

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 Vimeo		1.AV playback is fine 2.Forward is working fine. 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 Tested URL: > gst-launch-1.0 playbin uri=aamp://bitdash-a.akamaihd.net/content/MI201109210084_1/m3u8s/f08e80da-bf1d-4e3d-8899-f0f6155f6efa.m3u8 video-sink=westerossink > 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 Tested URL: > http://devimages.apple.com/iphone/samples/bipbop/bipbopall.m3u8 WORKING > http://bitdash-a.akamaihd.net/content/MI201109210084_1/m3u8s/f08e80da-bf1d-4e3d-8899-f0f6155f6efa.m3u8 > http://bitdash-a.akamaihd.net/content/sintel/hls/playlist.m3u8
9	Settings	BT	X	BT connection is not working. It shows pairing failed
10		Wi-Fi		Wifi Connected : 1. curl commands 2. Controller UI 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_rpi
- For Build Android OS for RPI 4 : https://github.com/android-rpi/device_arpi_rpi4