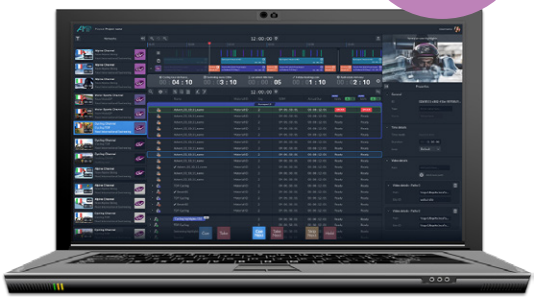
DATASHEET



GV AMPP Playout

Flexible, Scalable, Cloud-first Playout Solution

GV AMPP Playout is a cloud-first, flexible, scalable playout solution built using Grass Valley's Agile Media Processing Platform (AMPP) technology and targeted at temporary, special event channels.

It is the age of combined linear and internet TV delivery — people consume television on internet-connected devices and enjoy a rich mixture of interesting and varied content. Although traditional playout systems can be used to provide alternative content streams for internet/OTT delivery, such functions are seen as "bolt on" extensions to these types of systems.

What is needed is a playout system that can reside where the distribution system is. This could be in the cloud where the distribution system is for OTT delivery, or on premise where there are other distribution systems (e.g., SDI signal distribution), or, if required, a mixture of both. You can indeed "lift and shift" linear playout systems into the public cloud, but economically this doesn't lend itself to continuous operation due to the sometimes heavy resource requirements. Plus, a "lift and shift" approach does not provide the same level of business agility as a true, cloud-first, elastic deployment. Something different is therefore required — this is GV AMPP Playout.

What is GV AMPP Playout?

- Grass Valley's solution for flexible deployment of playout channels
- Cloud-native orchestration with on-premise or cloud-hosted player nodes
- Orchestration and player nodes built using GV AMPP core technologies
- Bundled playout orchestration UIs and GV AMPP Elastic Media Applications

GV AMPP is the technology that underpins an entire suite of cloud software offerings from Grass Valley. The use of GV AMPP for this new playout offering follows the "build once, integrate into many" philosophy.

AMPP Playout Delivers the Following Key Benefits:

- ***Agility:*** Create new channels and playout streams in a matter of minutes
- ***Scalability:*** Leverage cloud microservices architecture so you can provision one channel or hundreds of channels
- ***Resilience:*** Take advantage of the "self-healing" fault tolerance offered by a microservices architecture

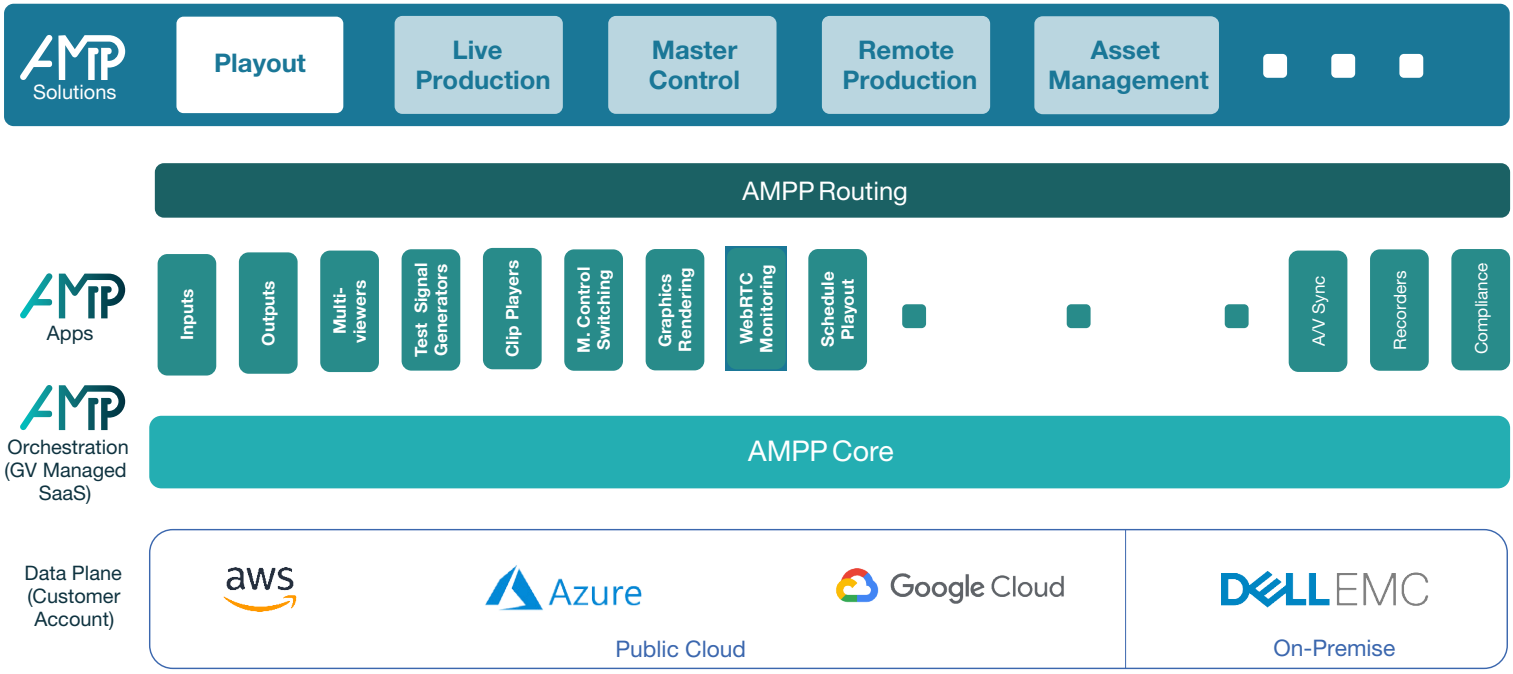
KEY FEATURES

- Live inputs: SMPTE ST 2110 as -7 redundant streams
- Outputs: SMPTE ST 2110, SMPTE ST 2022-6 and SMPTE ST 2022-2
- Up to 32 stereo audio language tracks in discrete SMPTE ST 2110-30 streams that can be track tagged so the desired language can be output based on event-by-event schedule information
- AES 67 support: Up to 64 mono audio tracks that can be shuffled using schedule rules to output the chosen language
- Integration with IP routing control systems using NMOS IS-04 discovery and registration protocol
- Integration with IP routing control systems using NMOS IS-05 device connection management protocol
- SD, HD and UHD formats supported
- Mixer functions such as fade/take, take/fade, V-fade
- HTML5 graphics rendering for native graphics
- Insertion of SCTE-35 start and end triggers for downstream systems to act on
- Various different UIs depending upon operator requirements, including custom designed interfaces

GV AMPP OVERVIEW: AGILE MEDIA PROCESSING PLATFORM

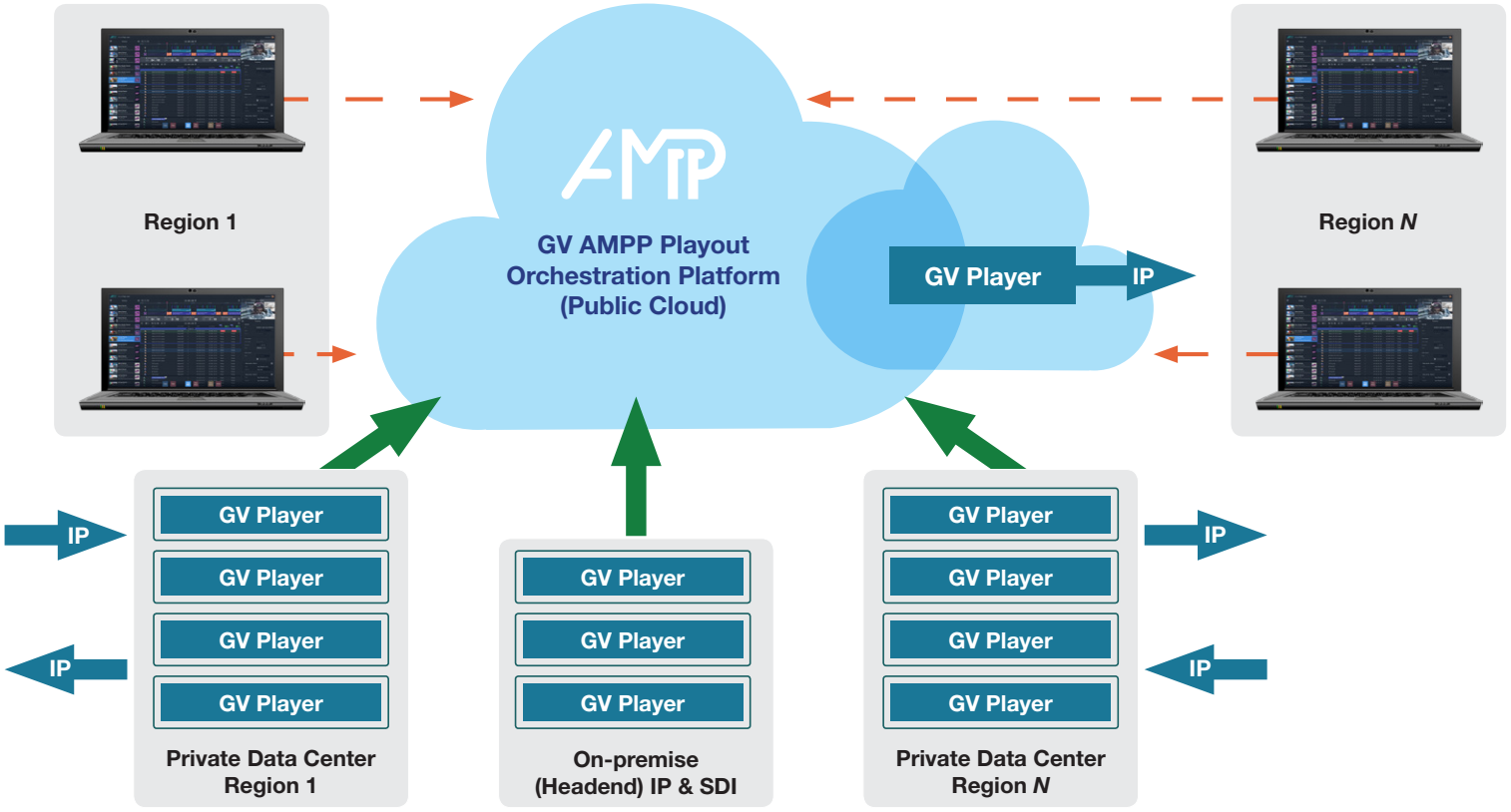
GV AMPP Playout is built using the Grass Valley Agile Media Processing Platform. This is the first cloud-based SaaS platform for broadcasters to fully leverage the power of elastic compute. Built for the cloud from the start, GV AMPP is specifically designed to overcome broadcasters' long-time reliance on costly and inflexible hardware-based media processing systems. Using nothing more than a web browser on a laptop, this revolutionary platform empowers users with unprecedented flexibility to quickly spin up or spin down applications as and when needed — and only pay for the services used. The true benefit of this platform is the modular nature of the functions it provides. Specific workflow functions run on the GV AMPP platform as modules, or solutions that are constructed from a wide range of microservices.

GV AMPP is the core enabling technology of the GV Media Universe, a concept that encapsulates the Grass Valley vision for the software- and cloud-based future of media processing. Designed around a comprehensive ecosystem of cloud-based tools and services that are interconnected with a range of existing solutions, partner offerings and a community of marketplaces, GV Media Universe will revolutionize the way broadcasters think about making media.



The GV AMPP Software Stack: Grass Valley's Media Processing Platform for building Agile Media Solutions.

GV AMPP PLAYOUT: ARCHITECTURE



In the above diagram we can see that we have the following system components:

1. ***The Orchestration Platform:*** This is where the schedules are loaded and processed by the automation services along with other functions such as user authentication, security and as-run logging. These software services are all cloud-native and run in Docker containers under Kubernetes within AWS.

2. ***The GV Player:*** A GV Player Node originates a channel output as derived from the loaded schedule. Multiple GV Player Nodes can be run simultaneously and the system chooses an output — this is called a Departure and is sent to the distribution system. If a GV Player Node encounters a problem, the system automatically and seamlessly chooses an output from another one, thus preserving on-air continuity.

3. ***Cloud or On-premise:*** Depending upon the application, GV Player Nodes can be run in the cloud (public or private) or on COTS hardware located on-premise. For example, if the distribution is a compressed IP stream (for OTT delivery) then the GV Player Node is best placed to be run within the cloud. If the distribution requirement is for uncompressed IP stream, or SDI, then the GV Player Node can be run on the on-premise hardware, which is located near to the distribution system for these signal types.

4. ***Operational UIs:*** The operational user interfaces are HTML5 web-based thin clients. They can be run at any location that has a network connection to the orchestration layer.

GV AMPP PLAYOUT: OPERATIONAL USER INTERFACES

All GV AMPP Playout operational user interfaces are modern, HTML5 web-based and are used to configure and control the system. Access points may be at any location and use a secure connection to the orchestration platform. There is a set of standard UIs included, however custom interfaces can be written as all features within GV AMPP Playout are exposed by publicly available APIs. This means that different UIs can be tailored for different operational environments, making GV AMPP Playout very flexible and extensible.

This UI shows a typical list-based view of a network or networks. The status of the events is shown along with their origins — in this example it displays which site each output is from and which of the main/backup systems is generating the output. The final output, the Departure, is sent to the distribution system. Also, event-specific data can be seen in the “Property Inspector” on the right of the UI and there is a mini-timeline view shown at the top of the schedule grid view.

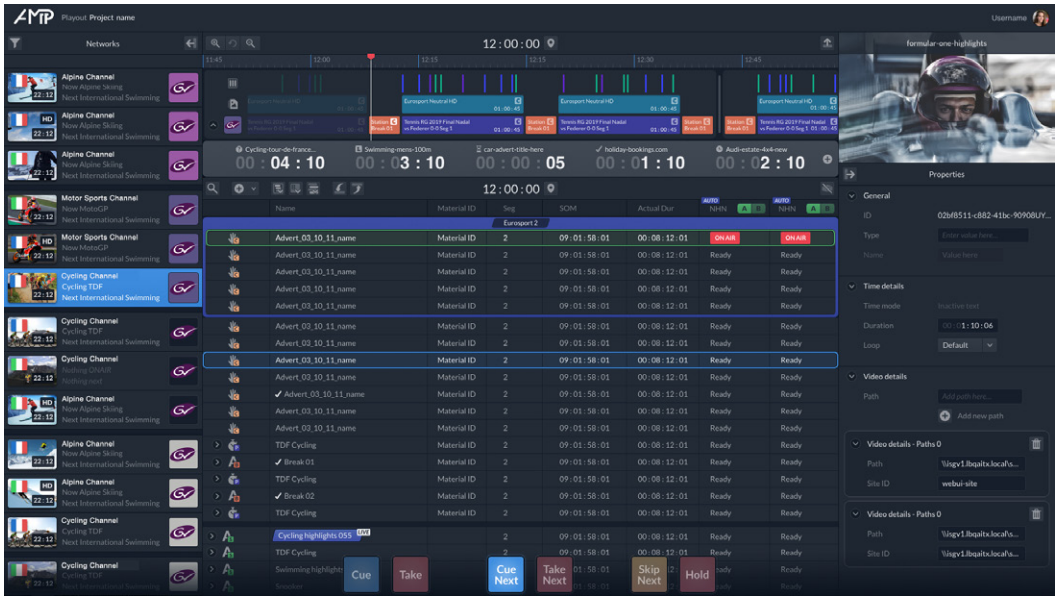
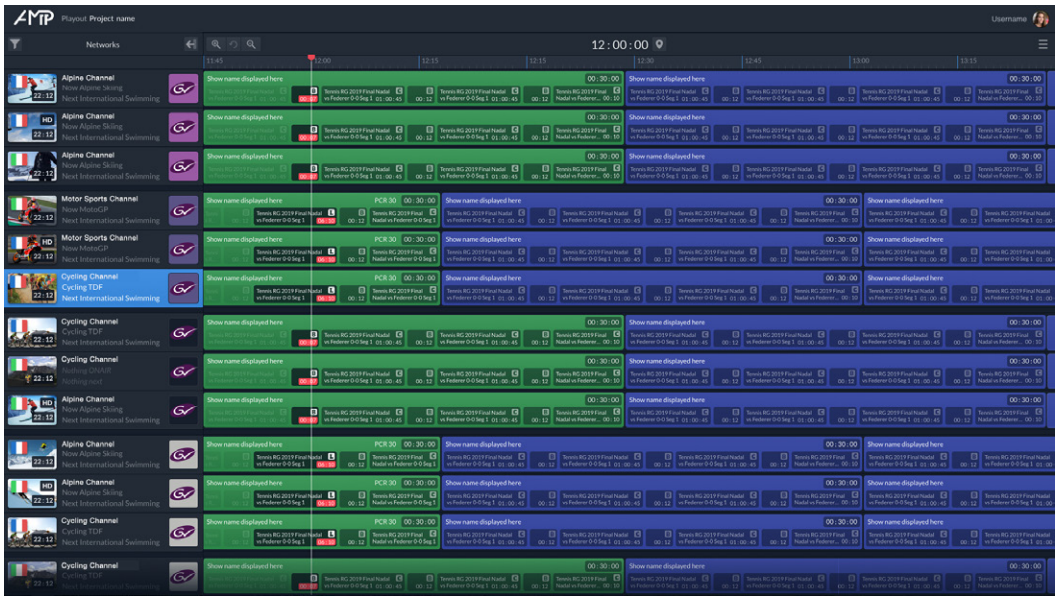
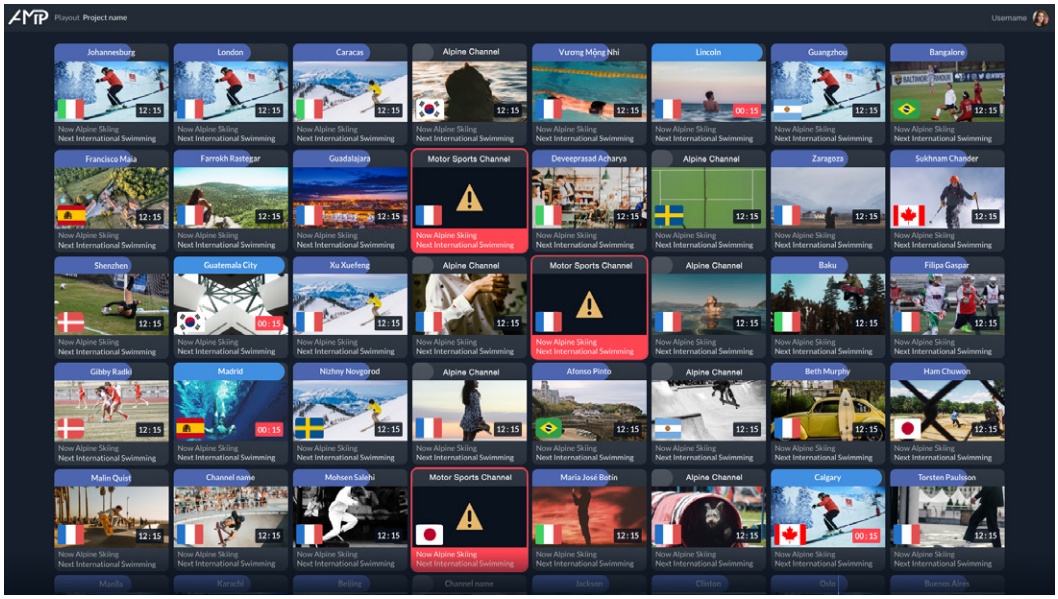


Figure 1: Main Departures GV AMPP Playout UI.



This UI shows a view of multiple networks horizontally. The operator can easily see, by the use of different colors, different event types, i.e., program, live and commercial breaks. Events can be inspected by using zoom in and out controls.

Figure 2: Multinetwork timeline view UI.



In this UI, multiple channels can be seen in a multiviewer-style layout. Each channel has a monitoring stream showing active video along with the event's remaining duration via a status bar and also "now and next" event details. Monitoring by exception displays channels that have some form of error so the operator can to take remedial action to resolve the problem.

Figure 3: Channel overview providing "Now and Next" event details or networks with errors.

ORDERING

GV AMPP is sold as a Software as a Service model (SaaS) — please contact your Grass Valley sales representative for more details.