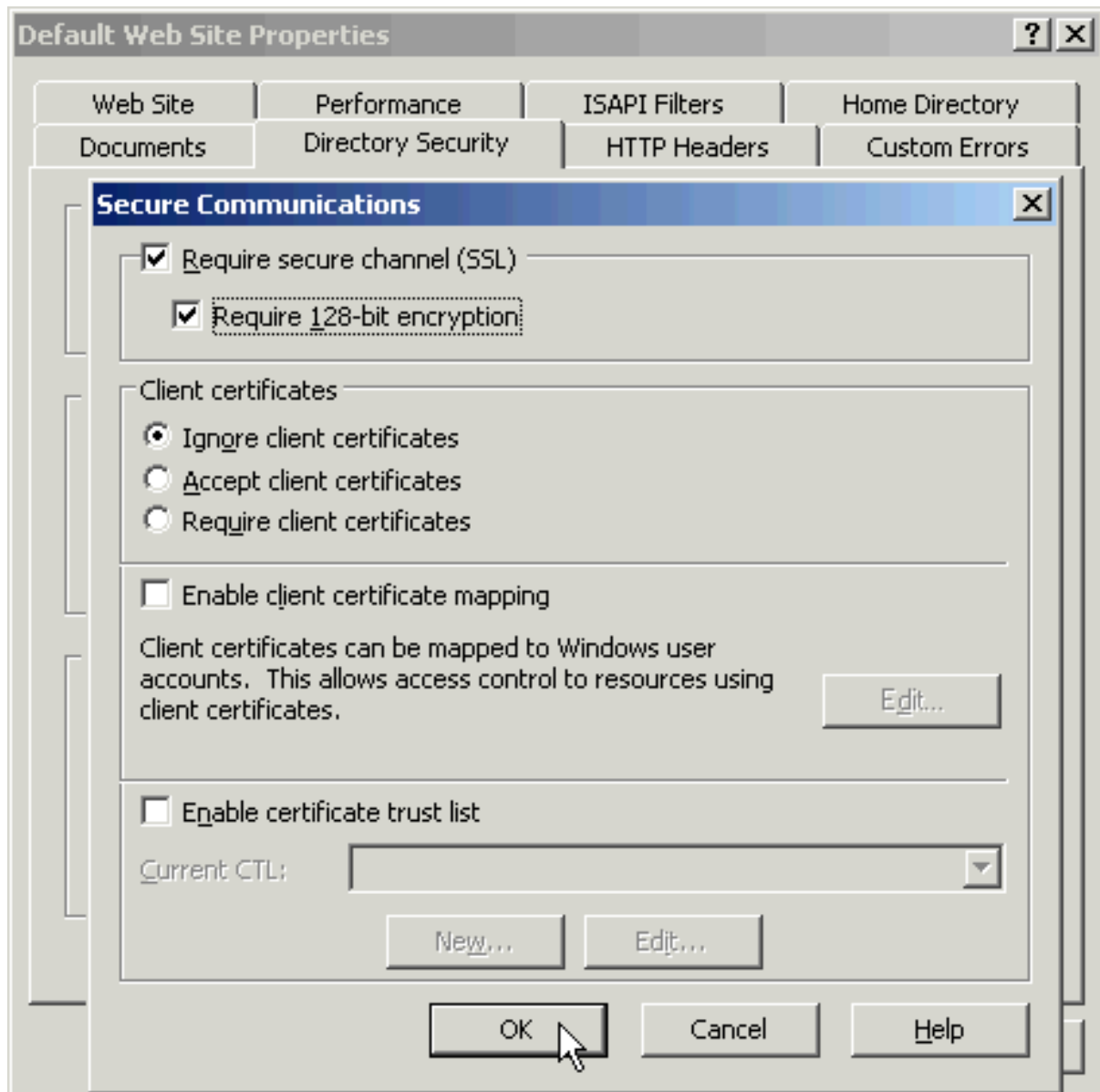
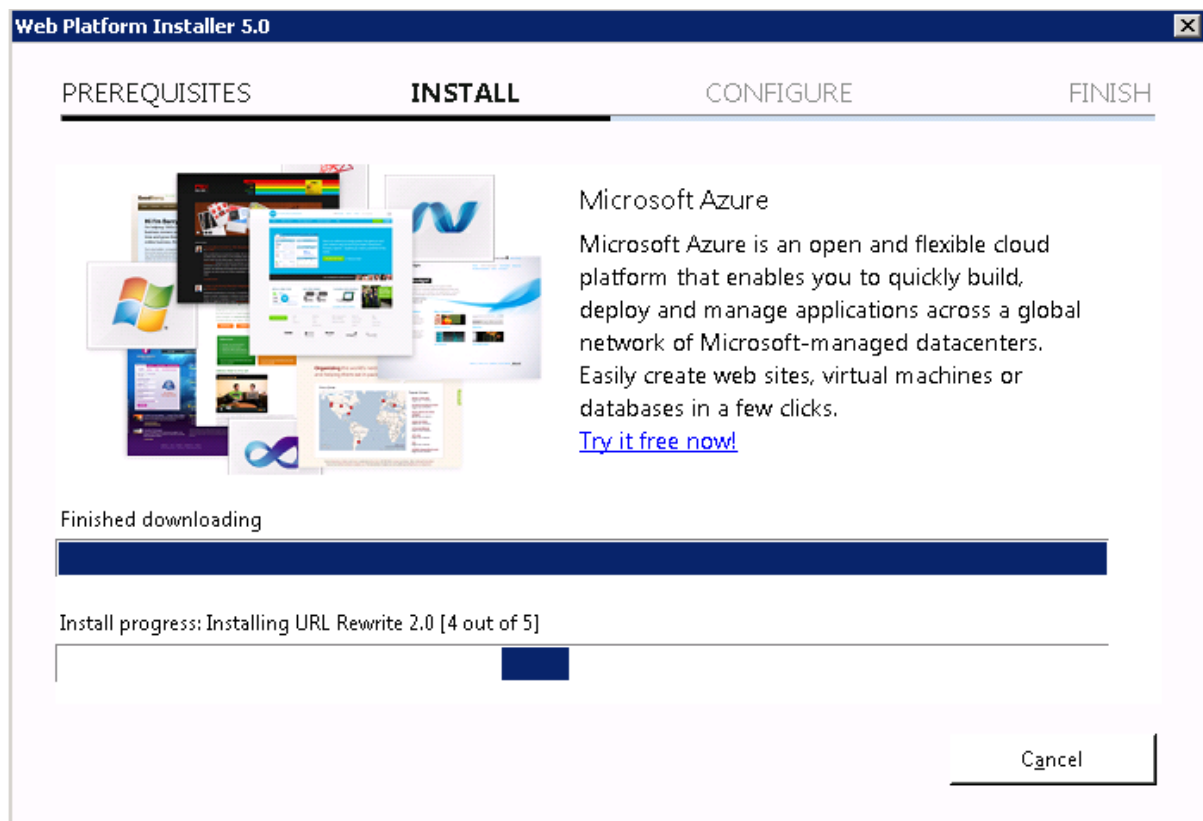
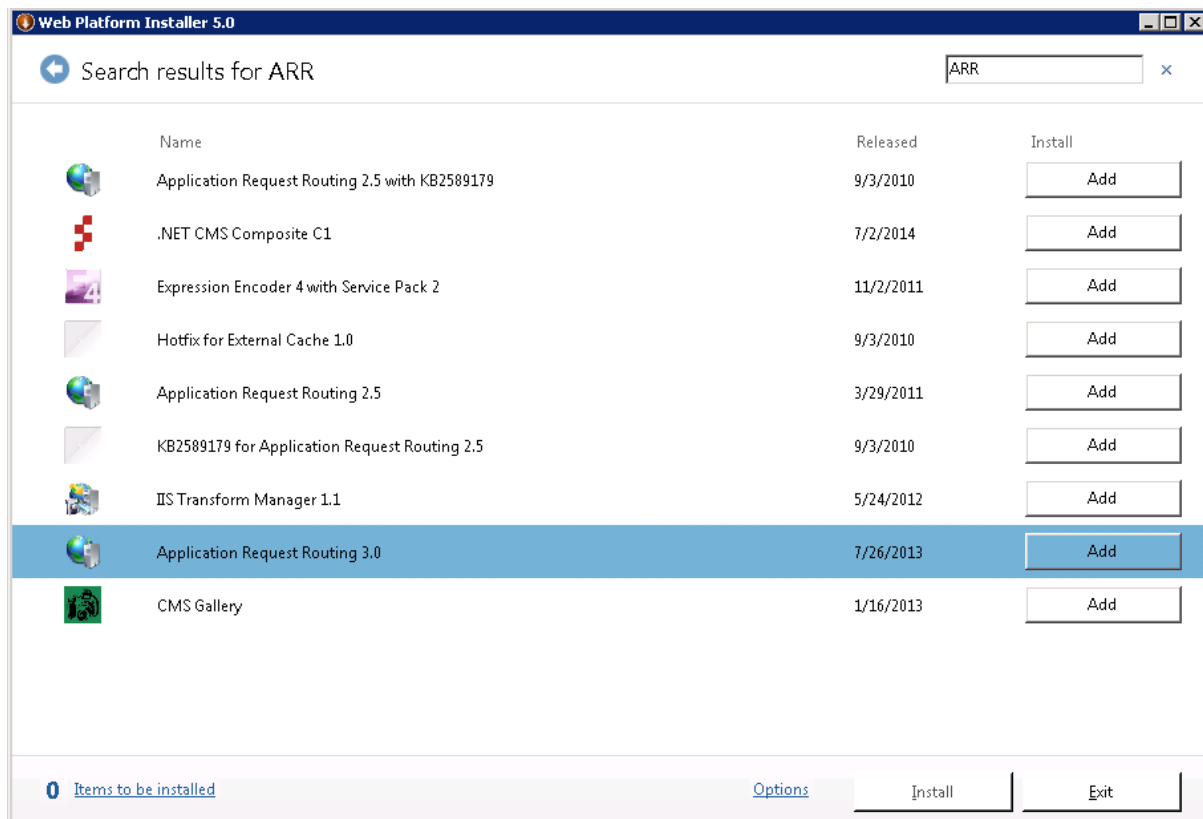
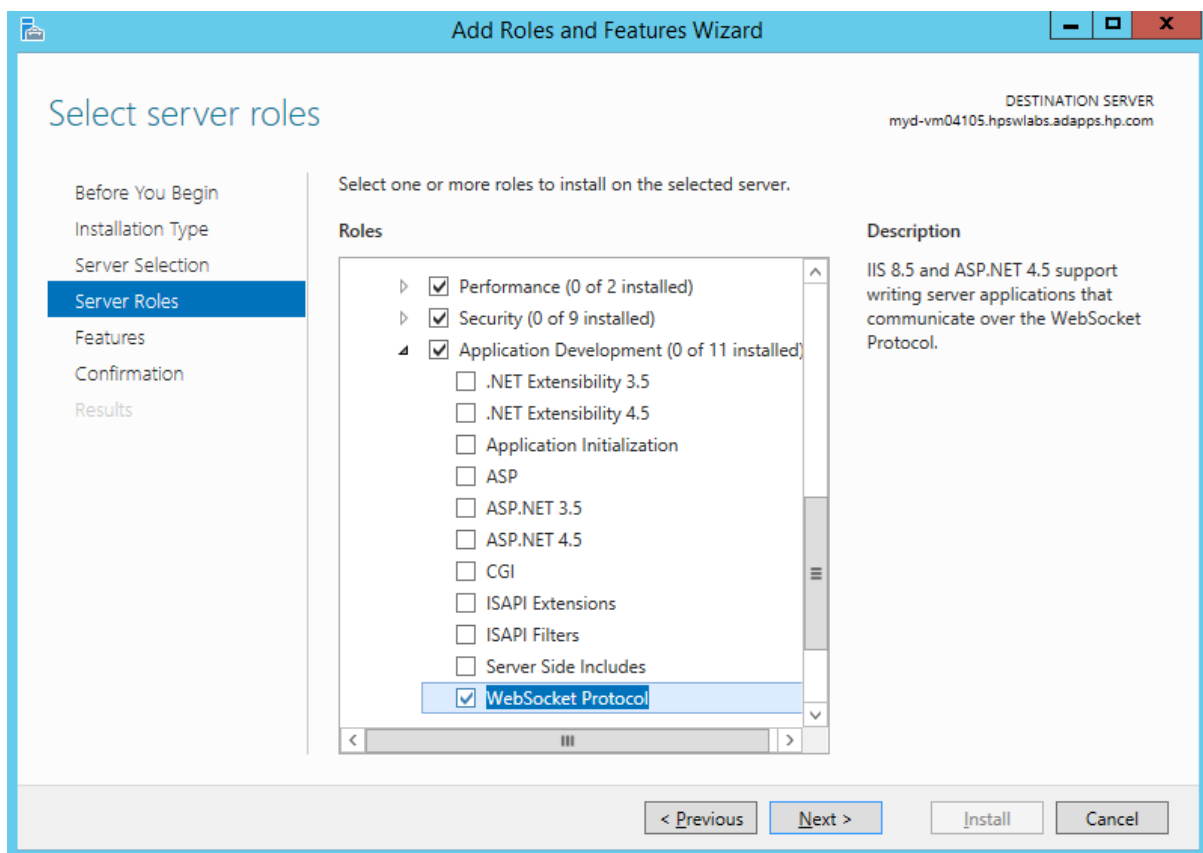
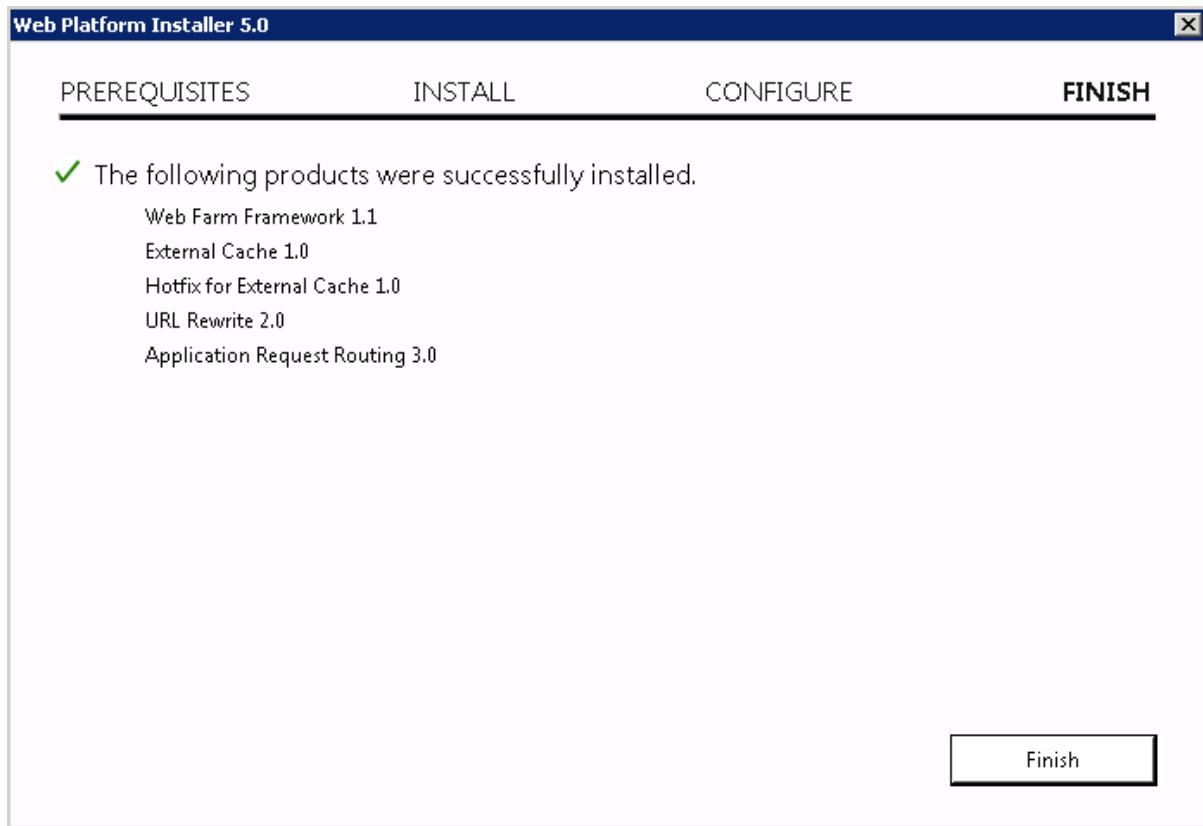


Chapter 2: Supporting Security







Chapter 3: Integrating WebRTC

Expert settings

Disable Video:	<input checked="" type="checkbox"/>
Enable RTCWeb Breaker ^[1] :	<input type="checkbox"/>
WebSocket Server URL ^[2] :	<input type="text" value="ws://your_IP:8088/ws"/>
SIP outbound Proxy URL ^[3] :	<input type="text" value="e.g. udp://sipml5.org:5060"/>
ICE Servers ^[4] :	<input type="text" value="[{url: 'stun.l.google.com:19302'}]"/>
Max bandwidth (kbps) ^[5] :	<input type="text" value="{ audio:64, video:512 }"/>
Video size ^[6] :	<input type="text" value="{ minWidth: 640, minHeight:480, maxWidth"/>
Disable 3GPP Early IMS ^[7] :	<input checked="" type="checkbox"/>
Disable debug messages ^[8] :	<input checked="" type="checkbox"/>
Cache the media stream ^[9] :	<input checked="" type="checkbox"/>
Disable Call button options ^[10] :	<input type="checkbox"/>

Save

Revert

Registration

Display Name:

Private Identity*:

Public Identity*:

Password:



Realm*:

** Mandatory Field*

You have connected to Flashphoner WebRTC server. Would you like to start your stream?



Flashphoner



Processing...

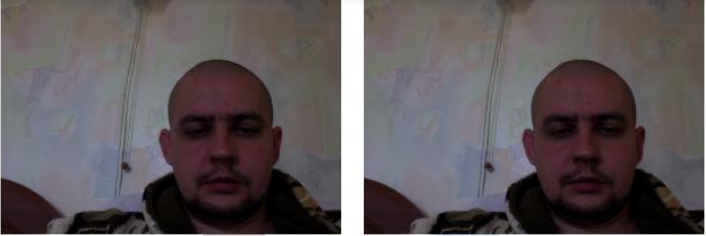


Chapter 4: Debugging a WebRTC Application

→ ↻ www.webrtcexample.com/getstats.html

Apps Dashboard - Lohika Engineering Position System Dashboard - OpenGrok Help BSM Code Search HP customers forum Other Bookmarks

WebRTC Example Git-HUB



4 10 11 3

Tweet Like Поделиться Share

15:18:52: Now, if somebody wants to join you, should use this link: <http://www.webrtcexample.com/getstats.html?room=730674>

Elements Network Sources Timeline Profiles Resources Audits Console

<top frame>

```
▶ Object {googTrackId: "9f56a461-1db7-44d0-b518-531212d1ae83", id: "googTrack_9f56a461-1db7-44d0-b518-531212d1ae83", type: "googTrack", timestamp: Thu Jan 01 1970 02:00:00 GMT+0200 (EET)} WebRTC0.js:109
▶ Object {googTrackId: "b72f09a9-3945-476e-b32f-f6e6df2c2f76", id: "googTrack_b72f09a9-3945-476e-b32f-f6e6df2c2f76", type: "googTrack", timestamp: Thu Jan 01 1970 02:00:00 GMT+0200 (EET)} WebRTC0.js:109
▶ Object {googTrackId: "e6223d54-ac28-4029-a3f4-6aa78760f4be", id: "googTrack_e6223d54-ac28-4029-a3f4-6aa78760f4be", type: "googTrack", timestamp: Thu Jan 01 1970 02:00:00 GMT+0200 (EET)} WebRTC0.js:109
3.8 kbits/s WebRTC0.js:109
▶ Object {audioInputLevel: "141", transportId: "Channel-audio-1", googRtt: "1", googEchoCancellationReturnLoss: "-100", googCodecName: "opus"} WebRTC0.js:120
▶ Object {googTargetDelayMs: "32", packetsLost: "0", googDecodeMs: "6", googFrameHeightReceived: "480", packetsReceived: "9614"...} WebRTC0.js:109
▶ Object {googFrameHeightInput: "480", googFrameWidthInput: "640", googCaptureQueueDelayMsPerS: "13", googRtt: "3", googEncodeUsagePercent: "22"...} WebRTC0.js:109
```

Elements Network Sources Timeline Profiles Resources Audits Console

<top frame>

```
▼ Object {audioInputLevel: "131", transportId: "Channel-audio-1"
  audioInputLevel: "131"
  bytesSent: "306542"
  googCodecName: "opus"
  googEchoCancellationEchoDelayMedian: "-60"
  googEchoCancellationEchoDelayStdDev: "0"
  googEchoCancellationQualityMin: "-1"
  googEchoCancellationReturnLoss: "-100"
  googEchoCancellationReturnLossEnhancement: "-100"
  googJitterReceived: "0"
  googRtt: "4"
  googTrackId: "9f56a461-1db7-44d0-b518-531212d1ae83"
  googTypingNoiseState: "false"
  id: "ssrc_2532551919"
  packetsSent: "3987"
  ssrc: "2532551919"
}
```

Q Elements Network Sources Timeline Profiles Resources Audits Console

🔍 <top frame> ▼

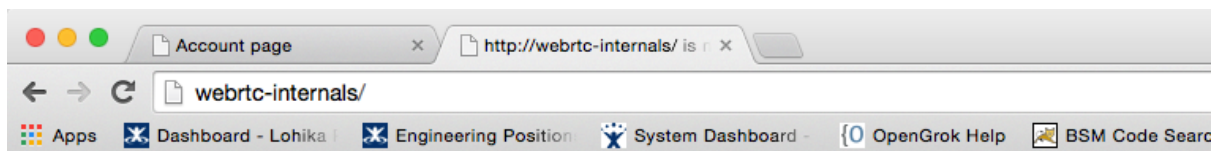
```
▼ Object {googTargetDelayMs: "33", packetsLost: "0", googDecodeMs: "6",
  bytesReceived: "11683103",
  googCurrentDelayMs: "33",
  googDecodeMs: "6",
  googFirsSent: "0",
  googFrameHeightReceived: "480",
  googFrameRateDecoded: "0",
  googFrameRateOutput: "0",
  googFrameRateReceived: "0",
  googFrameWidthReceived: "640",
  googJitterBufferMs: "15",
  googMaxDecodeMs: "8",
  googMinPlayoutDelayMs: "0",
  googNacksSent: "-1",
  googRenderDelayMs: "10",
  googTargetDelayMs: "33"}
```

Q Elements Network Sources Timeline Profiles Resources Audits Console

🔍 <top frame> ▼

```
  googTrackId: "b72f09a9-3945-476e-b32f-f6e6df2c2f76"
  id: "ssrc_2643325965"
  packetsLost: "0"
  packetsReceived: "10777"
  ssrc: "2643325965"
  ▶ timestamp: Mon Sep 01 2014 15:20:21 GMT+0300 (EEST)
  transportId: "Channel-audio-1"
  type: "ssrc"
  ▶ __proto__: Object
▼ Object {googFrameHeightInput: "480", googFrameWidthInput: "640",
  bytesSent: "13170058",
  googAvgEncodeMs: "15",
  googBandwidthLimitedResolution: "false",
  googCaptureJitterMs: "9",
  googCaptureQueueDelayMsPerS: "14",
  googCodecName: "VP8"}
```


Q	Elements	Network	Sources	Timeline	Profiles	Resources	Audits	Console
⊘	⌵	<top frame>	▼					
				36.4 kilobits per second				
				34.5 kilobits per second				
				39.3 kilobits per second				
				42.2 kilobits per second				
				38.7 kilobits per second				
				38.6 kilobits per second				
				49.8 kilobits per second				
				49.9 kilobits per second				
				48.4 kilobits per second				
				54.1 kilobits per second				
				56.2 kilobits per second				
				55.3 kilobits per second				
				70.6 kilobits per second				
				60.2 kilobits per second				



► Create Dump

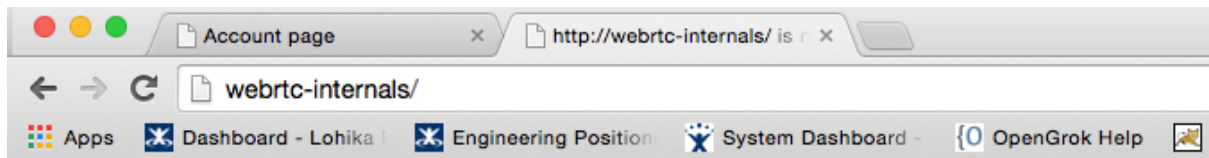
https://www.webrtcexample.com/1on1_new.html [6849-1]

https://www.webrtcexample.com/1on1_new.html [stun:23.21.150.121, stun:stun.l.google.com:stun:stun.ekiga.net, stun:stun.fwdnet.net, stun:stun.ideasip.com, stun:stun.iptel.org, stun:stun.l.google.com:19302, stun:stun1.l.google.com:19302, stun:stun2.l.google.com:19302, stun:stun4.l.google.com:19302, stun:stunserver.org, stun:stun.softjoys.com, stun:stun.voipstunt.com, stun:stun.voxgratia.org, stun:stun.xten.com, turn:numb.viagenie.ca, transport=udp, turn:192.158.29.39:3478?transport=tcp] optional: {DtlsSrtpKeyAgreement:true}

Time	Event
9/3/2014 2:26:40 P M	▼ addStream label: 4rMQJwOzyTeUQkTlk1stSURwle622TrXPCOQ, audio: [906e892253a42ed2108fdd6f0f6034f7cc8b5de15ae4483c
9/3/2014 2:26:40 P M	onRenegotiationNeeded

Stats Tables

- googLibjingleSession_5977456853075639871
- googTrack_c4cac0bf-88ed-46a0-a098-877d6ec0ecdc
- googTrack_f62723ac-7c9a-48d1-87f9-808d6bb36135



1_new.html [6849-2]

https://www.webrtcexample.com/1on1_new.html [stun:23.21.150.121, stun:stun.ekiga.net, stun:stun.fwdnet.net, stun:stun.ideasip.com, stun:stun.iptel.org, stun:stun.l.google.com:19302, stun:stun1.l.google.com:19302, stun:stun4.l.google.com:19302, stun:stunserver.org, stun:stun.softjoys.com, stun:stun.voipstunt.com, stun:stun.voxgratia.org, stun:stun.xten.com, transport=udp, turn:192.158.29.39:3478?transport=tcp] optional:

Time	Event
9/3/2014 2:35:23 PM	▶ addStream
9/3/2014 2:35:23 PM	onRenegotiationNeeded
9/3/2014 2:35:29 PM	▶ setRemoteDescription
9/3/2014 2:35:29 PM	▶ signalingStateChange
9/3/2014 2:35:29 PM	▶ onAddStream
9/3/2014 2:35:29 PM	▶ createAnswer
9/3/2014 2:35:29 PM	setRemoteDescriptionOnSuccess
9/3/2014 2:35:29 PM	▶ createAnswerOnSuccess
9/3/2014 2:35:29 PM	▶ setLocalDescription
9/3/2014 2:35:29 PM	▶ signalingStateChange
9/3/2014 2:35:29 PM	▶ addIceCandidate
9/3/2014 2:35:29 PM	▶ iceConnectionStateChange
9/3/2014 2:35:29 PM	setLocalDescriptionOnSuccess
9/3/2014 2:35:29 PM	▶ iceGatheringStateChange
9/3/2014 2:35:29 PM	▶ iceGatheringStateChange
9/3/2014 2:35:29 PM	▶ iceGatheringStateChange

Account page x http://webrtc-internals/ is r x

webrtc-internals/

Apps Dashboard - Lohika Engineering Position System Dashboard - OpenGrok

Time	Event
9/3/2014 2:36:12 PM	addStream
9/3/2014 2:36:12 PM	onRenegotiationNeeded
	▼ setRemoteDescription <pre> type: offer, sdp: v=0 o=Mozilla-SIPUA-30.0 6379 0 IN IP4 0.0.0.0 s=SIP Call t=0 0 a=ice-ufrag:e1512bfb a=ice-pwd:b87635a988ed5c45b16cb0194bf7d715 a=fingerprint:sha-256 2C:25:6B:74:89:68:85:0A:C8:E6:D1:3F:DA:E4:C8:1B:E0:F0:5C m=audio 59184 RTP/SAVPF 109 0 8 101 c=IN IP4 37.57.88.146 a=rtpmap:109 opus/48000/2 a=ptime:20 a=rtpmap:0 PCMU/8000 a=rtpmap:8 PCMA/8000 a=rtpmap:101 telephone-event/8000 a=fmtp:101 0-15 a=sendrecv a=extmap:1 urn:ietf:params:rtp-hdext:ssrc-audio-level a=setup:actpass a=candidate:0 1 UDP 2130444543 192.168.137.103 59184 typ host a=candidate:1 1 UDP 1694302207 37.57.88.146 59184 typ srflx raddr 192.168.137 a=candidate:0 2 UDP 2130444542 192.168.137.103 60418 typ host a=candidate:1 2 UDP 1694302206 37.57.88.146 60418 typ srflx raddr 192.168.137 a=rtcp-mux m=video 51890 RTP/SAVPF 120 c=IN IP4 37.57.88.146 </pre>
9/3/2014 2:36:12 PM	

Stats Tables

- ▶ Channel-audio-1
- ▶ Channel-video-1
- ▶ Conn-audio-1-0
- ▶ Conn-video-1-0
- ▶ bweforvideo
- ▶
- googCertificate_24:69:3C:64:77:B4:81:7C:C1:E4:75:23:91:6B:08:7E:D5:A4:67:55:2E:B4:A7:95:35:38
- ▶ googCertificate_7D:50:8E:DB:86:F6:E6:96:4C:ED:88:71:AF:DA:5F:5F:3B:57:87:3B
- ▶ googLibjingleSession_188305672927856316
- ▶ googTrack_b2cd07a7-1dbe-4085-8d63-1869951f5116
- ▶ googTrack_c1c90798-6a44-4d5f-93e0-6db6ec321779
- ▶ googTrack_defaulta0
- ▶ googTrack_defaulttv0
- ▶ ssrc_2800438688
- ▶ ssrc_2960997998
- ▶ Stats graphs for Conn-audio-1-0
- ▶ Stats graphs for Conn-video-1-0
- ▶ Stats graphs for bweforvideo
- ▶ Stats graphs for ssrc_2800438688
- cname:OJxzW5k9w86+G/Et
- msid:oil8nHytAzsNrasT36P8vAADkhnpPDtS7bhX c1c90798-6a44-4d5f-93e0-6db6ec321779
- mslabel:oil8nHytAzsNrasT36P8vAADkhnpPDtS7bhX
- label:c1c90798-6a44-4d5f-93e0-6db6ec321779
- ▶ Stats graphs for ssrc_2960997998
- cname:OJxzW5k9w86+G/Et
- msid:oil8nHytAzsNrasT36P8vAADkhnpPDtS7bhX b2cd07a7-1dbe-4085-8d63-1869951f5116
- mslabel:oil8nHytAzsNrasT36P8vAADkhnpPDtS7bhX
- label:b2cd07a7-1dbe-4085-8d63-1869951f5116

Account page

http://webrtc-internals/ is r

webrtc-internals/

AppsDashboard - LohikaEngineering PositionSystem Dashboard - {0} Open

▼ Conn-audio-1-0

Statistics Conn-audio-1-0

timestamp	Wed Sep 03 2014 14:38:17 GMT+0300 (EEST)
googChannelId	Channel-audio-1
bytesSent	811303
bytesReceived	928447
googWritable	true
googReadable	true
googActiveConnection	true
googLocalAddress	192.168.137.103:61243
googRemoteAddress	192.168.137.103:59184
googRtt	0
googTransportType	udp
googLocalCandidateType	local
googRemoteCandidateType	local

► Conn-video-1-0

Account page

http://webrtc-internals/ is n X

webrtc-internals/

Apps

Dashboard - Lohika

Engineering Position

System Dashboard - {0}

► Conn-audio-1-0

► Conn-video-1-0

▼ bweforvideo

Statistics bweforvideo

timestamp	Wed Sep 03 2014 14:38:31
googAvailableSendBandwidth	4000000
googAvailableReceiveBandwidth	3496143
googTargetEncBitrate	2000000
googActualEncBitrate	2108881
googRetransmitBitrate	0
googTransmitBitrate	2108881
googBucketDelay	0
googReceivedPacketGroupPropagationDeltaSumDebug	0

Account page

http://webrtc-internals/ is r

webrtc-internals/

Apps

Dashboard - Lohika

Engineering Position

System Dashboard -

OpenGrok H

▼ ssrc_2800438688

Statistics ssrc_2800438688

cname:OJxzW5k9w86+G/Et

msid:oil8nHytAzsNrasT36P8vAADkhnpPDtS7bhX c1c90798-6a44-4d5f-93e0-6db6ec321779

mslabel:oil8nHytAzsNrasT36P8vAADkhnpPDtS7bhX

label:c1c90798-6a44-4d5f-93e0-6db6ec321779

timestamp	Wed Sep 03 2014 14:39:15 GMT+0300 (EEST)
ssrc	2800438688
googTrackId	c1c90798-6a44-4d5f-93e0-6db6ec321779
transportId	Channel-video-1
bytesSent	51215512
packetsSent	45853
googFirsReceived	-1
googNacksReceived	-1
googFrameWidthInput	640
googFrameHeightInput	480
googFrameWidthSent	640
googFrameHeightSent	480
googFrameRateInput	15
googFrameRateSent	15
googRtt	1
googCodecName	VP8
googCpuLimitedResolution	false
googBandwidthLimitedResolution	false

▼ Stats graphs for Conn-audio-1-0

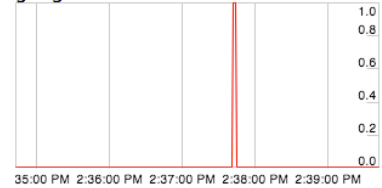
bitsSentPerSecond



bitsReceivedPerSecond



googRtt

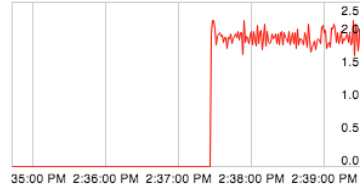


▼ Stats graphs for Conn-video-1-0

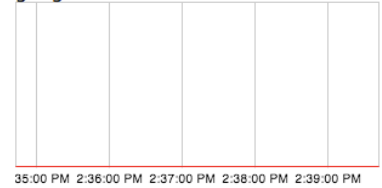
bitsSentPerSecond



bitsReceivedPerSecond



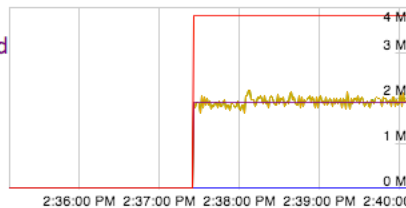
googRtt



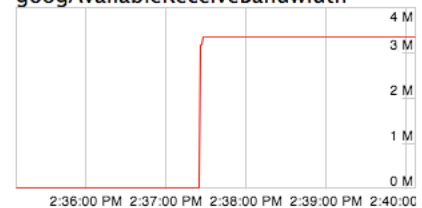
▼ Stats graphs for bweforvideo

bweCompound

- ☒ googAvailableSendBandwidth
- ☒ googTargetEncBitrateCorrected
- ☒ googActualEncBitrate
- ☒ googRetransmitBitrate
- ☒ googTransmitBitrate



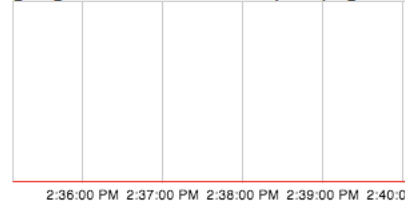
googAvailableReceiveBandwidth

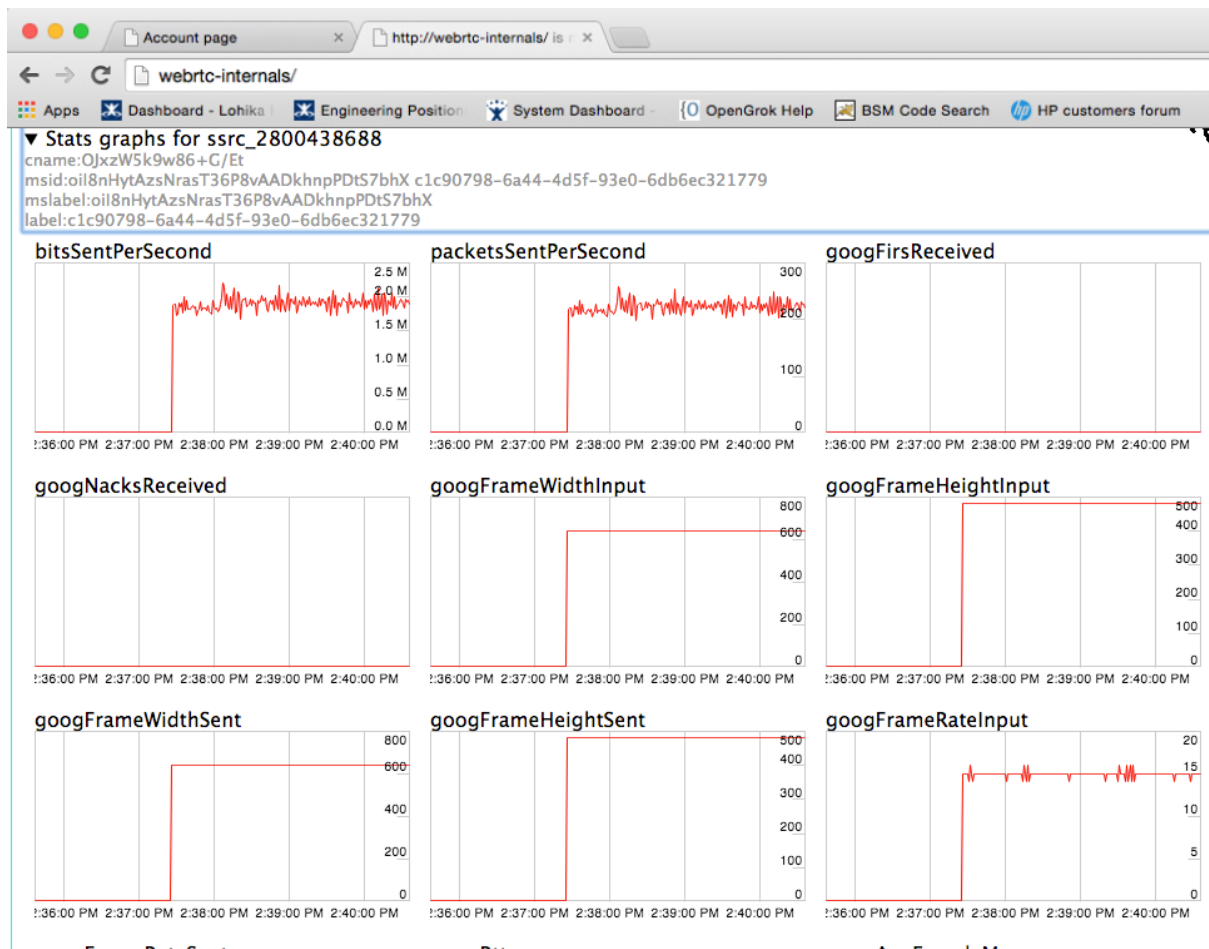


googBucketDelay



googReceivedPacketGroupPropagationDeltaSumDebug





Sawback Log Viewer

Pro...	Thr...	Time	File	Line	Message
4604	5824	21:12:19-279	render_thread.cc	778	RenderThread calling v8 IdleNotification for 015A11C0
8012	6464	21:12:19-620	render_thread.cc	778	RenderThread calling v8 IdleNotification for 016C11C0
6652	5996	21:12:19-935	CONSOLE	0	"requestURL: http://chromium-status.appspot.com/current," source: chrom
6652	7392	21:12:20-020	buffered_resource_handler.cc	203	To buffer: http://chromium-status.appspot.com/current
6652	7392	21:12:20-020	buffered_resource_handler.cc	135	Finished buffering http://chromium-status.appspot.com/current
6064	6872	21:12:20-043	render_thread.cc	778	RenderThread calling v8 IdleNotification for 012311C0
6100	2384	21:12:21-838	render_thread.cc	778	RenderThread calling v8 IdleNotification for 012411C0
6960	2392	21:12:23-788	render_thread.cc	778	RenderThread calling v8 IdleNotification for 015F11C0
6064	6872	21:12:26-043	render_thread.cc	778	RenderThread calling v8 IdleNotification for 012311C0

Address	Module	File	Line	Function
0x592CC8A2	C:\Users\siggil\AppData\Local\Google\Chrome\Application\chrome.exe	c:\b\slave\chrome-official\build\src\render_view_host.cc	1421	RenderViewHost::OnAddMessageToConsole+0x6F
0x592CE5B9	C:\Users\siggil\AppData\Local\Google\Chrome\Application\chrome.exe	c:\b\slave\chrome-official\build\src\ipc\message_with_tuple.cc	988	IPC::MessageWithTuple<Tuple3<std::basic_string<wchar_t,std::ch
0x592CB764	C:\Users\siggil\AppData\Local\Google\Chrome\Application\chrome.exe	c:\b\slave\chrome-official\build\src\render_view_host.cc	772	RenderViewHost::OnMessageReceived+0x5DC
0x5939415A	C:\Users\siggil\AppData\Local\Google\Chrome\Application\chrome.exe	c:\b\slave\chrome-official\build\src\browser_render_process_host.cc	791	BrowserRenderProcessHost::OnMessageReceived+0x12E
0x593AAFE4	C:\Users\siggil\AppData\Local\Google\Chrome\Application\chrome.exe	c:\b\slave\chrome-official\build\src\runtime_method.cc	290	RunnableMethod<CancelableRequest<CallbackRunner<Tuple4<i
0x591EC34B	C:\Users\siggil\AppData\Local\Google\Chrome\Application\chrome.exe	c:\b\slave\chrome-official\build\src\base\message_pump_for_ui.cc	209	base::MessagePumpForUI::DoRunLoop+0x52
0x591EC160	C:\Users\siggil\AppData\Local\Google\Chrome\Application\chrome.exe	c:\b\slave\chrome-official\build\src\base\message_pump_for_ui.cc	54	base::MessagePumpForUI::RunWithDispatchers+0x38

Ready

Wireshark 1.12.0 (v1.12.0-0-g4fab41a from master-1.12.0)

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filter: Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
140	5.23379800	192.168.137.101	192.168.137.104	STUN	154	Binding Request user: /AA20XexfJ5gRip:vmheuxxhvt4khyj
141	5.23392700	192.168.137.101	192.168.137.104	STUN	154	Binding Request user: /AA20XexfJ5gRip:vmheuxxhvt4khyj
142	5.23653800	192.168.137.104	192.168.137.101	STUN	106	Binding Success Response XOR-MAPPED-ADDRESS: 192.168.137.101:65087
143	5.25319400	192.168.137.101	192.168.137.104	STUN	154	Binding Request user: /AA20XexfJ5gRip:vmheuxxhvt4khyj
144	5.25353500	192.168.137.101	192.168.137.104	STUN	154	Binding Request user: /AA20XexfJ5gRip:vmheuxxhvt4khyj
145	5.25477400	192.168.137.104	192.168.137.101	STUN	158	Binding Request user: vmheuxxhvt4khyj:/AA20XexfJ5gRip
146	5.25753300	192.168.137.104	192.168.137.101	STUN	106	Binding Success Response XOR-MAPPED-ADDRESS: 192.168.137.101:65087
147	5.26209000	192.168.137.101	192.168.137.104	STUN	106	Binding Success Response XOR-MAPPED-ADDRESS: 192.168.137.104:53019
148	5.26239200	192.168.137.101	192.168.137.104	DTLSv1	163	Client Hello
149	5.26233400	192.168.137.101	192.168.137.104	STUN	106	Binding Success Response XOR-MAPPED-ADDRESS: 192.168.137.104:53019
150	5.26253500	192.168.137.101	192.168.137.104	DTLSv1	163	Client Hello
151	5.26289300	192.168.137.101	192.168.137.11	DNS	94	Standard query 0xeea6 A myd-vm00340.hpswlab.adapps.hp.com
152	5.26300800	192.168.137.101	192.168.137.11	DNS	94	Standard query 0xeea6 A myd-vm00340.hpswlab.adapps.hp.com
153	5.28200900	192.168.137.11	192.168.137.101	DNS	94	Standard query response 0xeea6 Server failure

Frame 149: 106 bytes on wire (848 bits), 106 bytes captured (848 bits) on interface 0

Ethernet II, Src: 4c:ed:de:c5:4c:5a (4c:ed:de:c5:4c:5a), Dst: 70:56:81:98:d1:b9 (70:56:81:98:d1:b9)

Internet Protocol Version 4, Src: 192.168.137.101 (192.168.137.101), Dst: 192.168.137.104 (192.168.137.104)

User Datagram Protocol, Src Port: 65087 (65087), Dst Port: 53019 (53019)

Session Traversal Utilities for NAT

[Duplicated original message in: 147]

[Request in: 145]

[Time: 0.007760000 seconds]

Message Type: 0x0101 (Binding Success Response)

Message Length: 44

Message Cookie: 2112a442

Message Transaction ID: 3148503175737a6b68434241

Attributes

- XOR-MAPPED-ADDRESS: 192.168.137.104:53019
- Attribute Type: XOR-MAPPED-ADDRESS (0x0020)
- Attribute Length: 8
- Reserved: 00

0000 70 56 81 98 d1 b9 4c ed de c5 4c 5a 08 00 45 00 pv...L...LZ..E.

0010 00 5c 17 58 00 00 80 11 8f 1a c0 a8 89 65 c0 a8 .\X... ..E.

0020 89 68 fe 3f cf 1b 00 48 89 fb 01 01 00 2c 21 12 .h?...H!

0030 a4 42 31 48 50 31 75 73 7a 6b 68 43 42 41 00 20 .BHPHus zkhCBA.

0040 00 08 00 01 ee 09 e1 b2 2d 2a 00 08 00 14 87 6e^.....n

0050 8e 4f 4d 46 ee 41 77 5d 72 0b 4c 8e 4e 5c 77 52#.....a

File: C:\Users\Andrey\AppData\Local\Temp... Packets: 1227 - Displayed: 1227 (100.0%) - Dropped: 0 (0.0%)

Profile: Default

EN 11:35 PM 9/9/2014

Wireshark 1.12.0 (v1.12.0-0-g4fab41a from master-1.12.0)

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filter: Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
147	5.26209000	192.168.137.101	192.168.137.104	STUN	106	Binding Success Response XOR-MAPPED-ADDRESS: 192.168.137.104:53019
148	5.26239200	192.168.137.101	192.168.137.104	DTLSv1	163	Client Hello
149	5.26253400	192.168.137.101	192.168.137.104	STUN	106	Binding Success Response XOR-MAPPED-ADDRESS: 192.168.137.104:53019
150	5.26253500	192.168.137.101	192.168.137.104	DTLSv1	163	Client Hello
151	5.26289300	192.168.137.101	192.168.137.11	DNS	94	Standard query 0xeea6 A myd-vm00340.hpswlab.adapps.hp.com
152	5.26300800	192.168.137.101	192.168.137.11	DNS	94	Standard query 0xeea6 A myd-vm00340.hpswlab.adapps.hp.com
153	5.28200900	192.168.137.11	192.168.137.101	DNS	94	Standard query response 0xeea6 Server failure
154	5.32878500	192.168.137.104	192.168.137.101	DTLSv1	883	Server Hello, Certificate, Server Key Exchange, Certificate Request, Server Hello Done
155	5.33919200	192.168.137.101	192.168.137.104	DTLSv1	823	Certificate, Client Key Exchange, Certificate Verify, Change Cipher Spec, Encrypted Handshake Message
156	5.33939500	192.168.137.101	192.168.137.104	DTLSv1	823	Certificate, Client Key Exchange, Certificate Verify, Change Cipher Spec, Encrypted Handshake Message
157	5.34594600	192.168.137.104	192.168.137.101	DTLSv1	133	Change Cipher Spec, Encrypted Handshake Message
158	5.38607300	192.168.137.101	192.158.29.39	TCP	66	65201->3478 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=4 SACK_PERM=1
159	5.38638800	192.168.137.101	192.158.29.39	TCP	66	65201->3478 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=4 SACK_PERM=1
160	5.38690100	192.168.137.101	192.158.29.39	TCP	66	65202->3478 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=4 SACK_PERM=1

Frame 154: 883 bytes on wire (7064 bits), 883 bytes captured (7064 bits) on interface 0

Ethernet II, Src: 70:56:81:98:d1:b9 (70:56:81:98:d1:b9), Dst: 4c:ed:de:c5:4c:5a (4c:ed:de:c5:4c:5a)

Internet Protocol Version 4, Src: 192.168.137.104 (192.168.137.104), Dst: 192.168.137.101 (192.168.137.101)

User Datagram Protocol, Src Port: 53019 (53019), Dst Port: 65087 (65087)

Datagram Transport Layer Security

- DTLSv1.0 Record Layer: Handshake Protocol: Server Hello
- DTLSv1.0 Record Layer: Handshake Protocol: Certificate
- DTLSv1.0 Record Layer: Handshake Protocol: Server Key Exchange
- DTLSv1.0 Record Layer: Handshake Protocol: Certificate Request
- DTLSv1.0 Record Layer: Handshake Protocol: Server Hello Done

0000 4c ed de c5 4c 5a 70 56 81 98 d1 b9 08 00 45 00 .L...LZpvE.

0010 03 65 89 7f 00 00 40 11 59 ea c0 a8 89 68 00 a8 .e...E.Y...h..

0020 89 65 cf 1b fe 3f 03 51 8e ab 16 fe ff 00 00 00 .e...?..q!

0030 00 00 00 00 00 00 68 02 00 00 5c 00 00 00 00 00h... ..P

0040 00 00 5c fe ff 97 23 59 69 ae 66 00 d4 95 50 35#y I...P

0050 64 3a 6e d6 16 82 0c 08 4b 4e 26 c3 87 4a 12 .d... ..

Frame (frame), 883 bytes

Packets: 1227 - Displayed: 1227 (100.0%) - Dropped: 0 (0.0%)

Profile: Default

EN 11:37 PM 9/9/2014

Wireshark 1.12.0 (v1.12.0-0-g4fab41a from master-1.12.0)

Filter: Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
176	5.441801000	192.168.137.104	192.168.137.101	UDP	469	Source port: 53019 Destination port: 65087
177	5.442120000	192.168.137.104	192.168.137.101	UDP	112	Source port: 65087 Destination port: 53019
178	5.449228000	192.168.137.101	192.168.137.104	UDP	112	Source port: 65087 Destination port: 53019
179	5.449429000	192.168.137.101	192.168.137.104	UDP	112	Source port: 65087 Destination port: 53019
180	5.458947000	192.168.137.101	173.194.113.198	TLSv1.2	333	Application Data
181	5.459195000	192.168.137.101	173.194.113.198	TLSv1.2	87	Application Data
182	5.459330000	192.168.137.101	173.194.113.198	TCP	1514	[TCP segment of a reassembled PDU]
183	5.459335000	192.168.137.101	173.194.113.198	TLSv1.2	1475	Application Data
184	5.459548000	192.168.137.101	173.194.113.198	TCP	1514	[TCP segment of a reassembled PDU]
185	5.459553000	192.168.137.101	173.194.113.198	TLSv1.2	1332	Application Data
186	5.459633000	192.168.137.101	173.194.113.198	TLSv1.2	333	[TCP out-of-order] Application Data
187	5.459634000	192.168.137.101	173.194.113.198	TLSv1.2	87	[TCP out-of-order] Application Data
188	5.459634000	192.168.137.101	173.194.113.198	TCP	1514	[TCP out-of-order] 65108-443 [ACK] Seq=313 Ack=1 Win=4144 Len=1460
189	5.459634000	192.168.137.101	173.194.113.198	TCP	1475	[TCP out-of-order] 65108-443 [PSH, ACK] Seq=1773 Ack=1 Win=4144 Len=1421 [Reassembly error, protocol]

Frame 180: 333 bytes on wire (2664 bits), 333 bytes captured (2664 bits) on interface 0

Ethernet II, Src: 4c:ed:de:c5:4c:5a (4c:ed:de:c5:4c:5a), Dst: 90:f6:52:25:35:f4 (90:f6:52:25:35:f4)

Internet Protocol Version 4, Src: 192.168.137.101 (192.168.137.101), Dst: 173.194.113.198 (173.194.113.198)

Transmission Control Protocol, Src Port: 65108 (65108), Dst Port: 443 (443), Seq: 1, Ack: 1, Len: 279

Secure Sockets Layer

TLSv1.2 Record Layer: Application Data Protocol: spdy

0000 90 f6 52 25 35 f4 4c ed de c5 4c 5a 08 00 45 00 L...LZ...RKS...E.

0010 01 3f 17 64 40 00 80 06 78 be c0 a8 89 65 ad c2 ...@...B...N...

0020 71 c6 fe 54 01 bb de 82 bb 7d 35 69 7c ba 50 18 q...T...S...P...

0030 10 30 c7 7a 00 01 07 03 02 12 f3 99 6b f7 98 .0.z...K...K...

0040 49 38 8e a9 f3 b7 ca 2d 9b 26 94 5c 20 65 2f 08 H...T...6.../...

0050 63 52 8e a9 f3 b7 ca 2d 9b 26 94 5c 20 65 2f 08 H...T...6.../...

Frame (frame), 333 bytes

Packets: 1227 - Displayed: 1227 (100.0%) - Dropped: 0 (0.0%)

Profile: Default

EN 11:38 PM 9/9/2014

Wireshark 1.12.0 (v1.12.0-0-g4fab41a from master-1.12.0)

Filter: Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
222	5.517781000	192.168.137.101	192.168.137.104	UDP	143	Source port: 65087 Destination port: 53019
223	5.535753000	192.168.137.101	192.168.137.104	UDP	140	Source port: 65087 Destination port: 53019
224	5.535994000	192.168.137.101	192.168.137.104	UDP	140	Source port: 65087 Destination port: 53019
225	5.542064000	173.194.113.198	192.168.137.101	TLSv1.2	87	Application Data
226	5.544020000	192.168.137.101	66.228.45.110	STUN	70	Allocate Request UDP
227	5.544566000	192.168.137.101	66.228.45.110	STUN	70	Allocate Request UDP
228	5.555179000	192.168.137.101	192.168.137.104	UDP	746	Source port: 65087 Destination port: 53019
229	5.555542000	192.168.137.101	192.168.137.104	UDP	746	Source port: 65087 Destination port: 53019
230	5.556310000	192.168.137.101	192.168.137.104	UDP	149	Source port: 65087 Destination port: 53019
231	5.556453000	192.168.137.101	192.168.137.104	UDP	149	Source port: 65087 Destination port: 53019
232	5.572575000	66.228.45.110	192.168.137.101	STUN	142	Allocate Error Response error-code: 401 (Unauthorized) unauthorized realm: viagenie.ca with nonce
233	5.573134000	192.168.137.101	66.228.45.110	STUN	174	Allocate Request UDP user: webtrc8live.com realm: viagenie.ca with nonce
234	5.573326000	192.168.137.101	66.228.45.110	STUN	174	Allocate Request UDP user: webtrc8live.com realm: viagenie.ca with nonce

Frame 232: 142 bytes on wire (1136 bits), 142 bytes captured (1136 bits) on interface 0

Ethernet II, Src: 90:f6:52:25:35:f4 (90:f6:52:25:35:f4), Dst: 4c:ed:de:c5:4c:5a (4c:ed:de:c5:4c:5a)

Internet Protocol Version 4, Src: 66.228.45.110 (66.228.45.110), Dst: 192.168.137.101 (192.168.137.101)

User Datagram Protocol, Src Port: 3478 (3478), Dst Port: 65087 (65087)

Session Traversal Utilities for NAT

Request ID: 1741

[Time: 0.128501000 seconds]

Message Type: 0x0113 (Allocate Error Response)

Message Length: 80

Message Cookie: 2112a442

Message Transaction ID: 443457354c6130517672376a

Attributes

ERROR-CODE 401 (Unauthorized): Unauthorized

Attribute Type: ERROR-CODE (0x0009)

0..... = Attribute Type Comprehension: 0x0000

[Required (0)]

0.. = Attribute Type Assignment: 0x0000

0000 4c ed de c5 4c 5a 90 f6 52 25 35 f4 08 00 45 00 L...LZ...RKS...E.

0010 00 80 00 00 40 00 30 11 90 0d 42 e4 2d 6e c0 a8 ...@...B...N...

0020 89 65 0d 96 fe 3f 00 6c 61 29 01 13 00 50 21 12 .e...?..a)...P...

0030 a4 42 44 34 57 35 4c 61 30 51 76 72 37 6a 00 09 .BD4w5La QQvr7j..

0040 10 00 00 00 04 01 55 6e 61 75 74 68 6f 72 69 7aUn authoriz

0050 65 64 00 14 00 0b 69 61 67 65 6e 60 65 70 67 ..5...nonce f...

File: C:\Users\Andrey\AppData\Local\Temp... Packets: 1227 - Displayed: 1227 (100.0%) - Dropped: 0 (0.0%)

Profile: Default

EN 11:40 PM 9/9/2014


Chapter 5: Working with Filters

www.webrtcexample.com/filters.html

Dashboard – Lohika Engineering Position System Dashboard – {0} OpenGrok

WebRTC Example

do grayscale



4 10 11

[Tweet](#) [Like](#) [Поделиться](#)

15:23:13: Now, if somebody wants to join you, should use this link:

WebRTC Example

do grayscale



4

10

11

Tweet

Like

Поделиться

15:25:31: Now, if somebody wants to join you, should use this link:

 www.webrtcexample.com/filters.html

 Dashboard - Lohika

 Engineering Position

 System Dashboard - {0}

WebRTC Example

Brightness





4

 10

 Tweet

 Like



WebRTC Example

Brightness



4

10

Tweet

Like

WebRTC Example

Contrast



4

10

Tweet

Like





www.webrtcexample.com/filters.html



Dashboard - Lohika



Engineering Position



System Dashboard -

{0}

WebRTC Example

Contrast



4

10

Tweet

Like

16:55:26: Now, if somebody wants to join you, should use this link:

WebRTC Example

Saturation



4

10

Tweet

Like

g+

WebRTC Example

Saturation



4

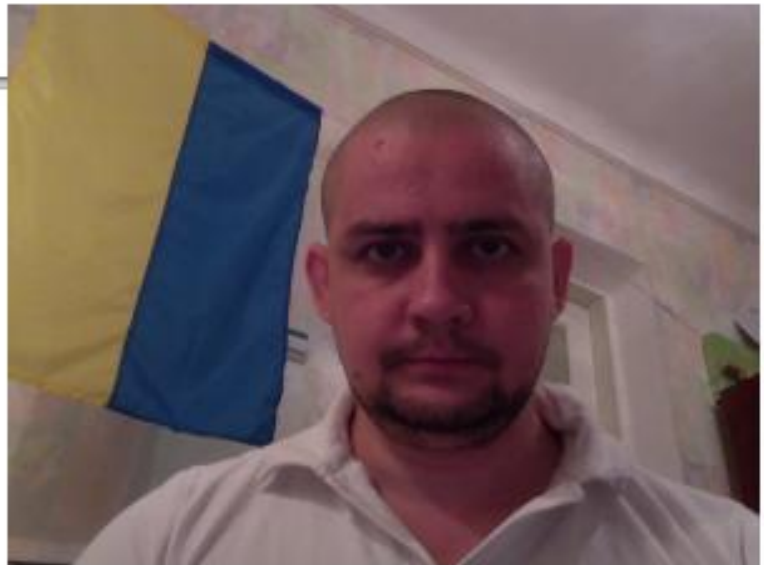
10

Tweet

Like

g+

Hue



4

10

Tweet

Like

g+

www.webrtcexample.com/filters.html

Dashboard – Lohika

Engineering Position

System Dashboard – {0}

WebRTC Example

Hue



4

10

Tweet

Like

example.com

WebRTC Example

Sepia



4

10

Tweet

Like

g+

WebRTC Example

Sepia



4

10

Tweet

Like

g+

WebRTC Example

Opacity



4

10

Tweet

Like

g+

WebRTC Example

Opacity



4

10

Tweet

Like

g+

WebRTC Example

Inversion



4

10

Tweet

Like

g+

WebRTC Example

Inversion



4

10

Tweet

Like

g+

WebRTC Example

Blur



4

10

Tweet

Like

g+

WebRTC Example

Blur



4

10

Tweet

Like

g

WebRTC Example

Shadow



4

11

Tweet



www.webrtcexample.com/filters.html



Dashboard - Lohika



Engineering Position

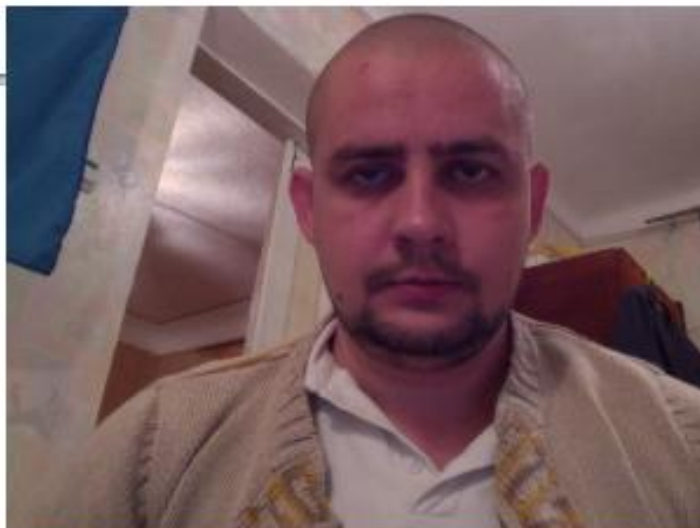


System Dashboard -

{0}

WebRTC Example

Shadow



4

11

 Tweet

 +

 www.webrtcexample.com/filters.html

 Dashboard – Lohika

 Engineering Position

 System Dashboard – {0}

WebRTC Example

Brightness

Contrast



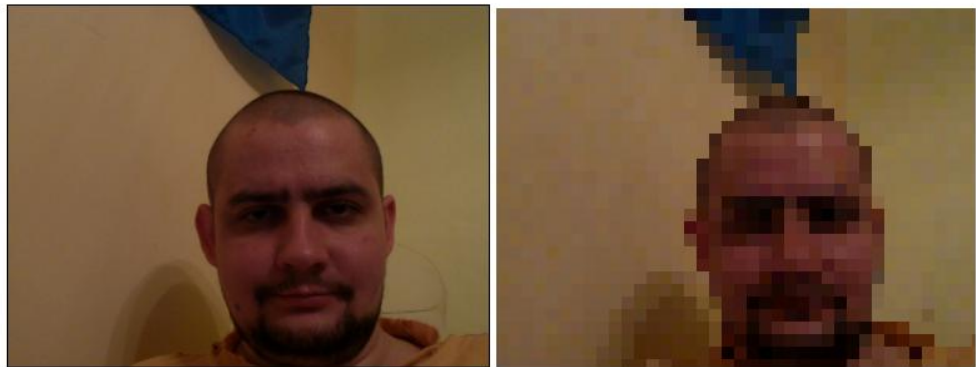
4

 10

 Tweet

 Like





☐ do grayscale

Brightness

Contrast

Saturation

Hue

Sepia

Opacity

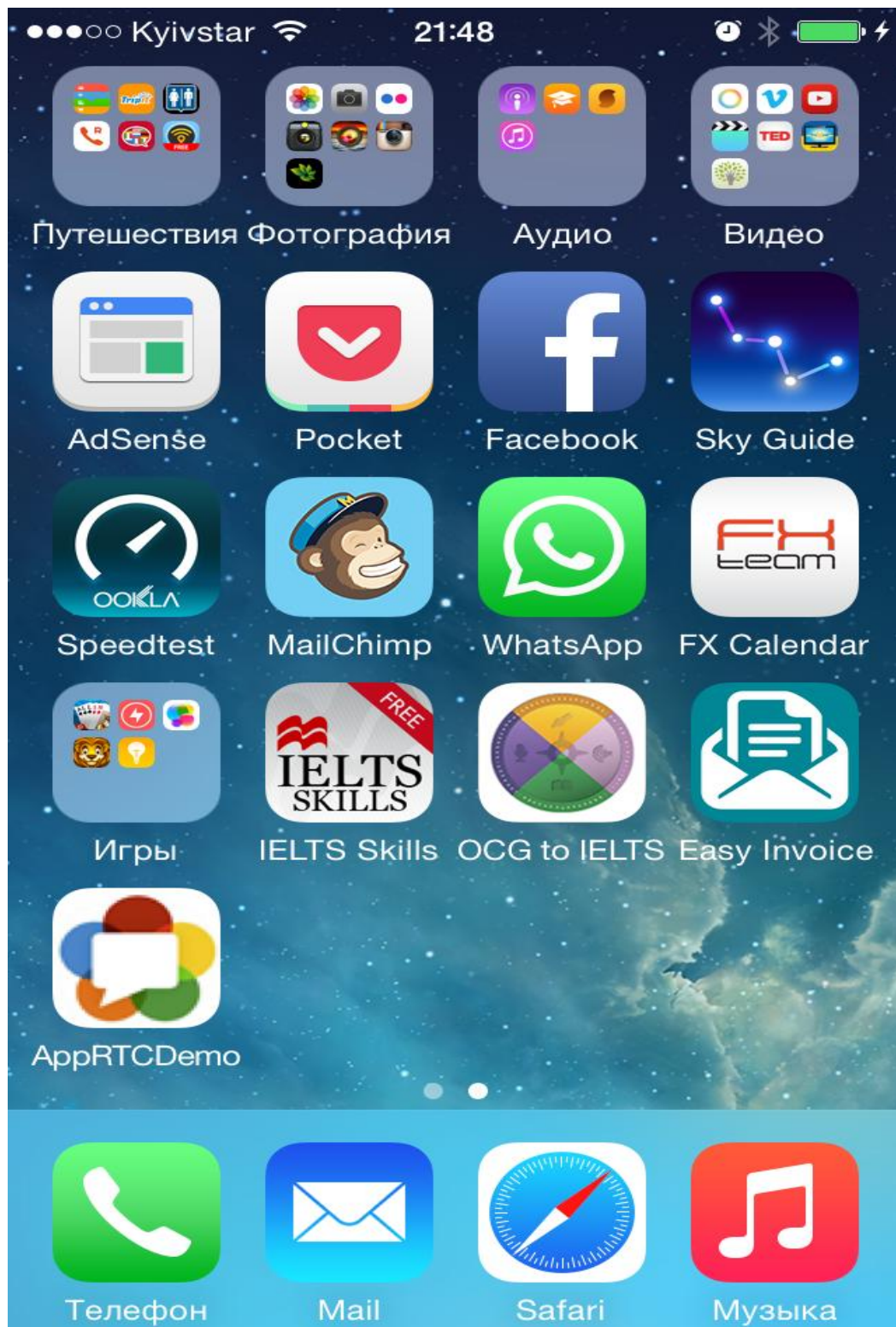
Inversion

Blur

Shadow

☐ Pixelize

Chapter 6: Native Applications



●●●○○ Kyivstar



21:49



Use Safari and open a URL with a scheme of apprtc to load the test app and connect. i.e. apprtc://apprtc.appspot.com/?r=12345678 Or just enter the room below to connect to apprtc.

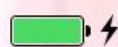
apprtc room

Disconnect

●●●●○ Kyivstar

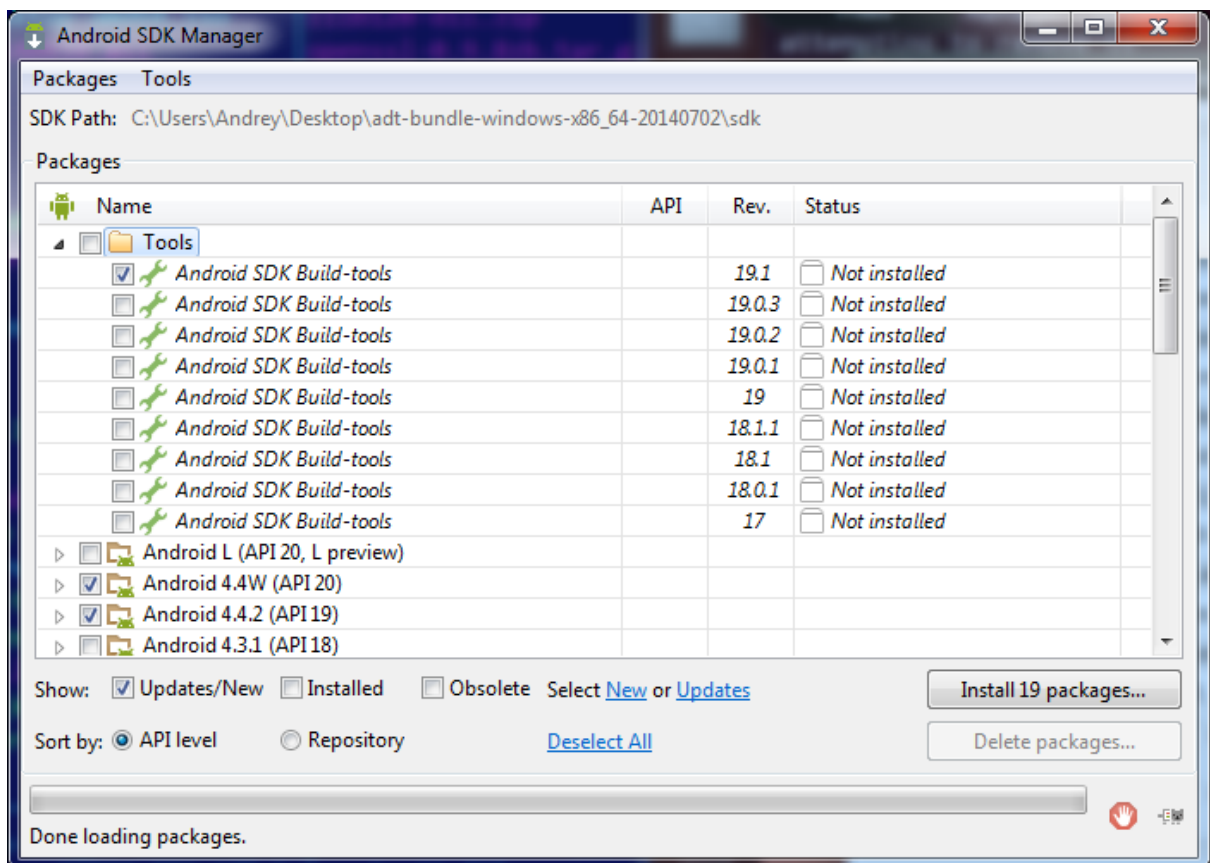
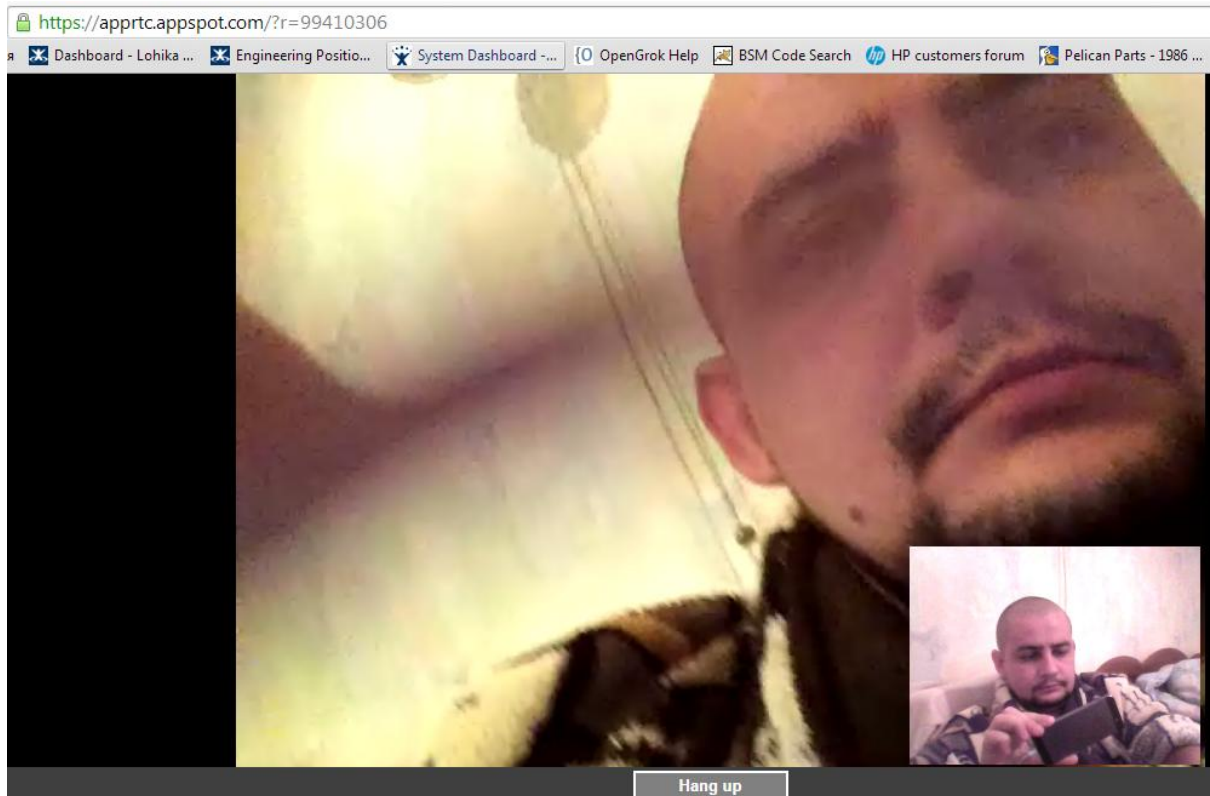


21:52



Loading... (tap to dismiss)

Disconnect



Create new Android Virtual Device (AVD)

AVD Name:

Device:

Target:

CPU/ABI:

Keyboard: ☒ Hardware keyboard present

Skin:

Front Camera:

Back Camera:

Memory Options: RAM: VM Heap:

Internal Storage:

SD Card:

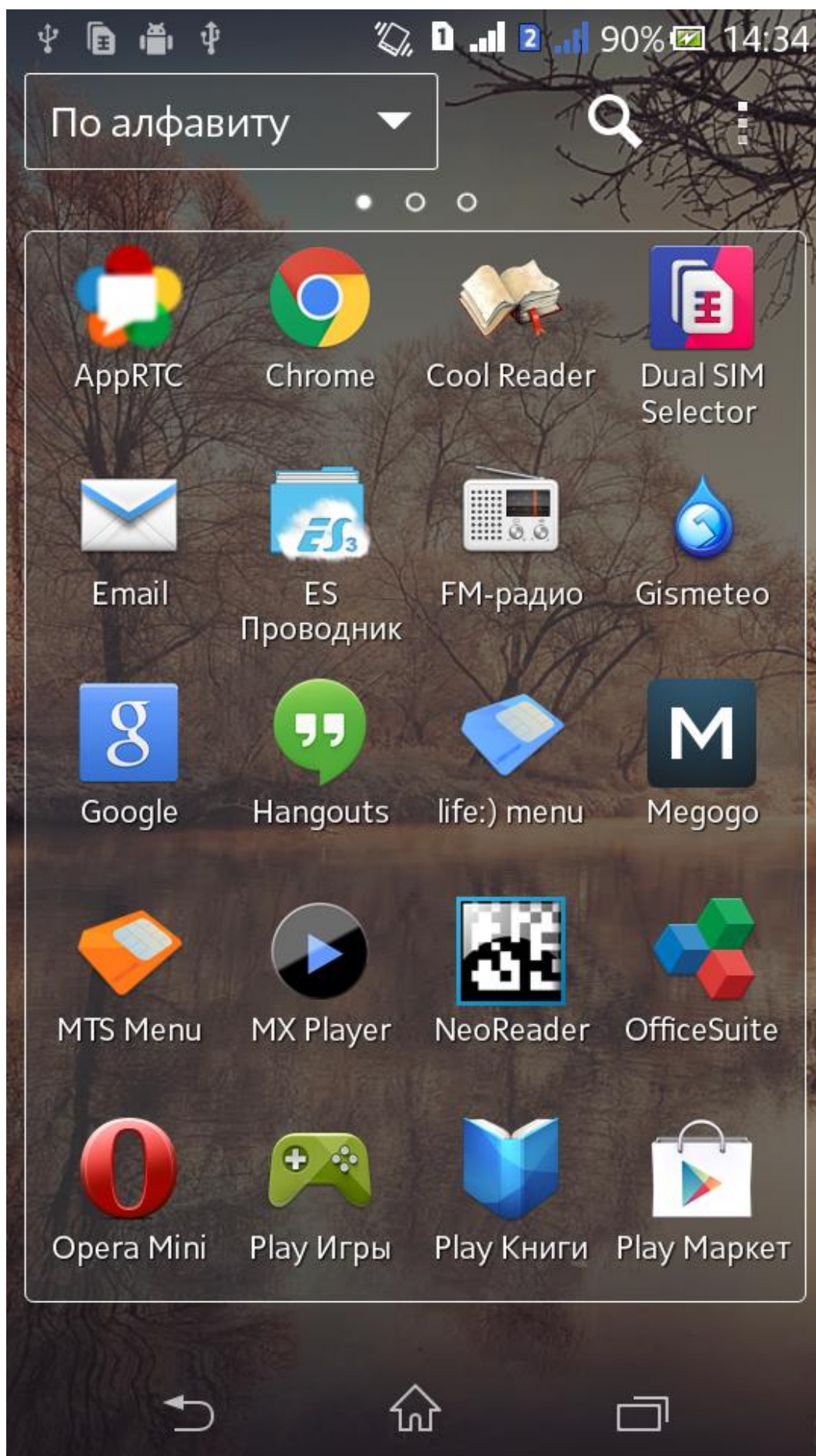
☒ Size:

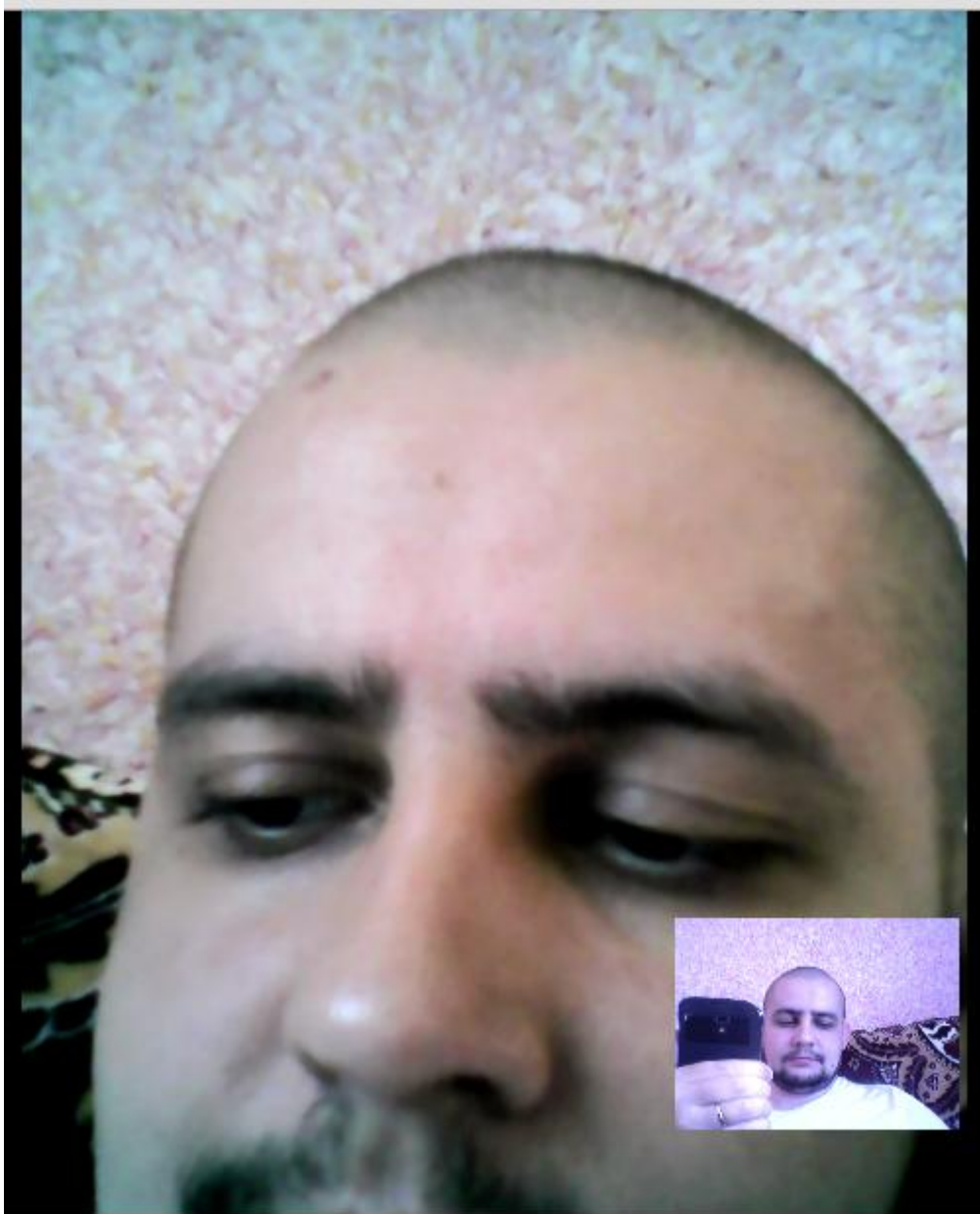
☐ File:

Emulation Options: ☐ Snapshot ☐ Use Host GPU





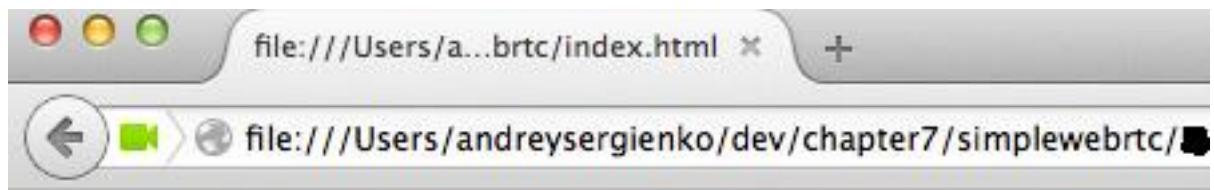




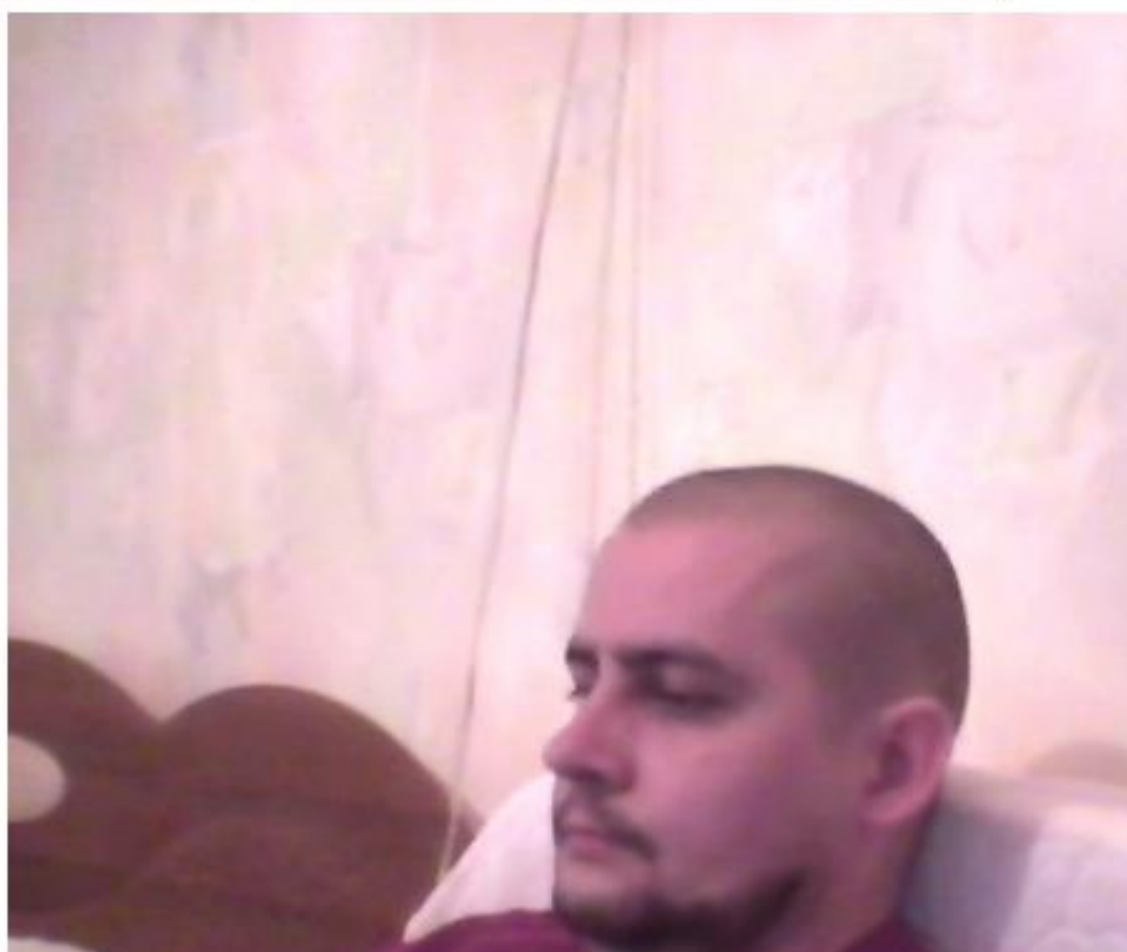
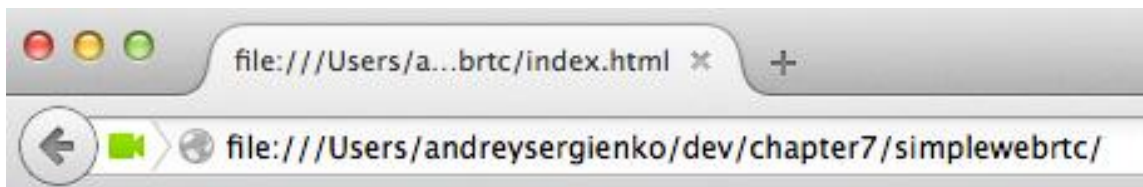
Hang up

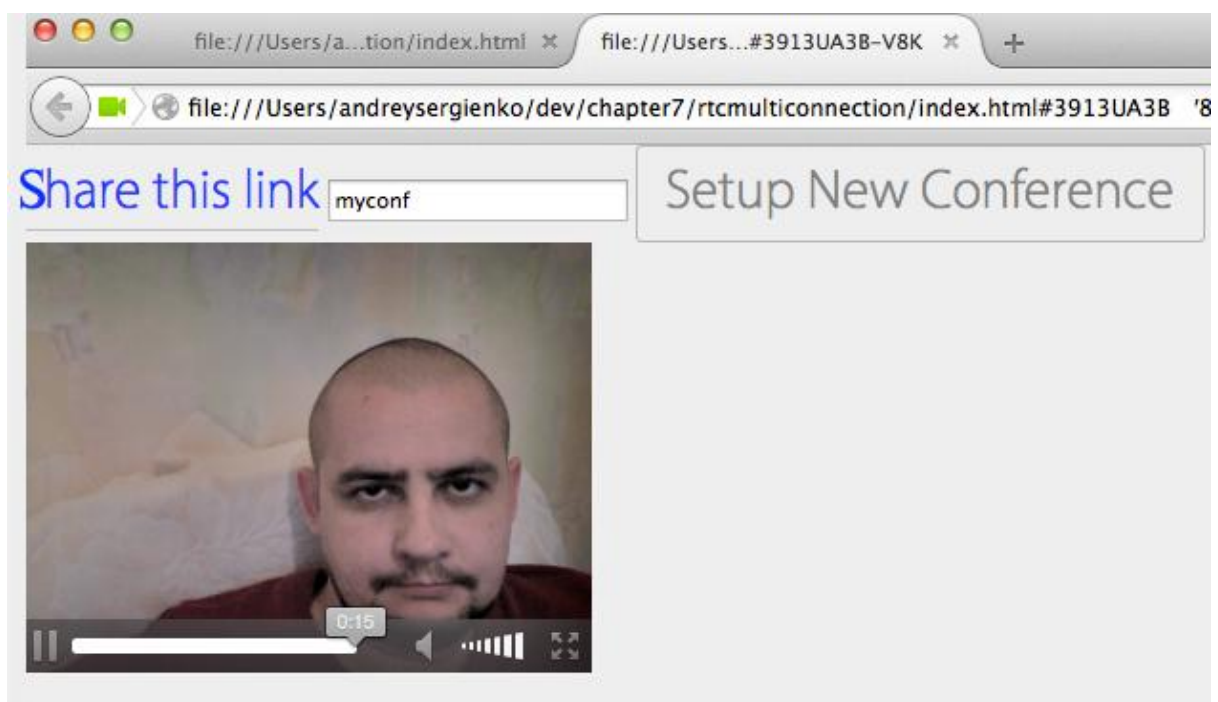
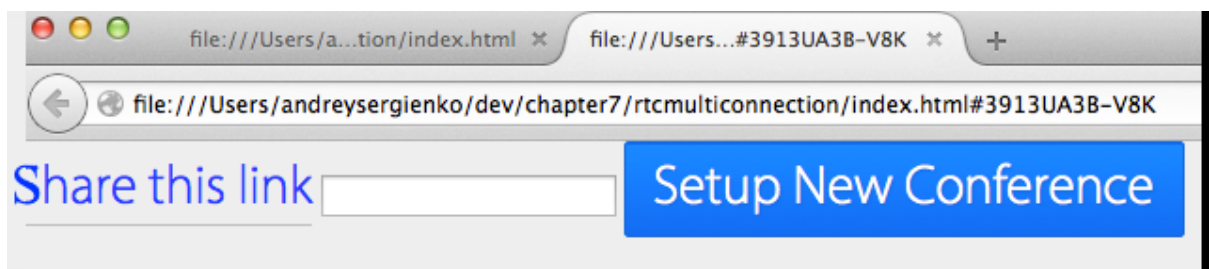
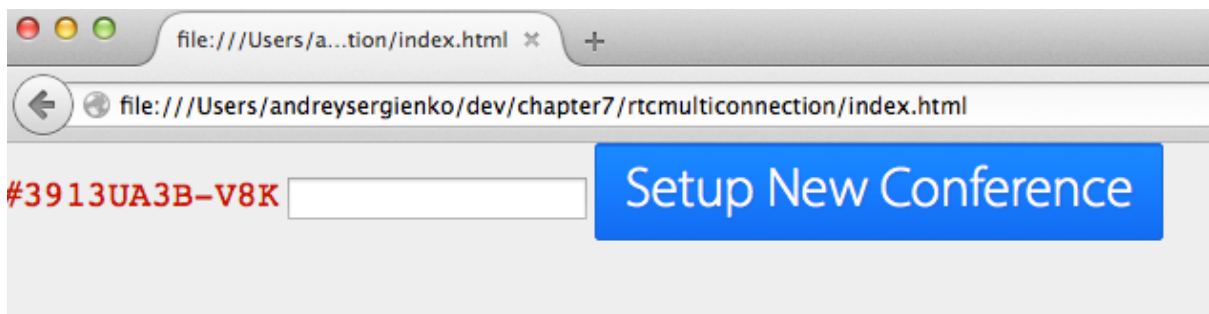


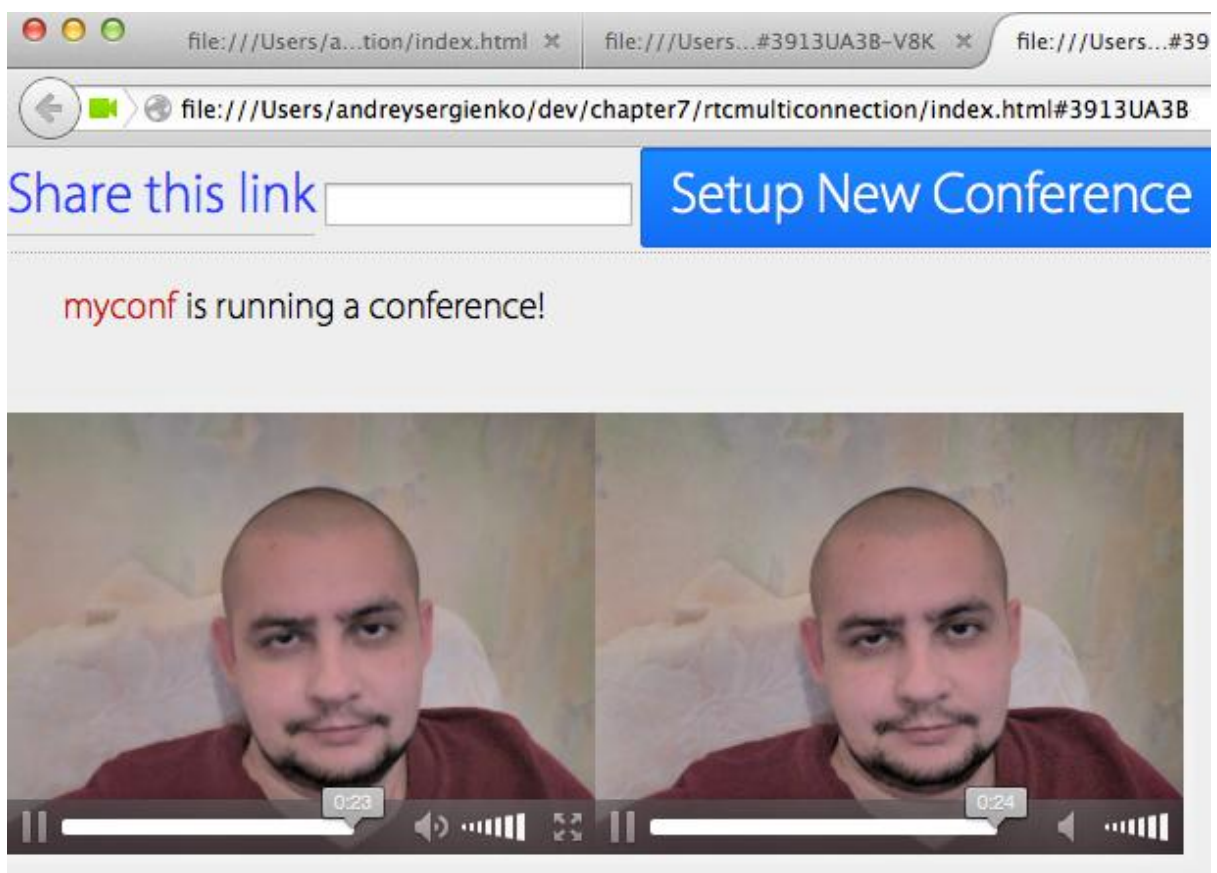
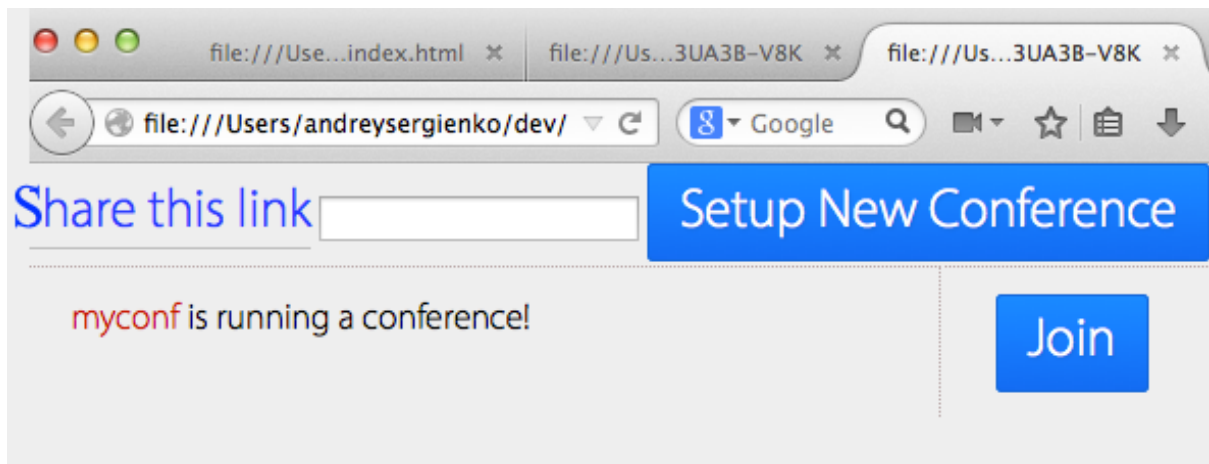
Chapter 7: Third-party Libraries

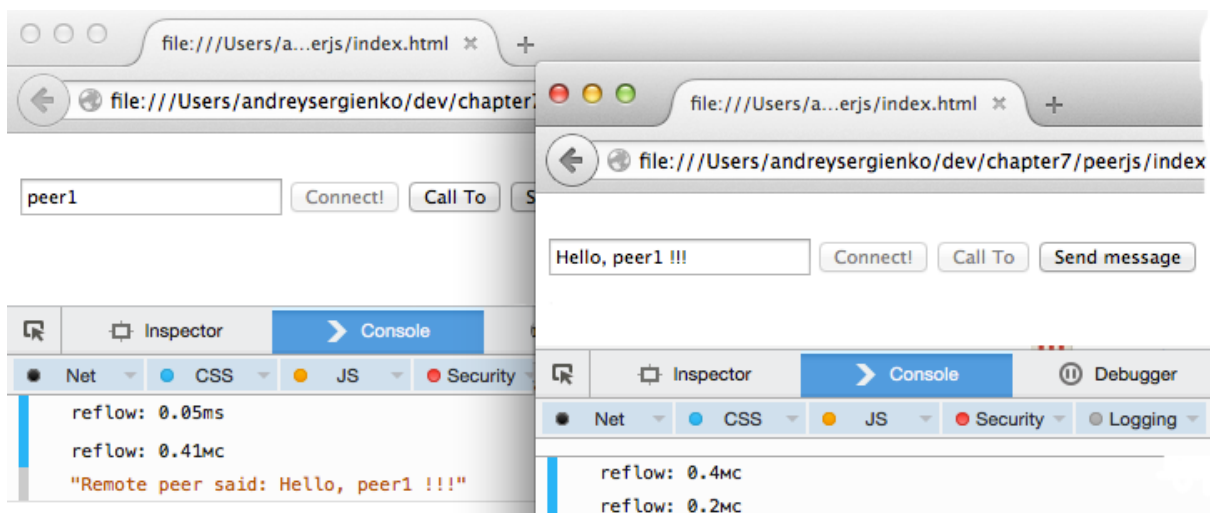
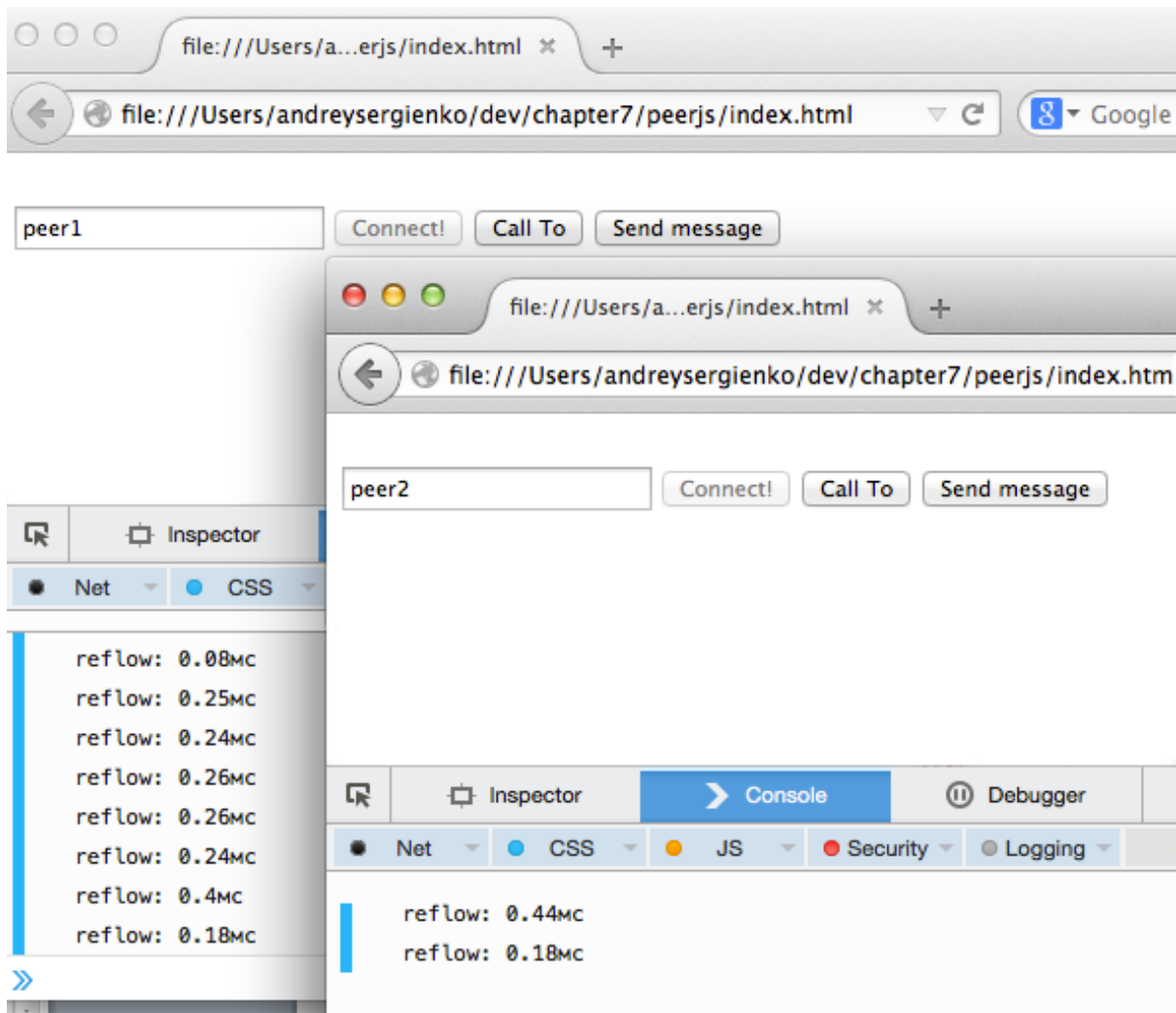


Start conference









Start your free OpenTok trial.

OpenTok is Tokbox's real-time video platform for web and mobile apps. Take advantage of our global infrastructure, quick implementation, and first-class support with a 30-day free trial.

pornomamba@mail.ru



grizli



.....



I am a...

developer



☒ I agree to [Terms of Service](#) and [Privacy policy](#).

Sign up



Already have an account? [Log in](#)



[Contact BizDev](#)

[My Account](#)

Welcome to TokBox

Your API key: 45131292

Before you start, you'll need to obtain your API secret.

Verify your account and get your secret



or visit this url:

[https://dashboard.tokbox.com/users/confirmation?
confirmation_token=9yuuqm5hqMVz53RDgqyv](https://dashboard.tokbox.com/users/confirmation?confirmation_token=9yuuqm5hqMVz53RDgqyv)

Projects

New Project +

Opentok Quick Start



API Key: 45131292

Secret:

57b06da9bd2543e432ce3aab9058b7e57ff4196c

View Details

created NaN/NaN/NaN

Project Tools

Create Session

Media mode:



Relayed



Routed

[More info...](#)

Create

Create Session

Media mode: ☒ Relayed ☐ Routed

[More info...](#)

Create

2_MX40NTEzMTI5Mn5-MTQyMTQzOTg0NDQyMn5MV3VodjZaY3RYNCtKUDlpa0p6Vk9iN0N-fg



Generate Token

* Session ID:

2_MX40NTEzMTI5Mn5-MTQyMTQzOTg0NDQyMn5MV3VodjZaY3RYNCtKUDlpa0p6Vk9iN0N-fg*

Role:

Publisher

Expiration time:

1 hour

Connection data:

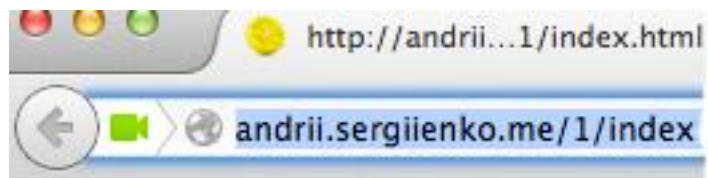
Client uses tokens to connect to OpenTok sessions. Assign a unique token to each client. The role determines the capabilities of the client in the session. You can set connection data to identify the client.

[More info...](#)

Generate

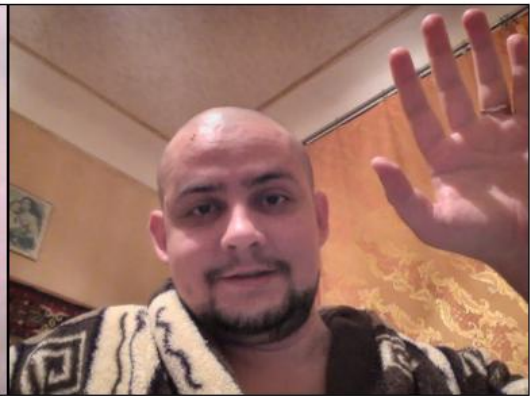
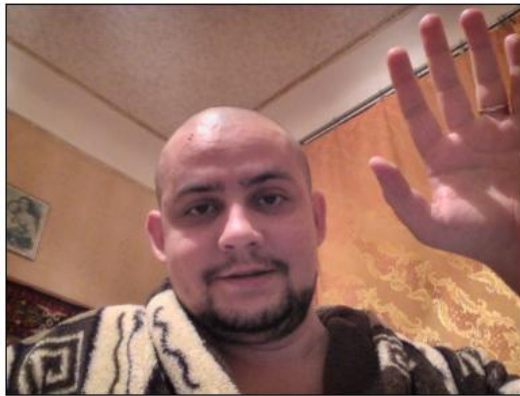
Generate

T1==cGFydG5lcl9pZD00NTEzMTI5MiZaWc9NGQ1ZDBkNzJlNzQzZjliMGJlYjYyNDY1YzlhNmY5ZWNiM2RhMDVjMDpyb2xIPX*



Awesome video feed





21:16:55: Now, if somebody wants to join you, should use this link: <http://andrii.sergiienko.me/1/?room=745168>

Chapter 8: Advanced Functions



file you want to stream elephants-dream.webm then press

WebM Demo File (webmfiles.org)
Elephants Dream by http://orange.blender.org

Inspector Console

Net CSS JS Security

```
"This appears to be Firefox"
>Data channel state is: open"
"first frame"
"media source state: " "open"
reflow: 0.26mc
reflow: 0.13mc
```

Now, if somebody wants to join you, should use this link:

file you want to stream elephants-dream.webm

Elements Network Sources Timeline Profiles Resources

<top frame>

```
This appears to be Chrome
Received data channel creating request
Data channel state is: open
```