

# LIVETOUCH X

## Replay Solution for AMPP

LiveTouch X is the first replay solution to enable creatives to collaborate on live video production from wherever is best for them. Like other GV AMPP® solutions, this SaaS application allows operators to work remotely through any device with a browser connected over public or private internet.

LiveTouch X covers all the fundamentals for live video production. Operators can intuitively select multiple ingest and playout channels and perform highlights editing in the cloud or on-prem. LiveTouch X supports all common replay functionality, including variable speed playback, shuttle, trim, page, bank, slot and playlist creation.

### Ingest & playback applications for high-scale distributed production environments

The integrated nature of GV AMPP allows multiple operators at home or in their production center to seamlessly access playlists and clips of other operators, making this a highly efficient distributed replay solution.

The LiveTouch X solution from Grass Valley® consists of two individual applications: an ingest application and a Replay Operator application. Each operator's playback application can see record channels from multiple ingest applications, providing extremely flexible record channel sharing.

The Replay Operator application enables the full replay functionality and supports multiple embedded real-time monitoring screens, making it possible to easily work on small displays at home.

The LiveTouch X UI is readily recognizable – even to novice users – with soft controls that are easy to use. All functionality can be accessed with either a touchscreen, with keyboard and mouse or third-party devices, like the ShuttleProV2 from Contour Design or Grass Valley's own LiveTouch control panel, for fast-turnaround sports production. The interaction between hardware and software is immediate, with no perceptible user delay. This choice of operation allows anyone to tailor the application for their optimum work environment, regardless of their location.

With the GV AMPP paradigm of high-quality distributed production in mind, the LiveTouch X solution combines an intuitive user interface that allows an operator to distribute the windows of the work environment as they see fit across multiple

monitors. The easily configurable application can dock the ingest and program monitor windows directly in the LiveTouch X UI or expand into a larger view on a separate monitor.

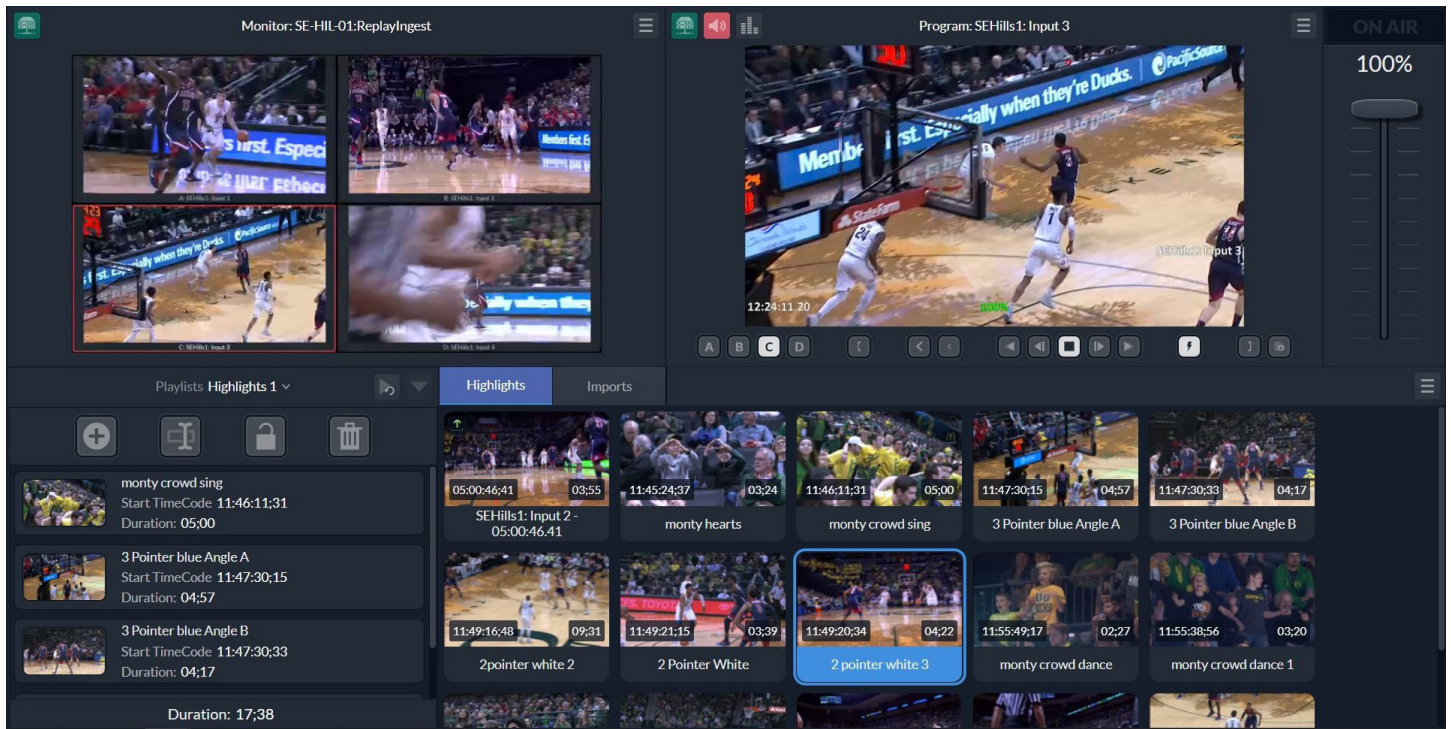
### Easy playlist and highlight creation

The thumbnail view of all clips and playlists and the clear arrangement of all assets allows operators to quickly select and edit content on the fly. Playlists may be assembled and edited with a simple drag and drop and can instantly be saved, edited and recalled.

### Full access for any environment

LiveTouch X has access to any source on the GV AMPP network. Already integrated with AMPP routing and monitoring, selecting and viewing inputs can easily be done by the operator from their own workstation. Finished highlights and playlists can be made available in Framelight™ X for editorial and packaging purposes. This seamless integration with Framelight X allows for content to not only be turned around for game packages, but also to be delivered to multiple locations using Framelight X Workflow.





## Key Features

- The LiveTouch X ingest application allows for any number of scalable ingest ports in groups of 4, 8 or 16. Multiple ingest applications can be scaled to provide access to any number of record trains
- Multiviewer access to any record train
- Always in record
- Speed presets
- Playlist transitions and re-order while live
- Multiple tagging and star ratings
- Import of tag sheets
- Framelight X integration
- 1 output in standard configuration, 2 outputs in the Pro version
- Industry standard Page, Bank, Slot for easy highlights store and recall
- ShuttlePRO v2 integration provides simple USB plug-and-play with a hardware controller
- Option to use with professional LiveTouch control panel
- Variable speed playback
- Thumbnail preview of all clips and playlist
- On-air playlist assembly and editing
- Operation requires no special processing frames or control surfaces

## Freedom to scale

Like all GV AMPP solutions, LiveTouch X uses orchestrated microservices to meet the response and accuracy requirements of live streaming media and entertainment. AMPP is Grass Valley's scalable SaaS platform of agile management tools, elastic platform services, and intelligent media technologies that are universally deployable.

Unlike traditional hardware systems, AMPP does not require a large upfront infrastructure buildout to begin experimenting with new agile media production models. Spin up as many operator instances as required where and when they are needed.

AMPP may be located on any combination of public and private cloud services. As a result, AMPP can quickly spin up solutions that integrate with existing infrastructures. Any subset of network sources can be shared with the AMPP fabric for use by AMPP-enabled cloud production solutions. Each instance of an AMPP-enabled solution can instantly select sources from any that are available on the AMPP fabric.



## Freedom to move

Live event environments with reduced on-site production crews frequently want creatives to work remotely. LiveTouch X supports remote production at any distance without compromising the user experience; and even when working at a significant distance from the live event, system operations are instantly responsive. The system's fully aligned monitoring and control capability makes it easy for operators to work without distracting timing delays.

When at-home production means literally working from home, AMPP is ready to go. Operators can connect to AMPP using typical residential Internet. The high-quality proxy workflow allows operators to make and act on decisions without requiring a high-bandwidth connection.

## Security

Rest assured, AMPP is designed with security in mind. Conforming to the best IT practices of a representational state transfer (REST) architecture:

- All REST operations are executed over HTTPS for secure communication
- All REST operations rely on JSON Web Tokens (JWT) for authorization
- IP streaming in AMPP is encrypted when applicable (SRT (AES), RIST (AES), RTMPS (TLS/SSL), WebRTC (DTLS/SRTP), AMPP Streaming (DTLS/SRTP)).

AMPP authentication is handled through an Identity Service which can optionally delegate authentication to an Okta server.

To ensure strict security standards are maintained, Grass Valley also regularly conducts third-party penetration testing.



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