

KALEIDO-IP X

On-demand Multiviewing Application for AMPP

One multiviewer for every signal, in any format, all in one view. Designed for both local and remote operations, it ensures your team is always connected, always informed, and always in control. No matter where your feeds come from.

Modern media production spans multiple formats and workflows: SDI from on-site cameras, uncompressed IP (SMPTE ST 2110) for internal routing, compressed IP for cloud workflows, and NDI for remote contribution. Traditional, hardware-based multiviewers struggle to handle them all in one view, forcing operators to switch systems or work with incomplete monitoring, slowing reaction times and increasing the risk of missing critical issues. Kaleido-IP™ X, built on AMPP® OS from Grass Valley®, solves this by showing SDI, SMPTE ST 2110, NDI and all AMPP OS-supported formats side-by-side in one layout, while offering tailored capabilities for both core monitoring and high-end live production.

In today's live production environment, content is sourced from everywhere — venue cameras, remote studios, cloud replay systems and distributed editing teams. These sources can arrive in multiple formats, each critical to the broadcast. The problem: most monitoring systems force format compromises. Operators

may have to split their attention between different multiviewers, each limited to certain inputs.

Kaleido-IP X is different. As an AMPP OS-based software multiviewer, it can display SDI, uncompressed IP (SMPTE ST 2110), and all AMPP OS-supported compressed formats in one layout. That means an SDI PiP can sit right next to a SMPTE ST 2110 PiP, an NDI PiP, or a JPEG XS feed, all running simultaneously. No hardware-based multiviewer can match this flexibility.

Kaleido-IP X comes in two versions:

Kaleido-IP X Essential delivers core monitoring capabilities in user-configurable layouts, making it ideal for playout monitoring, editorial review and compliance. Multiple PiP configurations are available (4, 9, 16, 24 or 48 tiles), with features such as easy source selection, editable UMDs, tally indicators, configurable audio meters and selectable audio monitoring sources. It supports simultaneous SDI, uncompressed IP and compressed IP sources side by side.

Kaleido-IP X Professional includes all Essential features and adds advanced layout customization, more flexible audiometer configuration and intelligent probing for black, freeze and audio loss detection. Designed for high-stakes live production and remote operations, Professional is forward-compatible with planned innovations, further extending creative and operational possibilities.

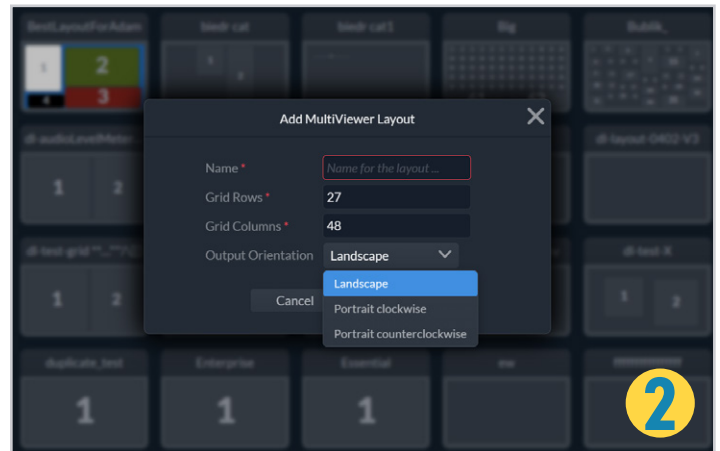
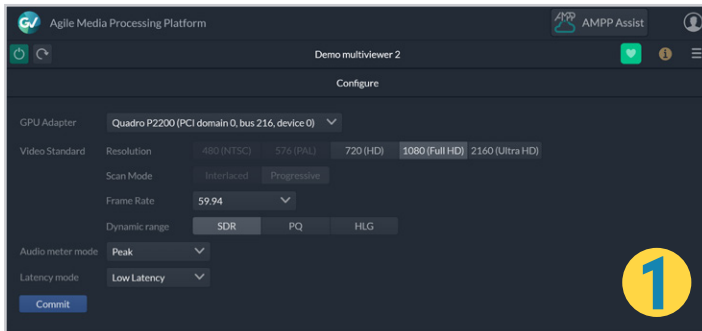
Both versions integrate seamlessly with AMPP OS control and automation apps, ensuring that every function can be managed within the same operational environment as switching, replay or playout. This removes silos and creates a consistent user experience across the GV Media Universe.

With Kaleido-IP X, a multiviewer is no longer just a way to put more feeds on fewer screens. It becomes a workflow integration point, enabling a single operator or an entire distributed team to fully connect to a production, no matter where they are.



Key Features

- Multiformat monitoring – view SDI, SMPTE ST 2110, NDI and compressed IP feeds together
- AMPP OS-based flexibility – software deployment without hardware constraints
- Essential user-configurable layouts – multiple PiP options in portrait or landscape mode
- Professional customization – advanced layouts and enhanced audio meter configuration
- Intelligent probing (Professional version only) – detect black, freeze and audio loss in real time
- Integrated AMPP OS controls – full management within AMPP OS apps
- Scalable deployment – from small rooms to large, distributed operations
- Low-latency display – essential for live production decision-making
- Reliable 24/7 performance – designed for mission-critical environments
- UHD and HD compatibility – mixed-resolution support
- SMPTE ST 2022-7 redundancy – seamless failover for network reliability
- Web-based control – manage from any authorized device

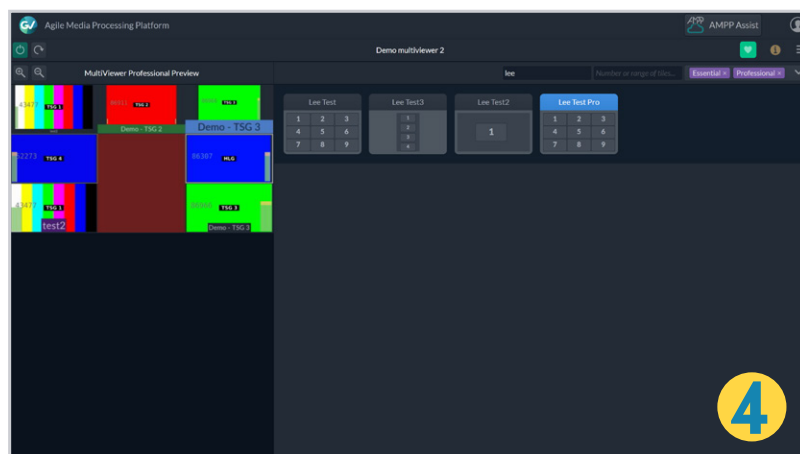
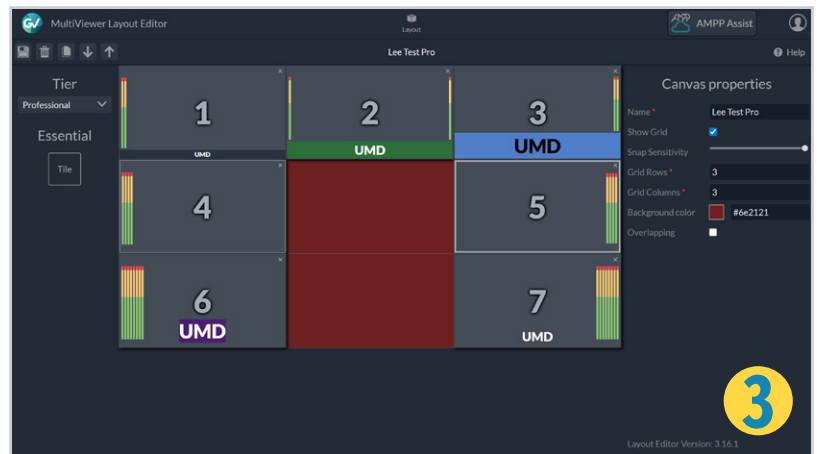


1. Launch and configure a new multiviewer application

2. Create and save a new multiviewer layout

3. Customize the new multiviewer layout

4. Apply any layout to the new multiviewer and assign sources to PiPs



Kaleido-IP X Elements

Kaleido-IP X gives teams a unified, format-agnostic view of their entire operation. The Essential version simplifies reliable monitoring, and the Professional version adds the intelligence, customization and forward adaptability that live production demands. Both versions fit naturally into AMPP OS workflows, enabling teams to focus on creativity and delivery rather than technology barriers.

Multiformat monitoring in one view

The defining capability of Kaleido-IP X – display any combination of SDI, SMPTE ST 2110, NDI and AMPP OS-supported formats in the same layout. No switching systems, no format barriers.

Essential version

Provides fixed layouts in portrait or landscape mode, with multiple PiP options (4, 9, 16, 24 or 48 tiles). Includes easy source selection,

editable UMDs, tally indicators, configurable audio meters and selectable audio monitoring sources. Ideal for playout monitoring, editorial review and compliance.

Professional version

Includes all Essential features plus advanced layout customization, enhanced audio meter flexibility and intelligent probing for black, freeze and audio loss. Designed for environments where precision and adaptability are critical. Forward-compatible with creative and operational enhancements such as custom backgrounds, overlapping tiles and composite widgets.

Scalable deployment

Kaleido-IP X leverages AMPP Grid for unparalleled scalability. AMPP Grid connects multiple compute nodes to create larger virtual processing fabrics, providing efficient, low-latency transmission of uncompressed

video between nodes. This allows seamless flow exchange between compute nodes, making them function as a single large computer. By leveraging the interconnected nodes, Kaleido-IP X can share sources across multiviewers without wasted bandwidth or the need to manually configure and manage the relationships between multiviewers and shared sources. This scalability is crucial for complex productions requiring a large number of sources and multiviewer outputs.

Integrated AMPP OS controls

All controls and configurations are available through AMPP OS control and automation apps, eliminating the need for separate management systems.

Feature/Capability	Essential	Professional
Platform	AMPP OS-based software multiviewer	AMPP OS-based software multiviewer
Primary Use Case	Core monitoring for playout, editorial review, compliance	High-stakes live production and remote operations
Multiformat Support	SDI, uncompressed IP (SMPTE ST 2110), NDI, and all AMPP OS-supported compressed formats side by side	SDI, uncompressed IP (SMPTE ST 2110), NDI, and all AMPP OS-supported compressed formats side by side
HDR/SDR Conversions & Graphics	—	Yes
PiP Configurations	4, 9, 16, 24 or 48 tiles (AMPP App Store)	4, 9, 16, 24 or 48 tiles (AMPP App Store)
Layout Type	User-configurable layouts in portrait or landscape mode	Advanced, fully customizable layouts including custom background colors and background images, and overlapping tiles
Source Selection	Easy source selection per tile	Easy source selection per tile
UMDs	Editable	Editable
Audio Meters	Configurable, selectable audio monitoring sources	Enhanced configuration flexibility
Tally Indicators	Yes	Yes
Intelligent Probing	—	Black/bars detection, freeze detection, audio loss detection
Integration	All controls available in AMPP OS control and automation apps	All controls available in AMPP OS control and automation apps
Scalability	Small to large monitoring environments	Small to large, distributed live production

Security

Rest assured, AMPP is designed with security as a foundational priority. Certified to SOC 2 standards, AMPP ensures that your workflows meet the most rigorous security, availability and confidentiality benchmarks. Its robust architecture conforms to best practices in IT security, utilizing a representational state transfer (REST) framework to protect every aspect of your production environment:

- 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)).

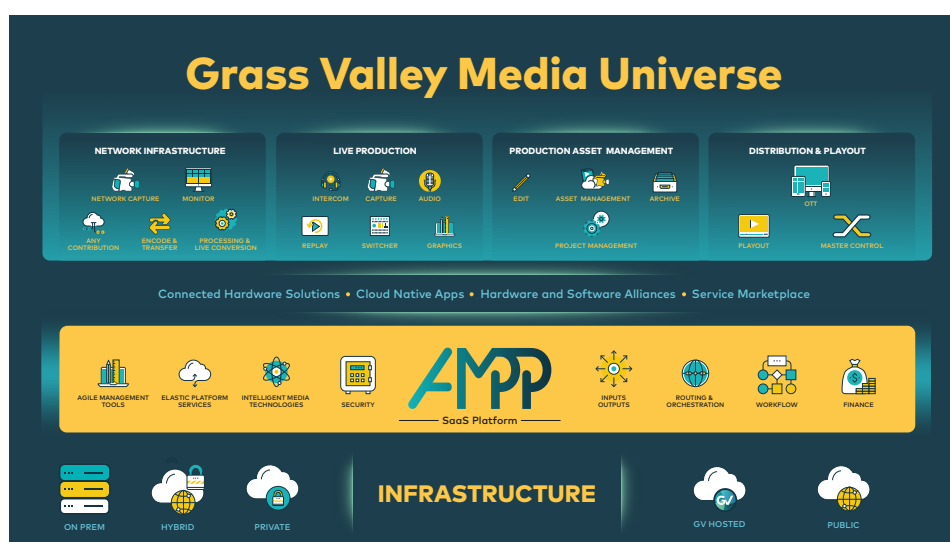


Multiviewer at the Core of the Grass Valley Media Universe

The GV Media Universe is Grass Valley's open ecosystem for agile, hybrid and scalable production. Kaleido-IP X is its multiviewer core; the universal viewing window for any signal, anywhere.

In the past, multiviewers simply displayed multiple feeds on a single monitor. In modern production, they are the nerve center for decision-making and collaboration. Kaleido-IP X takes this role further by supporting every major format side by side, ensuring complete visibility across the production chain.

By building it on AMPP OS, Grass Valley ensures that Kaleido-IP X operates within the same control and automation environment as other core production tools. This creates a unified operational layer, where monitoring, switching, replay and playout are seamlessly connected.



Leading the Media Revolution means giving customers tools that evolve with their workflows. Kaleido-IP X embodies this, delivering powerful capabilities today and continuously adding features to keep pace with the future of production.

This product may be protected by one or more patents. For further information, please visit: www.grassvalley.com/patents

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