



OPEN WEB
PLATFORM

Conteúdo com DRM na Web
e a especificação **EME** do W3C

Newton Calegari
Vagner Diniz



Newton Calegari
Vagner Diniz

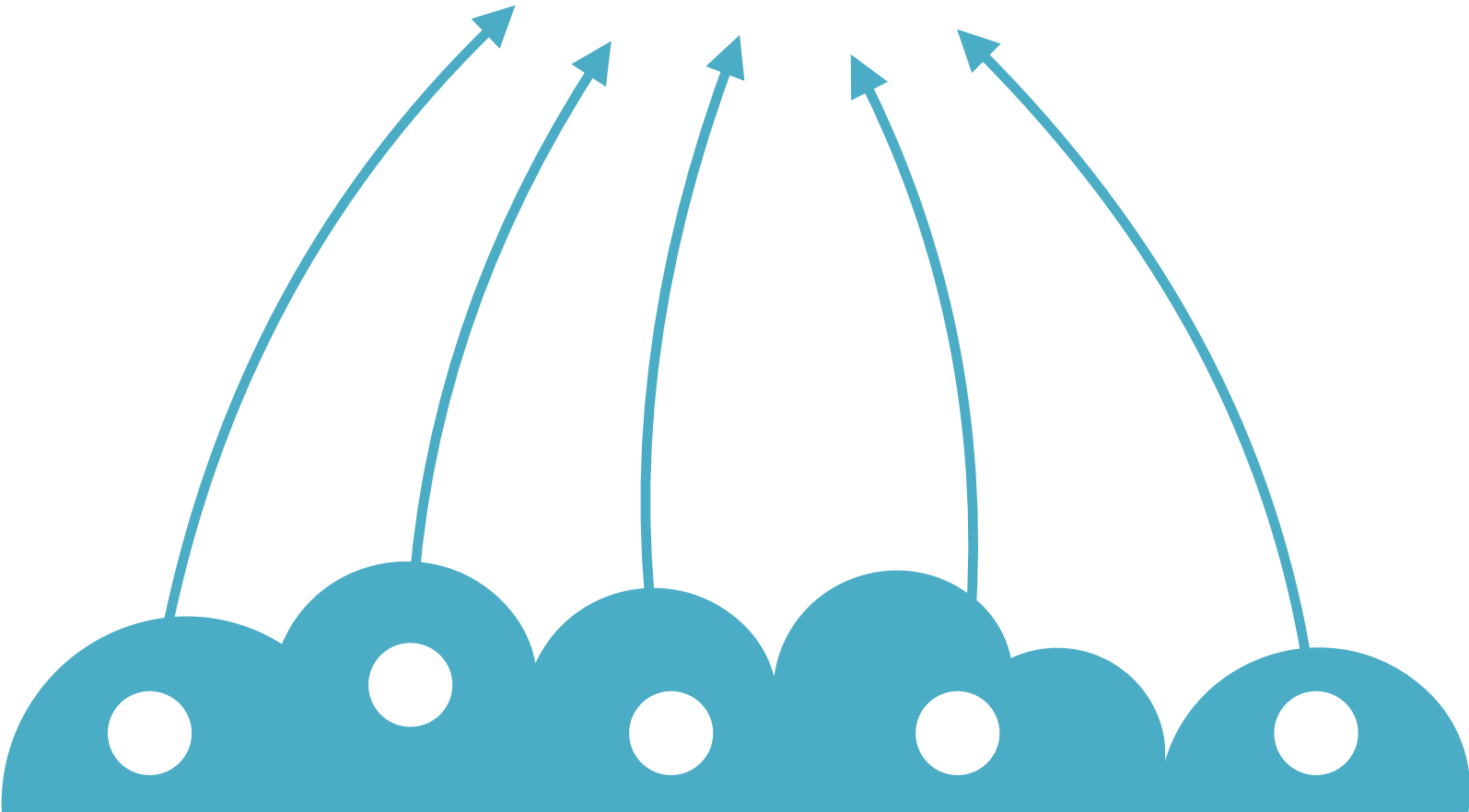
W3C[®]
Brasil

ceweb.br

nic.br **egi.br**

DRM CONTEÚDO DIGITAL

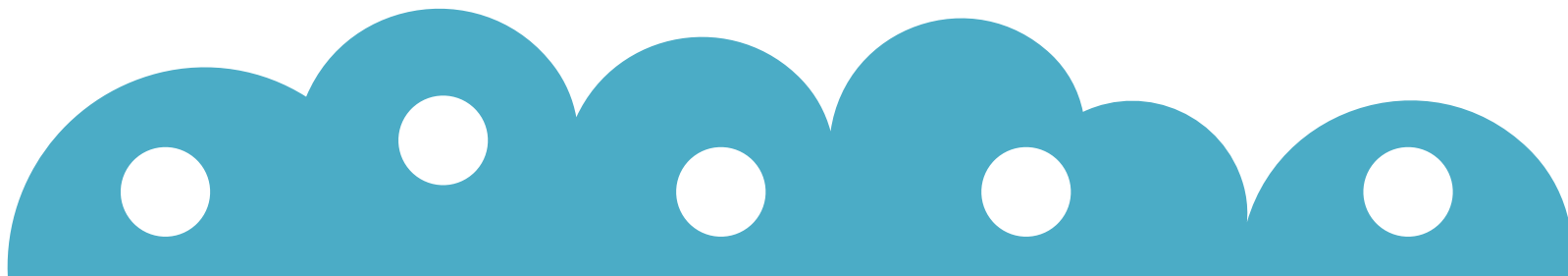


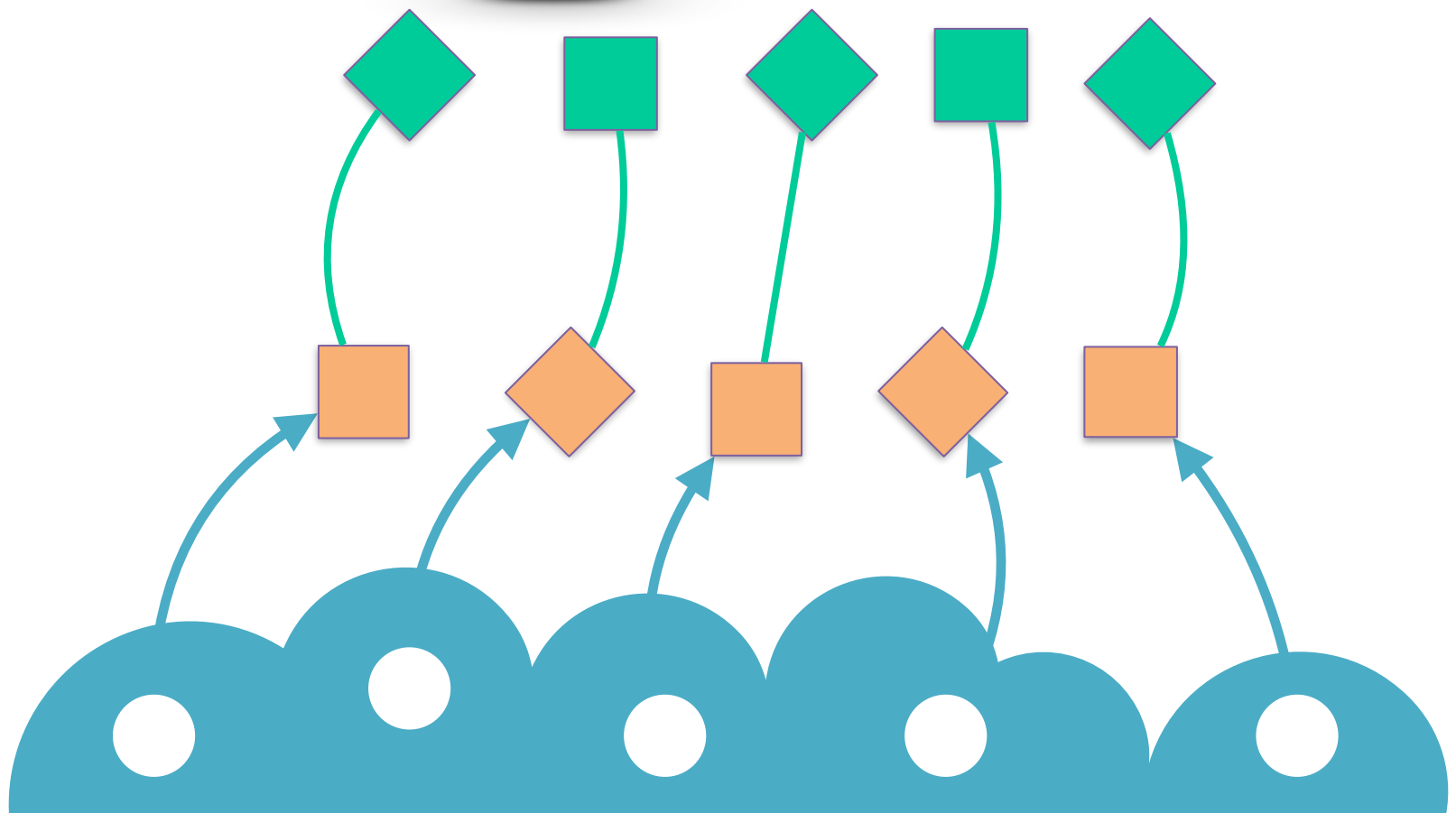


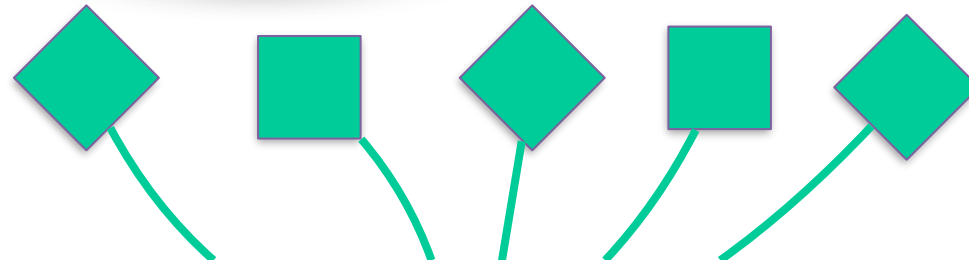


ENCODING

DRM

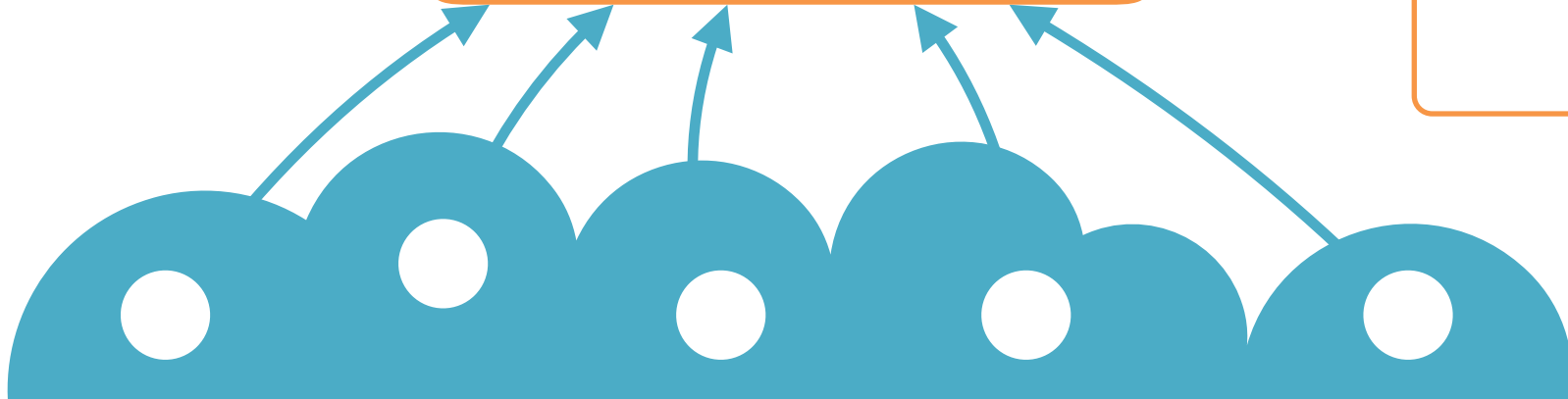






EME
(HTML5, Browser)

CDM
LicenseServer
Application
...



How does DRM work?



AWS S3

Google

Google Cloud Storage



FTP/SFTP

1

Source

The input files can start from a variety of sources, such as AWS S3, Google Cloud Storage, FTP/SFTP, etc.

Files are transferred via HTTP or FTP

2

Encoding

The cloud encoding system will encode the source files into adaptive streaming formats such as MPEGH-DASH and HLS.



3

Encryption

As this process takes place the encoder will encrypt the files with media keys from one or more DRM providers.

Media Keys from the DRM providers

The encoded and encrypted files are transferred to storage or CDN for streaming

4

Storage

The adaptive video is usually stored in a content delivery network ready for a user to click the play button.



DRM Servers

Microsoft Google Apple

The video is streamed to the adaptive player

5

Authentication

The player communicates with the DRM server to ensure that the license is valid.

6

Playback

Once the authentication process is successful the player can unencrypt the video and play it for the end user.



BITMOVIN

Video Infrastructure for the Web



AWS S3

Google

Google Cloud Storage



FTP/SFTP

1

Source

The input files can start from a variety of sources, such as AWS S3, Google Cloud Storage, FTP/SFTP, etc.

Files are transferred via HTTP or FTP

2

Encoding

The cloud encoding system will encode the source files into adaptive streaming formats such as MPEGH-DASH and HLS.

3

Encryption

As this process takes place the encoder will **encrypt the files with media keys** from one or more DRM providers.

Media Keys from the DRM providers



The encoded and encrypted files are transferred to storage or CDN for streaming

4

Storage

The adaptive video



DRM Servers

Files are transferred via HTTP or FTP



2

Encoding

The cloud encoding system will encode the source files into adaptive streaming formats such as MPEGH-DASH and HLS.

3

Encryption

As this process takes place the encoder will **encrypt the files with media keys** from one or more DRM providers.

The encoded and encrypted files are transferred to storage or CDN for streaming

Media keys from the DRM providers



4

Storage

The adaptive video is usually stored in a content delivery network ready for a user to click the play button.



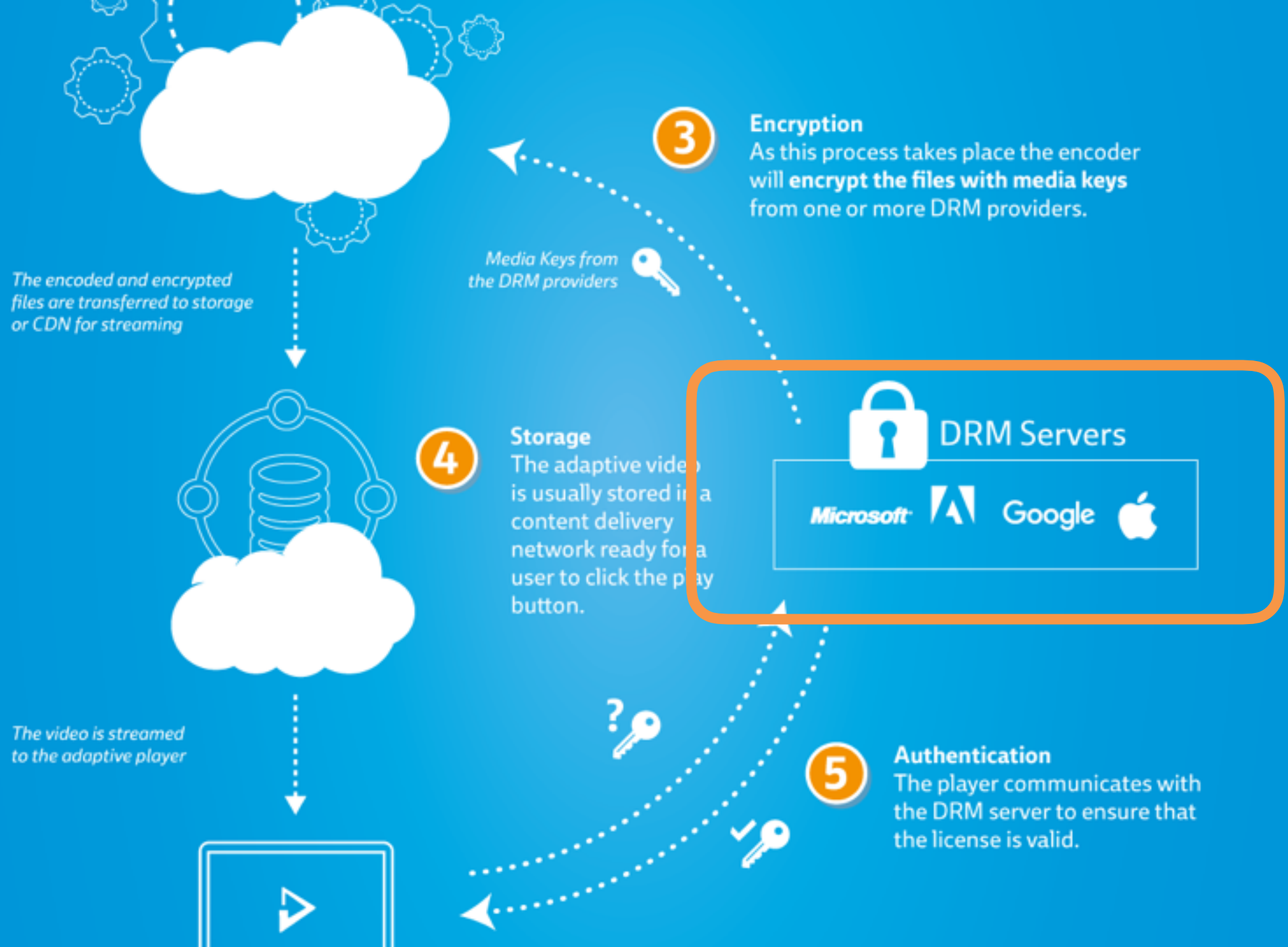
DRM Servers

Microsoft



Google





Files are transferred via HTTP or FTP



2

Encoding

The cloud encoding system will encode the source files into adaptive streaming formats such as MPEGH-DASH and HLS.

3

Encryption

As this process takes place the encoder will **encrypt the files with media keys** from one or more DRM providers.

The encoded and encrypted files are transferred to storage or CDN for streaming

Media keys from the DRM providers



4

Storage

The adaptive video is usually stored in a content delivery network ready for a user to click the play button.



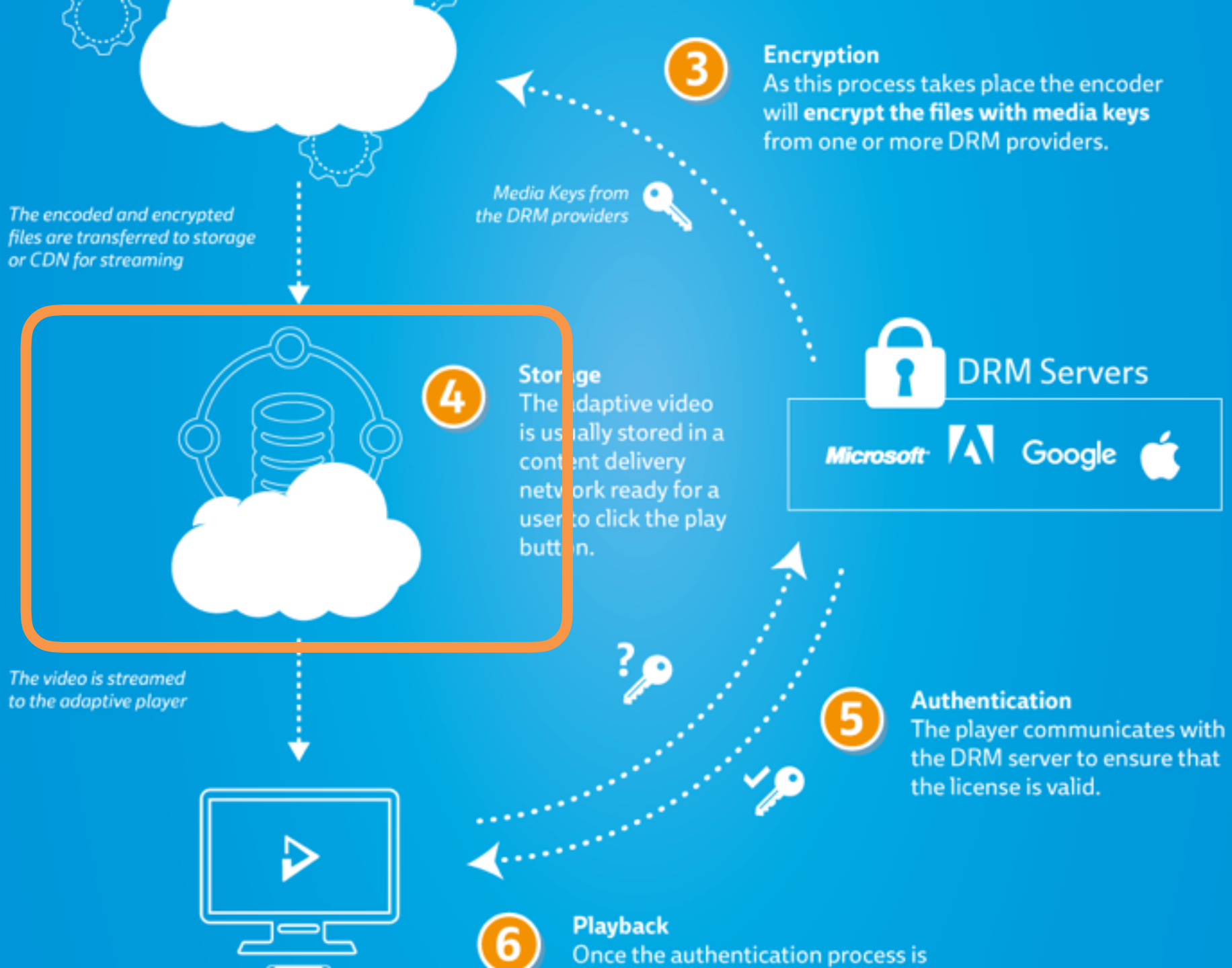
DRM Servers

Microsoft



Google





files are transferred to storage or CDN for streaming



4

Storage

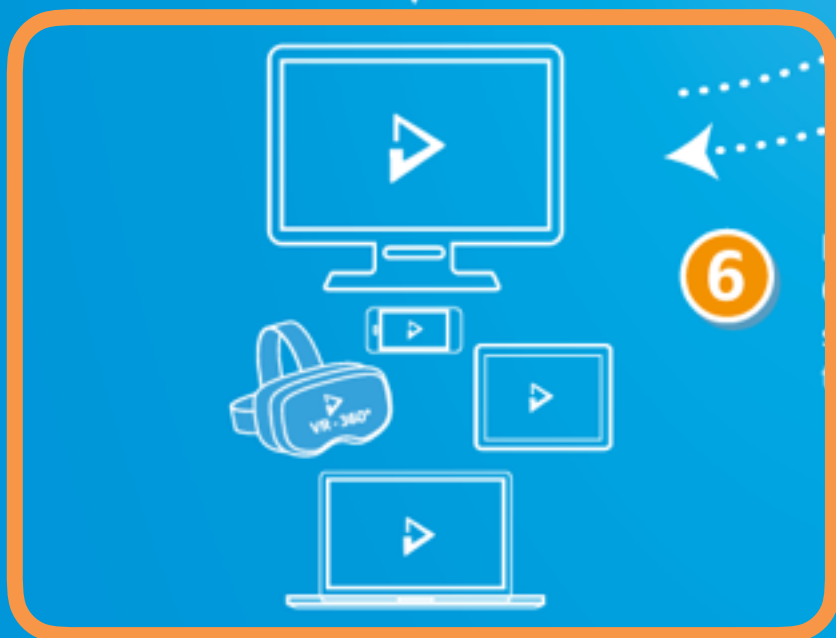
The adaptive video is usually stored in a content delivery network ready for a user to click the play button.



DRM Servers

Microsoft  Google 

The video is streamed to the adaptive player



6

Playback

Once the authentication process is successful the player can unencrypt the video and play it for the end user.

5

Authentication

The player communicates with the DRM server to ensure that the license is valid.



BITMOVIN

Video Infrastructure for the Web

files are transferred to storage or CDN for streaming



4

Storage

The adaptive video is usually stored in a content delivery network ready for the user to click the play button.



The video is streamed to the adaptive player



6

Playback

Once the authentication process is successful the player can unencrypt the video and play it for the end user.

5

Authentication

The player communicates with the DRM server to ensure that the license is valid.



BITMOVIN
Video Infrastructure for the Web

Media Source Extensions™

W3C Proposed Recommendation 04 October 2016



This version:

<https://www.w3.org/TR/2016/PR-media-source-20161004/>

Latest published version:

<https://www.w3.org/TR/media-source/>

Latest editor's draft:

<http://w3c.github.io/media-source/>

Implementation report:

<http://tidoust.github.io/media-source-testcoverage/>

Previous version:

<https://www.w3.org/TR/2016/CR-media-source-20160705/>

Editors:

Matthew Wolenetz, [Google Inc.](#)

Jerry Smith, [Microsoft Corporation](#)

Mark Watson, [Netflix Inc.](#)

Aaron Colwell (until April 2015), [Google Inc.](#)

Adrian Bateman (until April 2015), [Microsoft Corporation](#)

Repository:

[We are on GitHub](#)

[File a bug](#)

[Commit history](#)

Mailing list:

public-html-media@w3.org



Encrypted Media Extensions

W3C Candidate Recommendation 05 July 2016

**This version:**

<http://www.w3.org/TR/2016/CR-encrypted-media-20160705/>

Latest published version:

<http://www.w3.org/TR/encrypted-media/>

Latest editor's draft:

<https://w3c.github.io/encrypted-media/>

Previous version:

<http://www.w3.org/TR/2016/WD-encrypted-media-20160610/>

Editors:

David Dorwin, [Google Inc.](#)

Jerry Smith, [Microsoft Corporation](#)

Mark Watson, [Netflix Inc.](#)

Adrian Bateman, [Microsoft Corporation](#) (Until May 2014)

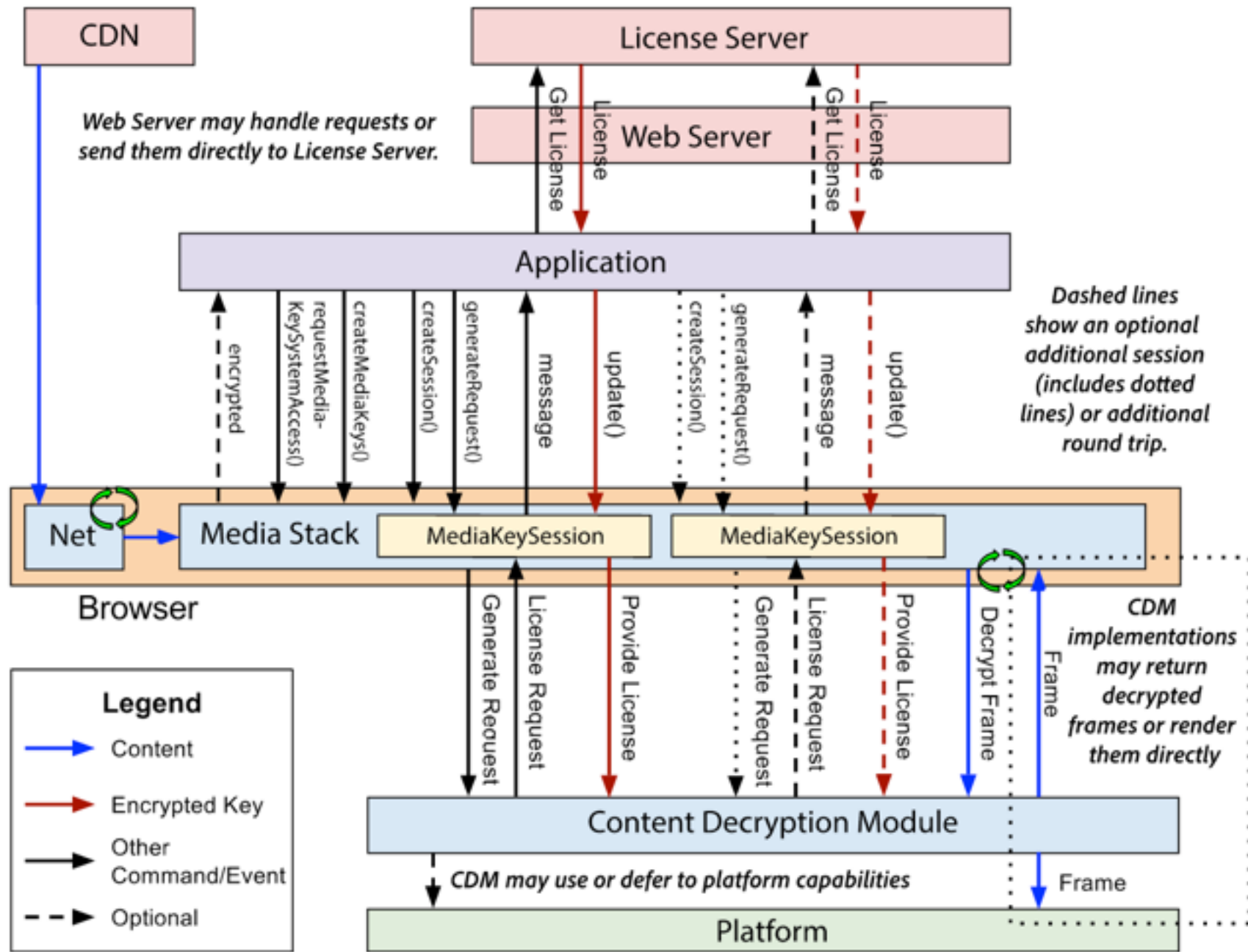
Repository:

[We are on GitHub.](#)

[File a bug.](#)

[Commit history.](#)

Copyright © 2016 W3C® (MIT, ERCIM, Keio, Beihang). W3C liability, trademark and document use rules apply.





Google Widevine



Adobe Primetime, Google Widevine



Microsoft PlayReady



Apple FairPlay

Preferências x Netflix x +

Firefox about:preferences#content

Pesquisar

General

Pesquisar

Conteúdo

Aplicativos

Privacidade

Segurança

Sync

Avançado

Conteúdo ?

Conteúdo com DRM

Reproduzir conteúdo com DRM [Saiba mais](#)

Notificações

Escolher quais sites podem mostrar notificações [Saiba mais](#)

Janelas popup

Bloquear janelas popup

Fontes e cores

Fonte padrão: Times Tamanho: 16

Idiomas

Selecione o idioma preferencial para as páginas


Preferências x Netflix x +

https://www.netflix.com/watch/80017472?trackId=14170286&tab=1%2C2%2C48718756-0468-40b6-9ac2-5b15af66dd53-18757933

Pesquisar

Ativar DRM

Você deve ativar o DRM para reproduzir algum áudio ou vídeo nesta página. [Saiba mais](#)



Desculpe, tivemos um problema...

Erro de reprodução

Um problema com o Firefox pode estar impedindo a reprodução.

Verifique se você está usando a versão mais recente do [Firefox](#).

Se precisar de ajuda para resolver esse problema, visite nosso Centro de ajuda.
<https://help.netflix.com/support/32661>

Código de erro: **F7701-1003**

SHARE

SHARE 1342

TWEET

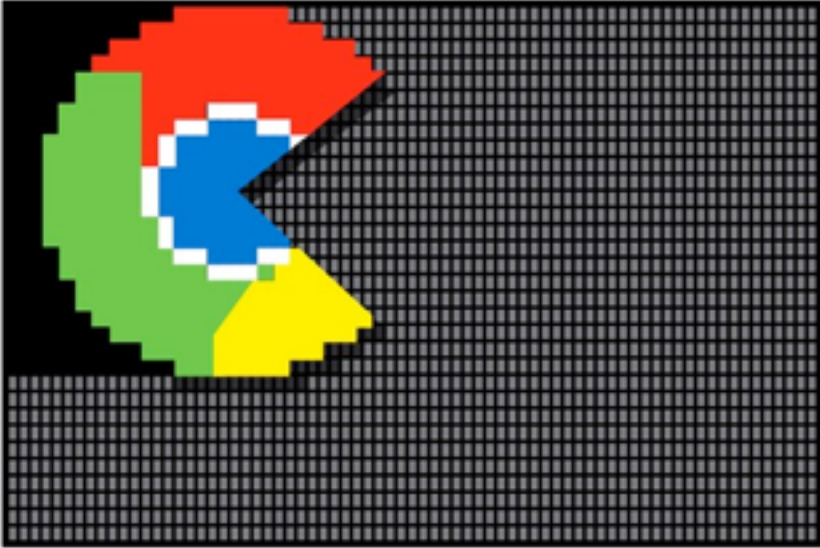
PIN 20

COMMENT 31

EMAIL

KIM ZETTER SECURITY 06.24.16 7:00 AM

A BUG IN CHROME MAKES IT EASY TO PIRATE MOVIES



WIRED

FOR YEARS HOLLYWOOD has waged a war on piracy, using

GET WIRED
Don't Let The Future Leave You Behind. Get 6 Issues For Just \$5.
SUBSCRIBE NOW

MOST POPULAR

- WIRED OPINION**
Gluing Galaxy Note 7 Batteries Down Made It Worse for Samsung
7 HOURS
- INFOGRAPHICS**
Let's All Obsess Over This Intricate Map of Alt Music History
10.07.16
- FACEBOOK WINS**
Twitter's Woes Signal the End of the Social Wars
8 HOURS

Widevine CDM Vulnerability

Capturing Widevine DRM protected content
during playback with Chrome browser

Será que não está na hora de discutirmos o ***modelo de negócios*** de ***direitos autorais*** na Web?