# **Telemetry - configurations, working procedure**

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# 1. Required equipment's

- · Raspberry pi device
- Ethernet cable
- SD card
- Standard USB keyboard
- TV/Monitor with HDMI input

# 2. Telemetry

Telemetry is the automatic recording and transmission of data from remote or inaccessible sources to an IT system in a different location for monitoring and analysis.

# 3. Telemetry Components

- Xconf Server
- Rpi Board with RDK Broadband image
- Tftp Server

# 4. Steps to build code

- repo init -u https://code.rdkcentral.com/r/manifests -b rdk-next -m rdkb-extsrc.xml
- repo sync -j4 --no-clone-bundle
- · source meta-cmf-raspberrypi/setup-environment
- choose option 8: meta-cmf-raspberrypi/conf/machine/raspberrypi-rdk-broadband.conf
- bitbake rdk-generic-broadband-image

# 5. Steps to flash image

- The image will be available under build-raspberrypi-rdk-broadband/tmp/deploy/images/raspberrypi-rdk-broadband
- Copy the image "rdkb-generic-broadband-image\_default\_<xx>.rootfs.rpi-sdimg" to your server.
- To flash the image
  - dmesg mount

umount <partition-mountpoint> sudo dd if=<rpi sdimg> of=/dev/sdb bs=1M

- Remove the SD card and insert it to the Raspberry Pi SD card slot
- Bring up the device

# 6. Xconf server

- Refer XConf Server for XCONF Server setup details.
- Server is already configured and hosted in the AWS VM : 35.155.171.121 .
- Xconf server page : http://35.155.171.121:9093/admin/ux/#/
  Common configurations in UI

## 6.1.1. Define Environments

URL : http://35.155.171.121:9093/admin/ux/#/environment/all Flow : Xconf-server -> Common -> Environments

Common - Firmwa	are • DCM • Telemetry • Settings • RFC • Tools •	Application First C+ 09/23/2019 UTC 06:19:43
Environments	Search by Id	+ Create - Z Export All
Id	Description	Actions
DEV	Development Environment	
PROD	Production Environment	/ <b>*</b> ±
QA	testing	

## 6.1.2. Define Models

URL : http://35.155.171.121:9093/admin/ux/#/model/all Flow : Xconf-server -> Common -> Models

	Firmware • DCM • Telemetry • Settings • RFC • Tools •	Application First C 09/23/2019 UTC 06:21:26
Models	Search by Id	+ Create • Z Export All
Id	Description	Actions
RDKB_RPI	rasberrypi	/ 🗎 🛓
RPI	Raspberri Pi3	
RPI_BB	Broadband image on RPI	/ <b>*</b> ±

## 6.1.3. Define MAC List

URL: http://35.155.171.121:9093/admin/ux/#/namespacedlist/MAC\_LIST Flow : Xconf-server -> Common -> MAC Lists -> Select the Id -> Add your MAC

Name
RDK8_MAC
Data
Please enter item
B8-27:EB:8A-31:59 💢
Save Cancel

# 7. Configuring Telemetry on Xconf server

## 7.1. Log upload

• 7.1.1. Change Application to stb in top right corner of the window



• 7.1.2. Defining the formula

URL	http://35.155.171.121:9093/admin/ux/#/formulas/all		
Flow	Xconf-server ->DCM -> Formulas -> Create		
Name	<unique for="" log="" name="" upload=""></unique>		
Description	<enter a="" description="" short=""></enter>		
Percentage	100	Priority	4
Build condition	estbMacAddress is <mac-address></mac-address>		

Sample

Conf	Bornulas	Bettings = PEPC = Tools =	atb T 10 10
Formulas Bearth by Name	Device Settings		- Greate - Z Export All
Description	Log Upload Settings VOD Settings	Conditions	Miere Bellings
Name: RDK-V	Upload repository	Contributions 10	Device /
Percentage: 100	Test page	BASTERCASTAF	LogUpload
Name: N_FORMULA	🛩 🔹 💌	untiAfueAddress 10	Device 🖌 🔺
		8427.68.62.63.00	LogUpland
Name: BOBS_FORMULA Percentage: 100	🛩 () 👻	mildlacAddress 10	Device 🖌 🔺
		(AND) (many 10, 000)	LogUpload
Name: in t	-		
Percentage: 100		model 15 PPT	
		AND ANDCODDEEFF	
Name: RDKB_telemetry	* 6 *	authAlacAddean IN_LIST	Device / 1
		RDHB_MAG	LogUplead
Items per page: 50 ¥			
Conf Common - Firmware -	DCM - Telemetry -	Sattings + RFC + Tools +	Application         First           stb         ▼         urc         10:17:
dit Formula			
roperties			
Name RDKB telemetry		Percentage 100	Default formula: 🛹
Description RDKB telemetry		Priority 5	Ŧ
L1 percentage 0 L2	2 percentage 0	L3 percentage 0	
lefine settings			
Edit Davice settings	dit Log Upload settings	Create VOD settings	
ulid condition			
estbMacAddress IN_LIST_HDRB_MAC			
		•	
	18		
For LIKE operation regex comparison is used. Use if if For MALCH operation wildcard comparison is used (* Exemples: firmware/westen MATCH 13.14.* extMacAddress MATCH AALAALAALAALAAL* extMacAddress MATCH 72.77:77:AALFF	( you know how jana works with few characters, ? - one charac	regent expressions. ler).	
Save Cancel			

• As soon as the formula is saved , displays the device settings and Log upload settings options

Defi	ine settings		
Co	reate Device settings	Create Log Upload settings	Create VOD settings

• 7.1.3. Device settings

Name	RDKB_telemetry
CheckOnReboot	true
Are active	true
Expression	21211

Edit Device Settings	
Name RDKB_telemetry	Expression 2 1 2 1 1
CheckOnReboot true V	Minutes 2
Are active true	Day of month 2
Time zone UTC Y	Month 1
	Time Window (minutes) 0
	Save Cancel

## 7.1.4. Defining the Upload repositories

URL	http://35.155.171.121:9093/admin/ux/#/uploadrepository
Flow	Xconf-server ->DCM -> Upload repositories
Name	RDKB_telemetry
Descriptio n	RDKB_telemetry
URL	tftp : 35.155.171.121
	HTTP : http://35.155.171.121/xconf/logupload.php

Conf Common - Firmware - DCM - Telemetry - Settings - RFC - Tools -	Application	01/31/2/
<b>C</b> OIII	stb ¥	ите 10:55
Indate Unload repository		
spaaro opioaa iopoortoi j		
Name		
RDKB_telemetry		
Description		
RDKB_telemetry		
TETP V 38 188 171 121		
Save Cancel		

## 7.1.5. Log upload settings

Name	<enter creation="" during="" formula="" given="" log="" name="" the="" upload=""></enter>
Upload On Reboot	true
Number of Days	1
Are settings active	true
Upload Repository	RDKB_telemetry
Cron Expression	21111

iettings		
Name RDKB_telemetry	Number Of Days	0
Upload On Reboot true 🔻	Are Settings Active	true 🔻
	Upload repository	RDKB_telemetry  Bobs_LOG_REPO Cloud server dps_upload_repository N_LOG_REPO BDK/J Mart
schedule		RDKB_telemetry
Type ActNow <b>v</b>		
Cron Expression 2 1 1 1 1	Time zone UTC	٣
Minutes 2	ExpressionL1	
Hours 1	ExpressionL2	
Day of month 1	Evenerical 2	
	expressionL3	
Month 1		

## 7.1.6. Test Page

URL	http://35.155.171.121:9093/admin/ux/#/formulas/all
Pat h	Xconf-server-> DCM -> Test Page

Conf Common -	Firmware - DCM - Telemetr	y - Settings - RFC -	Tools -	Application First C 01/31/2020 stb  10:35:51
Test page				
Parameters		Context		
estbMacAddress	B8:27:EB:22:18:38	{"estbMacAddress":"B8:27:	EB:22:18:38","applicationType":"stb"}	
		Rule		
		type	DCMRule	
Test With Parameters		matched rule ids	bb79cd7e-67ca-41c9-baa7-7f8a547a6eeb	
		Output(Settings)		
		urn:settings:GroupName		RDKB_telemetry
		urn:settings:CheckOnReboot		true
		urn:settings:CheckSchedule:	oron	21211
		urn:settings:CheckSchedule:	DurationMinutes	0
		urn:settings:LogUploadSettin	igs:Name	RDKB_telemetry
		urn:settings:LogUploadSettin	igs:NumberOfDays	0
		urn:settings:LogUploadSettin	gs:UploadRepositoryName	RDKB_telemetry
		urn:settings:LogUploadSettin	gs:RepositoryURL	thp://35.155.171.121
		urn:settings:LogUploadSettin	gs:UploadRepository:URL	35.155.171.121
		urn:settings:LogUploadSettin	gs:UploadRepository:uploadProtocol	TETP
		urn:settings:LogUploadSettin	sgs:UploadOnReboot	true
		urn:settings:LogUploadSettin	igs:upload	true
		urn:settings:LogUploadSettin	gs:UploadSchedule:cron	21111
		urn:settings:LogUploadSettin	gs:UploadSchedule:levelone:cron	
		urn:settings:LogUploadSettin	gs:UploadSchedule:leveltwo:cron	

# 7.2. Telemetry

## 7.2.1. Defining Telemetry profile

URL	http://35.155.171.121:9093/admin/ux/#/formulas/all
Pat h	Xconf-server-> Telemetry->Permanent Profiles -> Create
Sample :	

Conf Common - Firmware - DCM -	Telemetry - Settings - RPC - Tool	5 <b>-</b>	Application Pirst C atb 01/31/2020 utc 09:53:36
Permanent profiles	Permanent Profiles Targeting Rules	+ Create	• Export All
	Test page		
Name	Schedule	Upload repository	Action
MYRULE1	*/10 * * * *	10.172.52.80/tmp/RPI_Upload	* * *
RDk-V_Next	*/10****	http://35.155.171.121/xconfitelem etry_upload.php	
RDKB_tele	3	35.155.171.121	1
SamplePermanentProfile	3	35.155.171.121	
Telemetry_31OCT	*/10****	http://35.155.171.121/xconfitelem etry_upload.php	1

Conf	Common +	Firmware - (	DCM + T	elemetry -	Settings +	RFC +	Tools +	Application stb •	First C+ 01/31/2020 UTC 11:39:38
Permar	nent pr	ofile							
Name RDKB_tele									
Schedule 3									
Upload report	http://35.15	i5.171.121/xcon							
Telemetry	profile entries	S:							
Firewall		starting firewall s	service	FirewallDe	bug.txt	1			
*									
Save C	ancel								

## 7.2.2. Create Targeting rule

URL	http://35.155.171.121:9093/admin/ux/#/formulas/all
Path	Xconf-server-> Telemetry->Targeting rule -> Create
1. 2	Give the Unique rule name

3. Select the Bound profile (Telemetry Permanent Profile Name)

## Sample

Conf Common - Firmware -	DCM - Telemetry -	Settings -	RFC +	Tools -	Application stb •	First C+ 01/31/2020 UTC 09:59:19
Targeting rule						
Rule name: RDK8_frewall estbMacAddress IN_LIST RDK8_MAC AND OR Inot	IS	•			Bound profile: RDKB_tele MYRULE1 RDk-V_Next RDKB_tele SamplePermanentProfile Telemetry_310CT	•

## 7.2.3. Test Page

URL	http://35.155.171.121:9093/admin/ux/#/formulas/all
Pat h	Xconf-server-> Telemetry->Test Page

- To test whether the configured profile details are retrieved properly from xconf-server
   Give the rule specified in "Targeting Rule" section i.e., estbMacAddress here

Sample:

Conf	Common +	Firmware +	DCM +	Telemetry +	Settings +	RFC +	Tools +		Application stb	Fi 01/31 UTC 10	irst C+ 1/2020 103:21
Test pa	age										
Parameters	5				Context						
					("estbMacAd	ddress":"883	27.EB.22.16.3	6", "application Type". "stb")			
estbMacAddre	55	B8:27:EB:22:16:36 Matched rules									
					Name: RDKB Profile: RDKB	_firewall 3_tele	(	estbMacAddress IN_UST	RDKB_MAC		
Test With Para	meters										

# 8. Configuring Telemetry on Raspberry pi

• Once the board is up , go to /etc/dcm.properties and add the below details

LOG_SERVER=35.135.171.121
DCM_LOG_SERVER=http://35.155.171.121/xconf/logupload.php
DCM_LOG_SERVER_URL=http://35.155.171.121:9092/loguploader/getSettings

DCM\_SCP\_SERVER=35.155.171.121

DCM\_HTTP\_SERVER\_URL=http://35.155.171.121/xconf/telemetry\_upload.php

DCM\_LA\_SERVER\_URL=http://35.155.171.121/xconf/logupload.php

- Restart the dcm-log service using "systemctl restart dcm-log"
- To check the status of the service "systemctl status dcm-log"
- By triggering the service, rpi starts uploading the logs to the xconf-server
- The log upload and Telemetry markers can be uploaded via tftp and http
- . The profile can be verified using curl, conf file , through logs and in server as below

1. CURL

• Syntax : curl -i 'http://<ip>:9092/loguploader/getSettings?estbMacAddress=<MAC>'

## Sample: 1 TFTP

root@RaspberryPi-Gateway:~# ifconfig erouter0 erouter0 Link encap:Ethernet HWaddr **B8:27:EB:22:16:36** inet addr:192.168.30.125 Bcast:0.0.00 Mask:255.255.25.0 inet6 addr: fe80::ba27:ebff:fe22:1636/64 Scope:Link UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:18748 errors:0 dropped:0 overruns:0 frame:0 TX packets:3081 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:2614475 (2.4 MiB) TX bytes:590848 (577.0 KiB)

root@RaspberryPi-Gateway:~# curl -i 'http://35.155.171.121:9092/loguploader/getSettings?estbMacAddress=B8:27:EB:22:16:36' HTTP/1.1 200 OK

Date: Fri, 31 Jan 2020 10:59:09 GMT Content-Type: application/json Transfer-Encoding: chunked Server: Jetty(9.2.1.v20140609)

{"urn:settings:GroupName":"RDKB\_telemetry","urn:settings:CheckOnReboot":true,"urn:settings:CheckSchedule:cron":"2 1 2 1 1","urn:settings: CheckSchedule:DurationMinutes":0,"urn:settings:LogUploadSettings:Message":null,"urn:settings:LogUploadSettings:Name":"RDKB\_telemetry","urn: settings:LogUploadSettings:NumberOfDays":0,"urn:settings:LogUploadSettings:UploadRepositoryName":"RDKB\_telemetry","urn:settings: LogUploadSettings:RepositoryURL":"tftp://35.155.171.121","urn:settings:LogUploadSettings:UploadOnReboot":true,"urn:settings:LogUploadSettings:UploadSettings:UploadSettings:UploadSettings:UploadSettings:UploadSettings:UploadSettings:UploadSettings:UploadSettings:UploadSettings:UploadSettings:UploadSettings:UploadSettings:UploadSettings:UploadSettings:UploadSettings: LogUploadSettings:UploadSchedule:leveltone:cron":null,"urn:settings:LogUploadSettings:UploadSchedule:Ioveltwo:cron":null,"urn:settings: LogUploadSettings:UploadSchedule:levelthree:cron":null,"urn:settings:LogUploadSettings:UploadSchedule:Ioveltwo:cron":null,"urn:settings: VODSettings:Name":null,"urn:settings:VODSettings:LocationsURL":null,"urn:settings:VODSettings:SRMIPList":null,"urn:settings:TelemetryProfile":{"id":" 72ac2ca9-b248-4a5e-b120-27ff37382564","telemetryProfile":[{"header":"Firewall","content":"starting firewall service","type":"FirewallDebug.txt"," pollingFrequency":"1"}],"schedule":"3","expires":0,"telemetryProfile:name":"RDKB\_tele","uploadRepository:URL":"35.155.171.121","uploadRepository: uploadProtocol":"TFTP"}}

#### Sample: 2 HTTP

root@RaspberryPi-Gateway:~# curl -i 'http://35.155.171.121:9092/loguploader/getSettings?estbMacAddress=B8:27:EB:22:16:36' HTTP/1.1 200 OK

Date: Fri, 31 Jan 2020 12:15:26 GMT Content-Type: application/json Transfer-Encoding: chunked Server: Jetty(9.2.1.v20140609)

{"urn:settings:GroupName":"RDKB\_telemetry","urn:settings:CheckOnReboot":true,"urn:settings:LogUploadSettings:Name":"RDKB\_telemetry","urn:settings:LogUploadSettings:Name":"RDKB\_telemetry","urn:settings:LogUploadSettings:NumberOfDays":0,"urn:settings:LogUploadSettings:UploadRepositoryName":"RDKB\_telemetry","urn:settings: LogUploadSettings:NumberOfDays":0,"urn:settings:LogUploadSettings:UploadRepositoryName":"RDKB\_telemetry","urn:settings: LogUploadSettings:UploadOnReboot":true,"urn:settings:LogUploadSettings:UploadOnReboot":true,"urn:settings: LogUploadSettings:UploadInmediately":false,"urn:settings:LogUploadSettings:upload":true,"urn:settings:LogUploadSettings:UploadOnReboot":true,"urn:settings:LogUploadSettings:UploadSettings:UploadSchedule:cron":"2 1 1 1 1","urn:settings:LogUploadSettings:UploadSchedule:levelone:cron":null,"urn:settings:LogUploadSettings:UploadSchedule:leveltwo:cron":null,"urn:settings:LogUploadSettings:UploadSchedule:leveltwo:cron":null,"urn:settings:LogUploadSettings:UploadSchedule:leveltwo:cron":null,"urn:settings:LogUploadSettings:UploadSchedule:leveltwo:cron":null,"urn:settings:LogUploadSettings:UploadSchedule:leveltwo:cron":null,"urn:settings:LogUploadSettings:UploadSchedule:leveltwo:cron":null,"urn:settings:LogUploadSettings:UploadSchedule:leveltwo:cron":null,"urn:settings:VODSettings:Nume":null,"urn:settings:ScoUploadSettings:UploadSchedule:leveltwo:cron":null,"urn:settings:VODSettings:ScoUploadSettings:UploadSchedule:leveltwo:cron":null,"urn:settings:VODSettings:ScoUploadSettings:UploadSchedule:leveltwo:cron":null,"urn:settings:ScoUploadSettings:ScoUploadSettings:TopUploadSettings:TopUploadSettings:VODSettings:Nume":null,"urn:settings:ColemetryProfile":{"id":" 72ac2ca9-b248-4a5e-b120-27ff37382564", "telemetryProfile":{"header":"Firewall","content":"Starting firewall service","type":"FirewallDebug.txt"," pollingFrequency":"1"},"schedule:":"3,"expires":0,"telemetryProfile:name":"RDKB\_tele","uploadRepository:URL":"http://35.155.171.121/xconf /telemetry\_upload.php","uploadRepository:

2. Configuration file

- Once the profile details are successfully retrieved, the conf file will be created under /tmp which has the server configurations
   The telemetry markers are compared with the corresponding log files and if the match is found then the markers are uploaded to the http://35.
  - 155.171.121/xconf/upload/

#### Sample 1: tftp

root@RaspberryPi-Gateway:~# cat /tmp/DCMSettings.conf

urn:settings:GroupName=RDKB\_telemetry urn:settings:CheckOnReboot=true urn:settings:CheckSchedule:cron=2 1 2 1 1 urn:settings:CheckSchedule:DurationMinutes=0 urn:settings:LogUploadSettings:Message=null urn:settings:LogUploadSettings:Name=RDKB\_telemetry urn:settings:LogUploadSettings:NumberOfDays=0 urn:settings:LogUploadSettings:UploadRepositoryName=RDKB\_telemetry urn:settings:LogUploadSettings:RepositoryURL=tftp://35.155.171.121 urn:settings:LogUploadSettings:UploadOnReboot=true urn:settings:LogUploadSettings:UploadImmediately=false urn:settings:LogUploadSettings:upload=true urn:settings:LogUploadSettings:UploadSchedule:cron=2 1 1 1 1 urn:settings:LogUploadSettings:UploadSchedule:levelone:cron=null urn:settings:LogUploadSettings:UploadSchedule:leveltwo:cron=null urn:settings:LogUploadSettings:UploadSchedule:levelthree:cron=null urn:settings:LogUploadSettings:UploadSchedule:DurationMinutes=0 urn:settings:VODSettings:Name=null urn:settings:VODSettings:LocationsURL=null urn:settings:VODSettings:SRMIPList=null "urn:settings:TelemetryProfile":{"id":"72ac2ca9-b248-4a5e-b120-27ff37382564","telemetryProfile":{{"header" : "Firewall","content" : "staring firewall service","type" : "FirewallDebug.txt","pollingFrequency":"1"}],"schedule":"3","expires":0,"telemetryProfile:name":"RDKB\_tele," uploadRepository:URL":"35.155.171.121","uploadRepository:uploadProtocol":"TFTP"}

#### Sample 2: http

root@RaspberryPi-Gateway:~# cat /tmp/DCMSettings.conf

urn:settings:GroupName=RDKB\_telemetry

urn:settings:CheckOnReboot=true

urn:settings:CheckSchedule:cron=2 1 2 1 1

urn:settings:CheckSchedule:DurationMinutes=0

urn:settings:LogUploadSettings:Message=null

urn:settings:LogUploadSettings:Name=RDKB\_telemetry

urn:settings:LogUploadSettings:NumberOfDays=0

 $urn:settings: LogUploadSettings: UploadRepositoryName=RDKB\_telemetry$ 

urn:settings:LogUploadSettings:RepositoryURL=http://35.155.171.121/xconf/logupload.php

urn:settings:LogUploadSettings:UploadOnReboot=true

urn:settings:LogUploadSettings:UploadImmediately=false

urn:settings:LogUploadSettings:upload=true

urn:settings:LogUploadSettings:UploadSchedule:cron=2 1 1 1 1

urn:settings:LogUploadSettings:UploadSchedule:levelone:cron=null

urn:settings: LogUploadSettings: UploadSchedule: leveltwo: cron=null

urn:settings:LogUploadSettings:UploadSchedule:levelthree:cron=null urn:settings:LogUploadSettings:UploadSchedule:DurationMinutes=0

urn:settings:VODSettings:Name=null

urn:settings:VODSettings:LocationsURL=null

urn:settings:VODSettings:SRMIPList=null

"urn:settings: VolbotemetryProfile":{"id":"72ac2ca9-b248-4a5e-b120-27ff37382564","telemetryProfile":{"header" : "Firewall","content" : "starting firewall service","type" : "FirewallDebug.txt","pollingFrequency":"1"}],"schedule":"3","expires":0,"telemetryProfile:name":"RDKB\_tele"," uploadRepository:URL":"http://35.155.171.121/xconf/telemetry\_upload.php","uploadRepository:uploadProtocol":"HTTP"}

#### 3. Logs

- · Log file to monitor and analyze the files which are uploaded to server
- /rdklogs/logs/dcmscript.log

HTTP

Uploading Logs with DCM UploadOnReboot set to true 200131-11:22:00.729982 dca: Sleeping for 10 before upload. 200131-11:22:11.392670 dca: Direct connection success - ret:0 200131-11:22:11.399931 dca: Json message successfully submitted. 01-31-20-11-22AM-Consolelog.txt.0 01-31-20-11-22AM-dcmscript.log 01-31-20-11-22AM-version.txt 01-31-20-11-22AM-wifihealth.txt Uploading logs 01-31-20-11-21AM.tgz onto http://35.155.171.121/xconf/logupload.php Moving to Previous Logs Backup Folder

/rdklogs/logs/telemetry.log TFTP

TFTPIP:35.155.171.121								
200131-09:23:15.165431 dca: Using Direct commnication								
number of proUPdel1:42								
Upload protocol telemetry is:TFTP								
before TFTP 1	oac	d						
number of del	im	:17						
tftp ip is :3	5.	155.171.1	21					
rtl_json.txt	avi	ailable,go	oing for tftp	upload	1			
TFTP Telemetr	v :	succeded						
call uploadLo	00	Reboot						
Sleeping for	se	ven minute	63					
Done sleeping	D	rev logpa	th /rdklogs/10	ogs//P	cevid	ousI	Loga	
ckp100		prev	log path		/re	ikle	005/100	gs//PreviousLogs
ckp101			upload log-		cue			
total 390								
drwxr-xr-x		root	root	1024	Jan	31	09:23	
drwxr-xr-x	4	root	root	1024	Jan	31	09:23	
-rw-rr		root	root	15510	Jan	31	03:48	01-31-20-09-23AM-ArmConsolelog.txt.0
-rw-rr		root	root	214	Jan	31	09:12	01-31-20-09-23AM-BootTime.log
-rw-rr		root	root	18632	Jan	31	09:12	01-31-20-09-23AM-CRlog.txt.0
-rw-rr		root	root	73531	Jan	31	09:23	01-31-20-09-23AM-Consolelog.txt.0
-rw-rr		root	root	50543	Jan	31	09:12	01-31-20-09-23AM-FirewallDebug.txt
- <u>rw-r</u> r		root	root	20141	Jan	31	09:23	01-31-20-09-23AM-LM.txt.0
-rw-rr		root	root	17514	Jan	31	09:12	01-31-20-09-23AM-MnetDebug.txt
$-\overline{L}M-\overline{L}\overline{L}$		root	root	46715	Jan	31	03:48	01-31-20-09-23AM-PAMlog.txt.0
-rw-rr		root	root	16562	Jan	31	09:20	01-31-20-09-23AM-PARODUSlog.txt.0
-rw-rr		root	root	50662	Jan	31	03:48	01-31-20-09-23AM-PSMlog.txt.0
- <i>x</i> . <i>m</i> - <i>xx</i>		root	root	1478	Jan	31	09:12	01-31-20-09-23AM-TDMlog.txt.0
-rw-rr		root	root	12187	Jan	31	09:12	01-31-20-09-23AM-TR69log.txt.0
- <i>LM</i> - <i>LL</i>		root	root	6687	Jan	31	09:23	01-31-20-09-23AM-WEBPAlog.txt.0
-rw-rr		root	root	29083	Jan	31	09:12	01-31-20-09-23AM-WiFilog.txt.0
-rw-rr		root	root	460	Jan	31	09:23	01-31-20-09-23AM-dcmscript.log
- <i>LM</i> - <i>LL</i>		root	root	2079	Jan	31	09:16	01-31-20-09-23AM-swupdate.log
-rw-rr		root	root	176	Jan	31	09:23	01-31-20-09-23AM-version.txt
-rw-rr	-rw-rr 1 root root 12418 Jan 31 09:22 01-31-20-09-23AM-wifihealth.txt							
ckp101								
number of proUPdel2:42								
Upload protoc	01	logupload	d is:TFTP					
0								
one Uploadin	a 1	Logs and h	removing rtl_	son.t	tt fi	ile		

## HTTP

Opload protocol is:HTT				
HTTPORLihcopi//35.155.	171.121/mconf/1	ogupload.ph		
call uploadLogOnReboot				
Sleeping for seven min				
Done sleeping prev log	path /rdklogs/1	ogs//Previo	usLogs	
ckp100pre	v log path	/rd	klogs/log	ogs//PreviousLogs
ckp101	upload log			
dewke-ke-k 2 eoos		1024 Jan		
		283 Jan		. 01-31-20-11-22AM-Consolelog.txt.0
		1360 Jan		. 01-31-20-11-22AM-domsoript.log
		176 Jan		. 01-31-20-11-22AM-version.txt
		6207 Jan		s 01-31-20-11-22AM-wifihealth.twt
200131-11:22:10.747442	dea: Using Dir	ect commic		
number of proUPdel1:42				
Opload protocol teleme	SEY ISINTEP			
before HTTP upload				
number of httpdeli:42				
HTTPTELEMETRYURL:http:	//35.155.171.12	1/wconf/tel	emetry_up	spload.php
CURL_CMD:curl	clav1.2 -w '%{h	ttp_code}\n	-H *Acc	scept: application/json" -H "Content-type: application/json" -X POST -d @/nvram/rtl_json.txt "http://35.155.171.1
21/wconf/telemetry_up1	oad phpconn	edt-timeout	30 -m 30	50
http code in telemetry				
NTTP telemetry durl up	load succeded!!			
ckp101				
number of proUPdel2:42				
Upload protocol logup!	load 1stHTTP			
before HTTP log upload				
RTTPLOGUPLOADURLINttpl	//35.155.171.12	1/wconf/log	apload.ph	No.
upload log file is:01-	31-20-11-21AM. t	22		
CURL_CMD2:curl -	<pre>w '%(http_code)</pre>	/u, -% tile	tame=0/rd	<pre>sdklogs/logs//PreviousLogs/88:27:E8:22:16:36-Logs-01-31-20-11-21AM.tgz 'http://35.155.171.121/#conf/logupload.php</pre>
connect-timeout 10	0 -# 100			
http_code is :200				
HTTP log upload succed	editititititititi			

## 4. Xconf-Server

- URL : http://35.155.171.121/xconf/upload/
- The tar file (of all logs) and JSON file of telemetry will be uploaded
- Sample
   TFTP

```
    ← → C ③ Not secure | 35.155.171.121/xconf/upload/?C=M;O=D
    Index of /xconf/upload
        <u>Name
        Last modified Size Description

        Parent Directory

        <u>B8:27:EB:22:16:36-Logs-01-31-20-09-23AM.tgz</u>
        2020-01-31 09:25 13K

        <u>B827EB221636-TELE-01-31-20-09-23AM.json
        </u>
        2020-01-31 09:23 282
        </u>
```

# Index of /xconf/upload

Name	Last modified	Size Description
Parent Directory		-
B827EB57FC63 Logs 01-31-20-11-12AM.tgz	2020-01-31 11:25	92K
B827EB571731 Logs 01-31-20-11-22AM.tgz	2020-01-31 11:24	167K
B8:27:EB:22:16:36-Logs-01-31-20-11-21AM.tgz	2020-01-31 11:23	2.3K
B827EB221636_TELE_01-31-2020-11-21AM.json	2020-01-31 11:22	264

# 9. Configuring more entries to a profile

• Go to Telemetry -> Permanent Profile

HTTP

Under "Telemetry Profile entries" add your new required markers

tele_demo			
Schedule			
3			
Upload repository			
HTTP • http://35.155	.171.121/xcon		
Telemetry profile entries			
Firewall	Firewall	FirewallDebug.txt	1
Wifihealth_1	WIFI_MAC_2	wifihealth.txt	1
	WIFI_BYTESSENTCLIEN	wifihealth.txt	1
Wifihealth_2			

- Here, added 2 new markers for wifihealth.txt file
  - 1. WIFI\_MAC\_2 with the profile name as "Wifihealth\_1" and polling frequency as 1
  - 2. WIFI\_BYTESSENTCLIENTS with the profile name as "Wifihealth\_2" and polling frequency as 1
- Save
- In Rpi, make sure that you stopped the rdkbLogMontior service, in order to stop the log rotation process (systemctl stop rdkbLogMonitor)
- Now restart the dcm-log service using systemctl restart dcm-log
- · With successful response , tar file and JSON file gets uploaded to the xconf-server
- Open the upload JSON file in the browser
- We could see the profile entries with the number of times the specified marker has appeared in the file.

## Sample:

("searchResult":[{"Firewall":"1"},{"Wifihealth_1":"2"},{"Wifihealth_2":"2"},{"Profile":"RDKB"},("mac":"B8:27:EB:22:16:36"},
("erouterlpv4":"192.168.30.125"},("erouterlpv6":"null"},{"Partnerld":"RDKM"},{"Accountld":"Unknown"},{"Version":"rdkb-generic-
broadband-image_default_20200224150713"},{"Time":"2020-02-26 12:23:51"}]}

**NOTE :** JSON file holds only the number of times the particular marker has appeared in the respective log file. To see the complete log file, need to download the tar file uploaded and extract the files to see the complete logs or value of the parameters

# 10. Observations :

• Pushing script from XConf

Currently pushing the script from xconf to the target device is not possible due to the security issue, as it may lead to downloading the licensed file to the vulnerable device. The pushing may also lead to removal of file from rootfs, so this is not advised to do for now. Wh ereas, we can initiate the download from device through tftp/curl command either from the script or from console.

• telemetry target type

Target type is provided to handle dynamic parameters change . We have 4 target types .

- 1. #0 if as part of normal execution
- 2. #1 if initiated due to an XCONF update
- 3. #2 if forced execution before log upload
- 4. #3 if modify the cron schedule

During boot-up or service start , target type update will be initiated .

On each initiation, Whenever it finds the markers in the log files, it provides the search results with marker details, when it doesn't find, it just provides the basic RDKB profile details(without markers). It all depends on the markers availability in the log files.

Currently Type 1 and 2 are supported .

• Empty JSON message

On having the Schedule type in DCM either as "ActNow" or "CronExpression", with the expression in schedule under telemetry profile . JSON messages are seen with generic RDKB profile details on every 5 min / 10 mins (Expression : /5 \* \* \* \* or \*/10 \* \* \* \*). Once in a day uploads JSON with markers to the server.

This is seen due to the schedule expression . As a workaround , we can give the schedule in numbers (Example : 2 / 5 / 10)

The ticket is in place to implement the cron expression support in RPi. Once it is in place , the empty JSON messages will not be seen