



KeyOS MultiPlay™ SDKs

MULTI-FEATURE DRM PLAYER SDKS FOR ANDROID AND IOS

www.BuyDRM.com



KeyOS MultiPlay™ SDKs



Carrier-Class, Studio-Approved Content Security Platform

BuyDRM's content security platform, KeyOS, is a SaaS DRM platform which is operated using both managed hosting and cloud infrastructures. The platform components encompass the full spectrum of DRM requirements including, forensic watermarking, content encryption technologies, rights policy creation and enforcement, license key delivery services and secure content playback. KeyOS represents the evolution of several decades of commercial content security deployments and supports a wide ecosystem of encoders, servers and players.

KeyOS MultiPlay SDKs

The KeyOS MultiPlay SDKs support all of the popular consumer playback platforms with a feature rich player with Multi-DRM support. Using conventional development platforms, the SDKs are integrated into our clients' premium apps for Apple iTunes and Google Play and are utilized during the content playback process.

The nearly 100+ features are accessed via APIs and enable highly customized playback experiences. The KeyOS MultiPlay SDKs provide a market-tested, consumer approved approach to unifying your device delivery strategy in today's evolving marketplace.

Using these SDKs, our customers experience a shorter deployment window for their premium applications. Our feature parity on these two platforms create a unified user experience across both iOS and Android. Furthermore, the KeyOS MultiPlay SDKs insulate our customers from micro-changes in the OEM operating systems and prevent feature or product breaks.

MultiPlay SDKs Components



Download Manager

- Download of progressive and multi-bitrate assets
- Offline playback of downloaded content
- Multi-audio support
- In-stream subtitling/captioning



Streaming Manager

- Streaming of progressive and multi-bitrate assets
- Multi-audio support
- In-stream & external subtitling/captioning



Format Container

- | Formats | Protocols: |
|-----------|--------------------|
| • MP4 | • MPEG-DASH |
| • FMP4 | • Smooth streaming |
| • MPEG-TS | • HLS |



Activation Manager

- Protects DRM certificates & keeps encryption keys safe
- Manage & monitor DRM royalty reporting
- Perform remote security checks on SDK



SW Codec

- Ensures compatibility of all devices in case of lack of HW codecs or bad implementation



Device HW Codec

- Efficient, work around capabilities for bugs/specificities of most chipset vendors



White Crypto Secure Storage

- Manage hidden root keys inside SDKs
- Cascaded layers of encryption keys
- Manage adjacent backup storage for automatic recovery
- Linked to application and system integrity checks



Real-Time Security Guardian

- Anti-debugging
- Integrity checks
- Anti-tampering
- Root-detection

Features

ENCRYPTION & DRM

- Common Encryption (CENC)
- Microsoft PlayReady
- Google Widevine
- APPLE FairPlay

DEVICES

- Android 3.0+
- iOS 8.0+

ARCHITECTURE

- Android: Intel x86, ARM v6, v7
- iOS: ARM v7, ARM64

CONTAINER

- ASF
- MP4
- FMP4
- HLS using MPEG2/TS
- HLSv1, v2, v3, v4
- HLS VOD/Live
- Smooth Streaming VOD/Live
- DASH ISOBMFF VOD/Live

STREAMING & DOWNLOAD

for download, only the VOD use case is supported

- HTTP Live Streaming (HLS)
- Smooth Streaming
- MP4
- MPEG-DASH Time-based, Index-based, Live, On-Demand and DVB Profiles

DRM COMPATIBILITY

- MP4 with PlayReady Envelope
- Smooth Streaming with PlayReady
- MPEG-DASH with PlayReady
- MPEG-DASH with Widevine
- HLS with FairPlay (iOS 8+ for streaming; iOS 9+ for downloads)
- HLS with PlayReady (Discretix spec)
- HLS with PlayReady Envelope (Envivio spec)
- Apple FairPlay
- Google Widevine Modular

VIDEO CODECS

- WMV
- H264 (base, main, high profile)
- H265/HEVC (version 10.x)

AUDIO CODECS

- WMA
- WAV
- AAC, AAC-LC
- HE-AAC v1, v2
- Dolby ac3, ac3+ (on demand, not included by default)

SUBTITLES

- In stream TTML/DFXP/SMPTE-TT for MPEG-DASH assets
- In stream WebVTT for HLS assets
- In stream TTML/DFXP/SMPTE-TT for Smooth Streaming assets
- In stream ASS for MP4 files
- External WebVTT, TTML/DFXP, SRT

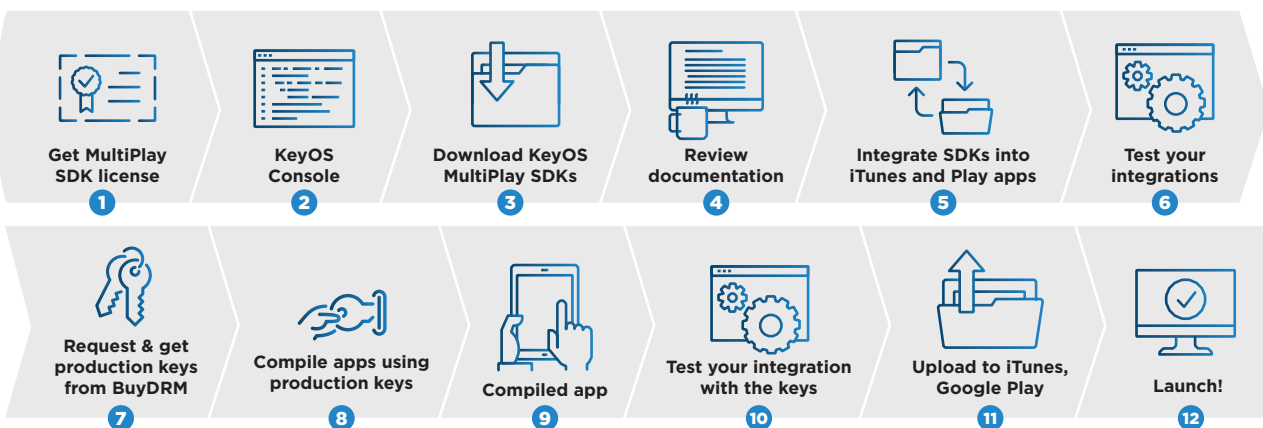
OTHER FEATURES

- Multiple Audio tracks
- Multiple Subtitles tracks
- License acquisition prior download starts
- Deferred license acquisition after download finishes
- AirPlay Mirroring/Export support for HLS w/ any DRM on iOS
- License acquisition process may be overridden to support custom scenarios
- VR 360 video playback with 3D object insertions, lens calibration options, stream compression
- HW acceleration
 - iOS (8.0+): h264/AAC
 - Android (4.4+): h264/AAC

SDK SECURITY FEATURES

- Generic secure storage API for any sensitive data such as certificates, licenses, keys, user data, secure storage with dynamic cascaded keys and with auto recovery on crash
- Advanced debugger detection
- Root/Jailbreak detection
- Integrity of all the binary libraries is checked at all times in memory.
- SDKs check for a change in this integrity.
- When integrity changes, the SDK will destroy all sensitive data and cease to function
- Integrity of the application is checked
- Advanced low level debugging detection
- Trap and obfuscation on program execution stack
- TV output detection
- Root/Jailbreak detection
- Code obfuscation
- Obfuscation of root keys in the application
- Obfuscation in memory of all keys
- Remote DRM individualization with anti-replay and dual encryption transactions
- Whitebox encryption
- Secure storage with cascaded keys and auto recovery
- Includes hidden features that can be activated or not depending on the expected level of security:
 - Remote statistical checks of the operating system fingerprints
 - Remote checks of security markers (such as integrity violation, re-installations, debugging detection)
 - Report changes of the operating system
 - Remote deactivation of any client SDK depending on any criteria such as the platform, or any specific device
 - Instant cancellation of any play session using a session heartbeat/invalidation mechanism

MultiPlay SDKs Workflow



SUPPORTED PLATFORMS



DRM SYSTEMS

Microsoft
PlayReady®



The KeyOS Platform: Content Security Done Right

KeyOS, is a content security platform which is operated using both managed hosting and cloud infrastructures. The platform components encompass the full spectrum of DRM requirements including, forensic watermarking, content encryption technologies, rights policy creation and enforcement, license key delivery services and secure content playback. MultiKey is capable of sustaining the highest level of DRM scalability available today and is compatible with every leading industry player stack.

BuyDRM provides content security services to world's leading media & entertainment brands



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