

# Telemetry - configurations , working procedure

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## 1. Required equipment's

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

## 2. Telemetry

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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

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

## 4. Steps to build code

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- `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

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- 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=<pi sdimg> of=/dev/sdb bs=1M
```

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

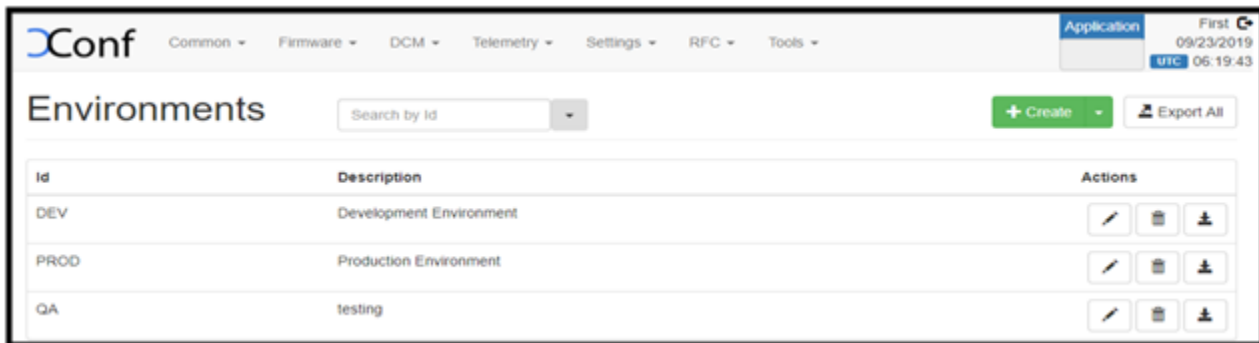
## 6. Xconf server










- 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

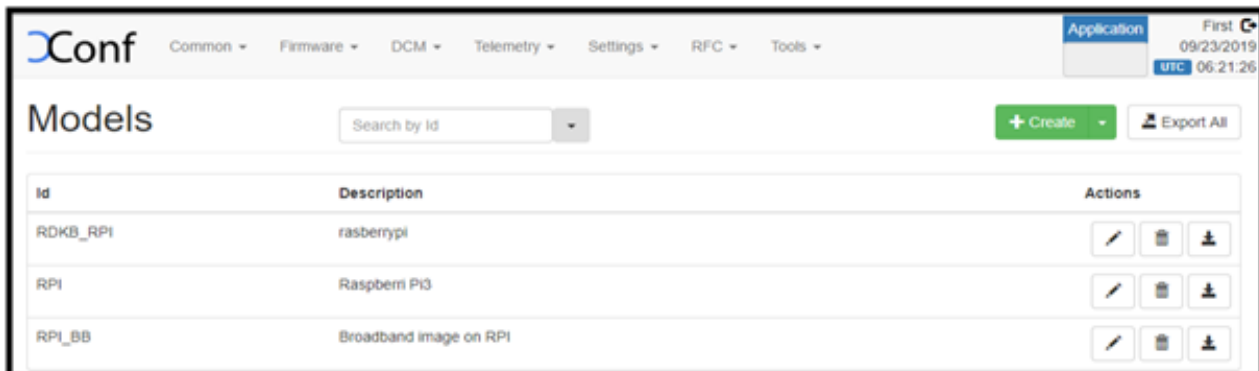











Id	Description	Actions
DEV	Development Environment	  
PROD	Production Environment	  
QA	testing	  

### 6.1.2. Define Models

URL : <http://35.155.171.121:9093/admin/ux/#/model/all>

Flow : Xconf-server -> Common -> Models



Id	Description	Actions
RDKB_RPI	rasberrypi	  
RPI	Raspberri Pi3	  
RPI_BB	Broadband image on RPI	  

### 6.1.3. Define MAC List

URL : [http://35.155.171.121:9093/admin/ux/#/namespacedlist/MAC\\_LIST](http://35.155.171.121:9093/admin/ux/#/namespacedlist/MAC_LIST)

Flow : Xconf-server -> Common -> MAC Lists -> Select the Id -> Add your MAC

Name

RDKB\_MAC

Data

Please enter item

B8-27-EB-8A-31-59

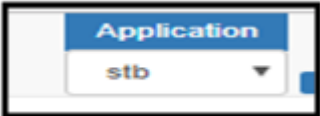
Save

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	<a href="http://35.155.171.121:9093/admin/ux/#!/formulas/all">http://35.155.171.121:9093/admin/ux/#!/formulas/all</a>		
Flow	Xconf-server ->DCM -> Formulas -> Create		
Name	<Unique name for log upload >		
Description	<Enter a short description>		
Percentage	100	Priority	4
Build condition	estbMacAddress is <MAC-Address>		

Sample

Common ▾
Firmware ▾
DCM ▾
Telemetry ▾
Settings ▾
RFC ▾
Tools ▾

Application

stb

▼

First

01/31/2020

UTC

10:17:30

## Edit Formula

Properties

Name

RDKB telemetry

Percentage

100

Default formula:

✓

Description

RDKB telemetry

Priority

5

▼

Percentage of responses with level one/two/three logs

L1 percentage

0

L2 percentage

0

L3 percentage

0

Define settings

Edit Device settings

Edit Log Upload settings

Create VOD settings

Build condition

webMacAddress

IN\_LIST

RDKB\_MAC

AND

OR

☐ not

IS

▼

+

For **LIKE** operation regex comparison is used. Use it if you know how java works with regex expressions.  
For **MATCH** operation wildcard comparison is used (\* - few characters, ? - one character).  
Examples:  
firmwareVersion MATCH 13.14.\*  
webMacAddress MATCH AA:AA:AA:AA:AA:AA.\*  
wcmMacAddress MATCH ??:?:?:AA:FF

Save

Cancel

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

Define settings

Create Device settings

Create Log Upload settings

Create VOD settings

7.1.3. Device settings

Name	RDKB_telemetry
CheckOnReboot	true
Are active	true
Expression	2 1 2 1 1

Edit Device Settings

Name

RDKB\_telemetry

CheckOnReboot

true

Are active

true

Type

ActNow

Time zone

UTC

Expression

2 1 2 1 1

Minutes

2

Hours

1

Day of month

2

Month

1

dayOfWeek

1

Time Window (minutes)

0

Save

Cancel

7.1.4. Defining the Upload repositories

URL	<a href="http://35.155.171.121:9093/admin/ux/#/uploadrepository">http://35.155.171.121:9093/admin/ux/#/uploadrepository</a>
Flow	Xconf-server ->DCM -> Upload repositories
Name	RDKB_telemetry
Description	RDKB_telemetry
URL	tftp : 35.155.171.121 HTTP : <a href="http://35.155.171.121/xconf/logupload.php">http://35.155.171.121/xconf/logupload.php</a>

XConf

Common - Firmware - DCM - Telemetry - Settings - RFC - Tools -

Application

First

stb

01/31/202

UTC

10:55:4

Update Upload repository

Name

RDKB\_telemetry

Description

RDKB\_telemetry

URL

TFTP

35.155.171.121

Save

Cancel

### 7.1.5. Log upload settings

Name	<Enter the name given during Log upload formula creation>
Upload On Reboot	true
Number of Days	1
Are settings active	true
Upload Repository	RDKB_telemetry
Cron Expression	2 1 1 1 1

#### Edit Log Upload Settings

Settings

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

RDK-V\_Next

RDKB\_telemetry

Schedule

Type

ActNow

Cron Expression

2 1 1 1 1

Time zone

UTC

Minutes

2

ExpressionL1

Hours

1

ExpressionL2

Day of month

1

ExpressionL3

Month

1

dayOfWeek

1

Time Window (minutes)

0

### 7.1.6. Test Page

URL	<a href="http://35.155.171.121:9093/admin/ux/#/formulas/all">http://35.155.171.121:9093/admin/ux/#/formulas/all</a>
Path	Xconf-server-> DCM -> Test Page

Common - Firmware - DCM - Telemetry - Settings - RFC - Tools -

Application: stb  
First: 01/31/2020 10:35:51 UTC

## Test page

Parameters

estbMacAddress

B8:27:EB:22:16:36

+

Test With Parameters

Context

```
[ "estbMacAddress": "B8:27:EB:22:16:36", "applicationType": "stb" ]
```

Rule

type	DCMRule
matched rule ids	bb79cd7e-07ca-41c0-baa7-7f8a547a8eeb

Output(Settings)

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.Name	RDKB_telemetry
urn.settings.LogUploadSettings.NumberOfDays	0
urn.settings.LogUploadSettings.UploadRepositoryName	RDKB_telemetry
urn.settings.LogUploadSettings.RepositoryURL	http://35.155.171.121
urn.settings.LogUploadSettings.UploadRepositoryURL	35.155.171.121
urn.settings.LogUploadSettings.UploadRepository.uploadProtocol	TFTP
urn.settings.LogUploadSettings.UploadOnReboot	true
urn.settings.LogUploadSettings.upload	true
urn.settings.LogUploadSettings.UploadSchedule:cron	2 1 1 1 1
urn.settings.LogUploadSettings.UploadSchedule:levelone:cron	
urn.settings.LogUploadSettings.UploadSchedule:leveltwo:cron	

## 7.2. Telemetry

### 7.2.1. Defining Telemetry profile

URL	<a href="http://35.155.171.121:9093/admin/ux/#/formulas/all">http://35.155.171.121:9093/admin/ux/#/formulas/all</a>
Path	Xconf-server-> Telemetry->Permanent Profiles -> Create

Sample :

Common - Firmware - DCM - Telemetry - Settings - RFC - Tools -

Application: stb  
First: 01/31/2020 09:53:36 UTC

## Permanent profiles

Permanent Profiles  
Targeting Rules  
Test page

Create

Export All

Name	Schedule	Upload repository	Action
MYRULE1	*/*/* * * *	10.172.52.80/tmp/RPL_Upload	
RDk-V_Next	*/*/* * * *	http://35.155.171.121/xconf/telemetry_upload.php	
RDKB_tele	3	35.155.171.121	
SamplePermanentProfile	3	35.155.171.121	
Telemetry_31OCT	*/*/* * * *	http://35.155.171.121/xconf/telemetry_upload.php	

Items per page: 50

**Permanent profile**

Name: RDKB\_tele

Schedule: 3

Upload repository: HTTP http://35.155.171.121/xconf

Telemetry profile entries:

Firewall	starting firewall service	FirewallDebug.txt	1
----------	---------------------------	-------------------	---

+ Save Cancel

## 7.2.2. Create Targeting rule

URL	<a href="http://35.155.171.121:9093/admin/ux/#/formulas/all">http://35.155.171.121:9093/admin/ux/#/formulas/all</a>
Path	Xconf-server-> Telemetry->Targeting rule -> Create

1. Give the Unique rule name
2. Select the rule. Here , used estbMacAddress as the rule
3. Select the Bound profile (Telemetry Permanent Profile Name)

Sample

**Targeting rule**

Rule name: RDKB\_firewall

Rule: estbMacAddress IN\_LIST RDKB\_MAC

AND OR not [ ] IS [ ] +

Bound profile: RDKB\_tele

## 7.2.3. Test Page

URL	<a href="http://35.155.171.121:9093/admin/ux/#/formulas/all">http://35.155.171.121:9093/admin/ux/#/formulas/all</a>
Path	Xconf-server-> Telemetry->Test Page

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

Sample:



## 8. Configuring Telemetry on Raspberry pi

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

```
LOG_SERVER=35.155.171.121
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:0.0.0.0 Mask:255.255.255.0
  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\":\"http://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":"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: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: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":"http://35.155.171.121/xconf/telemetry_upload.php","uploadRepository:uploadProtocol":"HTTP"}}
```

## 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: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":"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

#### TFTP

```
Uploading Logs with DCM UploadOnReboot set to true
200131-09:23:25.892859 dca : Direct Connection HTTP RESPONSE CODE :
200131-09:23:25.899693 dca: Direct connection success - ret:0
200131-09:23:25.908621 dca: Json message successfully submitted.
01-31-20-09-23AM-ArmConsolelog.txt.0
01-31-20-09-23AM-BootTime.log
01-31-20-09-23AM-CRlog.txt.0
01-31-20-09-23AM-Consolelog.txt.0
01-31-20-09-23AM-FirewallDebug.txt
01-31-20-09-23AM-LM.txt.0
01-31-20-09-23AM-MnetDebug.txt
01-31-20-09-23AM-PAMlog.txt.0
01-31-20-09-23AM-PARODUSlog.txt.0
01-31-20-09-23AM-PSMlog.txt.0
01-31-20-09-23AM-TDMlog.txt.0
01-31-20-09-23AM-TR69log.txt.0
01-31-20-09-23AM-WEBPAllog.txt.0
01-31-20-09-23AM-WiFillog.txt.0
01-31-20-09-23AM-dcmscript.log
01-31-20-09-23AM-swupdate.log
01-31-20-09-23AM-version.txt
01-31-20-09-23AM-wifihealth.txt
Uploading logs 01-31-20-09-23AM.tgz onto 35.155.171.121
Uploading logs 01-31-20-09-23AM.tgz onto 35.155.171.121
Moving to Previous Logs Backup Folder
```

#### 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

```

TFTP:35.155.171.121
200131-09:23:15.165431 dca: Using Direct communication
number of proUPdel1:42
Upload protocol telemetry is:TFTP
before TFTP load-----
number of delim:17
tftp ip is :35.155.171.121
rtl_json.txt available,going for tftp upload
0
TFTP Telemetry succeeded !!!
call uploadLogOnReboot
Sleeping for seven minutes
Done sleeping prev logpath /rdklogs/logs//PreviousLogs
ckp100-----prev log path-----/rdklogs/logs//PreviousLogs
ckp101-----upload log-----true
total 390
drwxr-xr-x 2 root root 1024 Jan 31 09:23 .
drwxr-xr-x 4 root root 1024 Jan 31 09:23 ..
-rw-r--r-- 1 root root 15510 Jan 31 03:48 01-31-20-09-23AM-ArmConsolelog.txt.0
-rw-r--r-- 1 root root 214 Jan 31 09:12 01-31-20-09-23AM-BootTime.log
-rw-r--r-- 1 root root 18632 Jan 31 09:12 01-31-20-09-23AM-CRlog.txt.0
-rw-r--r-- 1 root root 73531 Jan 31 09:23 01-31-20-09-23AM-Consolelog.txt.0
-rw-r--r-- 1 root root 50543 Jan 31 09:12 01-31-20-09-23AM-FirewallDebug.txt
-rw-r--r-- 1 root root 20141 Jan 31 09:23 01-31-20-09-23AM-LM.txt.0
-rw-r--r-- 1 root root 17514 Jan 31 09:12 01-31-20-09-23AM-MnetDebug.txt
-rw-r--r-- 1 root root 46715 Jan 31 03:48 01-31-20-09-23AM-PAMlog.txt.0
-rw-r--r-- 1 root root 16562 Jan 31 09:20 01-31-20-09-23AM-PARODUSlog.txt.0
-rw-r--r-- 1 root root 50662 Jan 31 03:48 01-31-20-09-23AM-PSMlog.txt.0
-rw-r--r-- 1 root root 1478 Jan 31 09:12 01-31-20-09-23AM-TDMlog.txt.0
-rw-r--r-- 1 root root 12187 Jan 31 09:12 01-31-20-09-23AM-TR69log.txt.0
-rw-r--r-- 1 root root 6687 Jan 31 09:23 01-31-20-09-23AM-WEBPAllog.txt.0
-rw-r--r-- 1 root root 29083 Jan 31 09:12 01-31-20-09-23AM-WiFilog.txt.0
-rw-r--r-- 1 root root 460 Jan 31 09:23 01-31-20-09-23AM-dcmscript.log
-rw-r--r-- 1 root root 2079 Jan 31 09:16 01-31-20-09-23AM-swupdate.log
-rw-r--r-- 1 root root 176 Jan 31 09:23 01-31-20-09-23AM-version.txt
-rw-r--r-- 1 root root 12418 Jan 31 09:22 01-31-20-09-23AM-wifihealth.txt
ckp101-----
number of proUPdel2:42
Upload protocol logupload is:TFTP
0
Done Uploading Logs and removing rtl_json.txt file

```

#### HTTP

```

Upload protocol is:HTTP
HTTP:35.155.171.121/xconf/logupload.php
call uploadLogOnReboot
Sleeping for seven minutes
Done sleeping prev logpath /rdklogs/logs//PreviousLogs
ckp100-----prev log path-----/rdklogs/logs//PreviousLogs
ckp101-----upload log-----true
total 13
drwxr-xr-x 2 root root 1024 Jan 31 11:22 .
drwxr-xr-x 4 root root 1024 Jan 31 11:22 ..
-rw-r--r-- 1 root root 283 Jan 31 11:21 01-31-20-11-22AM-Consolelog.txt.0
-rw-r--r-- 1 root root 3360 Jan 31 11:21 01-31-20-11-22AM-dcmscript.log
-rw-r--r-- 1 root root 176 Jan 31 11:21 01-31-20-11-22AM-version.txt
-rw-r--r-- 1 root root 6207 Jan 31 11:18 01-31-20-11-22AM-wifihealth.txt
200131-11:22:10.747442 dca: Using Direct communication
number of proUPdel1:42
Upload protocol telemetry is:HTTP
before HTTP upload
number of delim:42
HTTPTELEMETRY:35.155.171.121/xconf/telemetry_upload.php
-----CURL_CMD:curl --cli1.2 -w '%{http_code}' -H 'Accept: application/json' -H 'Content-type: application/json' -X POST -d @/var/run/rtl_json.txt 'http://35.155.171.121/xconf/telemetry_upload.php' --connect-timeout 30 -m 30
http code is telemetry is :200
HTTP telemetry curl upload succeeded!!!!!!!!!!!!!!
ckp101-----
number of proUPdel2:42
Upload protocol logupload is:HTTP
before HTTP log upload
HTTPLOGUPLOAD:35.155.171.121/xconf/logupload.php
upload log file is:01-31-20-11-21AM.tgz
-----CURL_CMD:curl -w '%{http_code}' -F 'filename=@rdklogs/logs//PreviousLogs/BS:27:EB:22:16:36-Logs-01-31-20-11-21AM.tgz' 'http://35.155.171.121/xconf/logupload.php' --connect-timeout 100 -m 100
http code is :200
HTTP log upload succeeded!!!!!!!!!!!!!!
Done Uploading logs and removing rtl_json.txt file


```

#### 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

Not secure   35.155.171.121/xconf/upload/?C=M;O=D			
<b>Index of /xconf/upload</b>			
	<u>Name</u>	<u>Last modified</u>	<u>Size</u> <u>Description</u>
	<a href="#">Parent Directory</a>		-
	<a href="#">BS:27:EB:22:16:36-Logs-01-31-20-09-23AM.tgz</a>	2020-01-31 09:25	13K
	<a href="#">BS27EB221636-TELE-01-31-20-09-23AM.json</a>	2020-01-31 09:23	282

HTTP

Index of /xconf/upload			
Name	Last modified	Size	Description
Parent Directory:			
 <a href="#">B827EB57FC63_Logs_01-31-20-11-12AM.tgz</a>	2020-01-31 11:25	92K	
 <a href="#">B827EB571731_Logs_01-31-20-11-22AM.tgz</a>	2020-01-31 11:24	167K	
 <a href="#">B8:27:EB:22:16:36-Logs-01-31-20-11-21AM.tgz</a>	2020-01-31 11:23	2.3K	
 <a href="#">B827EB221636_TELE_01-31-2020-11-21AM.json</a>	2020-01-31 11:22	264	

## 9. Configuring more entries to a profile

- Go to Telemetry -> Permanent Profile
- Under "Telemetry Profile entries" add your new required markers




### Permanent profile


Name

Schedule

Upload repository

Telemetry profile entries:

	<input type="text" value="Firewall"/>	<input type="text" value="Firewall"/>	<input type="text" value="FirewallDebug.txt"/>	<input type="text" value="1"/>
	<input type="text" value="Wifihealth_1"/>	<input type="text" value="WIFI_MAC_2"/>	<input type="text" value="wifihealth.txt"/>	<input type="text" value="1"/>
	<input type="text" value="Wifihealth_2"/>	<input type="text" value="WIFI_BYTESSENTCLIE"/>	<input type="text" value="wifihealth.txt"/>	<input type="text" value="1"/>



- 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 rdkbLogMonitor 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",
      "erouterIpv4": "192.168.30.125",
      "erouterIpv6": "null",
      "PartnerId": "RDKM",
      "AccountId": "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. Whereas , 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 .