

# Pipewire : Validation of multiple sample application without Gstreamer

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## Introduction

Pipewire is a server and user space API to deal with multimedia pipelines. This page is dedicated to bringing up and validation of multiple sample application with pipewire in RPI-3 B+ target.

Get the list of captured encoded data file(pipewirexxxxyy.h264) from /tmp directory and play it in VLC player.

## Build and Flash Procedure

[RDK-C rdk-next Yocto 3.1 dunfell build for Raspberry](#)

## Validation Steps

### **STEP 1:**

Add require SSID and PSK in /etc/wpa\_supplicant.conf file in below format

```
network={  
ssid="username"  
psk="password"  
}
```

#### Console output

```
ctrl_interface=/var/run/wpa_supplicant  
ctrl_interface_group=0  
update_config=1  
  
network={  
ssid="XXX"  
psk="YYYYY"  
}
```

### **STEP 2:**

Reboot the Target

After Reboot don't do step 1 and 2.

Note : Step 1 & 2 is only applicable for fresh target boot-up with new image.

### **STEP 3:**

WiFi connection is must needed for this validation to copy the encoded data file(pipewirexxxxyy.h264) to local PC.

Check WiFi connection by using below command.

```
ifconfig
```

#### Console output

```
root@raspberrypi3-rdk-camera:~# ifconfig
lo          Link encap:Local Loopback
            inet addr:127.0.0.1  Mask:255.0.0.0
            inet6 addr: ::1/128  Scope:Host
            UP LOOPBACK RUNNING  MTU:65536  Metric:1
            RX packets:87 errors:0 dropped:0 overruns:0 frame:0
            TX packets:87 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:4552 (4.4 KiB)  TX bytes:4552 (4.4 KiB)

wlan0       Link encap:Ethernet  HWaddr B8:27:EB:2E:72:2B
            inet addr:192.168.43.246  Bcast:192.168.43.255  Mask:255.255.255.0
            UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
            RX packets:23 errors:0 dropped:0 overruns:0 frame:0
            TX packets:44 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:2893 (2.8 KiB)  TX bytes:5887 (5.7 KiB)
```

#### **STEP 4:**

Before validate this use case we should stop rms binary and mediastreamer binary with below command.

```
systemctl stop rms-launcher
```

```
systemctl stop mst-launcher
```

#### **STEP 5:**

Use the below command to export PATH variable

```
export PATH=/usr/local/bin:/usr/bin:/bin:/usr/local/sbin:/usr/sbin:/sbin:/usr/libexec/installed-tests/pipewire-0.3/examples
```

#### Console output

```
root@raspberrypi3-rdk-camera:~# export PATH=/usr/local/bin:/usr/bin:/bin:/usr/local/sbin:/usr/sbin:/sbin:/usr
/libexec/installed-tests/pipewire-0.3/examples
```

#### **STEP 6:**

Before trigger the pipewire binaries, We need to enable "**repeat\_sequence\_header**" in v4l2 driver to validate multiple sample application.

#### Enable seq header

```
root@raspberrypi3-rdk-camera:~# v4l2-ctl --set-ctrl=repeat_sequence_header=1
```

#### **STEP 7:**

Run the pipewire binary with below command

```
pipewire &
```

#### Console output

```
root@raspberrypi3-rdk-camera:~# pipewire &
```

#### **STEP 8:**

Run the pipewire media session binary with below command

pipewire-media-session &

##### **Console output**

```
root@raspberrypi3-rdk-camera:~# pipewire-media-session &
```

#### **STEP 9:**

Run the sample application binary with below command.

If you want to validate multiple application then run this binaries at multiple time.

For example : If you want to validate three application then run this binary at three times and then buffer file will be store in /tmp directory with date and time.

pw-capture

##### **Console output**

```
root@raspberrypi3-rdk-camera:~# pw-capture &
```

#### **STEP 10:**

Get encoded data available file from local /tmp directory.

##### **Console output**

```
root@raspberrypi0-rdk-camera:~# cd /tmp/
root@raspberrypi3-rdk-camera:/tmp# ls pip*
pipewire2021-07-12:04:22:46.h264  pipewire2021-07-12:04:22:53.h264  pipewire2021-07-12:04:22:56.h264
```

#### **STEP 11:**

Copy encoded data available file from your RPI /tmp directory into your local PC and play it in VLC player.

##### **Console output**

```
xxxxxx@yyyyy-Lenovo-B480:~/XXXXX$ scp root@RPI_DEVICE_WIFI_IP:/tmp/pipewire2021-07-12:04:22:46.h264 .

Example:
xxxxxx@yyyyy-Lenovo-B480:~/XXXXX$ scp root@192.168.43.246:/tmp/pipewire2021-07-12:04:22:46.h264 .
pipewire2021-07-12:04:22:46.
h264
100% 16KB 16.4KB/s 00:00
xxxxxx@yyyyy-Lenovo-B480:~/XXXXX$
```

#### **STEP 12:**

We need to give demux module as "H264 video demuxer" in VLC player to play h264 file.

Please follow "**Part 2: How to Play H.264 Files on VLC**" option in below link to enable demux module in VLC player

<https://reolink.com/how-to-play-h264-files-in-vlc/>

Play the pipewirexxxxyy.h264 file in VLC player.