



INDUSTRY INSIGHT

EXPERT Q&A: PLANNING AND DELIVERING A SUCCESSFUL LIVE STREAMING EVENT

Content may be king, but when it comes to live-streaming an event, that king requires plenty of support to get it where it needs to go. Live streaming takes plenty of planning, and choosing the right content-delivery network (CDN) must be an integral part of that plan.

As a CDN service provider, Limelight Networks works with clients to deliver faster Websites, responsive applications, and high-quality video to any device. Limelight’s advanced services architects, offer some technical tips on how to plan and deliver a successful live-streamed event.

HOW DO YOU WORK WITH MEDIA CLIENTS TO HELP THEM PLAN TO LIVE-STREAM THEIR CONTENT?

We start by sitting down with the customer and understanding what the workflow is. We ask how they publish events; what services, equipment, and players they use; what bitrates they want to stream to; who the audience is; and the devices they’re most likely to consume it on. It’s important to understand the type of event and the quality they want and then, from there, fine-tune your player or mobile application or desktop device for it. There are many different technical options to consider.

The first step begins with choosing a content delivery network. Part of your decision should include taking into account your ingest location (where you’re streaming from) and whether the CDN that you select has ingest points close to that physical location.

Confirm that the CDN can support primary and backup ingest into separate physical locations for redundancy and that their delivery policy supports failover in the event of an outage. A significant element impacting a live-streaming event is the amount of time the traffic spends on the public Internet. For example, if you are streaming an event in New York, you can publish to a Limelight point of presence [POP] in New York. At that point, the stream is carried on our dedicated private backbone until it exits closer to the client. When transiting the Internet, you’re ultimately going to run into contention with other public traffic, which will impact stream quality. Limelight Networks has a global private network, so we can drastically reduce the amount of time spent transiting the public Internet, thus improving the user experience. Another way to ensure viewers receive the best possible viewing experience is with a multi-copy policy. Oftentimes, you may end up getting hot spots on a CDN, especially if you’re offering a single live stream to thousands of consumers and certain locations serve more content than others. With Limelight, in each of our POPs, we’ll have multiple servers spreading out that load for an overall better user experience.

YOU HIT ON AN ISSUE MANY LIVE- STREAMING CONTENT PROVIDERS FACE: SCALING UP FOR BIG EVENTS AND THOUSANDS OF CONSUMERS. HOW DO YOU WORK WITH CLIENTS TO ANTICIPATE AUDIENCE, AND HOW DO YOU MANAGE BANDWIDTH NEEDS?

If it’s a brand-new customer, we’ll create an estimate based on a number of factors, such as expected viewership, desired bitrate, and format. If they’re an existing customer, we often review prior events with similar viewership and use that in our estimates. Then, we’ll configure our tuning and multi-copy policy to match expected load. We recognize there’s no second chance on streaming a live event and take extra precautions to ensure success. During delivery, we closely watch the traffic numbers in real time so we can adjust tuning to be more aggressive if there are more viewers than anticipated.

We have analytics available that report traffic numbers, viewership, device breakdown, formats. Also, in certain cases, depending on the customer’s needs, we can help them integrate with third-party analytics as well as help monitor, maintain, and leverage for planning future capacity needs.

WHAT ARE SOME THINGS CLIENTS CAN DO TO DELIVER AN EXCEPTIONAL LIVE-STREAMING EXPERIENCE?

Have metrics, prepare for worst-case scenario, and understand your escalation workflow. Having metrics available during the event will help you spot issues before they become user-affecting. You need both a primary and backup ingest and a documented set of escalations to deal with things if they fail.

Make sure that you're delivering — on the quality side — the formats that the mobile or desktop clients need: HLS, HDS, DASH, MSS. Make sure that your ingest stream is of a high enough quality so that there is enough resolution to support the type of quality that you want. And that actually differs with the type of events. For most events, you want a high-quality ingest stream so that, when we transrate it down for mobile clients and viewing on smaller devices, we can maintain that quality.

Run a pre-event test. Confirm that your clients properly uprate/down rate as expected and that the quality is to your standards. Test your failover and confirm that the user doesn't experience a visible artifact when failing over.

HOW DO YOU WORK WITH CLIENTS TO MONITOR THE LIVE STREAM AND, IF THERE IS AN ISSUE, REPORT THAT BACK TO YOU?

We have war rooms with dedicated staff who monitor the events, the streams, the ingest, etc., and we also have advanced service architects [ASAs]. For major events, we'll have a very large war room with 20, 30 people on a bridge all communicating and passing back what they see in that instant to the ASA. Don't underestimate the customer service aspect of it. Don't underestimate having an advanced services architect around to help with the planning and delivery.

At the core, it's about preparation. If you sit down and work with experts in live streaming, such as Limelight, it's easy to optimize and create a workflow for the day of the event that will address any issues that could occur. Having a partner that looks at internal metrics from the CDN side and then ties that with your client-side metrics is very valuable.

HOW DO YOU HANDLE SECURITY OF THE LIVE STREAM?

Our MediaVault solution allows clients to secure their stream and offers them the ability to customize access. We support content that has had DRM pre-applied, or we can add PlayReady or WideVine using our media translation layer. Specifically, in sporting events, there are often geographical restrictions that need to be honored. That functionality must be available in your CDN, or you won't meet the business requirements of the event.

WHERE DO YOU SEE THE MOST DEMAND FOR LIVE STREAMING?

Our peak live traffic has frequently come from live sporting events and live concert events. World Cup Soccer was huge; other events — such as football, baseball, and wrestling — are as well. Our live streaming events have increased rapidly in the past few years, giving us the experience and expertise in guiding clients to success with streaming live events.

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