

RDK-V Features

RDK is a community-based project that enables developers, vendors, and cable operators to utilize a defined stack of software on one layer for provisioning set-top boxes and gateways. Unique features of RDK, such as its commitment to open source, the speed, and flexibility of RDK-based devices, set it apart from conventional set-top software stacks.

The standardized RDKV stack provides a common method for managing complex video and management functions, including rendering, content, content security, device management, networking, and peripherals.

The RDKV Feature List is categorized based on the following functions. Enhancements and new features are developed and contributed asynchronously by members of the RDK Community.



The device dependency in this context meant that the feature is only available in some OEM devices and not generally available in raspberry pi like reference devices.

Category	Feature	Description	Supported by IP /Hybrid/TV	Dependency (If any)
Conditional Access	DRM	PlayReady 4.4	IP STB, Hybrid STB, and TV	Device Dependency
		Widevine 16	IP STB, Hybrid STB, and TV	Device Dependency
		Common SVP	IP STB, Hybrid STB, and TV	Device Dependency
		Support HTML5 encrypted video via EME v3 for Widevine	IP STB, Hybrid STB, and TV	Device Dependency
	Conditional Access	Verimatrix	Hybrid	Device Dependency
		AnyCAS	Hybrid	Device Dependency
		CommScope CableCard Decrypt, PPV Ready	Hybrid	Device Dependency
		Technicolor CableCard Decrypt, PPV Ready	Hybrid	Device Dependency
	DTCP	DTCP integration	Hybrid-media client	No
	Device Security	Input sanitization	IP STB, Hybrid STB, and TV	NO
		Upgrade to OpenSSL 1.1.1.l	IP STB, Hybrid STB, and TV	NO
		Upgrade to NTP 4.2.8.p11	IP STB, Hybrid STB, and TV	NO
		Run applications in a secure container	IP STB, Hybrid STB, and TV	NO
		Secure bootloader	IP STB, Hybrid STB, and TV	Device Dependency
	Security	DAC (Containerization) using Dobby	IP STB, Hybrid STB, and TV	NO
		Rialto	IP STB, Hybrid STB, and TV	NO
		Packager (Lisa)	IP STB, Hybrid STB, and TV	NO
		AppArmor	IP STB, Hybrid STB, and TV	NO
		Kernel Hardening	IP STB, Hybrid STB, and TV	Device Dependency
Build & Platform	Yocto version	Yocto 3.1 (Dunfell)	IP STB, Hybrid STB, and TV	NO
	Kernel	Android common kernel	IP STB, Hybrid STB, and TV	NO
	Init system	Systemd v244 (Yocto 3.1)	IP STB, Hybrid STB, and TV	NO

	Application Manager	RDK Shell	IP STB, Hybrid STB, and TV	NO
Video Player	IP	UVE (AAMP)	IP STB, Hybrid STB, and TV	NO
	QAM	UVE via RMF (QAMSrc)	Hybrid STB	Device Dependency
	DVB (Mediarite)	UVE via RMF	Hybrid STB	Device Dependency
	DVB (DTVKit)	Sessionmanager via RMF	Hybrid STB	NO
	TSB	Fog	IP STB, Hybrid STB, and TV	NO
	DAC Apps	RIALTO		NO
Content Related	Adaptive Bit Rate	HLS (HLS v3 and HLS v4)	IP STB, Hybrid STB, and TV	NO
		MPEG-DASH	IP STB, Hybrid STB, and TV	NO
		HTML-5 Video (MSE/ESE)	IP STB, Hybrid STB, and TV	NO
		MPEG-DASH (Native)	IP STB, Hybrid STB, and TV	NO
	Audio Output Formats	Stereo	IP STB, Hybrid STB, and TV	NO
		Dolby Digital	IP STB, Hybrid STB, and TV	Device Dependency
		Dolby ATMOS	IP STB, Hybrid STB, and TV	Device Dependency
		Dolby Digital Plus (7.1 Channels)	IP STB, Hybrid STB, and TV	Device Dependency
		Split HDMI and SPDIF audio outputs	IP STB, Hybrid STB, and TV	Device Dependency
		Bit stream Pass-through	IP STB, Hybrid STB, and TV	Device Dependency
		Dolby MS12	IP STB, Hybrid STB, and TV	Device Dependency
	Audio Tracks	SAP, DVS	IP STB, Hybrid STB, and TV	Device Dependency
	Codecs	H264	IP STB, Hybrid STB, and TV	NO
		MPEG2, VP8, VP9, High Efficiency Video Coding (HEVC) (H.265/MPEG-H Part 10)	IP STB, Hybrid STB, and TV	Device Dependency
		HDR 10 Bit (HEVC HLS) for IP settop	IP STB, Hybrid STB, and TV	Device Dependency
	Captions	608, 708,subtec VTT	IP STB, Hybrid STB	Region Dependency
	Delivery	Broadcast, Video on Demand	IP STB, Hybrid STB, and TV	NO
		Video over Wi-Fi Ready	IP STB, Hybrid STB, and TV	Device Dependency
		Secondary Audio Output to Bluetooth devices	IP STB, Hybrid STB, and TV	Device Dependency
		IP Multiroom Music Playback (STB to Speakers)	IP STB, Hybrid STB, and TV	Device Dependency
	DVB	Broadcast DVB support	Hybrid STB, and TV	Device Dependency
		Subtitles	IP STB	Device Dependency
		Teletext	Hybrid STB, and TV	Device Dependency
		In-Band System Information	Hybrid	Device Dependency

	EAS	QAM EAS	Hybrid	NO
		IP EAS	TV	NO
	UHD/4K	RDKServices for 4K and HDR capability information across devices	IP STB, Hybrid STB, and TV	Device Dependency
		Supports IP Time Shift Buffer for DASH Linear content	IP STB, Hybrid STB, and TV	NO
Content Delivery	Video Input Formats	MPEG2, H.264, VP8 (h264 for RPI4)	TV,IP STB	NO
	Video Output Resolutions	480i(not in amlogic), 480p, 720p, 1080i, 1080p	IP STB, Hybrid STB, and TV	NO
		Ultra HD/4K, Advanced High Dynamic Range (HDR)	IP STB, Hybrid STB, and TV	Device Dependency
		Dolby Vision Advanced HDR for VOD	IP STB, Hybrid STB, and TV	Device Dependency
		HDR 10	IP STB, Hybrid STB, and TV	Device Dependency
	Video Over WiFi	UPnP	IP STB, Hybrid STB, and TV	NO
	VOD	IP VOD	IP STB, Hybrid STB, and TV	NO
Ad Insertion	Ad Insertion	Client Side Ad Insertion (Linear Segmented Advertisement)	Hybrid STB	Device Dependency
		Server side Ad Insertion	IP STB	Cloud Dependency
	Ad Insertion – Linear Segmented Advertising	LSA support for ad content read failure	Hybrid STB	Cloud Dependency
		LSA support for back-to-back ads	Hybrid STB	Cloud Dependency
	IP DAI	Handle DASH IP VOD Dynamic Ad Insertion (DAI) Transitions	IP STB and TV	Cloud Dependency
Rendering	Framework	Firebolt V1.0	IP STB, Hybrid STB, and TV	NO
		Ripple	IP STB, Hybrid STB, and TV	NO
		Lightning V2.8	IP STB, Hybrid STB, and TV	NO
		QT for BLE V5.1.1 OSS version	IP STB, Hybrid STB, and TV	NO
		Core Thunder framework Version R2	IP STB, Hybrid STB, and TV	NO
		Browser - WPEWebkit V2.28	IP STB, Hybrid STB, and TV	NO
	Browser Engine	QT WebKit	IP STB, Hybrid STB, and TV	NO
		WebKit Pure Embedded integration	IP STB, Hybrid STB, and TV	NO
	Connection Security	SSL/TLS	IP STB, Hybrid STB, and TV	NO
	Plugins	WebRTC	IP STB, Hybrid STB, and TV	NO
	Graphics	OpenGL ES	IP STB, Hybrid STB, and TV	NO
	Rendering	ESSOS with Westeros	IP STB, Hybrid STB, and TV	NO
Gstreamer		Gstreamer 1.18	IP STB, Hybrid STB, and TV	NO
Device Management	Feature Control	Securing RFC parameters via encryption	IP STB, Hybrid STB, and TV	NO
		RFC with Xconf rules	IP STB, Hybrid STB, and TV	NO
	Firmware Download Enhancements	Omit IP Address From Xconf Firmware Download Request	IP STB, Hybrid STB, and TV	NO
		Firmware Upgrade-SWUpdate with XConf and Webpa	IP STB, Hybrid STB, and TV	NO

	Logging	TFTP Log Upload, HTTP Log Upload	IP STB, Hybrid STB, and TV	Cloud Dependency
		Distribute (smear) logging uploads (dependent on XCONF Server)	IP STB, Hybrid STB, and TV	Cloud Dependency
	Memory Optimization	Use Flash/SD Card for Firmware Download Temporary Storage (CDL scratchpad)	IP STB, Hybrid STB, and TV	Device Dependency
	Platform Enhancements	Common WiFi HAL for RDK Video	IP STB, Hybrid STB, and TV	NO
		Converge to GCC V9.3x for all Yocto versions	IP STB, Hybrid STB, and TV	NO
	Power	Standby, Light Sleep	IP STB, Hybrid STB, and TV	NO
		Deep Sleep on IP Clients	IP STB and TV	Device Dependency
	Power Save	Supports ability to enable HDMI port while in standby mode	IP STB, Hybrid STB, and TV	Device Dependency
	Remote Management	TR-069	IP STB, Hybrid STB, and TV	Cloud Dependency
		WebPA (IP Clients)	IP STB	NO
		WebPA (QAM Clients)	Hybrid STB	NO
		ssh (secure shell into the device)/ reverse ssh (send trigger to have device initiate ssh)	IP STB, Hybrid STB, and TV	Cloud Dependency
		Feature Control (Remotely enable/ disable individual features on devices without new code deployment)	IP STB, Hybrid STB, and TV	Cloud Dependency
	Resource Optimization	Improved handling of app termination/suspension conditions (based on available memory rather than concurrency)	IP STB, Hybrid STB, and TV	NO
	Revenant	Persistent WiFi Enable/Disable	IP STB, Hybrid STB, and TV	NO
	Self Healing	Supports hardware self test	IP STB, Hybrid STB, and TV	Device Dependency
		Thermal Monitoring and Shutdown	IP STB, Hybrid STB, and TV	NO
	Telemetry	Telemetry 2.0 (via WebPA)		NO
		TR-181 Object Telemetry	IP STB, Hybrid STB, and TV	Cloud Dependency
		IP Video Telemetry	IP STB, Hybrid STB, and TV	NO
	WiFi Band & AP Steering	Dual Band WiFi	IP STB and TV	NO
Networking	WAN IP	eSTB IPv4	IP STB, Hybrid STB, and TV	NO
		IPv6 for IP clients	IP STB, Hybrid STB, and TV	NO
	LAN IP	Auto IP, DHCP, Dual Virtual	Hybrid STB	NO
		Wi-Fi	IP STB, Hybrid STB, and TV	NO
		LAN	IP STB, Hybrid STB, and TV	NO
	Wi-Fi	WPA Enterprise (IP settop to use Wi-Fi 802.1x authentication) Ready	IP STB and TV	Device Dependency
Ports /Peripherals	Audio Output Ports	Bluetooth Audio Output Ready	IP STB, Hybrid STB, and TV	Device Dependency
	HDMI	HDMI Out, HDCP Enforcement,	IP STB, Hybrid STB, and TV	NO
		HDMI In	TV	Device Dependency
		HDMI Consumer Electronics Control (HDMI-CEC) Power Sync	IP STB, Hybrid STB, and TV	NO
		HDMI Switching (Combine CEC and HDMI Input features to enable advanced switching)	TV	Device Dependency

	USB	WebRTC Camera Ready	IP STB, Hybrid STB, and TV	Device Dependency
		USB Port Detection and Control Ready	IP STB, Hybrid STB, and TV	Device Dependency
		USB Camera Support Ready	IP STB, Hybrid STB, and TV	Device Dependency
		WebRTC HW acceleration for encode/decode to enhance performance	IP STB, Hybrid STB, and TV	NO
		USB Filesystem Support	IP STB, Hybrid STB, and TV	NO
		USB Hot-plug	IP STB, Hybrid STB, and TV	NO
	User Input	Voice Stack	IP STB, Hybrid STB, and TV	NO
		RF4CE remote	IP STB, Hybrid STB, and TV	Device and Cloud Dependency
		BLE voice remote	IP STB, Hybrid STB, and TV	NO
		External Audio support	IP STB, Hybrid STB, and TV	Device Dependency
		IR Remote	IP STB, Hybrid STB, and TV	Device Dependency
		Voice Remote (RF4CE based) Ready	IP STB, Hybrid STB, and TV	Device and Cloud Dependency
	Video Output Ports	HDMI	IP STB, Hybrid STB, and TV	NO
Apps	Streaming Apps	YouTube V23 and Amazon Prime V4	IP STB, Hybrid STB, and TV	Device Dependency
TV Settings	Power, Standby		TV	NO
	LED		TV	NO
	Zoom, aspect ratio		TV	NO
AQ/PQ(doubt)	QoS		TV	NO
Screen cast	Application Casting & control	DIAL V2.2.1	IP STB, Hybrid STB, and TV	NO
UI/UX	Reference App		IP STB, Hybrid STB, and TV	NO
Gaming	HDMI-CEC DAL - Dynamic Auto Lipsync		TV	NO
	Low Latency Game Mode for HDMI Input		TV	NO
	Game Mode, Auto Low Latency Mode		TV	NO
	AQ/PQ		TV	Device dependency
Digital Assistant (Voice)	Alexa (Push to talk)		IP STB, Hybrid STB, and TV	NO
	Voice enabled Bluetooth remote		IP STB, Hybrid STB, and TV	NO
	Voice Assistant		IP STB, Hybrid STB, and TV	Device dependency