# ABOT VIDEO SETUP DOCUMENTATION





# ENSURING QUALITY ON SCHEDULE

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ABot video setup, implemented with 3 ubuntu 18.04 LTS server version VM's.

- 1. ABot -server
- 2. ABot-video-server
- 3. ABot-video-client

### Architecture:



**Note**: While configuring network interfaces, for Management interfaces only , you have to provide gateway and DNS , Except management interfaces , other interfaces not required any dns and gateway entries.

### **ABot-Server Setup:**

Below steps we have to fallow, to configure ABot server.

Step 1: Downloading below builds using wget. Using the below builds, we are going to setup ABot server.

#### VOLTE

#### ANALYTICS

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wget -q --auth-no-challenge --header=Accept:application/octetstream <u>https://ghp\_4CsbSYsFnt8pGVBOTo7jDCbGB5rk91364pOB:@api.github.com/repos/Rebacalnc/abot/r</u> <u>eleases/assets/45555585</u>-O abot-analytics\_3.39.6e555\_18.04\_all.tar.gz

- Step 2: Extract the package using below command. sudo tar -xvf abot-analytics\_3.39.6e555\_18.04\_all.tar.gz sudo tar -xvf abot-volte-pro\_8.39.6e555\_18.04\_all.tar.gz
- Step 3: Install below dependency packages for ABot setup.



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wget <u>https://dl.grafana.com/oss/release/grafana\_7.2.1\_amd64.deb</u> cd /var/lib; sudo curl -LO https://github.com/prometheus/prometheus/releases/download/v2.0.0/prometheus-2.0.0.linuxamd64.tar.gz; cd –

- Step 4: Running Abot stack for single instance.Sudo ./install-abot-single-instance.sh
- Step 5: Checking abot license activation. cat /var/log/abot/abot-license.log
- Step 6: Add static route. Sudo ip route add 5.5.5.5 via 192.168.15.161

## ABot-video-Server setup:

Please fallow below steps to setup Abot-server setup.

#### Step 1: Download build to mentioned location.

#### Step 2: extracting the package.

tar -xvf abot-video-server\_1.39.ff5fc\_18.04\_all.tar.gz

#### Step3: we have to add routes using route config file.

sudo vi route_conf.properties	
DataServer.IP=192.168.15.162	(Abot video server IP connected to abot server)
DataServer.Alias.IP=5.5.5.5	(Abot server alias IP)
DataServer.Interface=ens192	(Abot video client interface name connected to abot server )
#DataServer.Default.GW.IP=x	
#UPF.IP=x	
UPF.IP.Connected.To.Server=192.168.15.161	(Abot server ip, which is connected to abot video server)
UPF.Interface.Connected.Server=ens192	(Abot server interface, which is connected abot video Server)
#DataClient.Default.GW.IP=x	
DataClient.IP=192.168.2.162	(Abot client server ip which connected to abot server)
DataClient.Interface=ens192	(Abot client interface name connected to abot server)
gNodeB.IP.Connected.To.Client=192.168.2.161	(Abot server ip, which is connected to abot server)
ABot.IP=192.168.50.155	(Abot server management ip )

**Step4**: Run the video server initialization script. sudo ./install-video-server.sh



## ABot-video-client Setup :

Please fallow below steps to setup Abot-server setup.

Step 1: Download build in mentioned location.

cd /home/rebaca/
mkdir video-server
cd video-server
wget -qauth-no-challengeheader=Accept:application/octet-
stream https://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:@api.github.com/repos/RebacaInc/abot/r
<u>eleases/assets/45360253</u> -O abot-video-client_2.39.ff5fc_18.04_all.tar.gz

#### Step 2: extracting the package.

tar -xvf abot-video-client\_2.39.ff5fc\_18.04\_all.tar.gz

Step 3: we have to add routes using route config file.

sudo vi route_conf.properties					
DataServer.IP=192.168.15.162	(Abot video server IP connected to abot server)				
DataServer.Alias.IP=5.5.5.5	(Abot server alias IP)				
DataServer.Interface=ens192	(Abot video client interface name connected to abot server )				
#DataServer.Default.GW.IP=x					
#UPF.IP=x					
UPF.IP.Connected.To.Server=192.168.15	5.161 (abot server ip, which is connected to abot server)				
UPF.Interface.Connected.Server=ens192	2 (Abot server interface, which is connected abot video Server)				
#DataClient.Default.GW.IP=x					
DataClient.IP=192.168.2.162	(Abot client server ip which connected to abot				
server)					
DataClient.Interface=ens192	(Abot client interface name connected to abot				
server)					
gNodeB.IP.Connected.To.Client=192.168	8.2.161 (abot server ip, which is connected to abot server)				
ABot.IP=192.168.50.155	(Abot server management ip )				

Step 4: Run the video server initialization script. sudo ./install-video-client.sh

Step 5: By default ubuntu server don't have any GUI packages, So need install GUI packages for video Setup. Please fallow the below process to install GUI packages using tasksel.

sudo apt-get update && sudo apt-get upgrade sudo apt-get install tasksel tasksel

Step 7: We have to download and copy chrom drivers to below mentioned path.



**Step 6**: We have to add CORS extension in chrome browser using the blow link https://chrome.google.com/webstore/detail/corsunblock/lfhmikememgdcahcdlaciloancbhjino?hl=en

wget https://chromedriver.storage.googleapis.com/94.0.4606.41/chromedriver\_linux64.zip

path:/etc/rebaca-video-suite/conf/

Once this 3 nodes setup done, We have to make changes in abot server. For that we have to access ABot video server in in web browser. <u>http://192.168.50.155/</u>

After that we have to make changes following configuration file and Feature files.

#### File 1:

http://192.168.50.155/abot/#/config/detail/role2?path=ABotConfig.properties&fileName=ABotConfig.properties 26.#ABOT.SUTVARS=file:abot-emulated/sut-vars/default.properties 27.ABOT.SUTVARS=file:abot-emulated/sut-vars/default5g.properties

By default, 27<sup>th</sup> in commented, 26 in uncommented, we have to change like above.

196. #video server and player config 197. UE1.SecureShell.IPAddress=192.168.2.162

(Abot video client IP connected to abot server)

(set username as abot)

(set password as abot)

- 198. #UE1.Video.Client.SecureShell.KeyFile=ref:ABOT.SecureShell.KeyFile
- 199. UE1.SecureShell.Password=abot
- 200. UE1.SecureShell.UserName=abot
- 201. UE1.Type=BROWSER\_BASED\_VIDEO\_PLAYER

#### File 2:

http://192.168.50.155/abot/#/config/detail/role39?path=abot-emulated%2Fnodes-4g5g.properties&fileName=nodes-4g5g.properties

567. # Video Client and Server properties 568. Player1.DNN.Name=internet.apn.5gs.mnc030.mcc404.3gppnetwork.org 569. Player1.APN.Name=internet1.apn.epc.mnc001.mcc001.3gppnetwork.org 570. Player1.VideoServer.SecureShell.IPAddress=192.168.15.162 (Abot video server IP connected to abot server) 571. Player1. VideoServer. N6. Port=8057 572. Player1.VideoPlayer.SecureShell.IPAddress=192.168.2.162 (Abot video client IP connected to abot server) 573. Player1. Video Player. Port=8058 574. Player1.Proxy.Dest.IP=5.5.5.5 (Videos server alias IP) 575. Player1.VideoPlayer.Interface=ens192 (abot video client interface name connected to abot server) 578. Player1.VideoServer.Interface=ens192 (abot video server interface name connected to abot server) 579. Player1.SecureShell.IPAddress=192.168.2.162 (Client interfaceip connected to abot server) 580. Player1.SecureShell.UserName=abot (set username as abot) 581. Player1.SecureShell.Password=abot (set password as abot) 582. Player1.SecureShell.isEnabled=true

583. Player1.Vendor.Type=all-emulated



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#### File3:

http://192.168.50.155/abot/#/featureFile/detail/5GS\_InitialReg\_Slice\_One\_Video\_One\_Data\_Flow.feature?path=3GPP -23502-

5G%2F10\_PDU\_Session\_With\_Data%2F5GS\_InitialReg\_Slice\_One\_Video\_One\_Data\_Flow.feature&fileName=5GS\_Initial Reg\_Slice\_One\_Video\_One\_Data\_Flow.feature

We can to run this feature file in 2 ways ,

**1**<sup>st</sup> **way:** Run the feature file without uncommenting the below lines, in this video will play in background, after executing feature file, u can find video file in artifacts.

**2<sup>nd</sup> way:** Run the feature file uncommenting the below lines, in this case vide will play in frontend For 30 min, after excuting feature file, you can find video file in artifacts the below mentioned three lines we have to uncomment and We have to change ip to ABot video client ip is connected abot server, file name we have to change based on our video quality requirement. (we can find file\_names(Which is highlighted below) in abot video client path  $\rightarrow$  cat /var/www/html/player/index.html)

1470. When I start clients for 30 seconds with the following parameters:
1471. | parameter | value |
1472. | UE1 | player\_url:http://192.168.2.162/player/#;file\_name:480p\_BigBuckBunny |

Once you have executed Feature file, You have to analyze below things have to check, whether video setup is done successfully or not.

1. You can find one downloadable video file in artifacts.

M. Rebaca	Artefacts	
Artefacts	Load Test 🕞 Functional Test	all-emulated / 210ct2021-09:56:35.810097@5gs-initialreg5gaka-pdusess-slice-one-video-one-data-flow / 5gs_initialreg_slice_one_video_one_data_flow / 480p_BigBuckBunny.mp4
🖺 Feature File	<ul> <li>all-emulated</li> <li>default-build</li> </ul>	Artifacts Name - 210ct2021-09:56:35.810097@5gs-initialreg5gaka-pdusess-slice-one-video-one-data-flow (in UTC Format)
🔧 Config	<ul> <li>210ct2021-15:26:35@5gs- initialreg5gaka-pdusess-slice-c video.ope.data-flow</li> </ul>	
Execution	✓ Image of the data how	
n Analytics	▷ packet-captures ▷ logs	
Lest Case Distribution	▷ <b>b</b> config <b>b</b> tags.log	Download File
مγ⊷ Maturity <	<ul> <li>▶ kpi-analysis</li> <li>▶ ■ 210ct2021-12:50:23@local-</li> </ul>	<ul> <li>This is a significantly large file ( &gt; 5 MB). No preview available. Please download the compressed file</li> </ul>
💄 Admin	commands	

2. You can find pcap file in artifacts, you have to analyze any GTP tunnel created or not between UPF and UE. To decode GTP packets flow, you have to open pcap file using wireshark.



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ABot	Test Bench	Release - 8.43.49970						
Rebaca	Artefacts							
Artefacts	Load Test 👔 Functional Test	all-emulated / 210ct2021-09:56:35.810097@5gs-initiaireg5gaka-pdusess-silce-one-video-one-data-flow / 5gs_initiaireg_silce_one_video_one_data_flow / packet-captures / abot-packets / 56S_initiaiReg_Silce_One_Video_One_Data_Flow_210ct2021- 094356MAUTC pcap						
📔 🛛 Feature Fil	<ul> <li>all-emulated</li> <li>bidefault-build</li> </ul>	Artifacts Name - 210ct2021-09:56:35.810097@5gs-initialreg5gaka-pdusess-alice-one-video-one-data-flow (in UTC Format)						
🔦 Config	<ul> <li>210ct2021-15:26:35@5gs-initialreg5gaka- pdusess-slice-one-video-one-data-flow</li> </ul>							
Execution	<ul> <li>5gs_initialreg_slice_one_video_one_data</li> <li>480p_BigBuckBunny.mp4</li> </ul>							
hi Analytics	<ul> <li>packet-captures</li> <li>abot-packets</li> </ul>							
La Test Case Distributio	SGS_InitialReg_Slice_One_Video           094356AM-UTC.pcap           ▶ ■ logs	Download File						
۰۸۰- Maturity	config tags.log	- This is a significantly large file (> 5 MB). No preview available. Please download the compressed file						
💄 Admin	kpi-analysis ▷ 🕞 210ct2021-12:50:23@local-commands							
	4							

3. Finally you can watch video in abot video client , using below URL. <u>http://192.168.2.162/player/</u>

<b>a</b> 51	iS_Initi	alReg_Sli	ice_One	Video_Or	ne_Data_F	low_210ct	2021-0943	56AM-1	UTC.pcap	)			-	٥	×
File	Edit	View	Go (	Capture	Analyze	Statistics	Teleph	ony V	Nireless	Tools	Help				
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1	pl												Ð		• +
No.		Time		Source			Destination	n		Proto	col Leng	th Info			^
1	637	33.358	002	192.16	58.2.162	2	5.5.5.5	•		GTP	<t. 1<="" th=""><th>20 [TCP Out-Of-Order] 48084 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=2374045723</th><th>TSecr=0</th><th>WS=</th><th></th></t.>	20 [TCP Out-Of-Order] 48084 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=2374045723	TSecr=0	WS=	
1		33.358	882	192.16	58.2.16		5.5.5.5					20 [TCP Out-Of-Order] 48084 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=2374045723		WS=	
1		33.359		192.16	58.2.16		5.5.5.5					20 [TCP Out-Of-Order] 48084 + 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=2374045723		WS=	
1		33.359		192.16	58.2.162		5.5.5.5					20 [TCP Out-Of-Order] 48084 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=2374045723		WS=	
1		33.359		192.10	58.2.16		5.5.5.5					20 [TCP Out-Of-Order] 48084 + 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=2374045723		WS=_	_
1		33.359	335	192.16	58.2.16		5.5.5.5					20 [TCP Out-Of-Order] 48084 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=2374045723	TSecr=0	WS=	
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11 3	637	33.359	384	192.16	58.2.161		5.5.5.5					20 [TCP Out-Of-Order] 48084 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=2374045723	TSecr=0	WS=_	
1		33.359	433	192.16	58.2.16		5.5.5.5					20 [TCP Out-Of-Order] 48084 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERH=1 TSval=2374045723	TSecr=0	WS=	
	637	33.359	433	192.16	58.2.162		5.5.5.5					20 [TCP Out-Of-Order] 48084 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSva1=2374045723	TSecr=0	WS=	- v
<ul> <li>Juser Datageam Protocol, Src Port: 2155, Dot Port: 2722</li> <li>OPRS Tumeling Protocol</li> <li>Internet Protocol Version 4, Src: 192.108/. Dot: 5.5.5.5</li> <li>Transmission Control Protocol, Src Port: 48084, Dot Port: 80, Seq: 0, Len: 0</li> </ul>															
0000	00	00 03	84 88	06 00 0	0 00 0	9 66 66 6	88 88 88	8 00							
0010	45	00 00	68 fc	34 40 0	0 40 1	1 57 c9 d	c0 a8 32	2 96	Eh-4	6 6 I	N2-				
0020	01	60 52	50 00	00 00 0	2 00 5	+ eo ec :	45 00 00	3 30			- E C				
0044	4a	d8 40	00 40	06 22 9	0 c0 a	5 02 a2 0	85 85 85	6 05	1.0.0	·					
0050	bb	d4 00	50 4d	0f a7 d	a 00 0	00 00	a0 02 fa	fe	PM						
0060	31	10 00	00 02	04 05 b	4 04 0	2 08 0a i	8d 81 10	3 1b	1						
0071	00	00 00	00 01	03 03 0	7										
0	7 g	PRS Tunr	neling Pro	tocol: Prot	locol							Packets: 289962 · Displayed: 56283 (19.4%)		Profile:	: Default
_	-		-												



