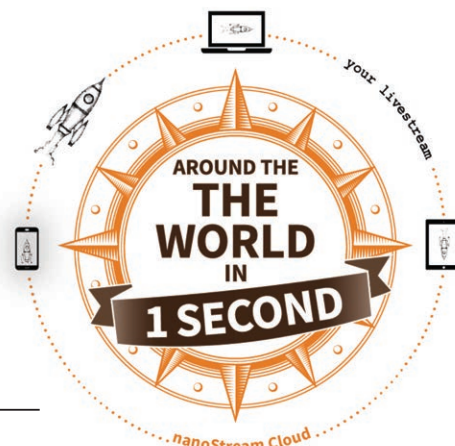# Advanced Live Streaming & Latency Resource
SUPERGUIDE

solid
solutions for
handling
live streams
at scale

Going Live Around the World in 1 Second

Interactive live streaming requires ultra-low latency, as every second counts to keep the user engaged.

Take iGaming, for example. The interaction between players and live dealers is a leading precondition to create engaging online games. Thus, ultra-low latency becomes a requirement for many content creators and platform operators looking for better user experiences.

There are several other interactive use cases with similar needs, as online auctions, online trivia, security and monitoring, and various types of webcasts. However, the greatest challenge remains the same: how to achieve and deliver plugin-free ultra-low latency live streams on all HTML5 browsers and on any device. Let's have a look and understand how nanoStream Cloud including nanoStream H5Live Player will help you tackle this interactive live streaming challenge.

INTERACTIVE LIVE STREAMING

The reason for the strong interest in interactive live streaming is clear: Engaging audiences is the number-one factor to keep the content interesting and dynamic.

Keeping viewers engaged is not that easy, though. From a technical point of view, it requires minimal latency and near real-time feedback from the broadcaster to the audience and vice-versa. To achieve minimal latency, in turn, several challenges must be faced, but we can guarantee there is a solution!

TECHNICAL CHALLENGES FOR DELIVERY/PLAYBACK

Interactive means end-to-end services, low latency

Interactive applications require low latency, end-to-end, glass-to-glass. Live streaming applications require all components to be closely aligned to each other: Live encoding from the camera, live ingest to a streaming server, delivery worldwide, and live playback on the viewer's device. Only end-to-end solutions that keep control over all components can ensure a successful user experience.

Worldwide growing user base on any device

Users and participants in interactive applications are increasingly located anywhere around the world. This requires setting up servers and delivery technologies worldwide. Scalable cloud and CDN platforms like nanoStream Cloud reduce the technical challenges involved with this and your overhead compared to doing this on your own.

Flash is dying; HLS and DASH is here.
Is interactive live streaming on any browser still possible?

Flash and the RTMP format have been great protocols for interactive applications. However, Flash was never available on iOS and now also desktop browsers are disabling their support for Flash, so RTMP can not be used as a delivery format to browsers anymore. In the HTML5 browser world, only HTTP and WebRTC-based protocols remain available for audio/video streaming.

HLS and DASH

HLS and DASH are similar protocols based on stream segments which can't deliver low-latency performance for live streams; they both create latency values of 6-10 seconds or even more, which is simply unacceptable for interactive live streaming use cases.

WebRTC

WebRTC is a great emerging technology designed for plugin-free peer-to-peer communication within browser environments. However, it is very limited in terms of scalability to large viewing audiences, complexity and compatibility.

THE NANOSTREAM H5LIVE PLAYER DELIVERY/PLAYBACK SOLUTION

Knowing the market limitations and willing to innovate, nanocosmos created a unique technology that delivers live streams on any device and HTML5 browser with ultra-low latency: nanoStream H5Live Player. H5Live as delivery and playback protocol is the solution that takes you live around the world in 1 second!

Interactive live streaming is still possible, and even better than before!

NANOSTREAM CLOUD WITH INTEGRATED NANOSTREAM H5LIVE PLAYER

Thinking of creating an integrated and easy to use live streaming workflow, nanoStream Cloud with integrated H5Live Player offers customers a global scalable cloud solution.

Cloud-based workflows can scale capacity easily and adapt to changing numbers of streaming users or audiences. Besides, they are cost-effective since they cut costs for setup, hardware, and maintenance, and do not require strong in-house expertise in live streaming infrastructures. Many of our customers also struggled

Latency values
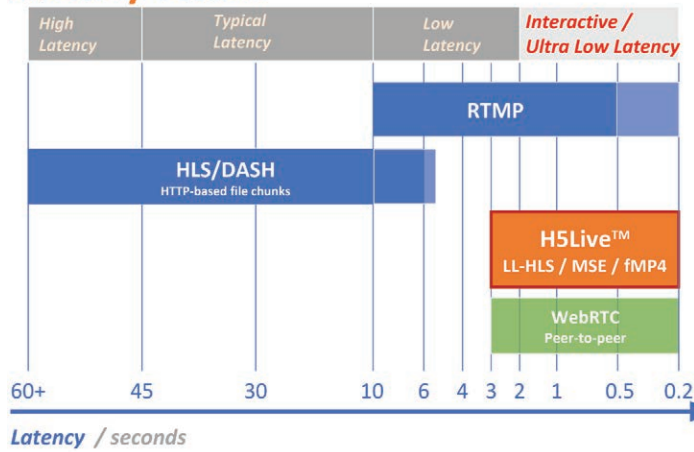
with the vendor fragmentation and mix and match of different technologies from different sources.

nanoStream Cloud including the unique nanoStream H5Live Player has brought a new era in ultra-low latency live streaming. It comes with exclusive features that make it an unique interactive live streaming experience for a global audience:

• **nanoStream H5Live Player:** unique, plugin-free, HTML5-based playback technology for ultra-low-latency (around 1 second) on any desktop and mobile device, including Safari on iOS

• **bintu.live:** easy dashboard management and REST API for creating and managing live streams, an auto-scaling origin/edge server setup for worldwide streaming

nanoStream Cloud including nanoStream H5Live Player is flexible and available in different deployment options:

• **Truly end-to-end:** Create an H.264/AAC RTMP stream with nanoStream Live Encoders (App or nanoStream WebRTC.live) into nanoStream Cloud

• **Ultra-low latency live streaming CDN:** Ingest your existing H.264/AAC RTMP streams to nanoStream Cloud and use nanoStream Cloud as your ultra low latency CDN

nanoStream Cloud including nanoStream H5Live Player was developed to provide an ultra-low latency hassle-free live streaming solution for our business customers. nanoStream Cloud gets rid of the overhead and complexity of building your own live streaming platform, and gives you our full expertise and global support for a successful interactive business on all platforms and all devices, including Safari on iOS.

NANOSTREAM CLOUD ADD-ONS

You can power your live streaming workflow with nanoStream Cloud Add-ons for live encoding and have a true *end-to-end* solution.

nanoStream Apps and SDKs are designed for true cross-platform mobile live encoding through H.264 and AAC optimised for ultra-low-latency.

Or you can even go completely plugin-free with nanoStream WebRTC.live as your browser-based live encoder. When combined with nanoStream Cloud including H5Live Player, it becomes a very powerful and scalable end-to-end, plugin-free live streaming solution.

Join nanoStream Cloud in a new interactive live streaming era! Let's go live around the world in 1 second!

Trying nanoStream Cloud including nanoStream H5Live Player

You can easily try any of the solutions mentioned above on our website, **www.nanocosmos.de/demo**.

Try it out for seven days for free and convince yourself nanoStream Cloud is the perfect solution to fulfill your live streaming needs. Get your camera ready, and we do the rest!

ABOUT NANOCOSMOS
nanocosmos, Berlin-based, 20 years of video and audio expertise, enables worldwide interactive live streaming with ultra-low latency for your business. Go live around the world in 1 second!