

LIMELIGHT REALTIME STREAMING

Limelight Realtime Streaming's sub-second latency enables you to create interactive applications that include live realtime data, making it easy to deliver online viewing experiences that open up new possibilities for how live content distributors interact with viewers. As viewers increasingly consume content online, one of the primary complaints with watching live sports and other realtime events is the delay between the broadcast feed and the online stream. Limelight Realtime Streaming is the first scalable, sub-second live video streaming solution that's natively supported by major browsers without special plug-ins.

CHALLENGES DELIVERING LOW LATENCY LIVE VIDEO

Traditional HTTP live streaming breaks the video into small segments or chunks that must be buffered prior to playback, causing live streams to lag realtime by 30 seconds or more. It's possible to reduce the size of the chunks to decrease the delay, but making them too small increases the chance viewers will experience video rebuffering and other playback issues. While streaming latency may be acceptable for some live streaming use cases, it does not satisfy the requirements for realtime workflows that require true sub-second latency for viewers everywhere.

GLOBAL REALTIME LIVE STREAMING

Limelight Realtime Streaming is the first scalable solution that allows video to be streamed from anywhere, to viewers everywhere, in less than a second. It utilizes the industry-standard WebRTC video format to deliver reliable, broadcast-quality, realtime video streaming using the UDP data transfer protocol. Video streams do not need to be segmented into chunks and buffered before they are viewed, eliminating streaming delays. WebRTC is natively supported in major web browsers without needing special plug-ins or custom applications, making it easy for viewers to enjoy realtime video on a variety of devices. Limelight Realtime Streaming leverages Limelight's global private network which has the capacity, reach, and connectivity to ensure a high-quality, realtime viewing experience for audiences—wherever they are. In addition to live global sub-second video delivery, Limelight Realtime Streaming provides numerous tools and capabilities to help you maximize the value of your live streams. Adaptive Bitrate streaming delivers the highest possible picture quality to each viewer, even over changing network conditions, ensuring every viewer has the best possible online experience and keeps coming back for more. Integrated content security and access control capabilities make it easy to stop unauthorized viewing of your live streams, including the ability to block access to streams by geolocation. Analytics are also available to help you understand how and where your content is being viewed and better engage your audience.

CREATING INTERACTIVE ONLINE VIEWING EXPERIENCES

Limelight Realtime Streaming's sub-second live video enables you to create interactive online experiences by integrating live data with video. You can share data with sports fans so they can vote for the player of the match, or wager on who will score the next goal, right from their computer or mobile device. Fans of eSports can participate in event polling along with the live in-arena audience. Remote participants in live auctions will be able to bid in realtime along with at event bidders. Limelight Realtime Streaming opens up new business opportunities in sports, gaming, auctions, and more by making live viewing a more interactive social experience.

FEATURES

Limelight Realtime streaming includes the following features:

CONFIGURATION

- **Self-Configuration** — Create, update, delete streams, as needed using an API or through the self-service UI.
- **Ingest Protocol** — Live ingest via RTMP or WebRTC with single or multiple bitrates within your global region.
- **Metadata** — RTMP ingest supports pass-thru on PTS.
- **Ingest Codecs** — H.264 baseline, AAC
- **Custom Stream Naming** — Make stream publishing fast and simple, so that Limelight Realtime Streaming integrates easily with your video publishing and CMS workflows.

REDUNDANCY

- **Secondary Ingest** — Seamless failover from primary to a backup ingest location is available.
- **Resume Redundancy** — Upon recovery, primary ingest will rejoin the redundancy relationship.
- **Ingest Server Restarted** — Encoders are not required to be reprovisioned to reconnect and resume streaming.
- **Selection of Ingest PoPs** — Selection of primary and secondary ingest PoPs utilizes the DNS name provided during provisioning, using existing Limelight logic for closest PoP.

INGEST

- **Single Bitrate** — With single bitrate output.
- **Multiple Bitrates** — Ingest for Adaptive Bitrate output.
- **Audio Only** — Ingest of audio only stream and egress of audio only stream.

DELIVERY

- **Sub-Second Latency** — Video delivery from ingest to edge, anywhere in the world in less than one second.
- **Unlimited Streams** — Provision as many streams as required.
- **Custom Video & Audio Bitrates** — Publish any combination of audio and video bitrates.
- **Configurable Streaming Options to Support Different Devices** — Define a custom bitrate and resolution up to 4 Mbps per stream for optimum viewing experience.

EGRESS/PLAYBACK

- **PoP Selection** — The available Point of Presence (PoP) with the lowest RTT to the client selected during client connection attempt.
- **Scalability** — 10s - 100Ks delivered upon request globally.
- **Output Protocol** — WebRTC, for fallback the player will not fall back to HLS - an HLS stream can be provided for the entire ingested stream via MMD Live.
- **Output Codecs** — H.264, AAC, OPUS audio
- **Adaptive Bitrate (ABR) Playback** — Viewers automatically receive the highest possible picture quality up to 4 Mbps for their available bandwidth and current network conditions.
- **UDP Delivery Enhancements** — Audio only playback.
- **Video can be Viewed Using Standard Web Browsers** — Live streams can be viewed in standard web browsers including Chrome, Firefox, Safari, and Opera, without the need for special plug-ins.
- **Integration with Android and iOS Applications** — SDKs are available to integrate Limelight Realtime Streaming capabilities with Android and iOS applications.

SECURITY

- Encrypted Video/Audio — Video/Audio data between edge and viewer client is encrypted.
- Access Control — Domain access control (CORS)
 - **CDN Stream Authentication** — Restricts ingest of live streams to authenticated sources using a unique password per stream. RTMP authentication compatible with OBS, Wirecast and other encoders.

SHARED OBJECTS DATA STREAMING

- **Data Distribution** — The publisher can create, update a data payload whose change is automatically distributed to each connected client, such as polls, sports statistics and other information.

ANALYTIC

- **Integrated Analytics for Decision Making** — Robust usage data is available to help you understand viewer behavior and make strategic business decisions.

BUSINESS BENEFITS

Limelight Realtime Streaming brings online viewers into the live action. And by sharing interactive data with your live video, you can open up new workflows in sports, gaming, gambling, and more. Limelight provides the tools and capabilities you need to grow your online audience and provide an interactive viewing experience that helps you increase the value of your live content.

ABOUT LIMELIGHT NETWORKS

Limelight Networks Inc., (NASDAQ: LLNW), a leading provider of digital content delivery, video, cloud security, and edge computing services, empowers customers to provide exceptional digital experiences. Limelight's edge services platform includes a unique combination of global private infrastructure, intelligent software, and expert support services that enable current and future workflows. For more information, visit www.limelight.com, follow us on Twitter, Facebook, and LinkedIn.

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