## Package Analysis

We still believe 'use-candidate' is the reason the connection failed, instead of the DTSL role setup (as we added the role and it is still failing). So we walked though the package related, and suggest adding 'use\_candidate' on every STUN package send to selected ICE.

Firefox Selects the ICE candidate:										
Session Statistics Clear History										
[ 32212254895 ] https://www.intern.facebook.com/videocall/incall/?peer_id=641265604&call_id=2039419132&is_ (closed) Mon Apr 02 2018 15:23:57 GMT-0700 (PDT)  ▲ hide details PeerConnection ID: 1522707814253010 (id=32212254895 url=https://www.intern.facebook.com/videocall/incall/?peer_id=641265604&call_id=2039419132&is_ Vice Stats										
Trickled candidates (arriving after answer) are highlighted in blue										
Local Candidate	Remote Candidate	Component ID	ICE State	Priority	Nominated	Selected	Bytes sent	Bytes received		
172.27.68.166:52102/udp(host)	172.22.149.146:64654/udp(host)	1	failed	9079290933588656000	false	false	0	0		
31.13.76.86:53763/udp(relayed-udp)	172.22.149.146:64654/udp(host)	1	failed	395506427071839740	false	false	0	0		
172.27.68.166:52102/udp(host)	31.13.76.86:48654/udp(relayed)	1	failed	144149272885592580	false	false	0	0		
31.13.76.86:53763/udp(relayed-udp)	31.13.76.86:48654/udp(relayed)	1	succeeded	144149268825521660	true	true	0	0		
31.13.76.86:44680/udp(relayed-tcp)	172.22.149.146:64654/udp(host)	1	failed	35219556393827840	false	false	0	0		
31.13.76.86:43779/udp(relayed-tcp)	172.22.149.146:64654/udp(host)	1	failed	35219556393827840	false	false	0	0		
31.13.76.86:44680/udp(relayed-tcp)	31.13.76.86:48654/udp(relayed)	1	succeeded	35219552233078270	true	false	0	0		
31.13.76.86:43779/udp(relayed-tcp)	31.13.76.86:48654/udp(relayed)	1	cancelled	35219552233078270	false	false	0	0		

ICE restarts: 0 ICE rollbacks: 0

The issue we found is: 'use-candidate' attribute is not set in the last package. However, RFC specified that every message should include this attribute: (https://tools.ietf.org/html/ rfc5245#section-8.1.1.2)

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udp.pd	ort == 40002			;			<u></u>		X -> -	Expression
D.	Time	Source	Destination	Protocol	Length		Info			·
5	73 10.852333	172.27.68.166	31.13.76.86	STUN		19	4 Send Indicatio	n XOR-PEER-ADDRES	5: 172.22.149.146:64654	
6	25 12.452997	172.27.68.166	31.13.76.86	STUN		19	4 Send Indicatio	n XOR-PEER-ADDRES	5: 172.22.149.146:64654	
6	35 13.618853	172.27.68.166	31.13.76.86	STUN		19	0 Send Indicatio	n XOR-PEER-ADDRES	5: 31.13.76.86:48654	
6	36 13.655705	31.13.76.86	172.27.68.166	STUN		14	2 Data Indicatio	n XOR-PEER-ADDRES	5: 31.13.76.86:48654	
6	53 15.653976	172.27.68.166	31.13.76.86	STUN		19	4 Send Indicatio	n XOR-PEER-ADDRES	5: 172.22.149.146:64654	
	75 17.694273	172.27.68.166	31.13.76.86	STUN					5: 31.13.76.86:48654	
	77 17.732049	31.13.76.86	172.27.68.166	STUN		14	2 Data Indicatio	n XOR-PEER-ADDRES	5: 31.13.76.86:48654	
8	39 21.867205	172.27.68.166	31.13.76.86	STUN		19	Ø Send Indicatio	n XOR-PEER-ADDRES	5: 31.13.76.86:48654	
	▶ Attribute T	ype: XOR-PEER-ADDRESS (	0x0012)							
	Attribute L	ength: 8								
	Reserved: 0	0								
	Protocol Fa	mily: IPv4 (0x01)								
	Port (XOR-d	): 9f1c								
	[Port: 4865									
	IP (XOR-d):									
	[IP: 31.13.	76.86]								
T	DATA									
		ype: DATA (0x0013)								
	Attribute L									
		00542112a4424ba32866c45	66090†0aad7300060019							
	▼ Data (104 b									
			5e66090f0aad7300060019							
	[Length:	104]								
Ŧ	FINGERPRINT									
		ype: FINGERPRINT (0x802)	3)							
	Attribute L									
	CRC-32: 0x7	7†86e25								
0000 0	00 00 0c 9f f1	2c 98 01 a7 a4 43 5d 08	3 00 45 00							
		00 40 11 46 48 ac 1b 44	a6 1f 0d@. FHD							
		42 00 9c 02 cf 00 16 00								
		4a c3 fc 54 1a e9 c5 73 1c 3e 1f e8 14 00 13 00								
	00 54 21 12 a4									
		19 66 6e 41 78 7a 50 6f								
0070 5	55 66 61 52 64	77 3a 39 62 63 33 35 66	38 36 00 UfaRdw:9 bc35f86.							
		04 05 7d 1e ff 80 2a 00								
		4a 00 08 00 14 a2 85 4e 3f 56 37 b0 41 23 f4 e2								
		9f 80 28 00 04 77 f8 66								

## Some previous package do have 'use\_candidate' attribute though:

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📕 udp.	port == 40002					Expression			
No.	Time	Source	Destination	Protocol L	ength	Info			
	530 9.543274	172.27.68.166	31.13.76.86	STUN		194 Send Indication XOR-PEER-ADDRESS: 31.13.76.86:48654			
	532 9.560772	31.13.76.86	172.27.68.166	STUN		86 CreatePermission Success Response			
	534 9.581111	31.13.76.86	172.27.68.166	STUN		142 Data Indication XOR-PEER-ADDRESS: 31.13.76.86:48654			
	544 9.651005 545 9.675205	172.27.68.166 31.13.76.86	31.13.76.86 172.27.68.166	STUN STUN		194 Send Indication XOR-PEER-ADDRESS: 172.22.149.146:64654 190 Data Indication XOR-PEER-ADDRESS: 31.13.76.86:48654			
	546 9.676088	172.27.68.166	31.13.76.86	STUN		150 Send Indication XOR-PEER-ADDRESS: 31.13.76.86:48654			
	562 10.051656	172.27.68.166	31.13.76.86	STUN		194 Send Indication XOR-PEER-ADDRESS: 172.22.149.146:64654			
	573 10.852333	172.27.68.166	31.13.76.86	STUN		194 Send Indication XOR-PEER-ADDRESS: 172.22.149.146:64654			
	625 12.452997	172.27.68.166	31.13.76.86	STUN		194 Send Indication XOR-PEER-ADDRESS: 172.22.149.146:64654			
	635 13.618853	172.27.68.166	31.13.76.86	STUN		190 Send Indication XOR-PEER-ADDRESS: 31.13.76.86:48654			
	636 13.655705	31.13.76.86	172.27.68.166	STUN		142 Data Indication XOR-PEER-ADDRESS: 31.13.76.86:48654			
	653 15.653976	172.27.68.166	31.13.76.86	STUN		194 Send Indication XOR-PEER-ADDRESS: 172.22.149.146:64654			
	675 17.694273	172.27.68.166	31.13.76.86	STUN		190 Send Indication XOR-PEER-ADDRESS: 31.13.76.86:48654			
	677 17.732049	31.13.76.86	172.27.68.166	STUN		142 Data Indication XOR-PEER-ADDRESS: 31.13.76.86:48654			
	IP (XOR-d):								
	[IP: 31.13.7	6.86]							
,	DATA								
		pe: DATA (0x0013)							
	Attribute Length: 108 Volum: 00010050112-04100ctbc24c605e40404f607-00060010								
	Value: 00010058211244210cc1b634a68b5d0d8df507a000660019 • Data (108 bytes)								
	Data: 000100582112a44210c1b634a68b5d0d8df507a00060019								
	FINGERPRINT								
	▶ Attribute Type: FINGERPRINT (0x8028)								
Attribute Length: 4									
	CRC-32: 0xa43b0c4a								
		c 98 01 a7 a4 43 5d 0							
		0 40 11 08 97 ac 1b 4							
		200a0670500160 ec2f3d06447006							
		c 3e 1f e8 14 00 13 0							
		2 10 cc 1b 63 4a 68 b							
		9 66 6e  41 78 7a 50 6 7 3a 39  62 63 33 35 6							
		0 00 24 00 04 6e 7d 0							
0090	00 08 f2 fe e8 b	f 5b 91 d3 4a 00 08 0	0 14 1d 01[J						
		2 a3 ca 76 eb 20 33 8							
00b0 00c0		4 ff 0c 46 56 80 28 0	0 04 a4 3b( FV.(;						
0000									
07	Bytes 78-185: Data (	data.data)				Packets: 867 · Displayed: 29 (3.3%) · Dropped: 0 (0.0%) Profile			