![Grass Valley logo](GV Grass Valley®)

Grass Valley's AMPP Revolutionizes the Live Global Leadership Summit (GLS) Experience with a Cloud-based Localization and Distribution Ecosystem

Agile, scalable AMPP enables the Global Leadership Network (GLN) to create and deliver multiple, time-shifted live streams, each containing customized, regional content, to over 650 North American host venues, plus translated versions for international viewers.

![Global Leadership Network logo]

The Global Leadership Summit (GLS) is an annual inspirational gathering held by the Global Leadership Network (GLN). This full two-day conference features acclaimed speakers who share their valuable insights and knowledge to motivate the next generation of leaders to address and solve issues, such as social injustice and inequity, and serve as catalysts for positive change in the world.

For its *Global Leadership Summit* last fall, GLN's goal was to create an engaging leadership experience that immersed people in its eight hours of daily programming. The event featured speeches from such notable leaders as former U.S. Secretary Condoleezza Rice, Intel Corporation CEO Pat Gelsinger, best-selling author and Harvard Business School Professor Anita Elberse, and Dallas Mavericks CEO and Author Cynt Marshall.

This event drew an audience of over 250,000 viewers worldwide, including 7,200 attendees at Willow Creek Church, a non-denominational Evangelical megachurch in South Barrington, Illinois that hosted the main event. Thousands also registered to watch the event in person at over 650 local host venues across the United States and Canada. And thousands more international viewers joined via online streaming through GLS partner, Sardius Media.

The Need for All-Cloud Localization and Distribution

To manage the distribution complexity of having multiple localized feeds, this GLS event marked the first time that the live conference was distributed entirely from the cloud. This cloud migration was enabled by Grass Valley® AMPP®, an innovative cloud-native video processing and playout ecosystem.

As a cloud-native Software-as-a-Service (SaaS), AMPP seamlessly orchestrates and integrates all the end-to-end capabilities necessary to produce and distribute live and pre-recorded broadcasts and streams. This includes ingest, virtual switching, slo-mos, replays, CG, transcoding, recording, and playout servers.

As this case study shows, AMPP was the only way to facilitate the technical scope and complexity of this event's multifaceted, global streaming and distribution cost-efficiently and entirely in the cloud. AMPP allowed an end-to-end infrastructure to be created on demand from scratch. Its agility and scalability also enabled the production team to modify its AMPP configuration to satisfy unanticipated needs on the fly.

> **(AMPP) gave us exceptional creative freedom during what proved to be a very technically complex and demanding live-streamed video event.**
>
> Jorge Dighero,
> Director of Cloud Production Solutions and Engineering,
> Advanced Systems Group

Technically Complex Live Streaming Workflow

Rather than just delivering a single live webstream of the main event from Willow Creek Church, GLN produced and distributed up to 12 different concurrent live streams. This highly complex streaming workflow was designed to create an exciting, relevant live conference experience customized to the interests of those attending in person at the local host venues.

The streams included the main conference content for all audience segments, additional fresh content personalized for the regional venues, and Spanish and Portuguese versions. The customized content web streams for the venues also needed to be delayed or time-shifted to account for differences between the venues' four time zones, Eastern, Central, Mountain and Pacific Time. Additionally, all the streams needed to be closed captioned.

Managed Cloud Services Provided by Advanced Systems Group

As a Value-Added Reseller (VAR), systems integrator, and Authorized Partner for AMPP, Advanced Systems Group, LLC (ASG) helped GLN and their Director of Broadcast, Kyle Healy, configure a VPCR (Virtual Production Control Room) based on AMPP (running on Google Cloud). The setup utilized many of AMPP's integrated services, such as ingest, switching, transcoding and playout. Unlike typical third-party video systems integration, this integration was seamless and reliable.

With AMPP's intuitive user interface, the production crew quickly had a handle on all their concurrent feeds. Its dashboard always displayed clear, legible workflow illustrations, multiviewer monitors and real-time status indicators. And the GLN team was especially pleased with how they could simplify even the most complicated and multifaceted tasks, making them effortless and straightforward for their front-end operators.

Moving to the Cloud No Longer in Question

To ensure that the production went off without a hitch, ASG's Director of Cloud Production Solutions and Engineering, Jorge Dighero, provided on-site technical support, while ASG provided additional remote technical support.

According to Claudia Souza, ASG's Chief Cloud Officer, "AMPP installation can be all cloud, all on premises-based, or a hybrid of both. Grass Valley also offers customers different payment options, such as pay-as-you-go or subscription-based billing. This helps customer's better control and manage their costs."

"The question is no longer: is cloud-based live video production possible or viable?" Souza added, "The question now is: how can customers implement it most cost-effectively and advantageously for their application? With our AMPP expertise, combined with familiarity with GLN's unique production goals and budget, we were able to give GLN specific recommendations for the most cost-effective workflow options and strategy possible."
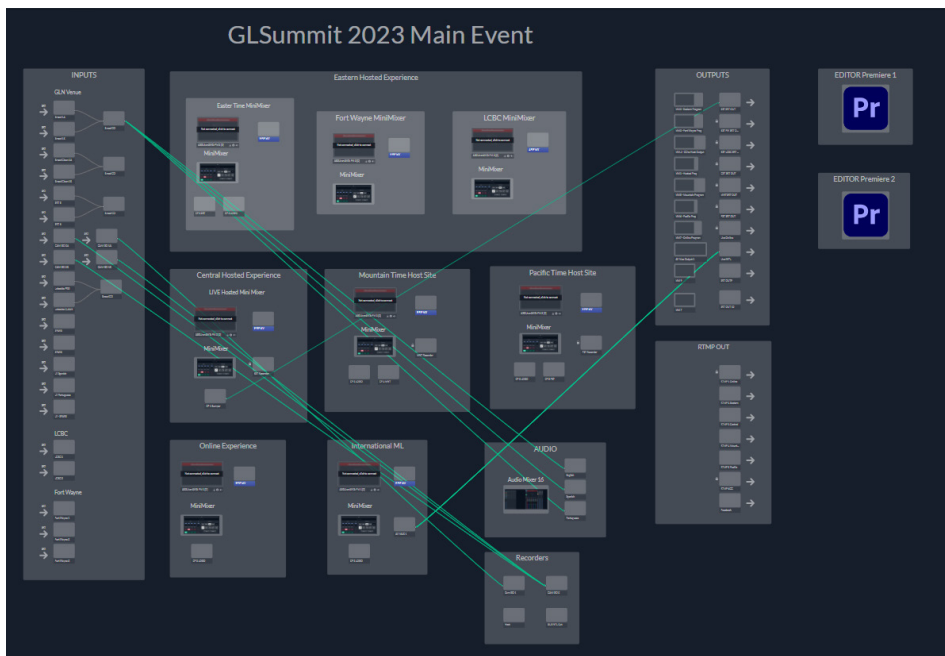
GLSummit 2023 Main Event

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>
> Kyle Healy
> Technical Director
> Global Leadership Network

The Cost of Not Moving to the Cloud

With a conventional hardware-based approach, users pay for the capital investment with these ownership costs persisting even when the gear sits idle. Then, if additional resources are needed, such as another switcher or playout system, on-premises-based CAPEX costs rise further. Users must also factor in the cost and time delays associated with systems integration to bring the additional units into a seamless workflow.

In contrast, the costs associated with cloud hosting and processing only apply to times of actual usage. And since processing is virtual and cloud-based, video functionality can be ramped up or scaled back in minutes. Grass Valley offers an App Store where AMPP users can download any application they need onto the platform, and/or utilize AMPP-compliant third-party solutions from its partners. In terms of total cost of ownership and production outcomes, AMPP has the potential to offer content creators and rights holders' greater satisfaction — both financially and in production quality.

Healy recalls how limiting and restricting on premises-based workflows were for previous streamed events. "Unlike a mobile unit, which only offers whatever equipment and capabilities are on the truck at the time it arrives at the production site, AMPP's cloud ecosystem is more agile and scalable," he said. "If I need additional switcher capacity, playout and record channels or whatever, AMPP can be reconfigured on-the-fly to cover that need."

"With AMPP, we could immediately ramp up to build a full VPCR from scratch, and then dismantle it when it was no longer needed," Healy said. "We could also readily add additional unforeseen functionality. More importantly, we can scale down or discontinue any part of the workflow when it is no longer needed." Rather than doing without, or finding workarounds for missing functionality, the event team could expand the workflow as easily as selecting new settings or pulldown menu options from the AMPP browser-based dashboard.

The Ins and Outs of GLN's AMPP

During the live event, the 1080i signals from the switchers at the main venue were converted to SRT signals, which were then delivered directly into AMPP's cloud ingest server. Once in AMPP, the growing pool of video was immediately available and accessible to the full production team, even authorized users working at remote sites. And streams for localized distribution were processed entirely in AMPP's cloud-based switchers.

Since the primary stream originated at Willow Creek Church, which is in the Central time zone, the live streams needed to be delayed and/or time-shifted so that anyone at the host venues would have a comparable viewing experience despite their time differences. The main feed also needed to be delayed or time-shifted for the Mountain and Pacific US time zones.

To do this, viewers were shown ancillary break-out content, which was shot at various host venue sites and customized for their region.

This content helped to fill the breaks between presentations and allowed Eastern time zone viewers to catch up to the start of the Central time-hosted event. At the host venue sites, the break-out video content was recorded onto mini recorders, switched using mini mixers, output using clip players, and watched on separate multiviewers and AMPP flow monitors.

Juggling Lots of Moving Parts

Nine hours of programming also needed to be recorded each day for each of the regions. This high volume of recording was further increased by the ISO recording of signals from individual cameras at each host venue site. Since it was a live event, the recordings needed to be fail-safe.

Recordings were also key to creating social media packages for distribution immediately following the live event. Remote video editors had access within 30 seconds to the growing video files so they could get right to work editing the video into packages and featurettes using Adobe Premiere. And they could share and edit the media without disturbing the main event's mission-critical production.

In previous years, this social media content creation was a complicated and time-consuming process that took three to four days to accomplish. It involved a massive data transfer via hard drives that were shipped and shuttled from place to place. Now, by working in AMPP's cloud-based ecosystem, the editors could have the finished content ready for distribution just two hours after the event. Grass Valley's Framelight™ X media asset management software, which runs on AMPP, was used to great advantage by the editors.

There's No Going Back

Because AMPP is a comprehensive end-to-end live production and streaming platform, not just a single cloud-based application, it can go above and beyond production, processing, and playout. On this event, it also proved invaluable by pinpointing and diagnosing the source of a troubling lip sync issue that arose in the lead up to the live event.

Using deep technical data and status monitoring within AMPP, Dighero was able to determine that the problem stemmed from encoders downstream of the AMPP workflow. Within minutes, he was able to use AMPP to spin up RTMP encoders to replace them and the lip sync issue was resolved.

Upon final output, the live program streams were delivered to Sardius Media for distribution at 1080p59.95 to multiple destinations. This included stream versions for in-person, online and non-English speakers worldwide. Sardius Media specializes in live event streaming for customers in sectors like government, corporate and worship.

International viewers could receive the live global feed with their desired real-time foreign language translations. Three different languages were embedded in the stream with two channels each: English, Spanish and Portuguese. This audio was dubbed and A/B mixed into the live stream in a way that preserved the original speaker's voice and ambiance in the background.

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The question is no longer: is cloud-based live video production possible or viable? The question now is: how can customers implement it most cost-effectively and advantageously for their application?

Claudia Souza,
Chief Cloud Officer,
Advanced Systems Group

According to Dighero, "AMPP is one of the few cloud-native video production platforms capable of producing and delivering broadcast-quality live streams. Currently, the AMPP ecosystem is unmatched on the market today. That is why AMPP is fast becoming an industry standard."

Healy summed up the experience this way: "AMPP's high degree of agility and scalability translated into significant operational and financial savings. It also gave us exceptional creative freedom during what proved to be a very technically complex and demanding live-streamed video event."

Advanced Systems Group, LLC asgllc.com
Sardius Media sardius.media