

# RDK-V Android Kernel Migration

## Why Android kernel ?

- An Android kernel is a mainstream Linux kernel, with additional drivers for the specific device, and other additional functionality, such as enhanced power management and faster graphics support.
- Many features in the Android kernel are later added to upstream Linux after the open-source community has accepted.
- When compared to Linux kernel, the Android common kernel has 355 changes, 32266 insertions, and 1546 deletions (as of February 2018).
- Android kernel is more popular and has more footprints compared to linux kernel which leads to more support world-wide
- SOC vendor supporting android kernel doesn't need to work to provide linux kernel support to bring in RDKV stack.

## Repo Setup:

- repo init -u <https://code.rdkcentral.com/r/manifests> -b dunfell -m rdkv-nosrc.xml
- repo sync -j `nproc` --no-clone-bundle --no-tags

## Build Instructions:

- MACHINE=raspberrypi4-64-rdk-android-mc source meta-cmf-raspberrypi/setup-environment
- bitbake lib32-rdk-generic-mediaclient-wpe-image

## Validated functionalities

| Status:      - Working      x - Not Working      O - Partially Working |                          |                         |         |  |
|--|--------------------------|-------------------------|---------|--|
| SL No.   | Tested Contents          | Apps and Features       | Results | Remarks  |
| 1  | Basic Tests              | ssh connection          |         | Connection is successful   |
| 2  |                          | Default UI              |         | UI is coming up consistently.  |
| 3  |                          | Time                    |         |  |
| 4  | Featured Content         | YouTube                 |         | YouTube is launching, Playback is happening.   |
|  |                          | Xumo                    |         |  |
| 5  | Lightning Apps           | CNN<br>Vimeo            |         | 1.AV playback is fine<br>2.Forward is working fine.<br>3.Next content playback is working fine.  |
| 6  | Featured Video on Demand | Fantasy-Island          |         | Playback is working fine   |
| 7  | Playback                 | gst-launch              | x       | AV playback is not working through gst-launch<br><br>Tested URL:<br>> gst-launch-1.0 playbin uri=aamp://bitdash-a.akamaihd.net/content/MI201109210084_1/m3u8s/f08e80da-bf1d-4e3d-8899-f0f6155f6efa.m3u8 video-sink=westerossink<br>> gst-launch-1.0 playbin uri=aamp://bitdash-a.akamaihd.net/content/sintel/hls/playlist.m3u8 video-sink=westerossink   |
| 8  |                          | aamp-cli                | x       | AV playback is not working for all streams except bipbop<br>Tested URL:<br>> <a href="http://devimages.apple.com/iphone/samples/bipbop/bipbopall.m3u8">http://devimages.apple.com/iphone/samples/bipbop/bipbopall.m3u8</a> WORKING<br>> <a href="http://bitdash-a.akamaihd.net/content/MI201109210084_1/m3u8s/f08e80da-bf1d-4e3d-8899-f0f6155f6efa.m3u8">http://bitdash-a.akamaihd.net/content/MI201109210084_1/m3u8s/f08e80da-bf1d-4e3d-8899-f0f6155f6efa.m3u8</a><br>> <a href="http://bitdash-a.akamaihd.net/content/sintel/hls/playlist.m3u8">http://bitdash-a.akamaihd.net/content/sintel/hls/playlist.m3u8</a> |
| 9  | Settings                 | BT                      | X       | BT connection is not working. It shows pairing failed  |
| 10   |                          | Wi-Fi                   |         | Wifi Connected :<br><br>1. curl commands<br>2. Controller UI<br>3. TV UI   |
| 11   | Plugins                  | HTMLApp                 |         |  |
| 12   |                          | LightningApp            |         |  |
| 13   |                          | Search And DiscoveryApp |         |  |
| 14   |                          | Webkitbrowser           |         |  |
| 15   |                          | Cobalt                  |         |  |

## References:

- <https://github.com/android-rpi>
- [https://github.com/android-rpi/kernel\\_arpi](https://github.com/android-rpi/kernel_arpi)
- [https://github.com/android-rpi/kernel\\_rpi](https://github.com/android-rpi/kernel_rpi)
- For Build Android OS for RPI 4 : [https://github.com/android-rpi/device\\_arpi\\_rpi4](https://github.com/android-rpi/device_arpi_rpi4)