



# Marlin DRM

## Open-standard DRM technology



**Marlin is the open-standard digital rights management (DRM) technology which provides maximum flexibility to meet the demands of consumers, device manufacturers and service providers.**

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**SONY®**

**SAMSUNG**

**PHILIPS**

**Panasonic®**

### Open-standard DRM

Marlin DRM is an open-standard content protection specification for digital media distribution ecosystems and associated consumer devices and services. Marlin not only protects high definition (HD) and ultra HD (UHD) content, it also works with audio, eBooks, games, images, etc. With Marlin, DRM is the enabler for all digital media.

Companies worldwide are involved in Marlin’s membership as partners, adopters, developers, and trusted services providers.

### History and founders

In 2005, Intertrust, Panasonic, Philips, Samsung and Sony - the Marlin Founders - set out to create Marlin, the only universal open-standard DRM technology, which provides maximum flexibility to meet the demands of consumers, device manufacturers and service providers. The technology specifications and test tools that were jointly developed are freely accessible for evaluation on the Marlin website.

### Marlin technology

Marlin technology is a consumer electronics and mobile friendly technology, applicable to a variety of use cases and compatible with all popular operating systems, codecs, content formats, and delivery mechanisms.

Marlin supports various content distribution models like adaptive streaming, multicast, download, progressive download, and broadcast services. It offers sophisticated copyrights management for Media & Entertainment content (including non-audiovisual content) distributed over mobile, broadband, and broadcast networks. Unique to Marlin is its general-purpose rights management architecture that allows for substantial flexibility and control in implementation.





Marlin supports MovieLabs' Enhanced Content Protection (ECP) requirements and is trusted for licensing of premium and UHD content, taking full advantage of modern on-chip facilities such as Trusted Execution Environment (TEE) and Secure Video Path (SVP).

Since Marlin is not a proprietary DRM, it is able to deliver content over any network or physical media. It seamlessly ports licensed content across devices and services in a consumer's home or personal domain and supports a large and flexible set of business models for content distribution.

## Marlin organization

Marlin includes two organizations, both established in 2006:

- The Marlin Developer Community (MDC), and
- The Marlin Trust Management Organization (MTMO)

### Marlin Developer Community

MDC developed the Marlin specifications and maintains Marlin as the only universal open-standard DRM that is widely adopted and trusted by major studios. MDC maintains a Community Source Program for specifications, reference technologies, software development kits (SDKs), reference implementations, conformance test suites, and other technology.

### Marlin Trust Management Organization

MTMO is the operational entity that grants commercial licenses for Marlin technology. It serves four key roles:

**Key Management:** Issuing and managing keys to certified vendors and providers of services. Delegation of trust to other Certificate Authorities (CAs). Dealing with Certificate Revocation Lists (CRLs) and Broadcast Key Block (BKB) for Marlin-wide operations.

**Certification:** MTMO maintains the Marlin License agreements that include Marlin Compliance and Robustness Rules as well as the processes associated with licensees' self-certification of their compliance with these rules and with Conformance Criteria specified by MDC. MTMO maintains records of licensees' declaration of their self-certification of their products with the C&R and Conformance requirements.

**Enforcement:** Establishing, managing and monitoring contractual relationships that govern use and deployment of the Marlin specifications.

**Incident Response System:** Responding to events that threaten the security and trustworthiness of Marlin deployments. This includes managing renewability and revocation, if needed.

## Use cases

### Media & Entertainment, online:

- OTT streaming services
- IPTV multicast services
- Broadcast TV services

### Travel and transportation, offline:

- In-Flight Entertainment
- Video services in buses, trains, etc.

### Non-audiovisual content:

- eBooks, digital trading cards
- Byte-code





## Marlin around the world

Marlin's open-standard development approach and flexible options makes it an attractive DRM solution around the world. Companies in China, France, India, Italy, Japan, Russia, United Kingdom, United States, and others rely on Marlin to distribute high-quality content to their customers.

Several national initiatives and standards bodies have adopted Marlin. YouView in the UK, TivùOn! in Italy, and the IPTV Forum Japan use Marlin DRM as their content security technology. Marlin is also a very widely deployed DRM in China and Asia.

In addition, a growing number of consumer devices including smart TVs, STBs, and mobile devices, are Marlin-enabled. In all, there is a growing base of more than one billion Marlin-enabled devices globally. More than 40 TV set manufacturers, STB and other device makers have integrated Marlin over the years.

## Marlin solution providers

Marlin DRM is much more than a technology specification. Entities that want to deploy a content protection solution can work with one of several Marlin solution providers.

### Marlin DRM from Intertrust

Intertrust offers a comprehensive Marlin-compliant solution that includes a hosted service and SDKs for mobile apps and embedded devices. Marlin DRM from Intertrust was one of the first implementations that is fully compliant with the Marlin specification. It is deployed widely in Japan, China and South-East Asia, as well as in Europe.

### Intertrust ExpressPlay DRM

ExpressPlay DRM is an integrated and cloud-based Marlin-compatible media monetization service for video streaming operators and content distributors. The ExpressPlay multi-DRM service supports all major DRMs: Apple FairPlay Streaming, Google Widevine, Microsoft PlayReady, Adobe Primetime, and Marlin DRM. ExpressPlay DRM supports millions of concurrent viewers for major live events with a cost-effective and global footprint including geo-redundancy and automatic fail-over options.

### Intertrust ExpressPlay XCA

ExpressPlay XCA is a cloud-based service for protecting broadcast content leveraging the open-standard Marlin DRM. ExpressPlay XCA enables pay-TV operators and broadcasters to deliver premium/UHD content securely to smart TVs without requiring set-top boxes or external security hardware. This DRM-based solution protects hybrid DVB broadcast and internet TV services with a cardless and converged client security stack.

Intertrust has amassed more than 20 years of experience in designing, developing, operating and supporting DRM systems, trusted distributed computing, app hardening, tamper resistance, and distributed PKI services.



## Developers

One of things that sets Marlin apart as a technology is that it's backed by a technical standard—with specifications available for download by anyone. This transparency goes well beyond the API access typically provided by other DRMs. In addition, Marlin is managed by a community of stakeholders, thus guarding against unilateral changes to the standard. The Marlin Standard is published in a set of packages available for download at no charge.

There are four Marlin specification packages:

### Marlin Broadband (MBB)

The complete set of specifications for Marlin broadband clients, the Marlin Broadband Server, and the Marlin MS3 Server. This includes architecture, system entities, communication protocol, trust management, and file formats.

Key MBB characteristics:

- Persistent content protection
- Flexible and extensible rights management
- Business models include subscription, rental, and electronic sell-through

### Marlin Simple Stream Setup (MS3)

Marlin Simple Secure Streaming specification defines lightweight protocols and mechanisms to enable a media streaming service to authenticate a trusted streaming client.

Key MS3 characteristics:

- Simple subset of Marlin Broadband
- Transactional business models (streaming)

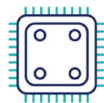
### Marlin IPTV-ES Specifications

The complete set of specifications for Marlin IPTV-ES clients and servers. This includes architecture, system entities, communication protocol, trust management, and file formats, designed for telco-managed IPTV services.

### Marlin DRM eBook Extension Specifications

The Marlin EPUB Extension Specification v1.1 and its associated Conformance Specification.

## Marlin client SDKs



Marlin Client SDKs are available for a variety of consumer devices:

- Marlin client embedded in smart TVs, STBs, and CE devices
- Binary SDKs for iOS, Android
- Source SDK/TEE Porting Kit for SoCs

Examples of SDKs available from Intertrust:

**Android** supports Google Modular Widevine native DRM on Android version 4.4 and above. On earlier Android versions, as well as on some manufacturers' devices, Google Widevine is not available natively. In such cases, the **ExpressPlay Binary SDK for Android** can be integrated into a native application to ensure playback of protected HLS and MPEG-DASH content even on devices that do not support a native DRM.

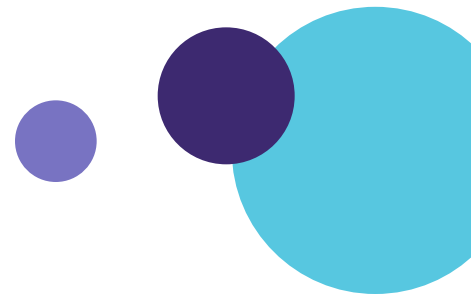
**iOS** devices that support Apple FairPlay DRM require content to be streamed in HLS format with either MPEG2-TS with SAMPLE-AES encryption, or HLS with fMP4 with AES-CBCS. As in the Android case, the **ExpressPlay Binary SDK for iOS** can be integrated into a native application to ensure playback of protected HLS and MPEG-DASH content on iOS devices.

In general, the benefits of using the ExpressPlay Binary SDK are the following:

- Provides a secure implementation of the Marlin DRM for iOS and Android
- Allows a service provider to stream HLS and DASH-CENC to both iOS and Android
- Supports both streaming and download scenarios (persistent licenses)
- Supports iOS jailbreak and Android root-device detection
- Can be integrated in an IPTV client to which content is delivered via multicast.

**ExpressPlay Source SDK** is also available for CE devices such as STBs and smart TVs. In this case the SDK takes advantage of a device's Trusted Execution Environment to meet the requirements for UHD content consumption.

In the case of smart TVs, the ExpressPlay security client is fully integrated into the TEE of the TV set. This eliminates the need for STBs or other external security hardware such as CAMs, thus reducing the total cost of ownership (TCO).



Visit the Marlin Developer Community at: [www.marlin-community.com](http://www.marlin-community.com)

Visit the Marlin Trust Management Organization at: [www.marlin-trust.com](http://www.marlin-trust.com)

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