

# SmartLabs Universal DRM

## datasheet



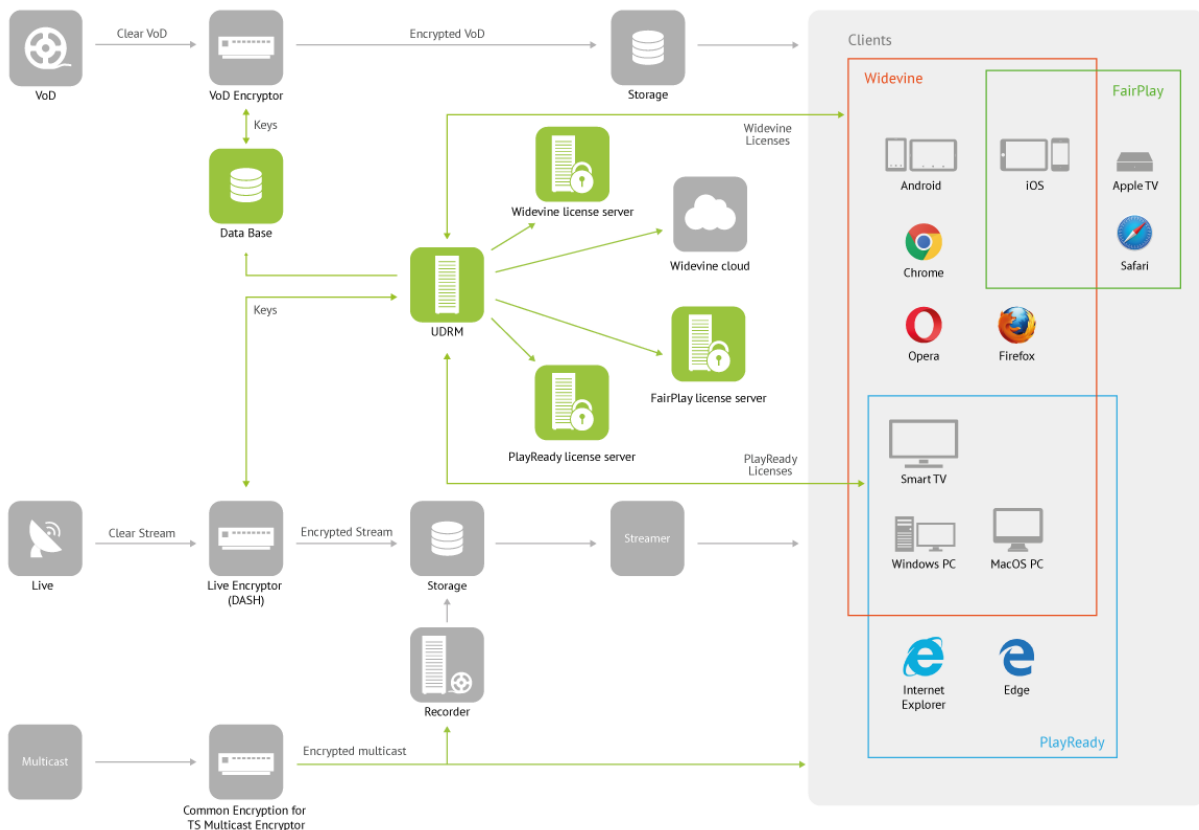
SmartLabs UDRM (SmartLabs Universal DRM) is a one-size-fits-all solution for DRM protection of content in IPTV and OTT networks.

SmartLabs Universal DRM consists of the following components:

- ▶ A server for generating keys and issuing licenses;
- ▶ A set of client libraries.

Libraries include CDM (Content Decryption Module) Modular DRM, PlayReady and Apple FairPlay developed by Google WideVine, Microsoft and Apple. Other CDMs can be added.

The diagram below illustrates the architecture of the solution.

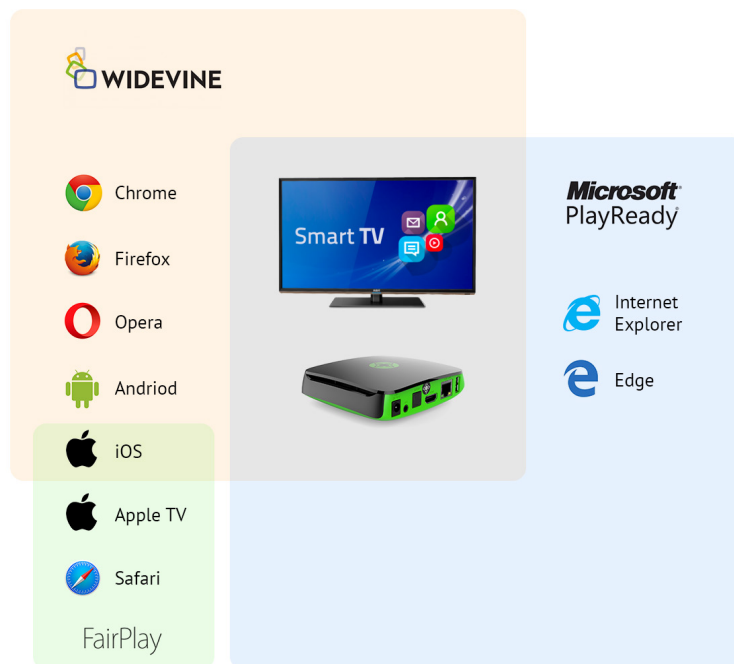


SmartLabs UDRM can be integrated with any software for preparation and delivery of VoD and Live content, the main condition lies in the fact that target software should support SmartLabs UDRM API.

SmartLabs UDRM supports the following client platforms:

- ▶ **PCs running Windows, OS X or Linux with one or more of the following web browsers:**
  - Chrome
  - Opera
  - Firefox 47
  - Safari
  - Internet Explorer 11 (Win8 64bit SP2+ and Win10)
  - Edge
  - Other browsers that support Silverlight
- ▶ **iOS-based devices (iPad, iPhone)**
- ▶ **Android-based devices (tablets and smartphones)**
- ▶ **Digital TV receivers (STB)**
- ▶ **Various Smart TV devices**
- ▶ **Other devices that support WideVine Modular DRM and Microsoft PlayReady**

CDMs for each of the platforms are shown in the following Figure.



## UDRM advantages

### One DRM solution for IPTV and OTT broadcasting

Various client devices in IPTV and OTT networks use the same content assets. Creation of additional copies is not needed.

### Turnkey solution for broadcasting

SmartLabs UDRM solution includes libraries for end-user applications and provides integration with SmartMEDIA, the service for content broadcasting. It is a turnkey solution for DRM-protected streaming.

### Cost efficiency

The use of a single DRM solution for both IPTV and OTT networks and for all client device types reduces the cost of content storage significantly.

### Expertise in DRM

We analyzed the features of existing DRM solutions to develop our turnkey solution. You do not have to spend your time on complicated integration procedures of each component, we have gathered everything you need in SmartLabs UDRM.

## Supported Encryption Systems (DRM)

Standard edition of Smartlabs UDRM supports the following DRM systems:

- Widevine Modular DRM
- PlayReady
- FairPlay

Due to the fact that this solution has a modular architecture, it also supports other DRMs that meet the following requirements:

- Compliance with Common Encryption (CENC) standard.
- Support the use of external resources for storing encryption keys (Key Server).

For example, Adobe Primetime may be supported.

There are following particularities of integration of UDRM with encryption systems:

- Protocol used for request and delivery of keys must be based on 128-bit keys, each of which must have a 128-bit identifier (Key ID) that is unique across the platform.
- Key IDs should be used to request keys and / or licenses instead of, for example, content IDs. There are the following requirements:
  - Server and client should use HTTP or HTTPS to communicate with each other;
  - There should be no requests for HTTPS session termination at the level of proprietary components of the DRM;
  - A repeater of requests in the middle (MITM) must not affect the performance or security of the chosen DRM system.

## Authentication and Authorization of Clients

There is no single conventional standard for authentication and authorization of client devices and end-users in DRM systems (WideVine, PlayReady, etc.). DRM systems can provide their own mechanism for identifying users and devices and providing access to content; moreover, there may be no such mechanisms in DRM systems at all.

SmartLabs UDRM offers a flexible mechanism for authentication and subsequent authorization. In addition to internal basic authenticators, SmartLabs UDRM supports all Java-based authenticators, thereby enabling developers to create any logic: queries to external systems using specialized API, additional data in the database, and so on. Thus, SmartLabs UDRM can be integrated with Middleware systems and tailored to specific client applications and DRM, security requirements for accessing content, etc.

## Supported Formats for Storing and Delivering Media Content

SmartLabs UDRM does not impose restrictions on content storage / delivery formats or content encryption algorithms.

This solution is initially focused on MPEG-DASH and Common Encryption (CENC) protocols, so the content should be encrypted using 128-bit keys, and each key should have a 128-bit identifier.

The following protocols may be used as basic protocols:

- MPEG-DASH supporting the ISO/IEC 23001-7 "Common encryption in ISO base media file format files" (CENC) standard;
- Protocols that are based on MPEG2-TS and support the ISO/IEC 23001-9 "Common encryption of MPEG-2 transport streams" (CENC) standard.

Other protocols can also be supported: HLS, etc. Support for specific protocols depends on the DRM being used.