 31 37 36 37 37 36 57 22 22 22 22 35 34 37 36 37 37 36 37 37 37 37 37 37 37 37 37 37	
C Use C Net C Net	n Time 10:39:15.82/ 10:39:15.82 10:39:15.82 10:39:15.82	352 425	h Source 192.169.223.70 192.169.230.1 192.169.230.1 192.169.230.1	Destination 192.169.230.1 192.169.223.70 192.169.223.70 192.169.223.70	SIP	Summary INVTE sip.tcmyus1@192.169.230.1 SI SIP/2.0.100 Trying SIP/2.0.100 Ringing SIP/2.0.00 OK	P/2.0	31	36	39	2e	32	33	30	2e	169.23
C Use			192.169.223.70		SIP	ACK sip:tcmyua1@192.169.230.1:5060	0 SIP/2.0									
C Net	10:39:15.85	218	192.169.230.1	192.169.223.70	RTP Audio	SSRC=1357833597 Seq=15691										
O Use			192.169.223.70		RTP Audio	SSRC=4008740144 Seq=47168										
C Net	10:39:15.876	5 218	192.169.230.1	192.169.223.70	RTP Audio	SSRC=1357833597 Seq=15692										
Ch Session Si	ata Length: 6 hecksum: 0x66 n Initiation IP/2.0 200 0K ia: SIP/2.0/U	5a Protocol		branch=z9hG4bKc6	e2773c833a364c;	rport=5060;received=192.169.223	30: 38: 40: 48: 50: 56:	66 30 04 49 44 36 30	5a 20 0a 50 50 39 3a	53 32 56 2f 20 2e 35	49 30 69 32 31 32 30	50 30 61 2e 39 32 36	2f 20 3a 30 32 33 30	32 4f 20 2f 2e 2e 3b	53 55 31 37	0.200. Via: IP/2.0 DP.192 69.223
Ct Session 75 75 77 77 77 77 77 77 77 77	necksum: 0x66 n Initiation IP/2.0 200 0K ia: SIP/2.0/U room: <sip:0.19 seq: 1 MWITE sall-ID: 69195 ontact: <sip: low: INWITE, ontent-Type: ontent-Length th =0 = 2950746059 =SIP Call</sip: </sip:0.19 	5a Protocol DP 192.1 2.169.22 al@192.1 5178@app tcmyual@ ACK, CA applicat : 226 2 IN IF 0TEGQjII 69.230.1 RTF/AVP	69.223.70:5060; 33.70>;tag=41954 69.230.1>;tag=2 50 192.169.230.1:5 MCEL, BYE, MESS ion/sdp 24 192.169.230.1 RKUSRSALIONWYT1	664938 226374547 060;transport=ud AGE	p>	rport=5060;received=192.169.223	38: 40: 48:	30 0d 49 44	20 0a 50 50	32 56 2f 20	30 69 32 31	30 61 2e 39	20 3a 30 32	4£ 20 2£ 2e	4b 53 55 31 37 62 39 65 30 65 30 20 30 20 30 20 39 32 61 36 61 36 61 31 32	f2SIP, 0.2000, IP/2.0 DP.19200, 0:5060 2773cf a364c2 773cf 3705 770cf 3705 770cf 3705 770cf 3705 770cf 3705 770cf 3705 770cf 3705 770cf 3705 770cf 3705 770cf 3705 770cf 3705 770cf 3705 770cf 3705 770cf 3705 7705 7705 7705 7705 7705 7705 7705
Ct Session V: V: Pin Tr CC CC CC CC CC CC CC CC CC CC CC CC CC	eekruu: 0x66 1 hitiation 17/2.0 200 0K 14: 31P/2.0/07 000 000: https://www.self.com 969: 1 Wirts 969: 1 bits of the self.com 100: 100: 100: 100: 100: 100: 100: 100:	Sa Protocol DP 192.1 2.169.22 al@192.1 5178@app tcmyual& ACK, CA applicat : 226 2 IN IF 0TBGQJII 69.230.1 RTP/AVP U/8000	<pre>69.223.70:5060; 33.70>;tag=41954 669.230.1>;tag=2 950 192.169.230.1:5 NNCEL, BYE, HES2 ion/sdp 4 192.169.230.1</pre>	64938 226374547 060;transport=ud AGE	D> 2IDAgMCAw		38: 40: 48: 50: 58: 68: 70: 78: 86: 90: 98: A0: 86: 90: 98: A0: B0: B0: B0: B0: B0: C0: C2: C2: D0: D8: D8: D8: D8: D8: D8: D8: D8: D8: D8	30 0d 49 44 36 30 72 61 61 32 61 61 32 61 32 33 39 0d 32 33 67 34 38 67 34 38 39	20 0a 50 50 39 3a 61 47 33 32 72 3d 2e 0a 32 2e 3d 39 20 6d 32	32 56 2f 20 35 56 34 37 36 31 32 46 531 37 34 33 37 34 33 57 9 2e	30 69 32 31 32 33 63 63 34 63 34 63 34 63 34 63 34 36 52 72 70 31 38 30 31 38 33 31 38 30 31 31 31 32 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 35 34 35 35 35 35 36 36 36 36 36 36 36 36 36 36 36 36 37 37 37 37 37 37 37 37 37 37 37 37 37	30 61 2e 39 32 66 40 63 63 35 65 32 33 65 38 39 39 39 30 69 61 36	20 3a 30 32 33 30 63 36 63 38 30 69 2e 2e 6d 40 2e 3b 35 0a 30 31 39	4f 20 2f 2e 2e 3b 36 33 72 36 76 31 37 36 31 37 32 34 32 74 34 34 22 22	4b 53 55 31 37 62 39 65 30 65 30 20 30 20 30 20 39 32 61 36 61 36 61 31 32	0.200 Via IP/2/ DP.19: 69.22: 0:506 ranch- hG4bK 4273cc: d=192 9.223 Froi 4:364c 4:392! 2.169 3.70> g=419. 4938. 1:<5119 4938. 92.165
Ct Session Vi Vi Vi Vi Vi Vi Vi Vi Cc Cc Cc Cc Cc Cc Cc Cc Cc Cc Cc Cc Cc	necknum: Ox66 n Initiation IP/2.0 200 0K imis SIP/2.0 020 0K imis SIP/2.0 0V 70 com: <spi0:192 signal for the signal signal for the signal signal for the signal of the signal for the signal signal for the signal signal for the signal for the signal for the signal Time</spi0:192 	5a Protocol DP 192.1 2.169.22 al@192.1 5178@app ACK, CA applicat : 226 2 IN IF 0TB60jII 69.230.1 RTP/AVP U/8000 Length	<pre>ce9.223.70:5060; 23.70>;tag=41954 c69.230.1>;tag=41954 c69.230.1>;tag=2 19122.169.230.1:5 ion/adp 24 192.169.230.1 PRUSRSALIGHWTTI 0 Source</pre>	i64938 226574547 0660jtransport=ud AGE INjaxIGH#YT1k2j0 Destination	ID> 2IDAgMCAw Protocol	Summary	38: 40: 48: 50: 68: 70: 78: 90: 90: 90: 90: 90: 90: 90: 90: 90: 90	30 0d 49 44 36 30 72 61 61 32 61 61 32 61 32 33 39 0d 32 33 67 34 38 67 34 38 39	20 0a 50 50 39 3a 61 47 33 32 72 3d 2e 0a 32 2e 3d 39 20 6d 32	32 56 2f 20 35 56 34 37 36 31 32 46 531 37 34 33 57 22 22	30 69 32 31 32 33 63 63 34 63 34 63 34 63 34 63 34 36 52 72 70 31 38 30 31 38 33 31 38 30 31 31 31 32 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 35 34 35 35 35 35 36 36 36 36 36 36 36 36 36 36 36 36 37 37 37 37 37 37 37 37 37 37 37 37 37	30 61 2e 39 32 66 40 63 63 35 65 32 33 65 38 39 39 39 30 69 61 36	20 3a 30 32 33 30 63 36 63 38 30 69 2e 2e 6d 40 2e 3b 35 0a 30 31 39	4f 20 2f 2e 2e 3b 36 33 72 36 76 31 37 36 31 37 32 34 34 34 34 22 22	4b 53 55 31 37 62 39 65 30 65 30 20 30 20 30 20 39 32 61 36 61 36 61 31 32	0.200. Via: IP/2.(0.22) 0:506(ranch- hG4bK(2773c6 a364c, ort=5(rece: d=192. 9.223. Fron c.sip: (2.169, 3.70>, g=419. 4938 csyna s.csyna
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C User From C User C Net	eckrum: 0x66 n Initiation 17/2.0 200 0K 16: 517/2.0 020 200 0K 201 0X 201 0X 20	5a Protocol DP 192.1 2.169.22 al@192.1 5178@app ACK, CA applicat : 226 2 IN IF 0TBC0jII 69.230.1 RTP/AVP U/8000 Length 719	<pre>69.223.70:5060; 33.70>;tag=41954 69.230.1>;tag=41954 69.230.1>;tag=2 192.169.230.1:5 inn/>dp 24 192.169.230.1 c 0 Source 192.169.223.70</pre>	64938 226374547 000.)transport=ud AGE 	p> 2IDAgMCAw Protocol SIP	Summary INVITE sig/tmyua1@192.169.230.1 SIP/	38: 40: 48: 55: 66: 70: 78: 90: 90: 90: 90: 90: 90: 90: 90: 90: 90	30 0d 49 44 36 30 72 61 61 32 61 61 32 61 32 33 39 0d 32 33 67 34 38 67 34 38 39	20 0a 50 50 39 3a 61 47 33 32 72 3d 2e 0a 32 2e 3d 39 20 6d 32	32 56 2f 20 35 56 34 37 36 31 32 46 531 37 34 33 57 22 22	30 69 32 31 32 33 63 63 34 63 34 63 39 32 72 70 30 31 38 30 31 38 33 31 38 33 31 38 33 31 38 30 31 31 32 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 35 34 35 35 35 36 36 36 36 36 36 36 37 37 37 37 37 37 37 37 37 37 37 37 37	30 61 2e 39 32 66 4b 63 63 35 65 32 33 65 38 39 39 39 30 69 61 36	20 3a 30 32 33 30 63 36 63 38 30 69 2e 2e 6d 40 2e 3b 35 0a 30 31 39	4f 20 2f 2e 2e 3b 36 33 72 36 76 31 37 36 31 37 32 34 34 34 34 22 22	4b 53 55 31 37 62 39 65 30 65 30 20 30 20 30 20 39 32 61 36 61 36 61 31 32	0.200 Via IP/2/ DP.19: 69.22: 0:506 ranch- hG4bK 4273cc: d=192 9.223 Froi 4:364c 4:392! 2.169 3.70> g=419. 4938. 1:<5119 4938. 92.165
Ct Session Sister Ct Ct Ct Ct Ct Ct Ct Ct Ct Ct Ct Ct Ct	necknum: 0x66 n Initiation 17/2.0 200 0K isi3P/2.0 0200 K isi3P/2.0 0200 K	Sa Protocol DP 192.1 2.169.22 al@192.1 5178@app tcayual@ ACK, CA applicat 2 IN IF 0TEG0jII 69.230.1 RTF/AVP U/8000 Length 719 352	69,223,70:5060,7 3,70:50,20,1,5,120,20,1,5,120,20,1,5,120,20,1,5,120,20,1,5,120,120,1,5,120,120,120,120,120,120,120,120,120,120	i64938 2226374547 0060.ttensport=ud	p> 2IDAgRCAw Protocol SIP SIP	Summary INVITE sip tempua1@192.169.230.1 SIP/ SIP2.0 100 Tring SIP2.0 100 Tringing SIP2.0 200 KK	38: 38: 48: 59: 58: 60: 79: 88: 99: 99: 99: 99: 99: 99: 9	30 0d 49 44 36 30 72 61 61 32 61 61 32 61 32 33 39 0d 32 33 67 34 38 67 34 38 39	20 0a 50 50 39 3a 61 47 33 32 72 3d 2e 0a 32 2e 3d 39 20 6d 32	32 56 2f 20 35 56 34 37 36 31 32 46 531 37 34 33 57 22 22	30 69 32 31 32 33 63 63 34 63 34 63 39 32 72 70 30 31 38 30 31 38 33 31 38 33 31 38 33 31 38 30 31 31 32 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 35 34 35 35 35 36 36 36 36 36 36 36 37 37 37 37 37 37 37 37 37 37 37 37 37	30 61 2e 39 32 66 4b 63 63 35 65 32 33 65 38 39 39 39 30 69 61 36	20 3a 30 32 33 30 63 36 63 38 30 69 2e 2e 6d 40 2e 3b 35 0a 30 31 39	4f 20 2f 2e 2e 3b 36 33 72 36 76 31 37 36 31 37 32 34 34 34 34 22 22	4b 53 55 31 37 62 39 65 30 65 30 20 30 20 30 20 39 32 61 36 61 36 61 31 32	0.200 Via IP/2/ DP.19: 69.22: 0:506 ranch- hG4bK 4273cc: d=192 9.223 Froi 4:36c 4:392! 2.169 3.70> g=419. 4938. 1.
C C User From From C User C Net C User C Net C User	eekraus: 0x66 n hitiation 17/2.0 200 0K isi317/2.0 020 0K isi317/2.0 020 isi317/2.0 020 isi317/2	5a Protocolo DP 192.12 2.169.22 2.169.22 2.169.22 2.169.22 2.10.12 2.10.12 2.10.12 2.10.12 2.10.12 10.12 2.10.12 1	69,223,70:5060,4 33,70:tag=4195,4 69,230,1>,tag=2 192,169,230,1: conversession of the second sec	ic4938 222574547 0000_ttensport=ud ic400 INJAxIGfWYT1k230 Destination 192.169.223.70 192.169.223.70 192.169.223.70	p> 2IDAgRCAw Protocol SIP SIP SIP SIP SIP	Summary IMTE sigt:rmys1@192.169.230.1 SIP/ SIP/2.0 100 Trying SIP/2.0 100 Trying SIP/2.0 200 OK ACK sigt:rmys1@192.169.230.15060 E	38: 38: 48: 59: 58: 60: 79: 88: 99: 99: 99: 99: 99: 99: 9	30 0d 49 44 36 30 72 61 61 61 32 61 61 32 32 34 39 0d 32 33 67 34 38 67 34 38 39	20 0a 50 50 39 3a 61 47 33 32 72 3d 2e 0a 32 2e 3d 39 20 6d 32	32 56 2f 20 35 56 34 37 36 31 32 46 531 37 34 33 57 22 22	30 69 32 31 32 33 63 63 34 63 34 63 39 32 72 70 30 31 38 30 31 38 33 31 38 33 31 38 33 31 38 30 31 31 32 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 35 34 35 35 35 36 36 36 36 36 36 36 37 37 37 37 37 37 37 37 37 37 37 37 37	30 61 2e 39 32 66 40 63 63 35 65 32 33 65 38 39 39 39 30 69 61 36	20 3a 30 32 33 30 63 36 63 36 30 69 2e 2e 6d 40 2e 3b 35 0a 30 31 39	4f 20 2f 2e 2e 3b 36 33 72 36 76 31 37 36 31 37 32 34 34 34 34 22 22	4b 53 55 31 37 62 39 65 30 65 30 20 30 20 30 20 39 32 61 36 61 36 61 31 32	0.200 Via IP/2. DP.19 69.22 0:506 ranch hG4bK 2773c a364c ort=5 ;rece d=192 9.223 Fro csip: 2.169 3.70> g=419 4938. :.sin 92.16
C C Session Session S Star S Star	eeckrum: 0x66 n Initiation 17/2.0 200 0K isi SIP/2.0 200 0K isi SIP/2.0 200 0K isi SIP/2.0 200 0 c Alpicong Sip	5a Protocol DP 192.1 2.169.22 2.169.22 2.169.22 2.109.22	 ce, 223, 70: 5060 / co, 70>; tag=41954 ce, 233, 1>; tag=41954 ce, 233, 1>; tag=41954 ce, 233, 1>; tag=41954 ce, 233, 1>; tag=41954 ce, 233, 10; tag=23, 10;	ie4938 2226374547 000 / transport=ud kGE IN j & x1GHwYT1k230 192168 223 70 192168 223 70 192168 223 70 192168 223 70 192168 223 70	D> 2IDAgttCAw SIP SIP SIP SIP SIP SIP SIP SIP SIP SIP	Summary INVTE sigt:rmysaf@192169.230.1 SIP/ SIP/2.0 100 Trying SIP/2.0 100 Trying SIP/2.0 100 Ringing SIP/2.2 020 OK ACK sigt:rmysaf@192.169.230.1.5060 S SSRC=135783397 Seq=15691	38: 38: 48: 59: 58: 60: 79: 88: 99: 99: 99: 99: 99: 99: 9	30 0d 49 44 36 30 72 61 61 61 32 61 61 32 32 34 39 0d 32 33 67 34 38 67 34 38 39	20 0a 50 50 39 3a 61 47 33 32 72 3d 2e 0a 32 2e 3d 39 20 6d 32	32 56 2f 20 35 56 34 37 36 31 32 46 531 37 34 33 37 34 33 57 9 2e	30 69 32 31 32 33 63 63 34 63 34 63 39 32 72 70 30 31 38 30 31 38 33 31 38 33 31 38 33 31 38 30 31 31 32 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 35 34 35 35 35 36 36 36 36 36 36 36 37 37 37 37 37 37 37 37 37 37 37 37 37	30 61 2e 39 32 66 40 63 63 35 65 32 33 65 38 39 39 39 30 69 61 36	20 3a 30 32 33 30 63 36 63 36 30 69 2e 2e 6d 40 2e 3b 35 0a 30 31 39	4f 20 2f 2e 2e 3b 36 33 72 36 76 31 37 36 31 37 32 34 34 34 34 22 22	4b 53 55 31 37 62 39 65 30 65 30 20 30 20 30 20 39 32 61 36 61 36 61 31 32	0.200 Via 1P/2 DP.197 0:506 ranch hG4bK 2773cc a364c d=192 9.223 Fro c.sip: 2.169 3.70> g=419 4938. :.sin 92.16
E C Session Session Si Session Si Sessi	eekraum: 0x66 n Initiation IP/2.0 200 0K is: SIP/2.0 200 0K is: SIP/2.0 200 0K is: SIP/2.0 200 Particle Sip: Pisson Sip: Capture Sip: Pisson Sip: Capture Sip: Pisson Sip: Capture Sip: Pisson Pisson Capture Sip: Pisson Pisson Pisson Capture Sip: Pisson Pi	5a Protocolo Protocolo 192,169,22, al@192,1 197,192,1 197,192,1 197,192,1 2 IN IF 070500311 69,230,1 KTTP/AVP 0000 Length 719 352 425 679 335 218	<pre>ce, 223. 70: 5060 / 23. 70> ; tag=41954 c69. 230. L> rtag=2 1922.169. 230. L> rtag=2 ion/adp 24 192.169. 230. L1 5 RRUSRSALIGHWTI 0 5000 192.169.233.0 192.169.233.0 192.169.230.1 192.169.230.1 192.169.233.1 192.169.233.1 192.169.233.1 192.169.233.1 192.169.233.1 192.169.233.1 192.169.233.1</pre>	64938 226574547 060) transport-ud AGE INT A×10HwYT1k2j0 1921692370 1921692370 1921692370 1921692370 1921692370 1921692370 1921692370 1921692370	D> 2IDAgMCAw SIP SIP SIP SIP SIP SIP SIP SIP SIP SIP	Summary INVTE sigt:rmyua1@192168.2301.5IP/7 SIP/2.0100 Trying SIP/2.0100 Enkging SIP/2.0200 OK ACK sigt:rmyua1@192169.2301.5000 SSRC=136783597 Seq=15691 SSRC=408740144 Seq=47168	38: 38: 48: 59: 58: 60: 79: 88: 99: 99: 99: 99: 99: 99: 9	30 0d 49 44 36 30 72 61 61 61 32 61 61 32 32 34 39 0d 32 33 67 34 38 67 34 38 39	20 0a 50 50 39 3a 61 47 33 32 72 3d 2e 0a 32 2e 3d 39 20 6d 32	32 56 2f 20 35 56 34 37 36 31 32 46 531 37 34 33 37 34 33 57 9 2e	30 69 32 31 32 33 63 63 34 63 34 63 39 32 72 70 30 31 38 30 31 38 33 31 38 33 31 38 33 31 38 30 31 31 32 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 33 34 35 34 35 35 35 36 36 36 36 36 36 36 37 37 37 37 37 37 37 37 37 37 37 37 37	30 61 2e 39 32 66 40 63 63 35 65 32 33 65 38 39 39 39 30 69 61 36	20 3a 30 32 33 30 63 36 63 36 30 69 2e 2e 6d 40 2e 3b 35 0a 30 31 39	4f 20 2f 2e 2e 3b 36 33 72 36 76 31 37 36 31 37 32 34 34 34 34 22 22	4b 53 55 31 37 62 39 65 30 65 30 20 30 20 30 20 39 32 61 36 61 36 61 31 32	0.200 Via IP/2. DP.19 69.22 0:506 ranch hG4bK 2773c a364c ort=5 ;rece d=192 9.223 Fro csip: 2.169 3.70> g=419 4938. :.sin 92.16
C C Session Session Si Session Si Si S	eeksuu: 0x66 n Initiation 17/2.0 200 0K 14: 317/2.0 02 0 0 0K 14: 317/2.0 00 0 0 0K 14: 317/2.0 0K 14: 17/0 0K 14:	5a Protocolo Protocolo 192,169,22, al@192,1 197,192,1 197,192,1 197,192,1 2 IN IF 070500311 69,230,1 KTTP/AVP 0000 Length 719 352 425 679 335 218	 ce, 223, 70: 5060 / co, 70>; tag=41954 ce, 233, 1>; tag=41954 ce, 233, 1>; tag=41954 ce, 233, 1>; tag=41954 ce, 233, 1>; tag=41954 ce, 233, 10; tag=23, 10;	ie4938 2226374547 000 / transport=ud kGE IN j & x1GHwYT1k230 192168 223 70 192168 223 70 192168 223 70 192168 223 70 192168 223 70	D> 2IDAgttCAw SIP SIP SIP SIP SIP SIP SIP SIP SIP SIP	Summary INVTE sigt:rmysaf@192169.230.1 SIP/ SIP/2.0 100 Trying SIP/2.0 100 Trying SIP/2.0 100 Ringing SIP/2.2 020 OK ACK sigt:rmysaf@192.169.230.1.5060 S SSRC=135783397 Seq=15691	38: 38: 48: 59: 58: 60: 79: 88: 99: 99: 99: 99: 99: 99: 9	300 0d4 49 44 300 722 61 62 32 31 32 32 32 32 32 32 32 33 33 33 33 33 33	20 0a 50 50 39 3a 61 47 37 27 22 30 32 20 64 32 20 64 32 20 64 32 20 64 32 20 64 32 20 64 32 20 50 20 50 50 50 50 50 50 50 50 50 50 50 50 50	32 56 20 22 35 66 34 37 34 37 34 65 31 32 46 69 31 37 34 33 37 22 22 20	30 69 32 31 32 30 63 33 34 63 32 72 70 30 33 34 63 33 34 63 32 72 70 31 33 31 31 31	30 61 22 39 32 36 68 63 63 55 55 32 33 65 33 65 33 61 36 36 39 04 69 39 04 69 39	200 3a 30 32 33 30 34 38 30 69 2e 64 40 2e 64 40 2e 3b 35 0a 70 0a 70 3b	4f 20 2f 2e 3b 3a 36 76 31 37 3a 37 3a 32 74 54 3a 32 74 54 3a 22 74	4b 53 55 31 37 62 39 65 33 70 65 30 65 30 30 65 30 30 65 30 30 65 30 30 65 66 61 30 30 82 61 31 32 61 32 61	0.200 Via IP/2. DP.19 69.22 0:506 ranch hG4bK 2773c a364c ort=5 ;rece d=192 9.223 Fro csip: 2.169 3.70> g=419 4938. :.sin 92.16

SIP Session Teardown

	From	Time	Length	Source	Destination	Protocol	Summary										
$^{\circ}$	Net	12:10:31.046	218	192.169.230.1	192.169.223.70	RTP Audio	SSRC=998022158 Seq=4653										
$^{\circ}$	User	12:10:31.060	218	192.169.223.70	192.169.230.1	RTP Audio	SSRC=720345257 Seq=17507										
0	Net	12:10:31.067	218	192.169.230.1	192.169.223.70	RTP Audio	SSRC=998022158 Seg=4654										
C	User	12:10:31.070	138	192.169.223.70	192.169.230.1	RTCP	SR: SSRC=720345257										
e	User	12:10:31.071	518	192.169.223.70	192.169.230.1	SIP	BYE sip:tcmyua1@192.169.230.1:5060 SIP/2	2.0									
0	Net	12:10:31.071	500	192.169.230.1	192.169.223.70	SIP	SIP/2.0 200 OK										
0	Net	12:10:31.071	138	192.169.230.1	192.169.223.70	RTCP	SR: SSRC=998022158										
~																	
0	User	12:10:31.072	118	192.169.223.70	192.169.230.1	RTCP	RR: SSRC=720345257										
		- ber: 4404 :ce: (User)						Hex Decode 00: 08:	00 e4	17 b8	df e4	ba 19	d4 08	00 00	00 45	03 00	E.
	e sour th: 51							08:	e4 01	b8 £4	e4 00	19 00	08 40	00	45 3£	00 11	E.
		8/11 12:10:3	1.071 Pe	cific Daylight	Time			18:	£3	5d	c0	a9	df	46	cO	a9	. 1 F
	ernet							20:	e6	01	13	c4	13	c4	01	e0	
		Protocol (II agram Protoco						28:	17	Зb	42	59	45	20	73	69	.;BYE.si
100		ce Port : 50						30:	70	Зa	74	63	6d	79	75	61	p:tcmyua
	Dest	ination Port	: 5060 \$	SIP				38:	31	40	31	39	32	2e	31	36	10192.16
		a Length: 480						40:	39	2e	32	33	30	2e	31	Зa	9.230.1:
		ksum: 0x173b						48:	35	30	36	30	20	53	49	50	5060.SIP
] Se		Initiation Pr		(SIP) 230.1:5060 SIP/	2.0			50:	2f	32	2e	30	0d	0a	56	69	/2.0Vi
					2.0 anch=z9hG4bKcda4	-3a968b88e5c.rn	art	58:	61	Зa	20	53	49	50	2f	32	a:.SIP/2
				70>;tag=1511811				60:	2e	30	2f	55	44	50	20	31	.0/UDP.1
				.230.1>;tag=344				68:	39	32	2e	31	36	39	2e	32	92.169.2
	CSec	4: 2 BYE		-				70:	32	33	2e	37	30	Зa	35	30	23.70:50
		L-ID: 3458111)				78:	36	30	Зb	62	72	61	6e	63	60;branc
		son: Q.850 ;c						80:	68	3d	7a	39	68	47	34	62	h=z9hG4b

Reason: Q.850 ;ca	ause=16					80:	68	3d	7a	39	68	47	34	62	h=z9hG4b
Max-Forwards: 70 Content-Type: tex	/t/nlain					88:	4b	63	64	61	34	63	33	61	Kcda4c3a
Content-Length: 1						90: 98:	39 63	36	38	62	38	38	65	35	968b88e5
\r\n								3b 46	72	70	6f	72	74	0d 3c	c, rport.
	MCwwLDY2LDAsNTQsHzMsMzMsMCwwLDAsIjE5Hi4xNjkuMjIzLjEiLDMsIjE5Hi4xNjkuMjIxLjIiLDQsIjE3Mi4xNi4yMjEuMSI sNTMsIjE5Hi4xNjkuMjMwLjEiLDQg							40 69	72 70	6f 3a	6d 40	3a 31	20 39	32	.From:.< sip:0192
sNTMsIjE5Mi4xNjku	MJMwLJE	ırDfâ				A8: B0:	73 2e	31	36	39 39	40 2e	32	32	33	.169.223
						B8:	2e	37	30	3e	зb	74	61	67	.70>;tag
						co:	3d	31	35	31	31	38	31	31	=1511811
						C8:	37	38	34	0d	0a	54	6f	Зa	784To:
						DO:	20	3c	73	69	70	За	74	63	. <sip:tc< th=""></sip:tc<>
						D8:	6d	79	75	61	31	40	31	39	myua1019
						E0: E8:	32 30	2e 2e	31 31	36 3e	39 3b	2e 74	32 61	33 67	2.169.23 0.1>;tag
						20.	00	20			52	~ 1	01	0,	0.15,01g
From Time	Length	Source	Destination	Protocol	Summary										
C Net 12:10:31.046	218	192.169.230.1	192.169.223.70	RTP Audio	SSRC=998022158 Seq=4653										
C User 12:10:31.060	218	192.169.223.70	192.169.230.1	RTP Audio	SSRC=720345257 Seq=17507										
O Net 12:10:31.067	218	192.169.230.1	192.169.223.70	RTP Audio	SSRC=998022158 Seq=4654										
C User 12:10:31.070	138	192.169.223.70	192.169.230.1	RTCP	SR: SSRC=720345257										
O User 12:10:31.071	518	192.169.223.70	192.169.230.1	SIP	BYE sip:tcmyua1@192.169.230.1:5060 SIP/	2.0									
Net 12:10:31.071	500	192.169.230.1	192.169.223.70	SIP	SIP/2.0 200 OK										
Net 12:10:31.071	138	192.169.230.1	192.169.223.70	RTCP	SR: SSRC=998022158										
C User 12:10:31.072	118	192.169.223.70	192.169.230.1	RTCP	RR: SSRC=720345257										

Detail Decode	Hex Decode									
Packet Number: 4405	00:	00	03	e4	b8	e4	19	00	17	
Frame source: (Network)	08:	df	ba	d4	00	08	00	45	00	E.
Length: 500	10:	01	e2	00	00	40	00	3d	11	
Time: 07/28/11 12:10:31.071 Pacific Daylight Time	18:	£5	6£	cO	a9	e6	01	cO	a9	.0
🗄 Ethernet	20:	df	46	13	c4	13	c4	01	ce	. F
Internet Protocol (IP)	28:	db	47	53	49	50	2£	32	2e	.GSIP/2.
User Datagram Protocol (UDP)	30:	30	20	32	30	30	20	4£	4b	0.200.0K
Source Port : 5060 SIP	38:			56						Via:.S
Destination Port: 5060 SIP		0d	0a		69	61	3a	20	53	
Data Length: 462	40:	49	50	2f	32	2e	30	2f	55	IP/2.0/U
Checksum: 0xdb47	48:	44	50	20	31	39	32	2e	31	DP.192.1
□ Session Initiation Protocol (SIP) SIP/2.0 200 0K	50:	36	39	2e	32	32	33	2e	37	69.223.7
517/2.0 200 0K Via: SIF/2.0/UDF 192.169.223.70:5060;branch=z9hG4bKcda4c3a968b88e5c;rport=5060;received=192.169.223	58:	30	3a	35	30	36	30	3b	62	0:5060;b
(14: 517/2.0/007 192.109.223.10:3000/DIanch=296040K044034960060630;10010=3060/100014001780.223 ,70	60:	72	61	6e	63	68	3d	7a	39	ranch=z9
./0 From: <sip:@192.169.223.70>;tag=1511811784</sip:@192.169.223.70>	68:	68	47	34	62	4b	63	64	61	hG4bKcda
To: <sp;tcmvual@192.169.230.1>tag-3449893253</sp;tcmvual@192.169.230.1>	70:	34	63	33	61	39	36	38	62	4c3a968b
CSeq: 2 BYE	78:	38	38	65	35	63	Зb	72	70	88e5c;rp
Call-ID: 3458111528app50	80:	6£	72	74	3d	35	30	36	30	ort=5060
Content-Type: text/plain	88:	3b	72	65	63	65	69	76	65	receive;
Content-Length: 154	90:	64	3d	31	39	32	2e	31	36	d=192.16
\r\n	98:	39	2e	32	32	33	2e 2e	37	30	9.223.70
MCwwLDY1LDASMSwzNCwzNCwwLDASMCwiMTkyLjE20S4yMzAuMiISMiwiMTcyLjE2LjIyMi4xIiw4LCIx0TIuMTY5LjIyMS4yIiw										
xNywiMTkyLjE20S4yNjEuMSIsMTYsIjE5Mi4xNjkuMjIzLjcwIiw3	A0:	0d	0a	46	72	6f	6d	Зa	20	From:.
	A8:	3c	73	69	70	3a	40	31	39	<sip:019< td=""></sip:019<>
	B0:	32	2e	31	36	39	2e	32	32	2.169.22
	B8:	33	2e	37	30	3e	Зb	74	61	3.70>;ta
	CO:	67	3d	31	35	31	31	38	31	g=151181
	C8:	31	37	38	34	0d	0a	54	6£	1784To
	DO:	3a	20	3c	73	69	70	Зa	74	:. <sip:t< td=""></sip:t<>
	D8:	63	6d	79	75	61	31	40	31	cmyual@1
	EO:	39	32	2e	31	36	39	2e	32	92.169.2
	E8:	33	30	2e	31	3e	3b	74	61	30.1>;ta
	1 20.	55	50	20	51	96	50	74	51	30.17,0d

RTP (Real Time Protocol)

- Application Layer protocol. Typically transported via UDP. •
- Carries the actual payload such as VoIP call content or the Video content. •
- RTP Packets have time stamp and sequence number so the corresponding end device can measure call • metrics such as jitter, and number of packets dropped, throughput of the call, (delay?- one way/round trip).

RTP Packet Capture

From Tim			Destination	Protocol	Summary									
	39:15.820 719	192.169.223.70	192.169.230.1	SIP	INVITE sip:tcmyua1@192.169.230.1 SIP/2.0									
	39:15.821 352	192.169.230.1	192.169.223.70	SIP	SIP/2.0 100 Trying									
O Net 10:	39:15.821 425	192.169.230.1	192.169.223.70	SIP	SIP/2.0 180 Ringing									
O Net 10:	39:15.821 679	192.169.230.1	192.169.223.70	SIP	SIP/2.0 200 OK									
O User 10:	39:15.822 335	192.169.223.70	192.169.230.1	SIP	ACK sip:tcmyua1@192.169.230.1:5060 SIP/2.0									
Net 10:	39:15.857 218	192.169.230.1	192.169.223.70	RTP Audio	SSRC=1357833597 Seq=15691									
O User 10:	39:15.860 218	192.169.223.70	192.169.230.1	RTP Audio	SSRC=4008740144 Seq=47168									
O Net 10:	39:15.876 218	192.169.230.1	192.169.223.70	RTP Audio	SSRC=1357833597 Seq=15692									
Detail Decode					-	lex Decode								
□ Ethernet □ Internet Pio □ User Datagra Source Destina Data Le Checksu □ Real-Time Pr Flags: Type: 0 Sequenc Timesta SSRC: 1	(Network) 1 10:39:15.857 F tocol (IP) m Protocol (UDP) Port : 30000 ngth: 1800 m: 0x9fc8 otocool (RTP Audi 0x80 10: Vers 0 ono: CSRG	.o) adding xtension : count arker	Fime		0 1 1 2 2 3 3 3 3 4 4 4 5 5 5 6 6 6 6 6 6 6 6 6 6 6 7 7 7 7 7 8 8 8 8	08: 10: 10: 10: 10: 10: 10: 10: 10	000 0:0 df bn 000 ci ff6 8:2 dff 4 dff 3 dff	a d44 3 000 5 75 8 800 9 ff 9 ff 9 ff 9 ff 9 ff 9 ff 9 ff 9	00 a9 30 00 09 09 09 09 09 09 09 09 0	e4 08 40 e6 75 3d e5 e5 00 00 00 00 00 00 00 00 00 00 00 00 00	19 00 00 30 4b 09 09 09 09 09 09 09 09 09 09 09 09 09	00 45 3d c0 00 04 ff ff ff ff ff ff ff ff ff ff ff ff ff	17 00 11 a9 b4 c5 89 89 89 89 89 89 89 89 89 89 89 89 89	
From Tim	_		Destination	Protocol	Summary	D8:	Od c.	L						
	39:15.820 719	192.169.223.70	192.169.230.1	SIP	INVITE sip:tcmyua1@192.169.230.1 SIP/2.0									
	39:15.821 352	192.169.230.1	192.169.223.70	SIP	SIP/2.0 100 Trying									
	39:15.821 425	192.169.230.1	192.169.223.70	SIP	SIP/2.0 180 Ringing									
O Net 10:	39:15.821 679	192.169.230.1	192.169.223.70	SIP	SIP/2.0 200 OK									
O User 10:	39:15.822 335	192.169.223.70	192.169.230.1	SIP	ACK sip:tcmyua1@192.169.230.1:5060 SIP/2.0									
O Net 10:	39:15.857 218	192.169.230.1	192.169.223.70	RTP Audio	SSRC=1357833597 Seq=15691									
📀 User 10:	39:15.860 218	192.169.223.70	192.169.230.1	RTP Audio	SSRC=4008740144 Seq=47168									
C Net 10:	39:15.876 218	192.169.230.1	192.169.223.70	RTP Audio	SSRC=1357833597 Seq=15692									
□ Ethernet □ Internet Pio User Datagra Source Destina Data Le Checksu □ Real-Time Pr Flags: Type: 0 Sequenc Timesta SSRC: 4	(User) 1 10:39:15.860 F stocol (IP) m Frotocol (UDP) Port : 30000 tion Port: 30000 tion Port: 30000 m: 0x1194 ox80 10: No p 0: No p 0: No p 0: No p	.o) adding xtension : count arker	Fime		0 0 1 1 2 2 3 3 3 3 4 4 5 5 5 6 6 6 6 7 7 7 7 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9	08: 10: 10: 10: 10: 10: 10: 10: 10	00 1' e4 bil 000 c e5 0. 11 9. 966 2: 800 8: <th>3 e4 3 00 9 c0 1 80 9 ff 9 ff</th> <th>00 a9 30 60 09 09 09 09 09 09 09 09 09 09 09 09 09</th> <th>d4 08 40 75 b8 85 00 00 00 00 00 00 00 00 00 00 00 00 00</th> <th>00 00 46 30 09 09 09 09 09 09 09 09 09 09 09 09 09</th> <th>00 45 3f c0 00 6a ff ff ff ff ff ff ff ff ff ff ff ff ff</th> <th>03 00 11 a9 b4 64 89 89 89 89 89 89 89 89 89 89 89 89 89</th> <th></th>	3 e4 3 00 9 c0 1 80 9 ff 9 ff	00 a9 30 60 09 09 09 09 09 09 09 09 09 09 09 09 09	d4 08 40 75 b8 85 00 00 00 00 00 00 00 00 00 00 00 00 00	00 00 46 30 09 09 09 09 09 09 09 09 09 09 09 09 09	00 45 3f c0 00 6a ff ff ff ff ff ff ff ff ff ff ff ff ff	03 00 11 a9 b4 64 89 89 89 89 89 89 89 89 89 89 89 89 89	

RTCP (Real-Time Transport Control Protocol)

- RTCP packet will show QoS of the call between two end points.
- RTCP stream is out of band stream. Another words, it is a separate stream from the RTP Stream and will not interfere with RTP stream.
- Note, these values are contained in the payload(Data) and which are not decrypted by VNS Probe
- RTCP UDP Destination Port number = RTP stream port number + 1

RTCP Packet Capture

	Frame Ba	maker: 1, Frame Length: 178, Captured Size: 178	1
	ETHERNET MPLS:	f: IEEE 802.3/Ethernet DIX V2 Header [Length : 14] 0 RFL5 Label Stack (Length : 4) 14	
	B IP:	- AF - Andernet Fragmon (Length : 20)	1
	IP: 1	offServ Field = 0x00	4
	m IP: 1	Identification = 0	
	🖻 IP:	<pre>imps = un4 .1edon't fragment</pre>	1
	m IP: P	Progment offset = 0 bytes	
	B IP: 7	inte co inve = 64 Seconda/Hops Protocol = 17 (UDP)	
	10 1P: 3	sease: checksum = UKEDFA (correct) Nource address = [192.169.230.1]	
	🖻 IP: N	estination address = [192.169.229.1] No options	
	UD9:	UDP - User Datagram Protocol (Length : 8)	
	B UDF:	Source port - 30001	
		Destination port = 30001 Length = 136	
PRD:	B (0)1:	unecesum = UxEssi (correct)	
Diff. Diff. Stat	B 007: RTC7:	RTCP - Real-time Transport Protocol (RTP) Control Protocol (Length : 52)	11
<pre>PiC: Pices Use Sup Pice Pice Pice Pice Pice Pice Pice Pice</pre>	RTCP:	Ver, Pad, RC: - 0x81	
<pre>PiC: Pices Use Sup Pice Pice Pice Pice Pice Pice Pice Pice</pre>	RTCP:	10 = Version = 2 (RFC 1889) = Padding = 0	
0 0 0 0	RTCP:	:0 0001 = Reception report count = 1 : Packet type = 200 (Sender Report)	
<pre>Prove Prove the second of the second of</pre>		Length = 13 (32-bit words) SSRC of sender = 150267618	
<pre>104000 // 107 tastage // 10400 // 107 tastage // 10400 // 107 tastage // 107</pre>	RTCP:	NTP reference timestam = 1312201040.66163 sec	1
<pre>BTTC: function function is a set of the set of the</pre>	RTCP:	:RTP timestamp = 199438 Sender's packet count = 1247	
BYTC: PSEC - 200021210 BYTC: First: - 00120 BYTC: First: - 0011 BYTC: First: <td>RTCP:</td> <td>Sender's octet count - 199520</td> <td></td>	RTCP:	Sender's octet count - 199520	
BTCD: Conductive packet 1 sets: • 0 CTCD: Conductive packet 1 sets: • 0 (c)(10, (s)(10,	B RTCP: B RTCP:	SSRC = 2569022182 Fraction lost = 0.03529	
BYTC: Action - 4 BYTC: Action - 4 BYTC: Action - 4 BYTC: Action - 4 BYTC: - 4 - 10 BYTC: - 4 - 10 BYTC: - 4 - 10	RTCP:	Cumulative packets lost = 40	
BUTC: Inter manual latt B • 0 (Me) BUTC: File patient latt B • 0 (Me) BUTC: • 0 (Me) • 0 (Me) CUTC: • 0 (Me) • 0 (Me)	RTCP:	Interarrival jitter = 4	
Dirto: - First Park-the Tourgett Parked: Dirto:	RICP:	Delay since last SR = 0 (Sec)	
BTCT: Yes: No. 1 Yes: Yes: No. 1 CTC: Yes: No. 1 Yes: No. 1	IN RTCP:	RTCF - Real-time Transport Frotocol (RTF) Control Protocol	Ľ
0111 Field (194 + 0.0 0111 + 0.0 1000000000000000000000000000000000000	B RTCP:		
0111 Field (194 + 0.0 0111 + 0.0 1000000000000000000000000000000000000	RTCP:	10	
<pre>state: stat</pre>	RTCP:		10
BYTC:			10
BYTC:	RTCP:	semesticano = 1002001010 SDES item = 1 (CRANE)	10
BYTC:	RTCP:	<pre>bength = 20 User/Domain = "tongtongual@epp200"</pre>	
Bertin • Defi CTUP: F. J	RTCP:	SUES ITEM - 0 (EMD)	14
BYTC: 10	RTCP:		
00000 • Fadima = 0 00000 • Encode = 0 000000 • Encode = 0 000000 • Encode = 0 000000000000000000000000000000000000	RTCP:	ver, red, RC: = 0x80 10 Version = 2 (RFC 1889)	
BYETC: Provide type Maximum BYETC: Provide type Maximum <t< td=""><td>RTCP:</td><td></td><td></td></t<>	RTCP:		
BYETC: Provide type Maximum BYETC: Provide type Maximum <t< td=""><td>RTCP:</td><td>: recket type = 207 (Unknown Type) Length = 11 (32-bit words)</td><td>13</td></t<>	RTCP:	: recket type = 207 (Unknown Type) Length = 11 (32-bit words)	13
BTCT:	RTCP:		13
000	RTCP:	RTCP - Real-time Transport Frotocol (RTP) Control Protocol	
0100 - 0.000 Feddame 1 + 0 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes 0707 Float type Balaxes - 0.000 Float type Balaxes	RTCP:	00	
BTCT: Facts type - 544 (Bakem Type) BTCT: Facts type - 544 (Bakem Type) BTCT: Facts type - 545 (Satt Seede) BTCT: Facts type Bakem - 545 (Satt Seede) BTCT: - 545 (Satt Seede) - 545 (Satt Seede) BTCT: - 545 (Satt Seede) - 545 (Satt Seede) BTCT: - 545 (Satt Seede) - 7 BTCT: - 616 (Satt Seede) - 7 BTCT: - 616 (Satt Seede) - 7 BTCT: - 707 (Satt Seede) - 7 BTCT: - 616 (Satt Seede) - 7	B RICP:	0.1000 = Block count = 8	
0707. TOT > Packs type Balance 0707.	RTCP:	Packet type = 244 (Unknown Type) Length = 59107 (32-bit words)	13 13
00000 0000 00000 000000 00000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000000000000000000000000000000000	RTCP:		13
BTC: TTC: Ford: Ford: BTC: FORD: Ford: Ford: BTC: Ford: <td< td=""><td>RTCP:</td><td> RTCP - Real-time Transport Protocol (RTP) Control Protocol</td><td></td></td<>	RTCP:	RTCP - Real-time Transport Protocol (RTP) Control Protocol	
BTUT: FUT: FUT: <t< td=""><td>RTCP:</td><td><pre>Ver, Pad, RC: = 0x07 00 = Version = 0 (VAT sudio tool)</pre></td><td></td></t<>	RTCP:	<pre>Ver, Pad, RC: = 0x07 00 = Version = 0 (VAT sudio tool)</pre>	
BTUT: FUT: FUT: <t< td=""><td>RTCP:</td><td></td><td></td></t<>	RTCP:		
BTC: TTC: Ford: Ford: BTC: FORD: Ford: Ford: BTC: Ford: <td< td=""><td>RTCP:</td><td>Packet type = 0 (Unknown Type) Length = 9 (32-bit words)</td><td>13</td></td<>	RTCP:	Packet type = 0 (Unknown Type) Length = 9 (32-bit words)	13
STG1 Freq. Pag. PCL 6.000 STG10 Freq. Pag. PCL 6.000 STG10 Freq. Pag. PCL Freq. Pag. PCL STG10 Freq.	RTCP:	RTCF Packet type Unknown	Þ
BYTC: 10	RTCP:		
B/TC:	RTCP:	Ver, Pad, RC: = 0x99 10 Version = 2 (RFC 1889)	
BYTC: 1000 (20-01 works) BYTC: 1000 (20-01 works) BYTC: Provide type Balance BYTC: Prov		1 1001 = Block count = 25	
BYTCD TYDP Packet type Bakeme BYTCD TYDP Pac	RTCP:	Packet type = 32 (Unknown Type) Length = 10983 (32-bit words)	14
BYTCD:	RTCP:	RTCP Packet type Unknown	14
PTCT: Free: bodd PTCT: Free: Free: Free: PTCT: Free: Fre	RTCP:		
2010;	RTCP:	Ver, Pad, RC: = 0x08	
BYCD: Finals type • 0 (blaumon Type) BYCD: Finals type • bold	RTCP:		
BYTC: TYP Packet type Balance BYTC: TYP Pack	B RTCP:	Packet type = 0 (Inknown Type)	14
BYTCD	RTCP:	RTCP Packet type Unknown	13
BYTC: Yes, Fed, Fei - bell SYTC: Yes, Yes, Yes, Yes, Yes, Yes, Yes, Yes,	RTCP:	RTCP - Real-time Transport Frotocol (RTP) Control Protocol	
BYTCT:	RTCP:	Ver, Pad, RC: - 0x01	
BYTC7: 0 0000 - Flock count 1 BYTC7: 0 0000 - Flock count 1 BYTC7: 0 0000 - Flock count 1 BYTC7: Flock type Maxwest Freedom Type BYTC7:	RTCP:		
BYTC: TXTS Packet type Balance BYTC: </td <td>RTCP:</td> <td> 00001 = Block count = 1 Pecket type = 89 (Onknown Type)</td> <td>13</td>	RTCP:	00001 = Block count = 1 Pecket type = 89 (Onknown Type)	13
0707:	RTCP:	RTCP Packet type Unknown	13 13
0000 0000 <td< td=""><td>RTCP:</td><td> RTCP - Real-time Transport Protocol (RTP) Control Protocol</td><td></td></td<>	RTCP:	RTCP - Real-time Transport Protocol (RTP) Control Protocol	
BTCD: 00	RTCP:	Ver. Ped. BC: = 0x00	
BYTCT: Yeast type 1 (Balows Type) BYTCT: Yeast type 4 (10 20 14 type) BYTCT: Yeast type Maxme 5 (20 14 type) BYTCT: Yeast type Maxme 5 (20 14 type) BYTCT: Yeast type Maxme 5 (20 14 type) BYTCT: Yeast type Maxme 5 (71 14 type) BYTCT: Yeast type Maxme 5 (71 14 type) BYTCT: Yeast type Maxme 5 (71 14 type) BYTCT: Yeast type Maxme 15 (Maxme Type) BYTCT: Yeast type Maxme 16 (17 15 Yeast type Maxme) BYTCT: Yeast type Maxme 16 (17 15 Yeast type Maxme) BYTCT: Yeast type Maxme 16 (17 15 Yeast type Maxme) BYTCT: Yeast type Maxme 16 (17 15 Yeast type Maxme) BYTCT: Yeast type Maxme 16 (12 12 34 type Maxme) BYTCT: Yeast type Maxme 16 (12 12 34 type Maxme)	RTCP:	00 = Version = 0 (VAT audio tool) = Padding = 0	
0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101 0101	RTCP:	Packet type = 1 (Unknown Type)	1.1
BTG::::::::::::::::::::::::::::::::::::	RTCP:	RTCP Packet type Unknown	13 13
0700; 000; <t< td=""><td>RTCP:</td><td> RTCP - Real-time Transport Frotocol (RTP) Control Protocol</td><td></td></t<>	RTCP:	RTCP - Real-time Transport Frotocol (RTP) Control Protocol	
BYTCP: 01	RTCP:	Ver. 2nd. BCI = 0v7F	
STGT: Fibel States type -155 (Bakmon Type) STGT: Fibel States type Bakman -155 (Sates words) STGT: Fibel States type Bakman -156 (Sates words) STGT: Fibel States type Bakman -157 (Sates type Bakman STGT: Fibel States type Bakman -117 (Bakman Type) STGT: Fibel States type Association States Type) -117 (Bakman Type) STGT: Fibel States type Association States Type) -117 (Bakman Type) STGT: Fibel States type Association States Type) -117 (Bakman Type) STGT: Fibel States type Association States Type) -117 (Bakman Type) STGT: Fibel States type Association States Type) -117 (Bakman Type) STGT: Fibel States type Association States Type) -117 (Bakman Type) STGT: Fibel States type Association States Type) -117 (Bakman Type) STGT: Fibel States type Association States Type) -117 (Bakman Typ	RTCP:	01 - Version - 1 (First Dreft Version for PTP)	
BYTCP: Incode > 12529 (22-bit words) BYTCP: ITCP Facket type Thatmen > 12529 (22-bit words) BYTCP: ITCP Facket type Thatmen > 1000 (1071) BYTCP: ITCP Facket type Thatmen > 1001 (1071) BYTCP: ITCP Facket type Thatmen > 1001 (1071) BYTCP: ITCP Facket type Advance > 0001 > 1001 BYTCP: ITCP Facket type Advance > 0001 > 1001 BYTCP: ITCP Facket type Advance > 0001 > 1001 BYTCP: ITCP Facket type Advance > 0001 > 1001 BYTCP: ITCP Facket type Advance > 0001 > 0001	RTCP:	1 1111 = Block count = 31 Packet type = 195 (Highware Type)	11
BTG7: -FFF - Feel-time Transport Frotocol (NTF) Control Frotocol BTG7: -FFF - Feel-time Transport Frotocol (NTF) Control Frotocol BTG7: -FFF - Feel-time Transport Frotocol (NTF) Control Frotocol BTG7: -FFF - Feel-time Transport Frotocol (NTF) Control Frotocol BTG7: -FFF - Feel-time Transport Frotocol (NTF) Control Frotocol BTG7: -FFF - Feel-time Transport Frotocol (NTF) Control Frotocol BTG7: -FFF - Feel-time Transport Frotocol (NTF) Control Frotocol BTG7: -FFF - Feel-time Transport Frotocol (NTF) Control Frotocol BTG7: -Feel - Feel-time Transport Frotocol (NTF) Control Frotocol	RTCP:	Length = 32529 (32-bit words)	10
BYTCP: Text:: - 0x3 BYTCP: Text:: - 0x3 BYTCP: Text:: - Text:: BYTCP: - 104 - 104	RTCP:		1
BTCD: 0	RTCP:		
PTC7: 0 011 + Sick road - 3 PTC7: 0 011 + Sick road - 3 PTC7: 0 011 + Sick road - 3 PTC7:	RTCP:	: ver, rea, MC: = 0X43 01 = Version = 1 (First Draft Version for RTP)	
XTO:: Kenyth - +462 (22-bit vorde) XTO:: KENyt Rocket type Unknown XTO:: KENyt RCH - Real-time Treamport Protocol (RTP) Control Protocol XTO:- XTO:: KENyt RCH - Real-time Treamport Protocol (RTP) Control Protocol XTO:	RTCP:		
B KTCF: FTCF Facket type Unknown B KTCF: = TTCF - Peal-time Transport Fratacoi (KTF) Control Fratacoi B KTCF: ====================================	RTCP:	: Length = 8482 (32-bit words)	10
RTCP: Ver. Pad. RC: = 0x60	RTCP:	RTCP Packet type Unknown	10
RTCP: Ver. Pad. RC: = 0x60	RTCP:	RTCP - Real-time Transport Protocol (RTP) Control Protocol	
	RTCP:	Ver, Pad, RC: = 0x60	
RTCP: Padding = 1 RTCP: 0 0000 = Block count = 0	RTCP:	- Padding - 1	
BrTCP: 0 0000 = Block count = 0 BrTCP: Packet type = 0 (Unknown Type) BrTCP: Length = 41 (22-bit words)	RTCP:	Packet type = 0 (Unknown Type)	16
FTCF: Length = 41 (32-bit words) FTCF: FTCF Packet type Unknown FTCF: FTCF:	RTCP:	RTCP Packet type Unknown	13

Packet#1

MPLS:	IEEE 802.3/Ethermet DIX VE Header (Length : 14) IEEE 1abel Stack (Length : 4) IF - Internet Frotcool (Length : 20)	0 14 18
TCP:	WTP - User Datagram Frotocol [Length : 8) KTCP - Real-time Transport Protocol (RTP) Control Protocol (Length : 52)	38
RTCP:	Ver, Pad, RC: = 0x81	
RTCP:	0 Padding - 0	
RTCP: RTCP:	Packet type = 200 (Sender Report)	4
RTCP: RTCP:	Length = 13 (32-bit words) SSRC of sender = 150267618	51
RTCP:	NTP reference timestamp = 1312201045.66143 sec RTP timestamp = 239436	63
RTCP:	Sender's packet count = 1497 Sender's octet count = 239520	61
RTCP:		7
RTCP:	Fraction lost = 0.02745 Cumulative packets lost = 47	71
RTCP:	Extended highest sequence # = Cycle:0, Seq:S3515 Interarrival jitter = 5	8
B RTCP:	Last SR timestamp = 2600464292 Delay since last SR = 0 (Sec)	9
RTUP:	RTCP - Real-time Transport Protocol (RTP) Control Protocol	9
RTCP:	The Bod BR	
RTCP:	10 = Version = 2 (RFC 1889) = Padding = 0	
RTCP:	0 0001 = Source count = 1 Packet type = 202 (Source Description)	9
RTCP:	Length = 8 (32-bit words)	10
RTCP:	SSRC/CSSC = 150267618 SDES item = 1 (CNAME) Length = 20	10
RTCP:	User/Domain = "tcmytcmyual@app200"	10
RTCP:	SDES item = 0 (END)	12 13
RTCP:		
RTCP:	Ver, Pad, RC: = 0x80 10 = Version = 2 (RFC 1889)	
RTCP: RTCP:		
RTCP:	Packet type = 207 (Unknown Type) Length = 11 (32-bit words)	13 13
RTCP:		13
RTCP:		
B RTCP:	<pre>Ver, Pad, RC: = 0x08 00 = Version = 0 (VAT audio tool)</pre>	
RTCP: RTCP:	0 1000 = Block count = 8	
RTCP:	Packet type = 244 (Unknown Type) Length = 59107 (32-bit words)	13 13 13
RTCP:		13
RTCP:	KTCP - Real-time Transport Protocol (RTP) Control Protocol	
RTCP: RTCP: RTCP:	<pre>Ver, Pad, RC: = 0x07 00 Version = 0 (VAT audio tool) 0 Padding = 0</pre>	
RTCP:	0 0111 = Block count = 7	13
RTCP:	Packet type = 0 (Unknown Type) Length = 9 (32-bit words) RTCP Packet type Unknown	14
RTCP:		14
RTCP:	KTCP - Real-time Transport Protocol (RTP) Control Protocol Ver, Pad, RC: - 0x99	
RTCP: RTCP:	10 = Version = 2 (RFC 1889)	
RTCP:		14
RTCP:	Length = 10(003 (32-bit words) RTCP Packet type Unknown	14
RTCP:	RTCP - Real-time Transport Protocol (RTP) Control Protocol	
RTCP:	Ver, Pad, RC: = 0x07	
RTCP:	00 Version - 0 (VAT audio tool)	
RTCP:	0 0111 = Block count = 7 Packet type = 0 (Unknown Type)	147
RTCP:	RTCP Packet type Unknown	14
RTCP:	RTCP - Real-time Transport Protocol (RTP) Control Protocol	
RTCP:	<pre>Ver, Pad, RC: = 0x01</pre>	
RTCP: RTCP: RTCP:		
RTCP:		15
RTCP:	raunet type = 55 (UNRIAWA Type) Length = 1888 (32-bit words) RTCP Packet type Unknown	15
B RTCP:		
RTCP:	Ver, Pad, RC: = 0x00	
RTCP:	00 = Version = 0 (VAT audio tool) = Padding = 0	
RTCP:		15
RTCP:	Rength = 61 (32-bit words) RTCP Packet type Unknown	15
RTCP:	KTCP - Real-time Transport Protocol (RTP) Control Protocol	
RTCP:		
RTCP:	01 = Version = 1 (First Draft Version for RTP) = Padding = 1	
RTCP:	1 1111 = Block count = 31 Packet type = 195 (Unknown Type)	15
B RTCP:	Length = 3529 (32-bit words) RTCP Packet type Unknown	16
RTCP:	RTCP - Real-time Transport Protocol (RTP) Control Protocol	10
RTCP:		
RTCP: RTCP: RTCP:	01 Version - 1 (First Draft Version for RTP)	
RTCP:	0 = Fadding = 0 0 0100 = Block count = 4 Packet type = 127 (Unknown Type)	16
RTCP:	Length = 8482 (32-bit words)	16
RTCP:		16
RTCP:		
RTCP:		
RTCP:		
RTCP:		161
RTCP: RTCP: RTCP:	Packet type = 0 (Unknown Type) Length = 41 (32-bit words)	16
RTCP: RTCP: RTCP: RTCP: RTCP: RTCP:	Packet type - 0 (Unknown Type) Length - 41 (J2-bit words) RTUP Packet type Unknown [4 extra bytes of KTCP data]	168

Packet#2

	mmber : 23, Frame Length : 178, Captured Size : 178 f: IEEE 602.3/Ethernet DIX V2 Header (Length : 14) HV5 Label Stack (Length : 4)	
IP:	HPLS Label Stack (Length : 4) IP - Internet Protocol (Length : 20)	1
10 IP: 10 IP: 1	fersion = 4, header length = 20 bytes	
19:1 10:19:	refice = 4, measer length = 20 bytes iffServ Field = 0x00 0000 00 = DSCP - 0 , Best Effort	1
B IP: B IP: 1		2
D IP: 1	dentification = 0	2
h 19: h 19:	.1 = don't fragment 	
B 12: 1	rament offset = 0 bytes	2
B 17: 1	lime to live = 64 seconds/hops rotocol = 17 (UD9) leader checkyma = 0xDD7A (correct)	2
B IP: :	lource address = [192.169.230.1]	3
IP: 1	estination address = [192.169.229.1] No options	3
19: D09:	UDF - User Datagram Frotocol (Length : 0)	3
DP:	Source port = 30001	Т
a upp: a upp:	Destination port = 30001 Length = 136 Checksma = 0x6E47 (correct)	4
DIP:	Checksum = 0x0E47 (correct) (128 byte(s) of data)	
🖻 UDP:	RTCP - Real-time Transport Protocol (RTP) Control Protocol (Length : \$2)	17
RTCP:	Ver, Pad, RC: = 0x81	
RTCP:	10 Version = 2 (RFC 1889)	
RTCP:	0 0001 = Reception report count = 1	
RTCP:	Facket type = 200 (Sender Report) Length = 13 (32-bit words) SSRC of sender = 139873916	4
RTCP:		5
RTCP:	NTP reference timestamp = 1312201152.15732 sec RTP timestamp = 159510	6
RTCP:	NY VERENNE LLASTAD - 131200151.5752 BEC NY LLASTAD = 159510 Sender's packet count = 997 Sender's octet count = 159520	6
RTCP	33DC - 3860733414	7
RTCP:	Fraction lost = 0.01569	1
RTCP:	Cumulative packets lost = 20 Extended highest sequence θ = Cycle:0, Seq:63752	8
RTCP:	Interarrival jitter = 4 Last SR timestamp = 2607117192	9
RTCP	Delay since last SR = 4 (Sec)	9
RTCP:	RICP - Real-time Transport Protocol (RIP) Control Protocol	Ľ
B RTCP:	New Red RCs - Ov81	
RTCP	Padding = 0	
RTCP: RTCP:	0 0001 = Source count = 1 Facket type = 202 (Source Description)	,
RTCP	Length = 8 (32-bit words)	10
RTCP	SSRC/CSRC - 1.389573916 SDES item = 1.(GRME) Longth = 20 User/Downin = "comp-company,Bagp200" SDES item = 0.(SED)	10
RTCP	Length = 20	10
RTCP	User/Domain = "tcmytcmyusl@app200" SDES item = 0 (END)	10
	RTCP - Real-time Transport Protocol (RTP) Control Protocol	13
RTCP	Ver, Fad, RC: = 0x00	
RTCP	10 = Version = 2 (RFC 1889)	
RTCP	0 0000 = Block count = 0	13
RTCP	Packet type = 207 (Waknown Type) Length = 11 (32-bit words)	13
RTCP		13
RTCP:	RTCP - Real-time Transport Protocol (RTP) Control Protocol	
RTCP	Ver, Pad, RC: = 0x52	
RTCP	<pre>ver_v res. ************************************</pre>	
RTCP	Facket type = 211 (Unknown Type)	13
RTCP	RTCP Packet type Unknown	13
RTCP: RTCP:	RTCP - Real-time Transmort Protocol (RTP) Control Protocol	
RTCP	Yer, Jud, Fri - Borr 10 Forman = 0 (YAT modis tani) Forman = 0 (YAT modis tani) Borr Packet type Theket type = 0 (20-bits words)	
RTCP	00 = Version = 0 (VAT audio tool)	
RTCP	0 0111 - Block count - 7	13
RTCP	length = 9 (32-bit words)	14
RTCP	RTCP Facket type Unknown	14
RTCP		
RTCP:	Ver, Pad, RC: = 0xE6 11 = Version = 3 (?)	
RTCP	Padding - 1	
RICE	Facket type = 30 (Unknown Type)	14
RTCP	RTCP Facket type Unknown	14
	RTCP - Real-time Transport Protocol (RTP) Control Protocol	
RTCP	Ver, Pad, RC: = 0x07	
RTCP	<pre>00 = Version = 0 (VAT audio tool)</pre>	
RTCP		14
RTCP	Length = 13059 (32-bit words)	14
RTCP	RTCP Packet type Waknowa	15
RTCP: RTCP:		
RTCP: RTCP:	Ver, Fad, RC: = 0x00 00 Version = 0 (VAT modio tool)	
RTCP		
RTCP	Facket type = 254 (Wakown Type) Length = 2111 (32-bit words)	15
RTCP	RTCP Facket type Unknown	15
RTCP: RTCP:	RTCP - Real-time Transport Protocol (RTP) Control Protocol	
RTCP	Ver. Red. BC: - 0x00	
RTCP: RTCP:	00 Version = 0 (VAT mudio tool)	
RTCP	0 0000 = Block count = 0	15
RTCP	Facket type = 1 (Unknown Type) Length = 61 (32-bit words)	15
RTCP		15
RTCP: RTCP:	NTCP - Real-time Transport Protocol (NTP) Control Protocol	
RTCP	Ver, Fad, RC: = 0x7F	
RTCP	1 = Pedding = 1	
RTCP	Packet type = 195 (Unknown Type)	15
RTCP: RTCP:	Length = 32529 (32-bit words) RTCP Facket type Unknown	16 16
RTCP	RTCP - Real-time Transport Protocol (RTP) Control Protocol	Ľ
RTCP		
B RTCP:	01 = Version = 1 (First Draft Version for RTP)	
RTCP	0 = Fadding = 0 0 0111 = Block count = 7	
	Packet type = 127 (Unknown Type) Length = 8995 (32-bit words)	16 16
a gross	RTCP Facket type Unknown	16
RTCP: RTCP:	RTCP - Real-time Transport Protocol (RTP) Control Protocol	
RTCP: RTCP: RTCP: RTCP:		
RTCP: RTCP: RTCP: RTCP: RTCP: RTCP: RTCP:	Ver, Fad, BC: = 0x60	
RTCP: RTCP: RTCP: RTCP: RTCP: RTCP: RTCP: RTCP:	01 Version - 1 (First Draft Version for RTF)	
RTCP: RTCP: RTCP: RTCP: RTCP: RTCP: RTCP: RTCP: RTCP:	01 = Version = 1 (First Draft Version for RTP) = Padding = 1 0 6000 = Block count = 0	14
RTCP: RTCP: RTCP: RTCP: RTCP: RTCP: RTCP: RTCP: RTCP: RTCP: RTCP:	01 Version - 1 (First Draft Version for RTF)	16

Packet#23

6.3.1 SR: Sender report RTCP packet

0 1 2 3	
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1	
V=2 P RC PT=SR=200 length	header
+-	
SSRC of sender	
+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=	sender
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-	
NTP timestamp, least significant word	
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-	
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-	
sender's packet count	
· · · · · · · · · · · · · · · · · · ·	
sender's octet count	
+=	
SSRC_1 (SSRC of first source) +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-	report
fraction lost cumulative number of packets lost	- DIOCK
-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+	-
extended highest sequence number received	
+-	
interarrival jitter	
last SR (LSR)	
+-	
delay since last SR (DLSR)	_
SSRC 2 (SSRC of second source)	report
+-	-
: :	2
+=	
profile-specific extensions	
+-	

The sender report packet consists of three sections, possibly followed by a fourth profile-specific extension section if defined. The first section, the header, is 8 octets long. The fields have the following meaning:

version (V): 2 bits

Identifies the version of RTP, which is the same in RTCP packets as in RTP data packets. The version defined by this specification is two (2).

padding (P): 1 bit

If the padding bit is set, this RTCP packet contains some additional padding octets at the end which are not part of the control information. The last octet of the padding is a count of how many padding octets should be ignored. Padding may be needed by some encryption algorithms with fixed block sizes. In a compound RTCP packet, padding should only be required on the last individual packet because the compound packet is encrypted as a whole.

reception report count (RC): 5 bits

The number of reception report blocks contained in this packet. A value of zero is valid.

packet type (PT): 8 bits

Contains the constant 200 to identify this as an RTCP SR packet.

length: 16 bits

The length of this RTCP packet in 32-bit words minus one, including the header and any padding. (The offset of one makes zero a valid length and avoids a possible infinite loop in scanning a compound RTCP packet, while counting 32-bit words avoids a validity check for a multiple of 4.)

SSRC: 32 bits

The synchronization source identifier for the originator of this SR packet.

The second section, the sender information, is 20 octets long and is present in every sender report packet. It summarizes the data transmissions from this sender. The fields have the following meaning:

NTP timestamp: 64 bits

Indicates the wallclock time when this report was sent so that it may be used in combination with timestamps returned in reception reports from other receivers to measure round-trip propagation to those receivers. Receivers should expect that the measurement accuracy of the timestamp may be limited to far less than the resolution of the NTP timestamp. The measurement uncertainty of the timestamp is not indicated as it may not be known. A sender that can keep track of elapsed time but has no notion of wallclock time may use the elapsed time since joining the session instead. This is assumed to be less than 68 years, so the high bit will be zero. It is permissible to use the sampling clock to estimate elapsed wallclock time. A sender that has no notion of wallclock or elapsed time may set the NTP timestamp to zero.

RTP timestamp: 32 bits

Corresponds to the same time as the NTP timestamp (above), but in the same units and with the same random offset as the RTP timestamps in data packets. This correspondence may be used for intra- and inter-media synchronization for sources whose NTP timestamps are synchronized, and may be used by media-independent receivers to estimate the nominal RTP clock frequency. Note that in most cases this timestamp will not be equal to the RTP timestamp in any adjacent data packet. Rather, it is calculated from the corresponding NTP timestamp using the relationship between the RTP timestamp counter and real time as maintained by periodically checking the wallclock time at a sampling instant.

sender's packet count: 32 bits

The total number of RTP data packets transmitted by the sender since starting transmission up until the time this SR packet was generated. The count is reset if the sender changes its SSRC identifier.

sender's octet count: 32 bits

The total number of payload octets (i.e., not including header or padding) transmitted in RTP data packets by the sender since starting transmission up until the time this SR packet was generated. The count is reset if the sender changes its SSRC identifier. This field can be used to estimate the average payload data rate.

The third section contains zero or more reception report blocks depending on the number of other sources heard by this sender since the last report. Each reception report block conveys statistics on the reception of RTP packets from a single synchronization source. Receivers do not carry over statistics when a source changes its SSRC identifier due to a collision. These statistics are:

SSRC_n (source identifier): 32 bits

The SSRC identifier of the source to which the information in this reception report block pertains.

fraction lost: 8 bits

The fraction of RTP data packets from source SSRC_n lost since the previous SR or RR packet was sent, expressed as a fixed point number with the binary point at the left edge of the field. (That is equivalent to taking the integer part after multiplying the loss fraction by 256.) This fraction is defined to be the number of packets lost divided by the number of packets expected, as defined in the next paragraph. An implementation is shown in Appendix A.3. If the loss is negative due to duplicates, the fraction lost is set to zero. Note that a receiver cannot tell whether any packets were lost after the last one received, and that there will be no reception report block issued for a source if all packets from that source sent during the last reporting interval have been lost.

cumulative number of packets lost: 24 bits

The total number of RTP data packets from source SSRC_n that have been lost since the beginning of reception. This number is defined to be the number of packets expected less the number of packets actually received, where the number of packets received includes any which are late or duplicates. Thus packets that arrive late are not counted as lost, and the loss may be negative if there are duplicates. The number of packets

expected is defined to be the extended last sequence number received, as defined next, less the initial sequence number received. This may be calculated as shown in Appendix A.3.

extended highest sequence number received: 32 bits

The low 16 bits contain the highest sequence number received in an RTP data packet from source SSRC_n, and the most significant 16 bits extend that sequence number with the corresponding count of sequence number cycles, which may be maintained according to the algorithm in Appendix A.1. Note that different receivers within the same session will generate different extensions to the sequence number if their start times differ significantly.

interarrival jitter: 32 bits

An estimate of the statistical variance of the RTP data packet interarrival time, measured in timestamp units and expressed as an unsigned integer. The interarrival jitter J is defined to be the mean deviation (smoothed absolute value) of the difference D in packet spacing at the receiver compared to the sender for a pair of packets. As shown in the equation below, this is equivalent to the difference in the "relative transit time" for the two packets; the relative transit time is the difference between a packet's RTP timestamp and the receiver's clock at the time of arrival, measured in the same units.

If Si is the RTP timestamp from packet i, and Ri is the time of arrival in RTP timestamp units for packet i, then for two packets i and j, D may be expressed as

D(i,j)=(Rj-Ri)-(Sj-Si)=(Rj-Sj)-(Ri-Si)

The interarrival jitter is calculated continuously as each data packet i is received from source SSRC_n, using this difference D for that packet and the previous packet i-1 in order of arrival (not necessarily in sequence), according to the formula

J=J+(|D(i-1,i)|-J)/16

Whenever a reception report is issued, the current value of J is sampled.

The jitter calculation is prescribed here to allow profile- independent monitors to make valid interpretations of reports coming from different implementations. This algorithm is the optimal first- order estimator and the gain parameter 1/16 gives a good noise reduction ratio while maintaining a reasonable rate of convergence [11]. A sample implementation is shown in Appendix A.8.

last SR timestamp (LSR): 32 bits

The middle 32 bits out of 64 in the NTP timestamp (as explained in Section 4) received as part of the most recent RTCP sender report (SR) packet from source SSRC_n. If no SR has been received yet, the field is set to zero.

delay since last SR (DLSR): 32 bits

The delay, expressed in units of 1/65536 seconds, between receiving the last SR packet from source SSRC_n and sending this reception report block. If no SR packet has been received yet from SSRC_n, the DLSR field is set to zero.

Let SSRC_r denote the receiver issuing this receiver report. Source SSRC_n can compute the round propagation delay to SSRC_r by recording the time A when this reception report block is received. It calculates the total round-trip time A-LSR using the last SR timestamp (LSR) field, and then subtracting this field to leave the round-trip propagation delay as (A-LSR - DLSR). This is illustrated in Fig. 2.

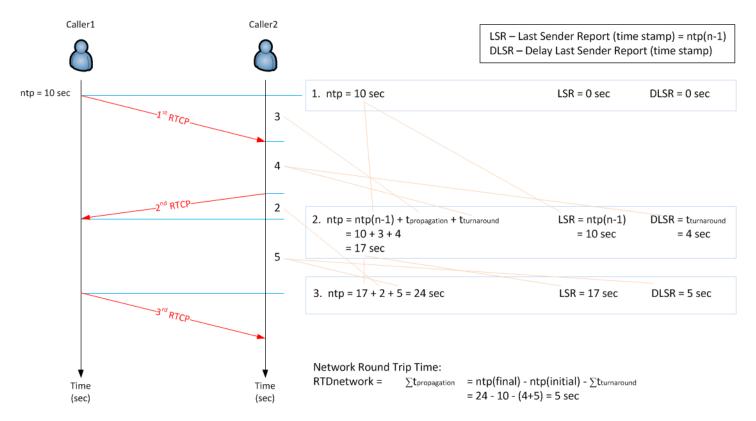
This may be used as an approximate measure of distance to cluster receivers, although some links have very asymmetric delays.

6.3.2 RR: Receiver report RTCP packet

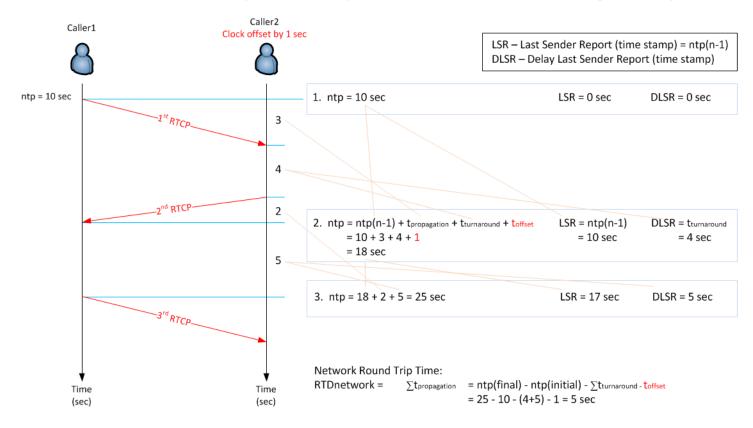
[10 Nov 1995 11:33:25.125][10 Nov 1995 11:33:36.5]nSR(n)A=b710:8000 (46864.500 s) A=b710:8000 (46864.500 s) n -----> ~ v ntp sec =0xb44db705 v ^ dlsr=0x0005.4000 (5.250s) ntp_sec =0xb44db705 v ^ dls ntp_frac=0x2000000 v ^ lsr (3024992016.125 s) v ^ r v ^ RR(n) ^ lsr =0xb705:2000 (46853.125s) -----> <-DLSR->| (5.250 s) A 0xb710:8000 (46864.500 s) DLSR -0x0005:4000 (5.250 s) LSR -0xb705:2000 (46853.125 s) _____ delay 0x 6:2000 (6.125 s) Figure 2: Example for round-trip time computation 0 1 2 3 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 |V=2|P| RC | PT=RR=201 | length | header SSRC of packet sender . SSRC 1 (SSRC of first source) | report | fraction lost | cumulative number of packets lost | 1 extended highest sequence number received . 1 interarrival jitter 1 last SR (LSR) 1 delay since last SR (DLSR) SSRC_2 (SSRC of second source) | report 1 : . 2 . . . profile-specific extensions .

The format of the receiver report (RR) packet is the same as that of the SR packet except that the packet type field contains the constant 201 and the five words of sender information are omitted (these are the NTP and RTP timestamps and sender's packet and octet counts). The remaining fields have the same meaning as for the SR packet. An empty RR packet (RC = 0) is put at the head of a compound RTCP packet when there is no data transmission or reception to report.

Example of RTCP Network Round Trip Time Calculation



When the two callers ntp clock is not synced, it does not affect the resulting round trip time



Source:

http://www.packetizer.com/ipmc/sip/papers/understanding_sip_voip/

http://freesoft.org/CIE/RFC/1889/19.htm

Thanks Noman @Telchemy!