amagi

INFORMATION

TEAM NAME VS TEAM NAME

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TIME

HOME 90:00 AWAY

Advanced dynamic graphics:
Shaping the future of viewing experiences

The need for sophisticated graphics in today's broadcasting industry

Offering powerful graphics in today's broadcasting industry is no longer an enhancement – it's a necessity. With so many streaming options available to the viewers, it's hard enough to grab their attention. Having informative and high-quality graphics helps elevate the overall viewing experience, offering broadcasters and platforms a competitive edge over other market players.

Graphics enable broadcasters to communicate complex information, enhance storytelling, improve ad monetization and create immersive experiences that resonate with viewers. From news tickers to animated weather forecasts, interactive sports analysis, or a simple countdown timer to a favorite show, well-designed graphics provide a competitive edge by making content more engaging, accessible, and memorable.
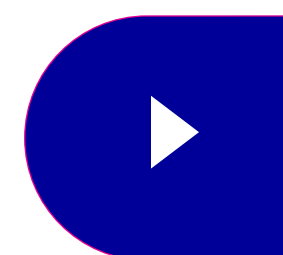
▶ **Watch how Gannett improves audience viewership through Amagi's advanced graphics**

Advanced graphics' evolution

Fueled by rapid technological advancements and increasing demand for immersive visual experiences, advanced graphics have grown tremendously in recent years. More and more broadcasters continue to use Artificial Intelligence (AI) and Augmented Reality (AR) tools to create hyper-realistic visuals across industries. The rise of 3D modeling, real-time rendering, and photorealistic animations has set new standards, allowing content creators to push the boundaries of visual storytelling.

This growth is functional, as advanced graphics help enhance communication by intuitively and impactfully visualizing complex data.

Live sports broadcasting coverage now features augmented replays and on-screen stats powered by dynamic graphics, while news channels rely on animated infographics to make information more accessible and intuitive. With IP workflows, graphics production, editing, and distribution are moved from traditional SDI systems to network-based IP systems.

The cloud revolution is driving this transformation. Cloud-based services allow broadcasters to store, render, and distribute graphics remotely. Cloud graphics services moved to a SaaS model, separating graphics production from physical hardware and significantly improving efficiency.

High-quality graphics ensure seamless user experiences, boosting engagement as more people access media across devices. As innovation continues, technologies like Virtual Reality (VR) and metaverse platforms will fuel the growth of advanced graphics further, making them an indispensable element of the modern digital ecosystem.

Read: How to transform your broadcast operations with cloud modernization

Elevating visual experiences: Graphics types used in the broadcasting industry

The current broadcasting industry is highly dependent on high-quality graphics that help elevate the viewing experience. These not only offer better contextual information to a viewer about a show/sport they are watching but also take storytelling to a different level.

Let's dive deeper into different graphics categories: ➜

Static or animated sequences

Static graphics are fixed visuals that do not incorporate dynamic elements that require changes or updates during playout. They can include still images that maintain a consistent appearance throughout use, like channel bugs, program logo, lower-third banners, promos and full-screen cards.

Logos/bugs

Channel logos or small animated promos overlaid on the primary video.

Lower-third banners

Animated screen banners used for a variety of purposes such as co-branding, or for promoting other programs or upcoming events on the channel.

Promos

Animated banners that can be designed to be overlaid anywhere in the screen for promotion of upcoming events or shows.

Full screen cards

Used to display information such as film classification or other advisory notices.

Advanced dynamic graphics

Dynamic graphics are real-time, data-driven visuals that automatically update based on the content or live feeds. They adjust instantly to reflect changing data like sports scores, stock prices, now-next-later, etc. The templatization ensures the dynamic graphic file contains the placeholders where the metadata information can be updated during playout. This way, a dynamic graphic is created only once but can be used any number of times repeatedly in an automated way. Examples include tickers, game scorecards, back-in counter, music information/artist details, etc.

Full screen now / next / later
A full screen dynamic bumper that is used to convey currently playing, and upcoming programs.

Music album / artist information
Lower-third banner with textual information such as song title and artist name.
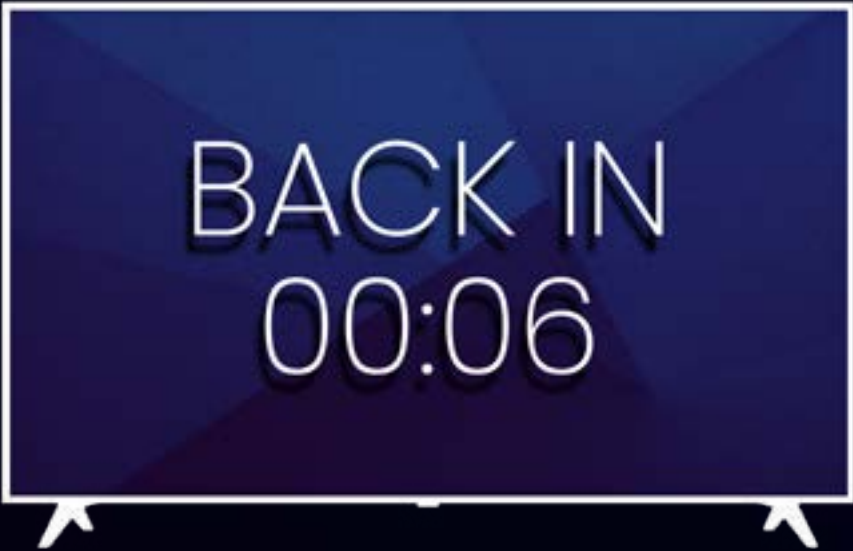
'Back in' counter
A live updating digital clock used to display time based on playlist input.
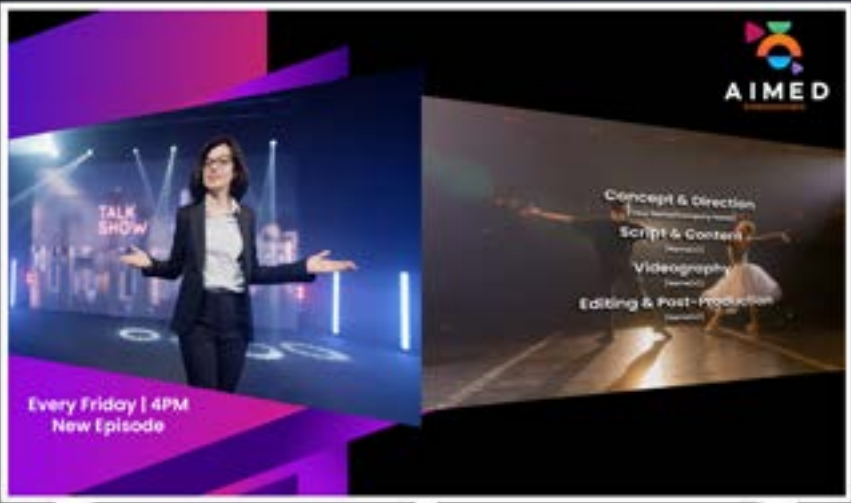
Countdown
Live updating countdown timer based on input in the playlist.

Digital Video Effects (DVE)

DVE is primarily utilized for promotional purposes and can be automated through Adobe After Effects templates. These graphics can seamlessly integrate with embedded videos or images, featuring Picture-In-Picture (PiP) and 2-box (equal sized boxes) effects. For instance, L Bar, J Bar, Pillar Graphic (Vertical Aston Band), Lower Third (Horizontal Aston Band) and credit squeeze.
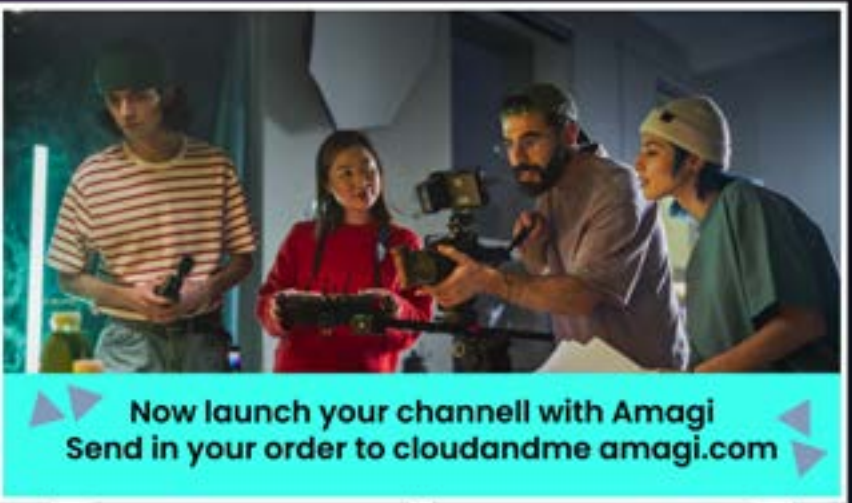

Aston band

Animated graphic played during the playback of primary video with effect of squeezing the video from bottom. This is used for in show advertising or as promotion for other programs on the channel.

Credit squeeze

Animated graphic played during the credits of a program. This graphic effect squeezes the credits to a corner of the screen, while the rest of the screen used to display animated graphics such as now / next / later, or for playing other video assets such as the commercials. While the screen can show two videos, audio can be from either asset or both.

Live graphics

During live playout various graphics can be added using the schedule, the live controls on the web UI, or automated overlays.

L-band

Animated graphic during the playback of a primary asset with effect of shrinking or squeezing the primary video from side and bottom. This is used for in-show advertising or as promotion for other programs on the channel.


PiP dynamic graphic

Picture-in-Picture effect used to dynamically display images or promo videos.
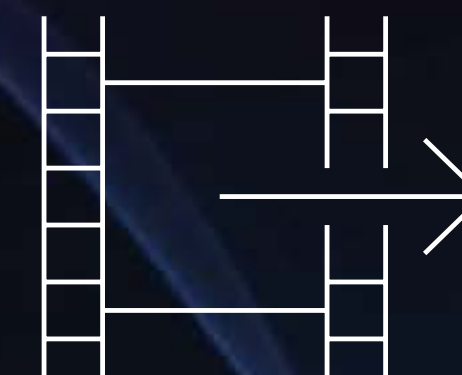
Transitions

A visual effect that activates as the playlist transitions to the next item, with customizable settings for duration, frame count, and other properties to enhance the viewing experience.
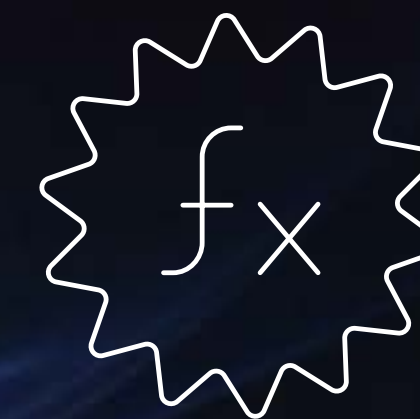For example: mix, fade, V-fade, cut-fade and wipe.

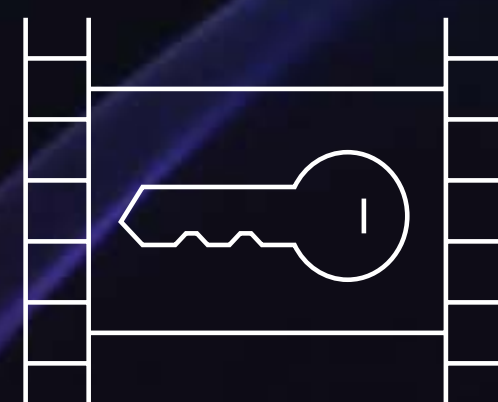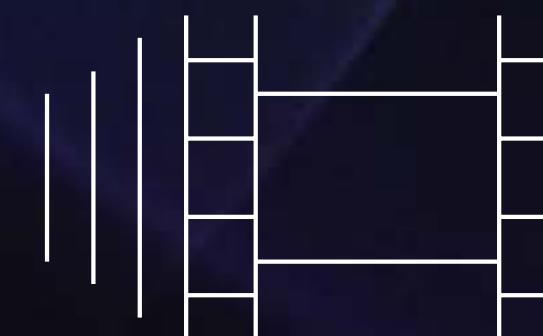**Read:** Transforming live broadcasting through cloud technology, FAST, and single live events
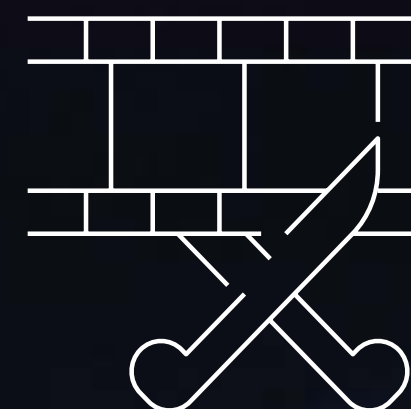
Cut

Fade

FX

Lock

Timeline

FPS

Graphics: Key applications

Live sports

News

Entertainment

Live sports

Graphics are crucial in live sports broadcasting, enhancing viewer engagement and providing real-time information. Critical applications include scoreboards, player stats, timelines and instant replays, which help viewers follow the action.

Challenges include:

- Ensuring low latency
- Maintaining visual clarity across multiple platforms
- Seamlessly integrating graphics with live footage

Real-time updates, interactive overlays, and dynamic visual effects are essential for creating an immersive sports viewing experience.

Read: Revolutionizing live sports and events coverage with unified cloud workflows

News

In live news broadcasting, graphics convey information quickly and clearly, enhancing viewer understanding and engagement. Key types of graphics include breaking news tickers, live maps, data visualizations, and lower-thirds that display headlines, names, and other crucial details. These graphics help present complex stories – such as weather updates, election results, or live reports – in an easily digestible format.

Challenges include:

• Maintaining real-time accuracy
• Ensuring graphic updates are synchronized with live reporting
• Avoiding clutter while delivering essential information in a visually appealing way

Effective use of graphics ensures that news broadcasts remain informative, dynamic, and engaging.

Entertainment

In the entertainment industry, graphics enhance viewer engagement and amplify storytelling. Key types of graphics used include animated intros, lower-thirds for talent names, dynamic backgrounds, NNLs (now-next-later) for title sequences, and special effects for live events or shows. These graphics help set the tone, provide context, and engage the audience visually.

Challenges include:

- Creating visually appealing graphics while not distracting from the content
- Ensuring seamless integration with live or pre-recorded footage
- Managing the increasing demand for high-quality, real-time visual effects, especially with the rise of high-definition and immersive formats like 4K and VR
- Efficient graphics management is essential for maintaining a smooth, polished viewer experience

Transforming graphics in broadcasting with Amagi CLOUDPORT

Amagi CLOUDPORT supports both real-time rendering and preprocessed graphics, making it suitable for various broadcast scenarios. The application streamlines graphics management by allowing seamless uploading and flexible handling of graphics templates in the cloud. It allows dynamic control of graphics through metadata, playlists, and real-time data sources like APIs, RSS feeds, and social media. Users can easily preview, edit, and adjust graphic parameters via an intuitive interface.

Dynamic graphics types supported by Amagi CLOUDPORT:
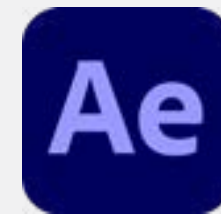
Adobe After Effects (AEP): Dynamic templates for elements like "Now-Next-Later" displays and credit squeezes

Native graphics: Customizable graphic elements using a proprietary language for logos, text overlays, clocks, and more

HTML5: Flexible HTML5 overlays, allowing varied resolution options for adaptable display needs

Network Device Interface (NDI): Seamless integration with graphic tools such as Vizrt, SMT, Ross Xpression for high-end, IP-based graphic overlays

Decoding graphics workflow in Amagi CLOUDPORT

Amagi CLOUDPORT essentially divides the graphics workflow into four major steps – ingestion, processing, scheduling and playout.

Ingestion

CLOUDPORT enables effortless upload of graphic files into the cloud through various methods such as AWS S3 drop, UI upload, automated pull from customer's cloud, etc.

Processing

Amagi platform performs various automated quality checks for all the uploaded graphic files to ensure smooth rendering and playback.

Scheduling

Various methods of graphics scheduling are supported in the Amagi system which includes scheduling as logos, rule-based scheduling, manual scheduling and ad-hoc playback of graphics during live events providing great flexibility and control to the operators.

Playout

The playout system ensures accurate, reliable graphic playback and supports multiple overlays and last-minute edits, giving operators complete control over the on-air graphics during both live and non-live playback.

On-premises vs cloud tech:
Which is better for graphics management?

On-premises (traditional)

Graphics rendering relies on specialized hardware like GPU-based servers, SDI video pipelines, or broadcast-grade workstations.

Significant upfront investment in hardware, software licenses, and maintenance.

Integration with live data (e.g., sports stats, weather updates) and third-party tools are manual or require additional middleware.

Adding new functionalities often demands substantial engineering effort, reducing modularity and limiting the flexibility to tailor channel graphics resources based on specific needs.

Longer processing times as files must be manually exported and processed within the constraints of on-prem hardware.

Templates are often tied to specific systems or software, restricting their use across channels or events.

Cloud tech (modern)

Graphics rendering occurs on virtual machines or cloud instances using GPU acceleration.

Costs are operational, based on usage, offering better flexibility for scaling.

Direct integration with data feeds for real-time updates (e.g., sports scores, social media content) and third-party tools through APIs for adding new functionalities.

Cloud-based playout graphics offer modularity, allowing features like graphics rendering, data feeds, or encoding to operate independently, enabling seamless resource optimization for each channel.

Parallel processing capabilities drastically reduce turnaround time, even for large or complex projects.

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Graphics 2.0: What does the future look like?

Graphics are crucial for a broadcaster's success in today's competitive media landscape. Delivering dynamic, high-quality visuals boosts viewer engagement and helps channels stand out in a crowded market. As technology advances, broadcasters need modern solutions to meet changing viewer expectations and seize new opportunities.

The future of broadcast and streaming media graphics is poised for transformative change, driven by Artificial Intelligence (AI) and Machine Learning (ML) integration. These technologies enable broadcasters to automate tasks such as real-time graphics creation, tagging, and personalized content delivery. AI/ML will enhance graphics by enabling adaptive designs that respond dynamically to live events, data, and audience engagement, improving the viewer experience and operational efficiency. With AI-driven systems, broadcasters can streamline workflows, enhance interactivity, and provide more targeted and relevant visual content, such as customized overlays or real-time statistics tailored to individual viewers' preferences.

As a leader in cloud broadcast technology, Amagi is at the forefront of this transformation, providing innovative tools that empower broadcasters to streamline workflows, enhance personalization, and future-proof their operations. Amagi's cloud-native foundation and modular architecture uniquely position it as a trailblazer in adopting and advancing cutting-edge graphic technologies in the broadcast industry.

Recognizing the transformative potential of generative AI, Amagi is actively integrating these advancements into the broadcast and streaming value chain. The recent acquisition of Argoid, an AI-ML company, underscores Amagi's strategic focus on AI-driven innovation. By leveraging its commitment to AI, machine learning, and deep learning technologies, Amagi is set to redefine how graphics are created, scheduled, and displayed — paving the way for a new era in broadcast and streaming.

Thrive with us!

Reach out to us at **cloudandme@amagi.com** or <u>visit our website</u> to build or bolster your presence across the broadcast and streaming industry.

Learn more!	
Webinar: State of the broadcast market with Dan Rayburn	**Insights:** The state of cloud modernization in M&E
Whitepaper: Unlock the future of live broadcasting	**Webinar:** Discover the benefits of cloud migration

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