
LIVE
LIVERY
The quality live streaming solution
for professionals
LIVERYVIDEO.COM | INTERACTIVE VIDEO CLOUD

Great live video: Simple and affordable

High quality live video with less than 3 seconds of delay from your camera to your viewer's screen. With all devices in sync (so every viewer sees the same frame at the same time).

Great quality that suits your brand.

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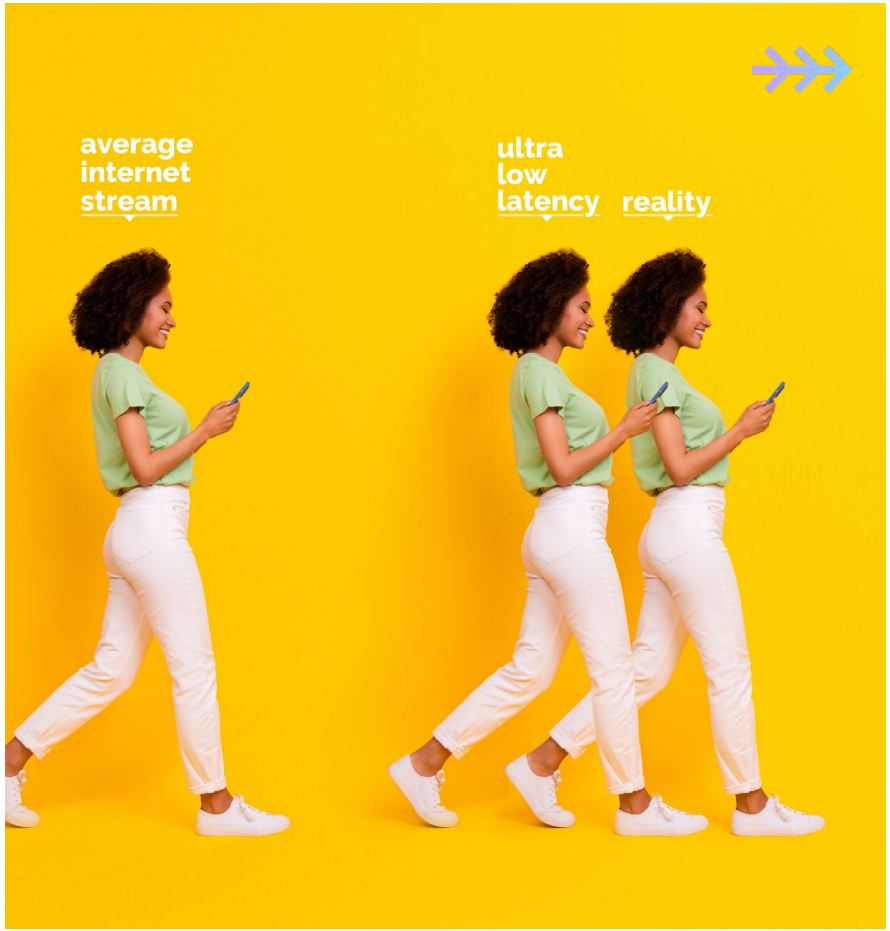

Ultra low latency: Less than 3 seconds behind reality

For live video, latency sucks. With Livery, users see your content as it happens, not 30 seconds later. And… teaming up with Livery enables you to scale up for large audiences.

You can even choose your desired latency: from glass to glass latency of 1-3 seconds up until 10 seconds, depending on your wishes.

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Syncronized:
The same frame at the same time

Regardless of where you are, what device you use, or how fast your internet connection is, everybody sees the same frame at the same time – there are no discrepancies, cheating, or getting ahead.

In order to achieve synchronization, the encoder writes a timestamp use a NTP time source, as soon as it starts encoding the stream. The same NTP time source is used by the players to determine to offset of the stream. The players adjust the starting moment and prevent drifting based set target latency.

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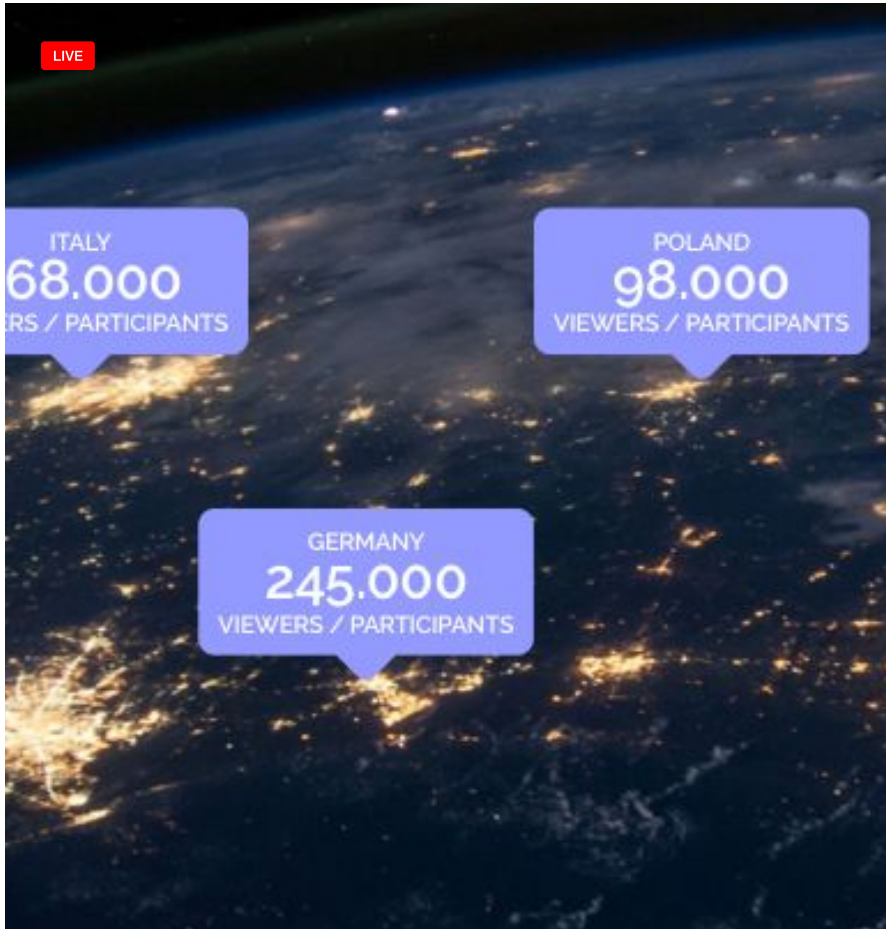

Scalable:
Up to 100 of thousands

From small to the largest. We scale, together with your ambition. Your live stream can scale to volumes beyond anything WebRTC can reach.

Enjoy quality and consistency around the world, backed by trusted partners like Akamai.

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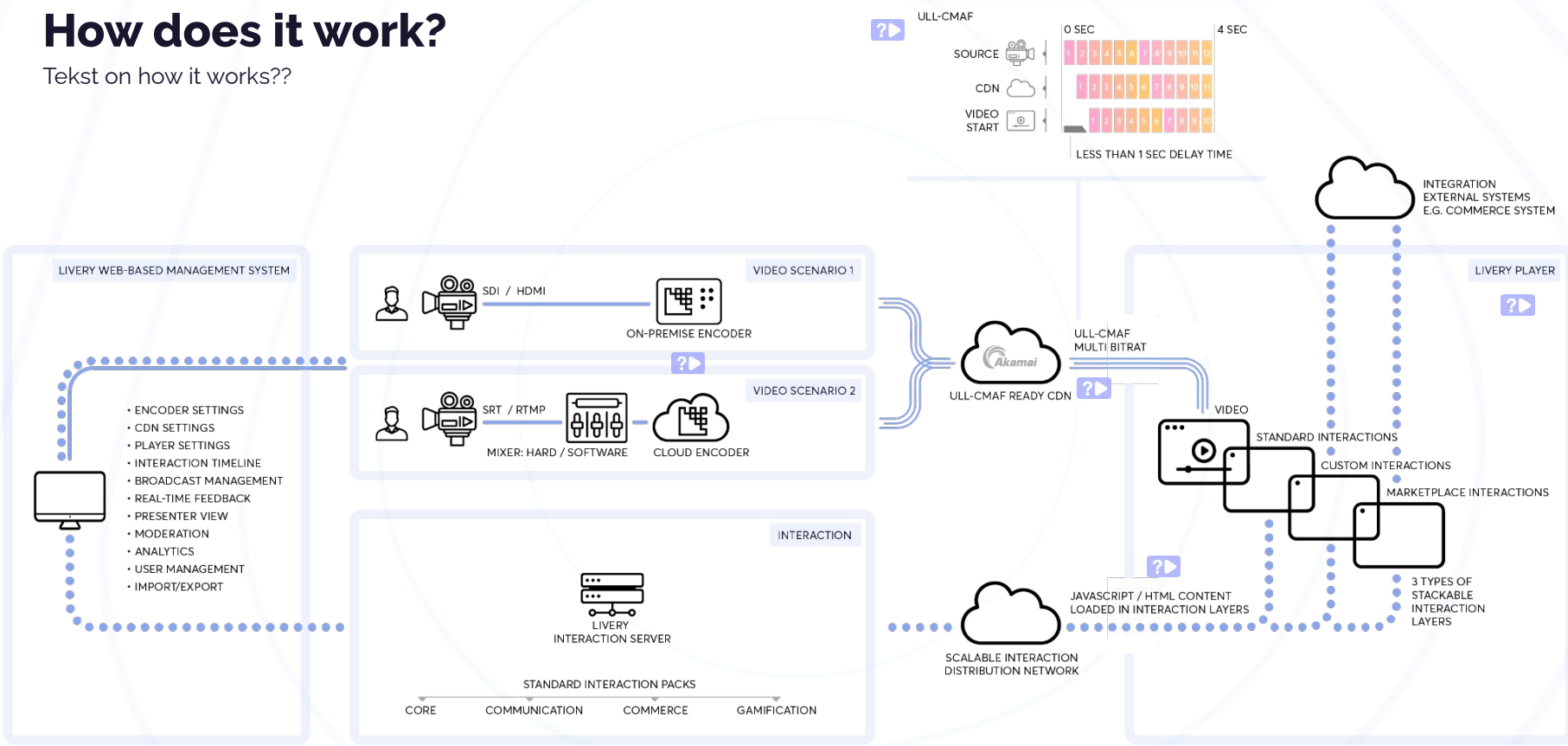
How does it work?

Tekst on how it works??



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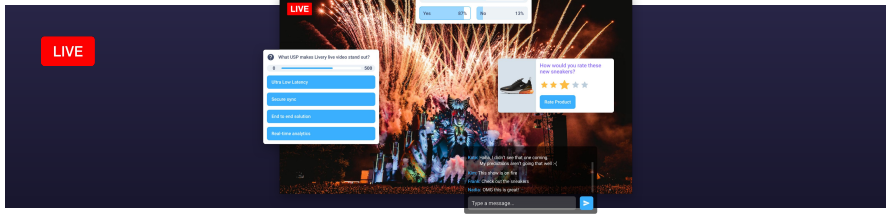
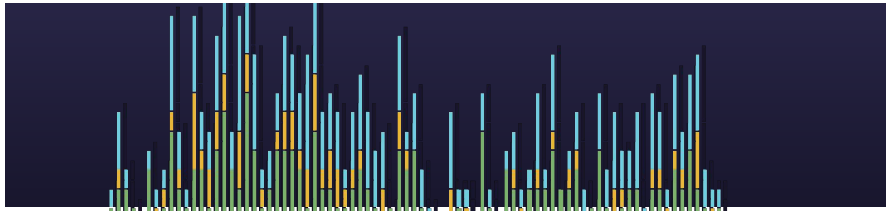
Features

Livery is ready for interactive live sessions. Both the video and interactive elements are ready to be integrated in your system with our API's, or to get video- and interactions data per user or per session.



Ready for interactive live video

Next to live video, we offer off the shelf interactive elements, right on top of your live video. From live statistics and graphics, to live trivia quizzes, betting, shoppable video and auctions. Read more



Data dashboard

Real-time stats dashboard with data from the encoder, CDN, and player: Connection speed, Unique users, Concurrent users over time, Video quality, Devices used, Users per app/website and Location based heat-map

API's

We provide a wide range APIs that can be used by application developers to control the stream from within their own software.
Documentation

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Security

Security is an essential aspect of live streaming, we strives to ensure the utmost safety of your interactive live streams. In addition, Livery provides supplementary security features:

IP whitelisting

IP-level security, customers can specify the IP addresses authorized view the live stream.

Domain whitelisting

Domain-level privacy, customers can specify the websites that are authorized to integrate or embed the Livery video player.

Token Authentication

Secure session tokens are utilized to authenticate user sessions and prevent unauthorized sharing of the streaming URL.

CDN Authentication

CDN authentication is utilized to secure the connection between the encoder (both cloud and on-premises) and the CDN. This prevents hackers from hijacking the stream.

Stream Key

The Livery platform utilizes an RTMP or SRT stream for the first mile delivery to the cloud encoder. A Stream-Key is used for autorisation with the Cloud-Encoder.

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Livery's ULL-CMAF or WebRTC, what to use?

Latency:
ULL-CMAF is able to achieve a glass-to-glass latency of 1-3 seconds, while WebRTC can achieve less than 800ms. The difference between the two has to do with TCP versus UDP. ULL-CMAF is TCP-based, while WebRTC is UDP-based. UDP delivers each package the moment it is created and is not concerned with the order or if the packages have arrived. TCP queues packages and retries if the receiver does not confirm the arrival of the packages.

Scalability:
ULL-CMAF is designed as a "one-to-many" solution, able to scale to millions of concurrent users and more than capable of handling spiky traffic behavior. WebRTC requires a WebRTC server to be created in the region that accommodates the expected load, creating scalability challenges when more users join than expected.

Quality:
The fact that WebRTC's UDP setup does not confirm the reception of packages could mean that data is dropped, which creates artifacts in the stream or distortion in the audio. This issue becomes more prominent with high bitrates (4k Streaming). This is not an issue with ULL-CMAF's TCP-based stream, where packages are retried when not received by the receiver, providing better quality.

Firewalls:
ULL-CMAF is firewall-friendly due to its use of TCP, while WebRTC's UDP connection is not. This is often a problem in corporate networks and forces WebRTC providers to use TCP as a backup, increasing the glass-to-glass latency.

Cost:
ULL-CMAF is based on well-known video delivery protocols and does not require a special server setup. The price for ultra-low-latency video is similar to the VOD price points, making it about 4-8X cheaper than WebRTC. ULL-CMAF operates on a fixed global price point per user hour.

More info on the differences (article)

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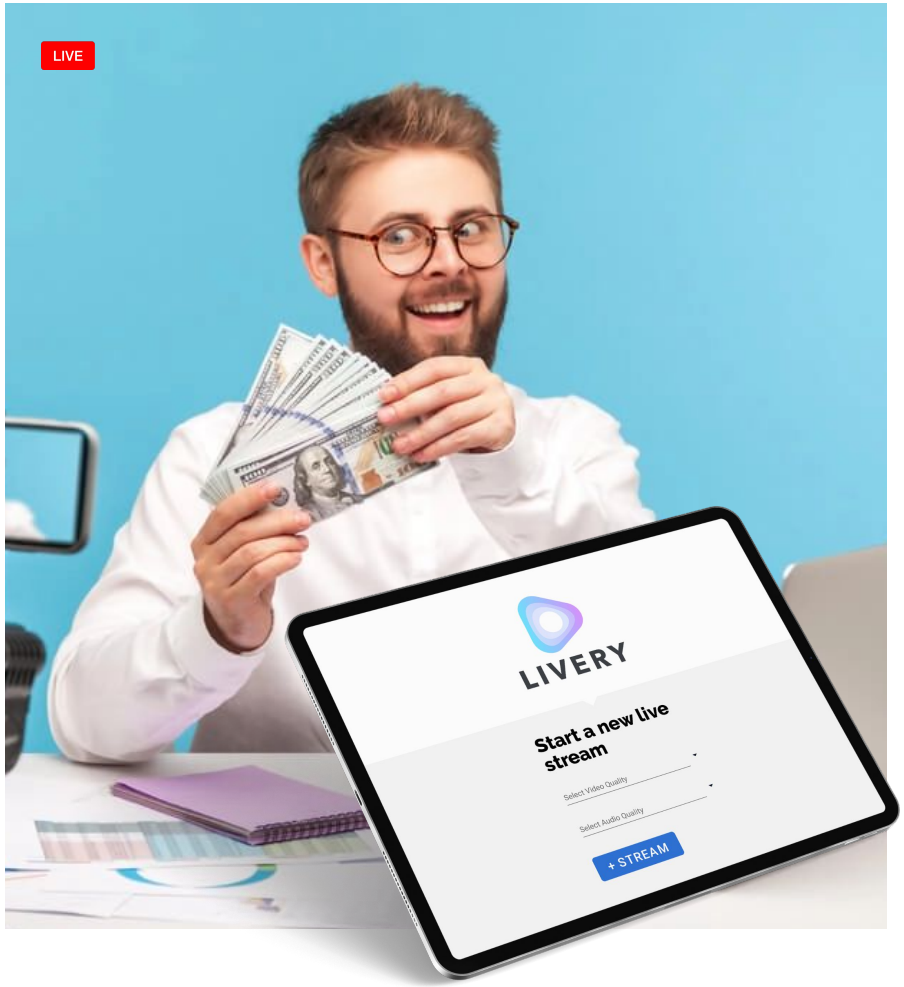

Simple & affordable

Starting from just €450 per month, live streaming is affordable for every company. Check out your price instantly with our price configurator.

Access and manage your stream from anywhere you like in an easy to understand way without losing any power for hardcore video pro's.

No installation required, so super easy. Supporting iOS, Android & Web.

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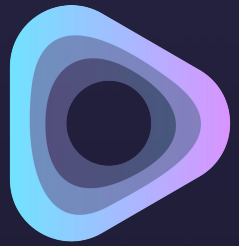

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Glass-to-glass latency of less than 3 seconds

The glass-to-glass latency of interactive live streams significantly impacts the participant's experience. For 1-1 communication, a latency exceeding 200ms can negatively affect the end-user experience. Larger groups and structured interactions can tolerate a higher delay, but a maximum delay of 5 seconds does not affect the pace of the broadcast.

Livery delivers video using the Chunked CMAF standard, which combines .mpd and .m3u8 audio files with an mp4 video segment. The system pushes data via HTTP 1.1 Chunked Transfer Encoding through the CDN to the end user's video player. With CMAF, the system assumes that chunks can be pushed to the player as soon as they are available, reducing latency

More info on latency article / video

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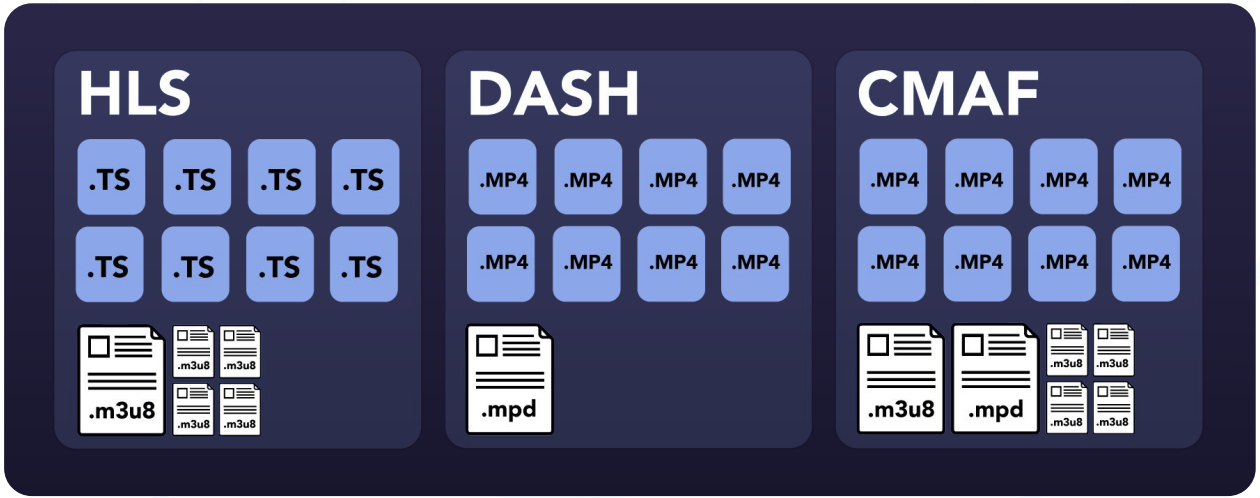
Traditional HLS & DASH vs CMAF

Format fragmentation is a major issue in the video industry due to the lack of consensus on the best format (HLS vs. Dash). CMAF aims to solve issues with both formats. With many devices on the market, supporting all formats (HLS, Dash, Smooth Streaming, HDS) is a challenge, but CMAF enables multi-format delivery and reduces the number of encodes needed.



More info on CMAF article / video

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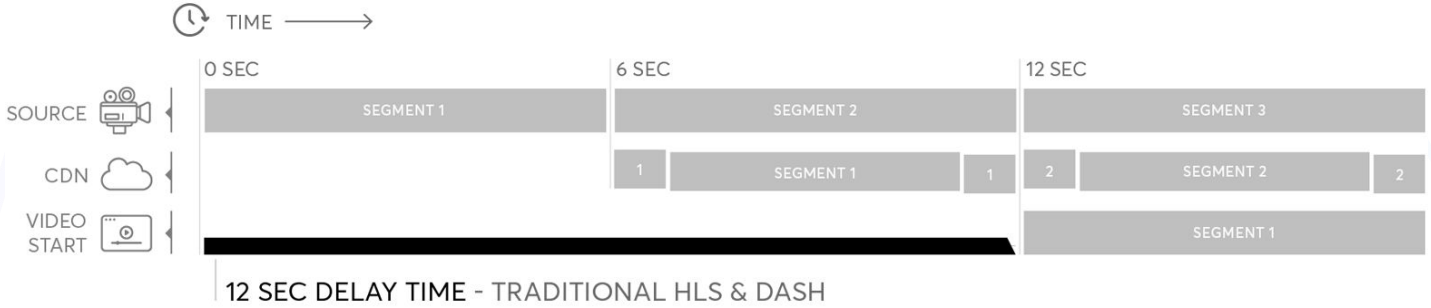
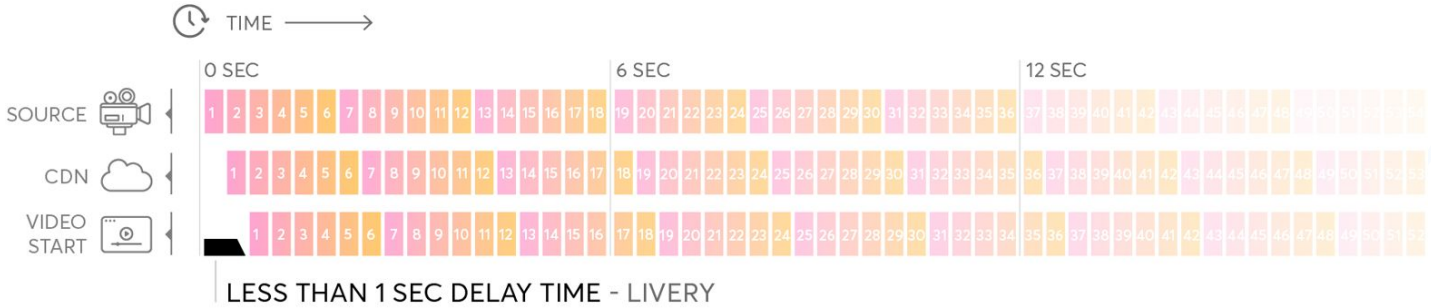
Traditional Segment based setup



Chunk based delivery (<3 seconds)



More info (video)

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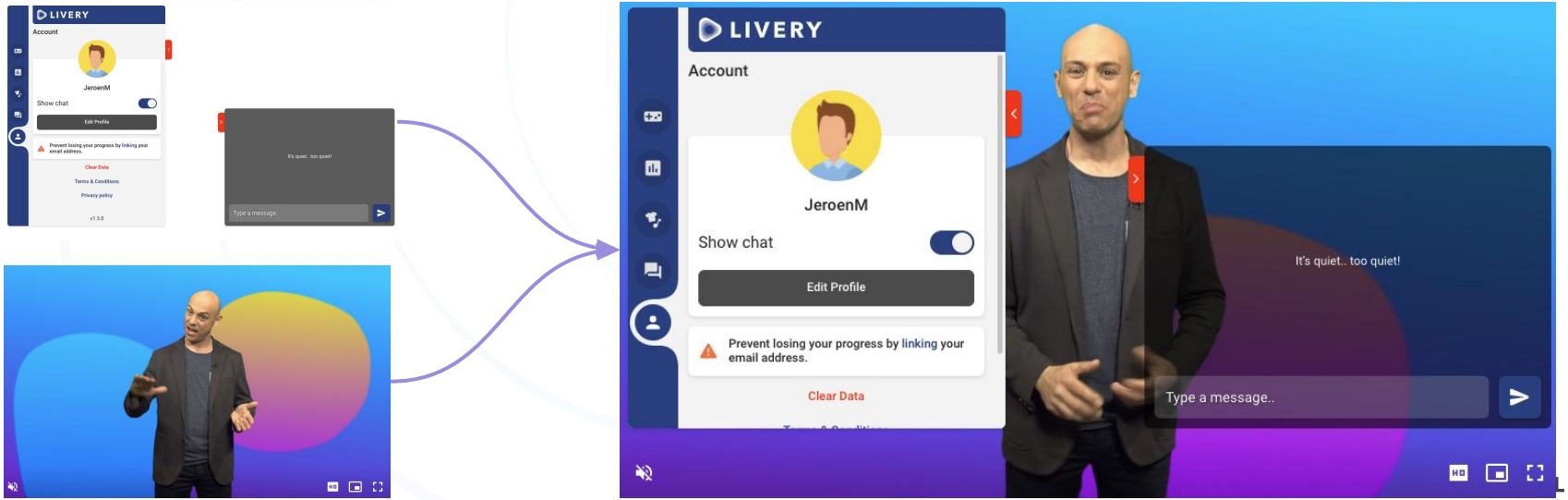
Interactive layer

The Livery video player is based on multiple layers. The interactive layer, which is based on standard web technology, allows you to build HTML5 based interactive video experiences.

The Livery Interaction Bridge allows you to share data between the layer and the underlying website or app. This allows eCommerce platforms to add products, featured in the interactive layer, directly to the users basket. Or it allows platforms to share auth token to prevent multiple logins.



Low Latency Comparison Table

	Livery	Youtube	Twitch	Vimeo	Amazon IVS	Wowza	Red5Pro	Nanocosmos
Sub-second (~1s)						✓	✓	✓
Ultra low latency(2-5s)	✓	✓	✓		✓	✓	✓	✓
Sync	✓							
Secure sync	✓							
Interactive layer	✓		✓		✓			
Interactive Engine / video cloud	✓		✓		✓			
Data and analytics	✓			✓		✓		✓
End-to-end, integrated solution	✓	✓	✓	✓		✓		✓
Own CDN	✓	✓	✓	✓	✓	✓		✓
Flexible CDN	✓						✓	
iOS Safari support	✓	✓				✓	✓	✓
WebRTC						✓	✓	✓
Global availability	✓			✓				
Price	$	fair use	fare use	$$	$$	$$$	$$	$$$

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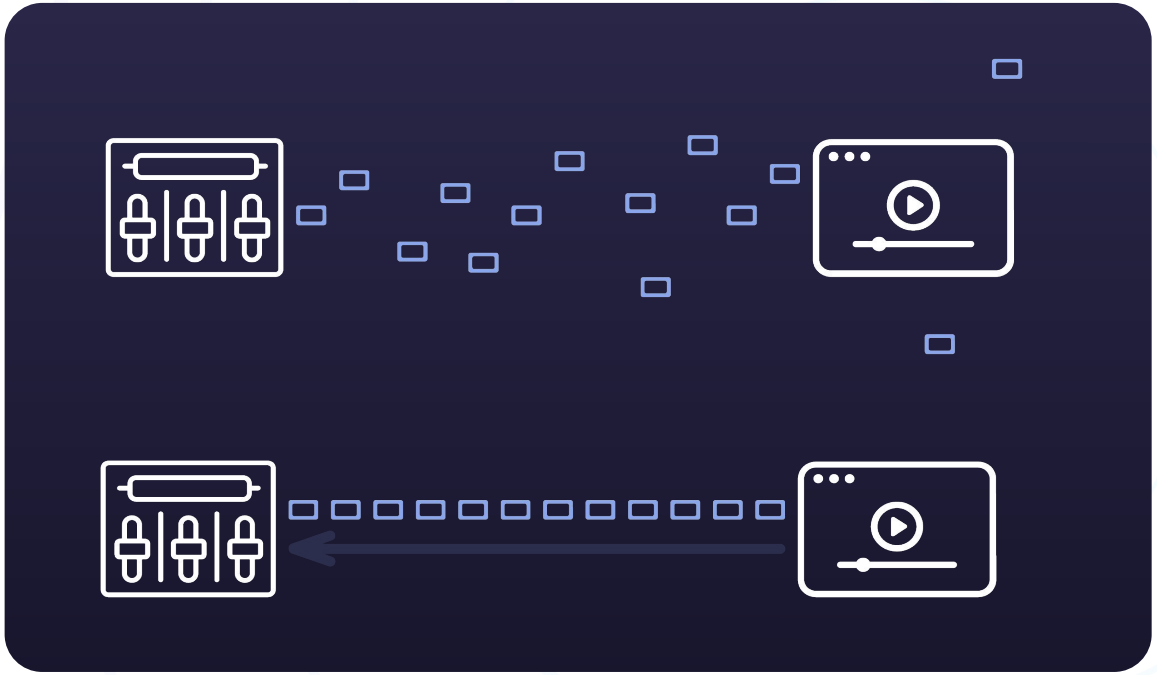
UDP vs. TCP



TCP is a connection-based protocol, while UDP is connectionless. TCP is more reliable but transfers data more slowly, while UDP works more quickly but is less reliable.

TCP is suitable for secure and reliable data transfer. Once a messages is sent the receiver confirmed all data was received. While UDP does not establish a connection, data is send without a confirmation by the receiver and data might be lost during the transmission.

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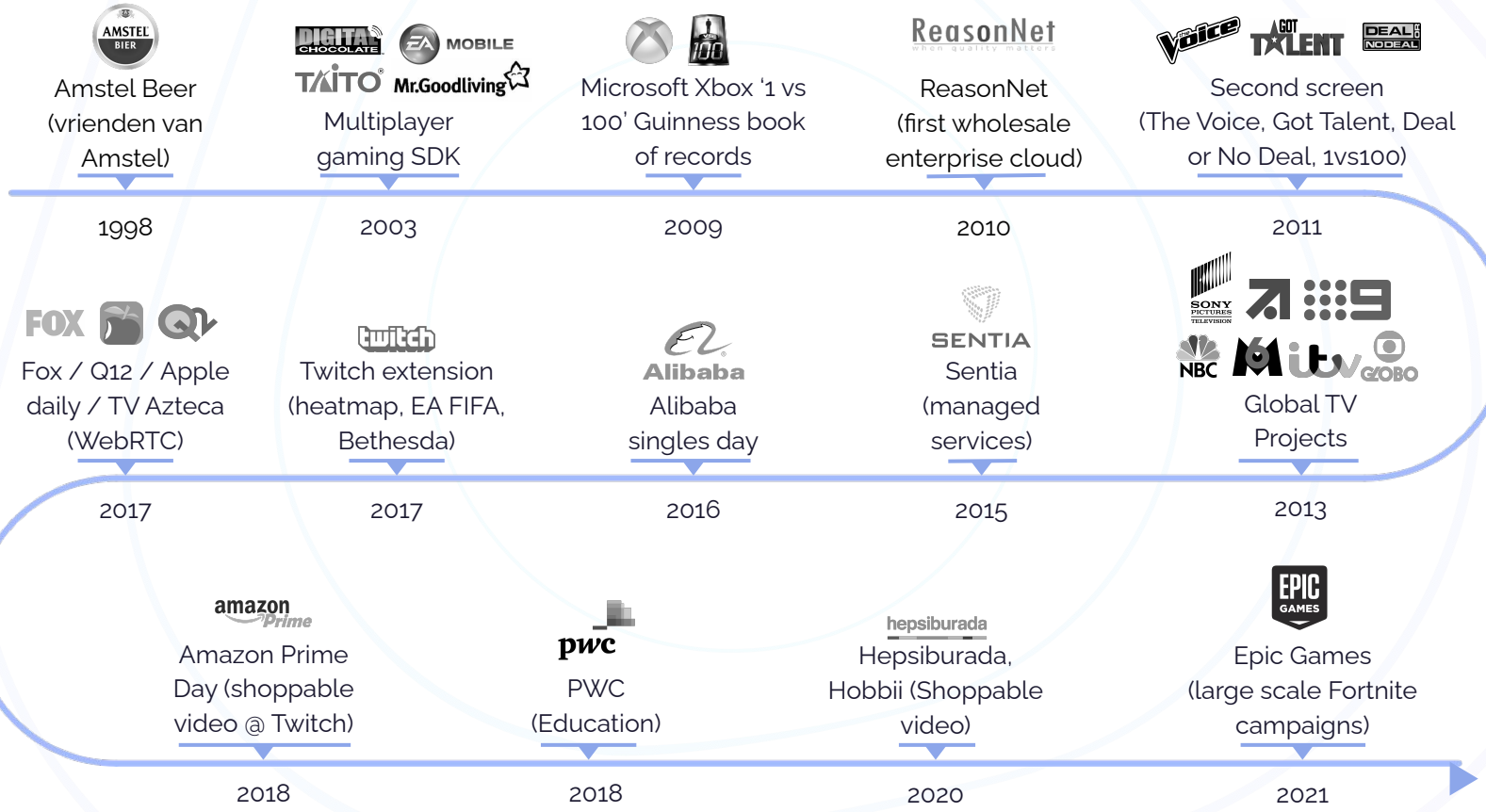
Where did we came from?

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