Media Services Live

Bring the TV experience online with purpose-built capabilities for reliable, scalable, high-quality live event and 24/7 live linear streaming.

Live streaming is not like broadcast. It has more challenges and requires a solution capable of handling a continuous flow of content transferred over the Internet, while consistently delivering broadcast-quality experiences to individual online viewers at scale. Providing a high-quality viewing experience, for 24/7 live linear services in particular, merits a purpose-built approach that takes reliability, scalability, and cost into consideration.

Challenges of Moving to a 24/7 Live Linear Environment

Akamai has delivered some of the world's largest live streaming events and worked with several of the world's most popular content providers, giving us a unique vantage point for architecting our solution. A key lesson we've learned while working with our media customers on transitioning to or launching live linear OTT services is that although there is still a significant gap between streaming and TV, viewers demand an online experience that matches or exceeds that of broadcast.

The challenges of providing a live streaming service that brings the TV experience to online audiences for live events and/or 24/7 live linear programming include:

1. **Ingesting content on a 24/7 ongoing basis,** rather than just event based, while taking into account the unprovisioned nature of the Internet

2. **Reducing live delay,** which currently averages between 30 and 60 seconds end to end across the industry, to provide a true TV experience online

3. **Attaining broadcast-level reliability** to ensure streams are available 24/7, even when system components fail

4. **Realizing consistent distribution** for online content across a variety of delivery channels to reach a broadly distributed audience

BENEFITS TO YOUR BUSINESS

Enable reliable, robust ingestion for 24/7 live linear streams regardless of the unpredictable nature of the Internet

Minimize delays between broadcast and live streaming down to 1 or 2 seconds to provide broadcast-quality viewer experiences

Ensure broadcast-level reliability so your service and content are always available for your viewers

Maximize audience reach through a modular architecture that allows multiple delivery channels to connect to a single origin

Offer seamless, engaging viewing experiences through serving relevant, targeted ads at scale, to effectively monetize content

Provide visibility into first-mile performance and stream health in nearly real time so that quick, relevant action can be taken as needed

Transport content securely from encoder to viewers with end-to-end TLS encryption

Offer features and functionalities to extend content consumption at the viewer's discretion

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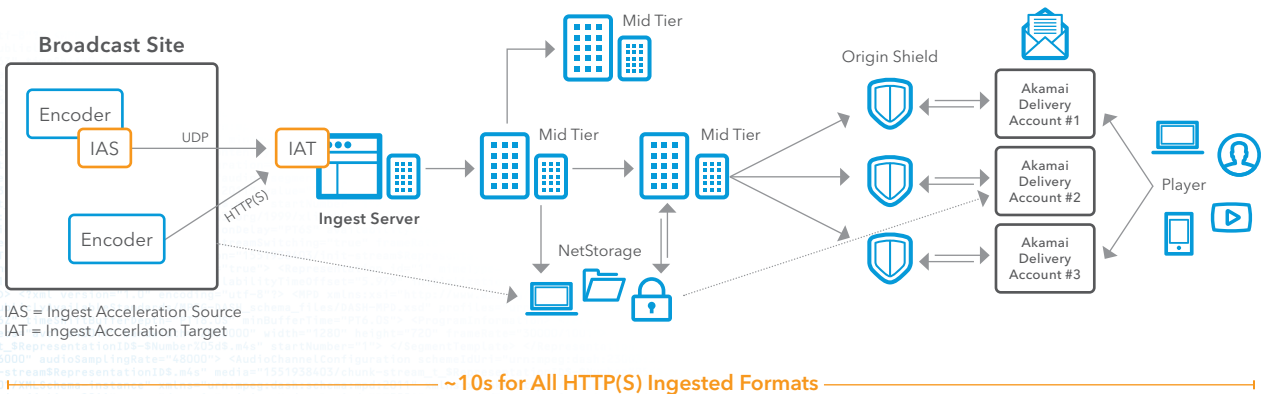live event and 24/7 live linear streaming

⑤ **Efficiently monetizing** online content in an increasingly complex video ecosystem driven by rising viewer demands for a TV experience online, fragmentation of devices, and advancements in ad-blocking technologies

⑥ **Monitoring stream performance** in real time to quickly mitigate or address issues that may arise

⑦ **Securing content throughout the entire delivery chain** – from the point of ingestion to when it is viewed on an end-user device

⑧ **Providing alternative ways** for online viewers to control and consume content

This is why Media Services Live offers liveOrigin™ – designed to specifically bridge the gap between live streaming and broadcast. Purpose-built to overcome the challenges of providing 24/7 live linear and live streaming services, liveOrigin ensures that content providers are able to meet the quality and performance expectations of their audiences and provide a true TV experience online.

Purpose-Built for Live

By embracing the challenges our customers face, Akamai's unique, purpose-built capabilities, known as liveOrigin, were designed to specifically overcome the challenges of providing 24/7 live linear experiences at broadcast quality. Media Services Live focuses on our customers' most important asset – their live content. Our modular architecture, which is compatible with Adaptive Media Delivery, combines reliable, scalable ingestion and origination with high-performance delivery of live video content.

It All Starts With the

IAS = Ingest Acceleration Source
IAT = Ingest Accerlation Target

~10s for All HTTP(S) Ingested Formats

Key Capabilities Offered with liveOrigin

Our liveOrigin solution offers purpose-built capabilities that operate in concert to provide unmatched reliability, scale, and quality to bring the TV experience to your online audience at scale. These capabilities include:

Ingest Acceleration: Akamai has integrated proprietary acceleration technology within a highly distributed ingestion network. While mapping technology matches encoders to optimal entry points to route content, UDP-based acceleration improves the performance and throughput of ingestion. These capabilities add an additional level of robustness to overall contribution and improve the quality of the live feed even in cases of packet loss.

Low-Latency Support: To reduce the delay between online and live linear broadcast, liveOrigin has been designed to reliably handle small fragments of low-latency video for HTTP-based streaming (HLS/HDS/DASH/CMAF). Akamai supports 10-second end-to-end latency (1-2 seconds behind broadcast) reliably and at scale to provide a true TV experience for online audiences.

Self-Healing Network: One of Akamai's core principles is based on eliminating single points of failure throughout our solutions. liveOrigin replicates content to multiple locations and dynamically assigns encoders to optimal entry points in order to ensure 24/7 reliability and availability of your service.

One-to-Many (Cross-Account) Delivery: Content providers need to efficiently and flexibly distribute their content across multiple delivery channels. LiveOrigin allows for multiple Akamai delivery accounts to easily access content from a single origin to simplify broader distribution of content across a variety of channels.

Dynamic Ad Insertion: Highly scalable server-side stitching provides a seamless viewing experience and, in combination with platform-agnostic middleware, enables consistency in deployment to client devices. It provides the flexibility to integrate with all major ad decisioning servers and ad exchanges. Viewer-level targeting improves monetization opportunities through delivery of relevant ad content, while ensuring live content is never lost through support for early return breaks and start-stream failover capabilities for live, live linear, and on-demand (only available with Adaptive Media Delivery integration) use cases.

End-to-End Transport Layer Security (TLS) Support: Akamai has added the ability to receive content over a TLS session from the encoder and maintain the delivery between components in the Akamai network (and out to end users) so that the content is transported securely end to end.

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First-Mile Reports: Server-side monitoring and reporting capabilities provide visibility into live stream performance, ingested bitrates, fluctuations over the past hour, packet loss, latency, errors, etc. Content distributors gain near real-time insight into first-mile performance of live feeds to help support operational decision making and to take relevant action when necessary.

DVR and Archive: By providing DVR and archive functionality, it becomes possible to offer alternative viewing experiences, including "live rewind," for the end user.

Live Clipping: A quick and easy way to generate on-the-fly clips from live streams and to integrate clip generation into live streaming workflows. Live clipping would provide capability to support use cases including highlights creation, events replay and program creation available for a limited time period (31 days with the live clipping feature)

liveOrigin includes access to all of Akamai's live video origin and workflow features for live streaming — ingestion, archiving, and supported output formats — and includes the following features: Ingestion, REST APIs, Basic Archive, Ingest Acceleration, Low-Latency Streaming, End-to-End Streaming TLS Support, First-Mile Reporting, and Media Acceleration. Required Akamai product: Adaptive Media Delivery.

Akamai secures and delivers digital experiences for the world's largest companies. Akamai's intelligent edge platform surrounds everything, from the enterprise to the cloud, so customers and their businesses can be fast, smart, and secure. Top brands globally rely on Akamai to help them realize competitive advantage through agile solutions that extend the power of their multi-cloud architectures. Akamai keeps decisions, apps, and experiences closer to users than anyone — and attacks and threats far away. Akamai's portfolio of edge security, web and mobile performance, enterprise access, and video delivery solutions is supported by unmatched customer service, analytics, and 24/7/365 monitoring. To learn why the world's top brands trust Akamai, visit www.akamai.com, blogs.akamai.com, or @Akamai on Twitter. You can find our global contact information at www.akamai.com/locations. Published 05/20.