

RDK-C : Architecture

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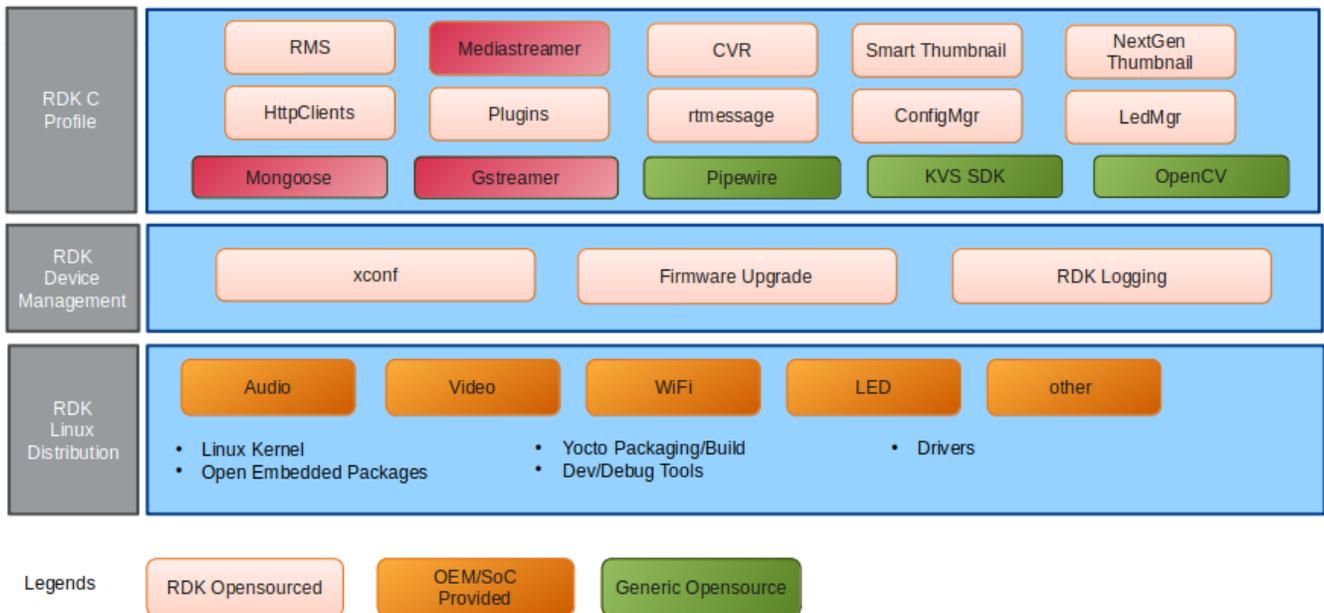
Introduction

- RDK-C provides a common set of software components to build IP-based video cameras with standard functions, such as live streaming, continuous video recording and Normal Thumbnail. RDK accelerates the deployment of next-gen IP camera products and services, while simplifying the customization of the application and user experience.

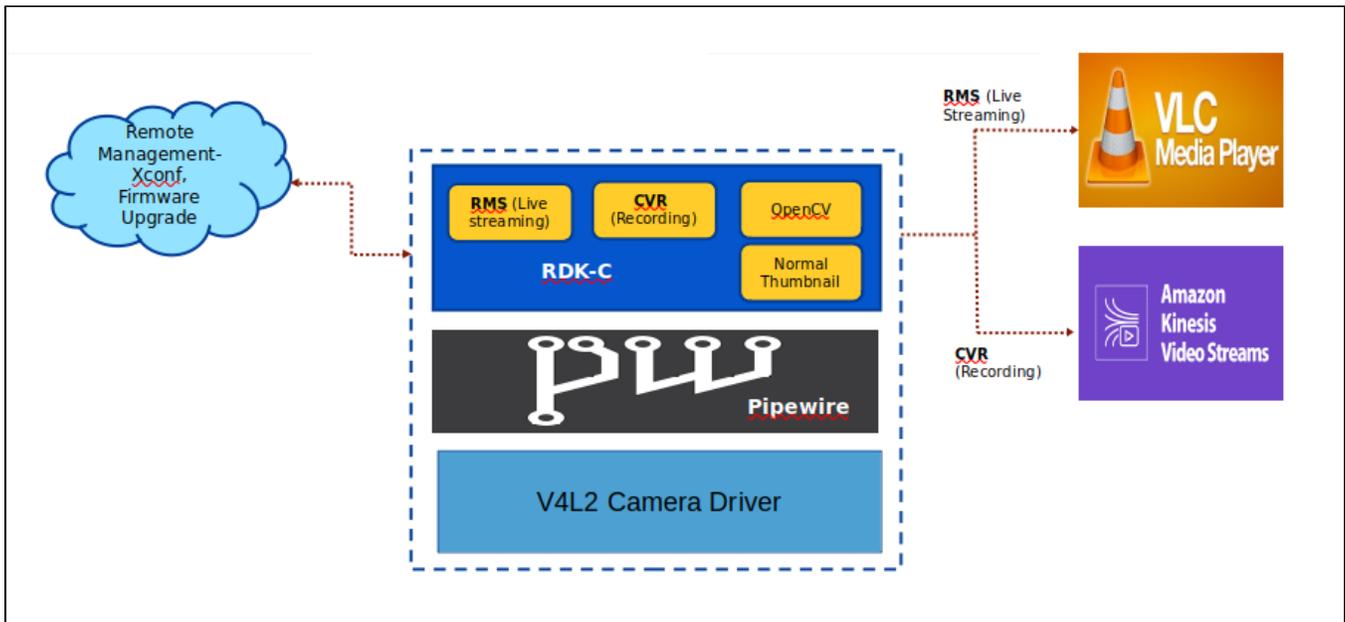
Supported Features

- Live streaming
- 24/7 Continuous video recording
- Normal Thumbnail
- Firmware upgrade

High Level Architecture



Overall Service Offerings



Components

- **RMS (RDK Media Streamer)**
 - RDK Media Streamer is a media server capable of delivering your live and on-demand content to any screen
 - RMS is not just a multi-format, multi-protocol server that delivers your media rich content across multiple screens and platforms.
 - Capable of ingesting a single live H.264 video stream from either an MPEG-TS, RTMP, or RTP encoder and concurrently transforming and redistributing the stream to any other endpoint including PCs, Macs, mobile phones, tablets, and televisions.
 - RMS uses WebRTC/RTSP streaming protocol for end to end streaming
- **Mediastreamer**
 - The media streamer does the streaming of captured media content from the camera.
 - HTTP streaming through Mongoose server
 - The gstreamer media framework is used to stream H264 encoded content to mongoose server
 - The output of media streamer shall be provided as input to RDK Mediastreamer (RMS) or for Continuous video recording (CVR) modules
- **CVR(Continuous Video Recording)**
 - CVR support using Kinesis Video Streams Producer libraries.
 - Kinesis video stream - A set of easy-to-use software and libraries that you can install and configure on your devices, These libraries make it easy to securely connect and reliably stream video in different ways, including in real time, after buffering it for a few seconds, or as after-the-fact media uploads.
- **Pipewire**
 - Multiple application can get the video data from PipeWire
 - It have ability to create audio and video server
 - Apps and device are represented by node
 - Each node have the input and output port to share media between node
 - Session manager is to configure nodes, ports and linking nodes
- **KVS SDK**
 - The Amazon Kinesis Video Streams Producer libraries are a set of easy-to-use libraries that are part of the Kinesis Video Streams Producer SDK. The client uses the libraries and SDK to build the on-device application for securely connecting to Kinesis Video Streams and streaming video and other media data that can be viewed in the console or client applications in real time.
 - Media data can be streamed in the following ways:
 - Streaming media data in real time
 - Streaming media data after buffering it for a few seconds
 - Streaming after-the-fact media uploads
 - After you create a Kinesis Video Streams stream, you can start sending data to the stream. You can use the SDK to create application code that extracts the video data (frames) from the media source and uploads it to Kinesis Video Streams. These applications are also referred to as *producer* applications.
- **Thumbnail**
 - The RDK-C Thumbnail provides Real time thumbnail and thumbnail on motion events.Types of Thumbnail
 - Next-Gen Thumbnail
 - Smart Thumbnail
- **rtmessage**
 - rtmessage provides basic messaging capabilities across Unix domain or TCP sockets and offers RPC and event capabilities.

- **HttpClients**
 - The RDK-C httpclients component provides APIs for REST Operation.
- **ConfigMgr**
 - The ConfigMgr provides APIs for the devices and user specific management services.
- **Plugins**
 - The RDK-C plugins components provides HAL, APIs to connect with audio and video source streams.