



# Enabling Offline Protected Playback on Desktops

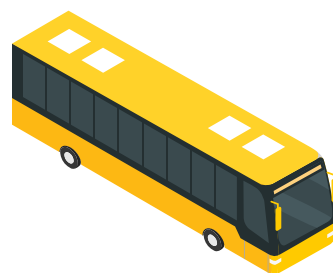
*Thasso Griebel, castLabs' Lead Player Developer*

# Why Offer Offline Playback?

Allow customers to continue enjoying your service's valuable content in a number of situations...



Unreliable or slow internet  
interrupting streams



Entertainment  
on the go



Heading to areas  
without internet

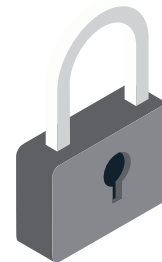
# Offline Playback Challenges



Offline premium content playback on desktops present workflow challenges



Handling content



Handling DRM

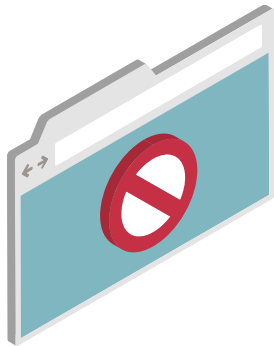
Previously, offline premium content was mainly enabled through traditional plugin-based applications

Example: Silverlight<sup>®</sup>, Adobe<sup>®</sup> AIR<sup>®</sup>



But how can you offer this across desktops with current technologies?

Need to download and store large content files securely



Why can't browsers do this?

No API support for advanced local storage  
(Example: storing on external drives)

A stand-alone application solution can solve this!



Use the open-source **Electron** framework to develop stand-alone desktop players

*Visit: [electron.atom.io](https://electron.atom.io)*



Develop branded apps for both Windows and Mac



Flexibility with file management



Includes Chromium: build apps using web technologies!

Deployable to Mac App Store and Windows Store

...now that you have an app environment, you need to enable downloading



Use our open-source downloader library: [DOWNstream for Electron](#)

*Available soon!*

## Features

*Simultaneous segment transfers for quick title downloads*

*Pause/resume transfer*

*Specify resolution, language, audio track, subtitle*

Currently this technology supports:



Offline Playback

MPEG-DASH (DRM & clear)



Online Playback

MPEG-DASH (DRM & clear)  
Smooth Streaming (DRM & clear)  
HLS (clear)





If you deliver premium content, you have a DRM use-case



Out-of-the-box Electron/Chromium doesn't support DRM



Need to locally store/use DRM licenses securely

Use our [free custom-build](#) of Electron enabling three elements to support DRM

*Available soon!*

1



Content Decryption Module (CDM)

*Handles DRM licensing & content decryption*

Use our [free custom-build](#) of Electron enabling three elements to support DRM

*Available soon!*

2

## Verified Media Path (VMP)

*Only authorized components communicate with the Widevine CDM for extra protection*

(Example: protects against 'MITM' attacks)



Currently the only way to enable VMP with Electron

Use our [free custom-build](#) of Electron enabling three elements to support DRM

*Available soon!*

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## 'Persistent sessions' for Widevine

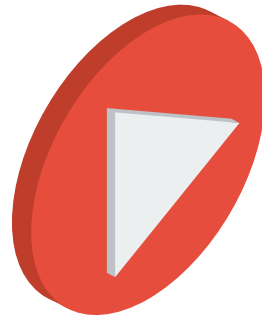
*Securely manages protected storage & use of local DRM licenses*

*Persistent sessions encrypt Widevine licenses for CDM to store*

*Uses proprietary algorithm where saved license data is locked to user's specific device*

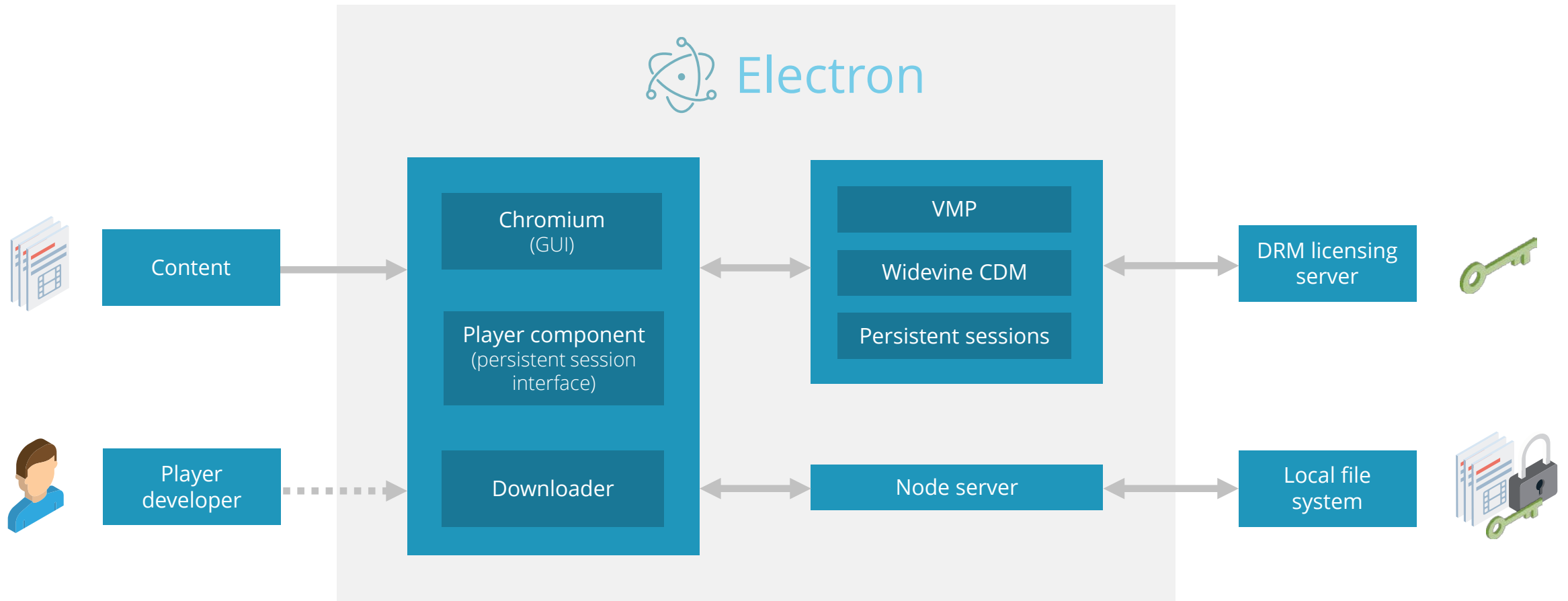


To facilitate playback, you will also need player logic  
Needed to create/trigger the persistent sessions



Build this from scratch or  
we can help you implement this with an SDK

# Solution Architecture



Tools available for creating standalone Windows and Mac apps



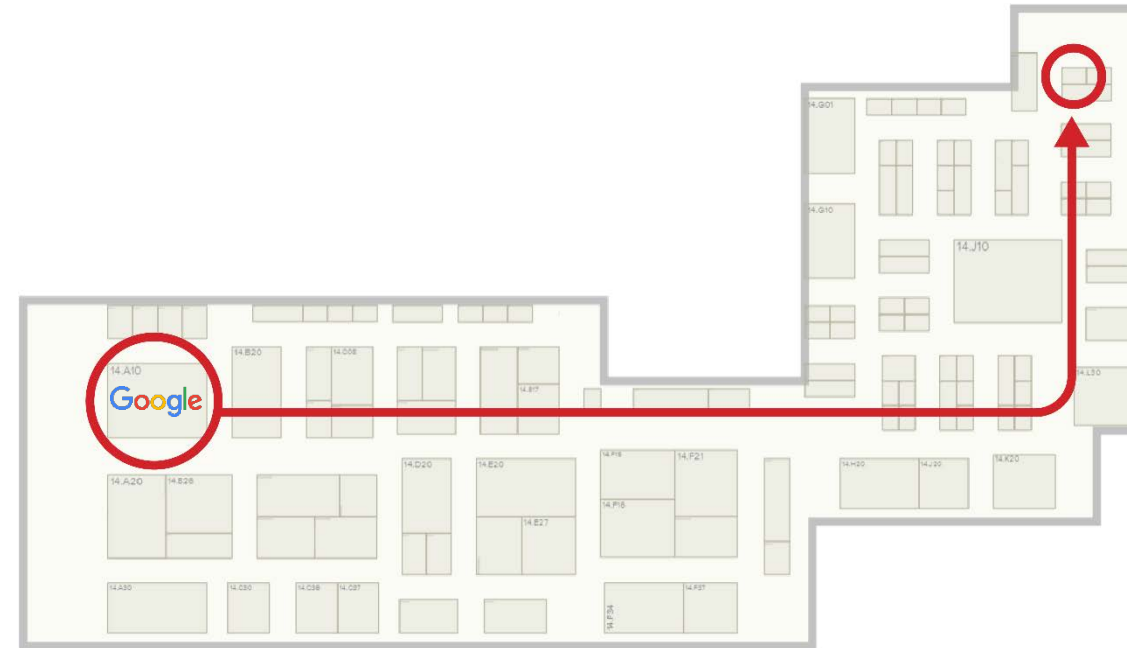
Lets you provide customers with DRM-enabled  
online & offline desktop playback

Stop by to see a desktop demo in action!



Booth 14.L02

Copy of slides available at:  
[castlabs.com/ibc2017](http://castlabs.com/ibc2017)



## Discover our solutions

PRESTOplay SDKs

Feature-rich player SDKs for Windows,  
Mac, Android, iOS, & browsers

DRMtoday

Multi-DRM Licence Delivery Network