
AWS
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MDS204

Live content production on the AWS Cloud

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Agenda

1. What is live video production?
2. Performant technologies for live production
3. Customer use case—Electronic Arts
4. AWS architecture using Grass Valley AMPP
5. Demo
6. New AWS technologies for live production



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What is live video production?

“Production” is the creative process of composing together all the various media elements making up the entertainment experience, such as cameras, microphones, music, graphics, logos, replays, screen captures, news stories, and pre-recorded interviews

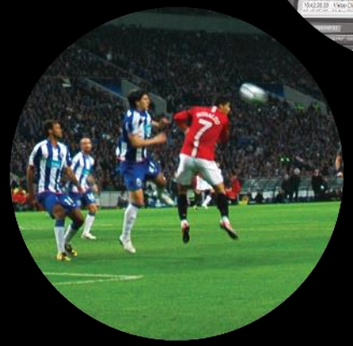
“Live” means the action is consumed by the audience at approximately the same time as it is occurring



On-premises live production

Capex intensive	Impedes opportunities to experiment and innovate with new content or customer facing tech features
Poor ROA	Bursty workloads mean poor return on assets
Limited agility	Operational features tied to hardware refresh lifecycles

The challenge of cloud-based live production



Live production



Linear playout



OTT, Streaming, VoD

Chasm

Innovators **2.5%**

Early adopters **13.5%**

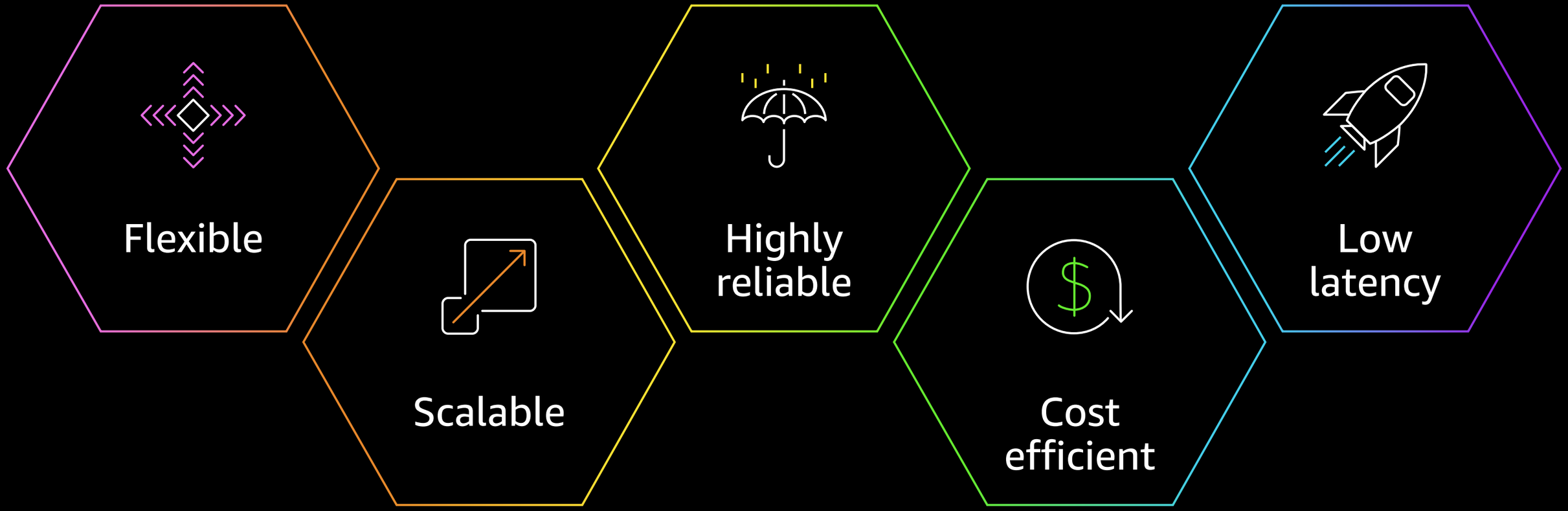
Early majority **34%**

Late majority **34%**

Laggards **16%**

Technology adoption lifecycle

Performant technologies for live production



Electronic Arts



Electronic Arts

REQUIREMENTS

- Distributed creative and operational workforce
- Broadcast quality storytelling
- Geographically pivotable scalability
- Extensive probing / monitoring capabilities



Electronic Arts

SOLUTIONS APPROACH

- Months of research into software solutions
- Use and evaluation of other systems in concert with EA properties (FIFA, Madden)
- Ultimately selected Grass Valley AMPP (Agile Media Processing Platform) on AWS





Electronic Arts

KEY FACTORS

- Operator-specific UI’s
- Low-latency, high-quality monitoring
- Intelligent timing management
- Breadth of tools



Electronic Arts

PRODUCTION SCOPE

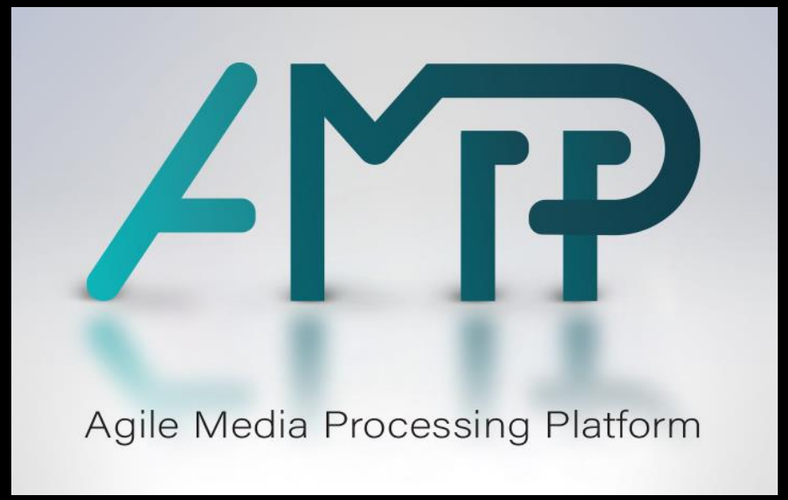
- 8x virtual cameras **(observer stations)**
- 8x contribution links for talent
- Live **switching, graphics, audio, replay**
- Contribution from EMEA, US, APAC
- 100% cloud-based processing







EA Apex Solution



The first cloud based SaaS platform capable of addressing ***broadcast-grade*** live production applications

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Electronic Arts

Agile
Save and restore factories instantly

Elastic
Utilize media services on-demand

Flexible
Deploy in public cloud, on-premise, or hybrid

Scalable
Resilient and secure web-scale technology

Nimble
New services released continuously, CI/CD

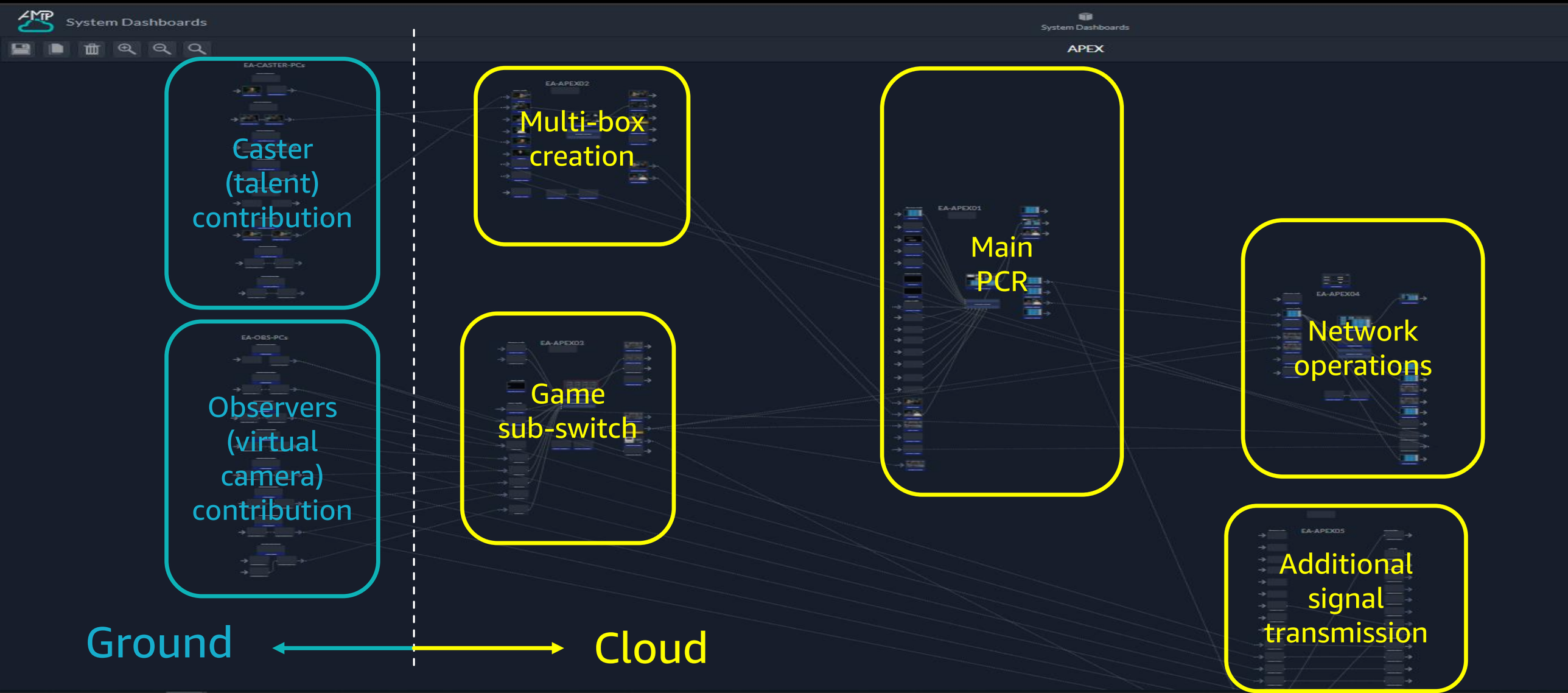


Grass Valley AMPP

The first cloud-based SaaS platform capable of addressing *broadcast-grade* live production applications

Electronic Arts

SYSTEM FOOTPRINT



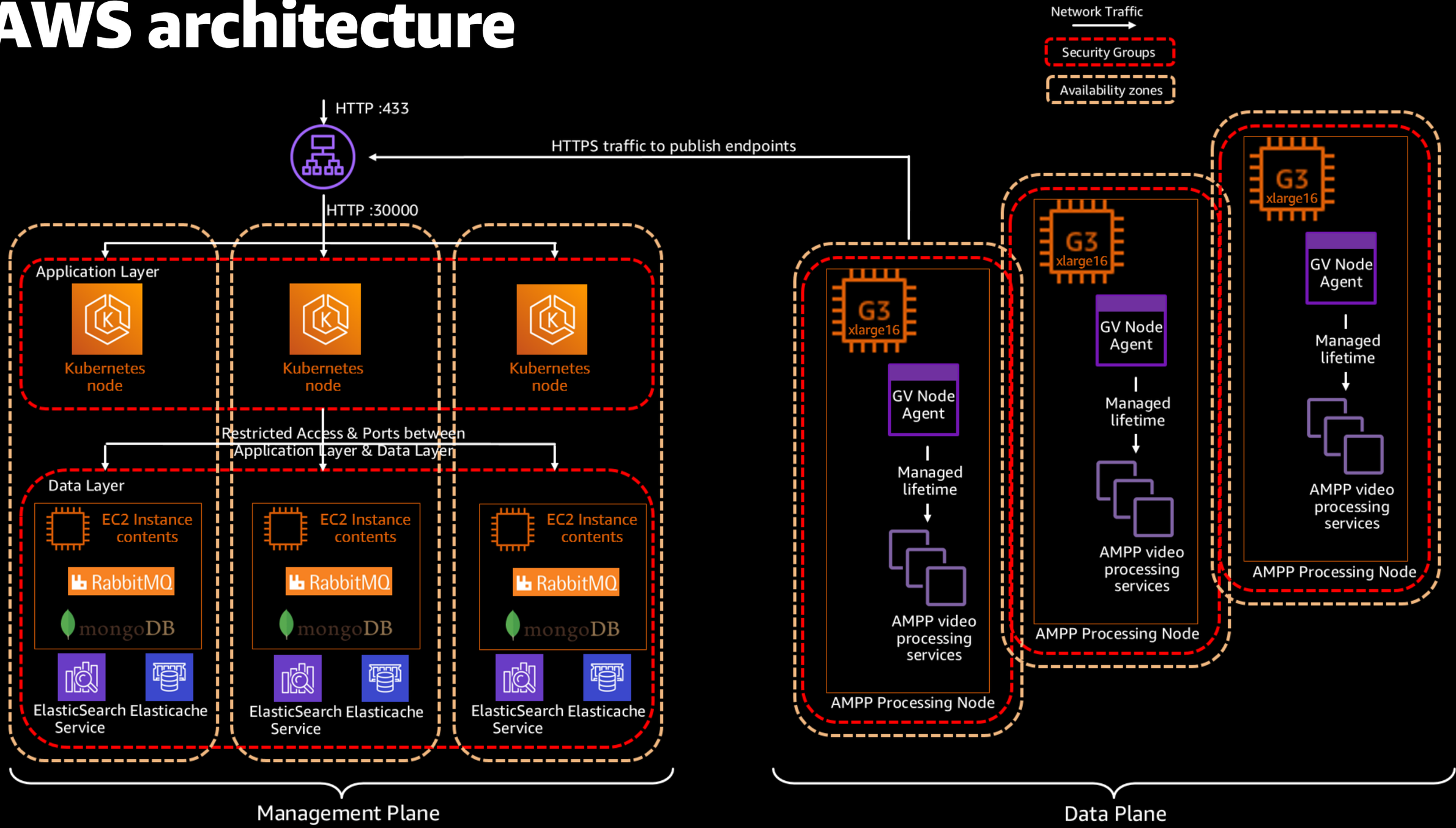
AWS architecture



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AWS architecture



Results

- Quick learning curve
- Improved production quality
- Greater cloud automation
- Strong support
- Ongoing collaboration



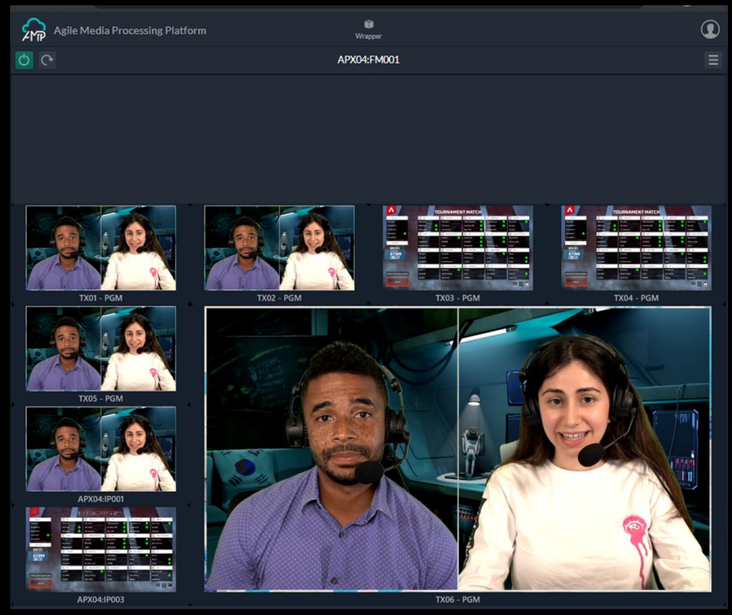
Benefits realized

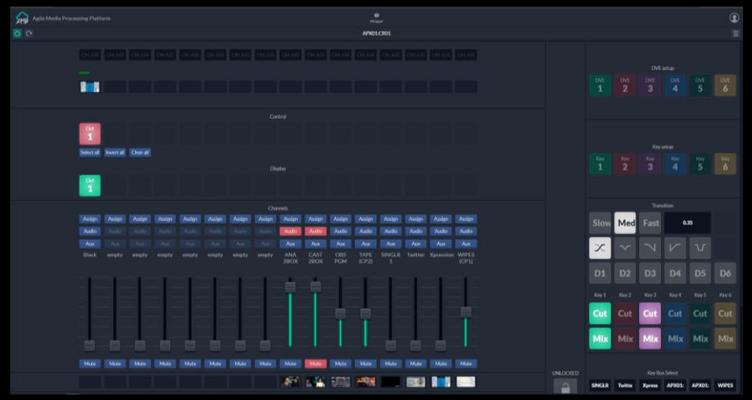
Geographic diversity

True elasticity

Work from home production

Broadcast professional tools





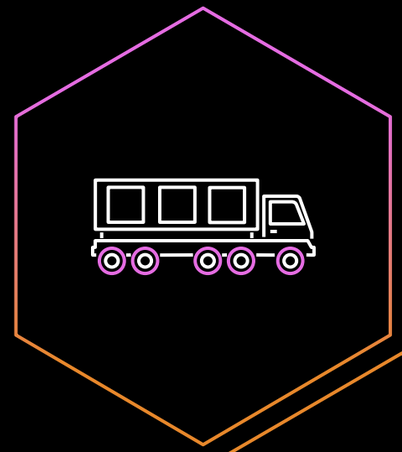
AWS technologies for live production



AWS Cloud Digital Interface

Baseband Transport between EC2

Technology **stack** built on top of the EFA adapter enabled EC2 Instances



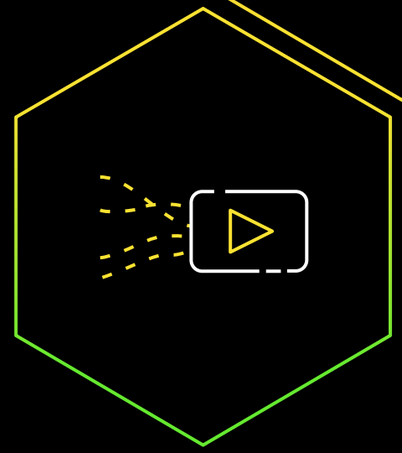


High bandwidth, low latency

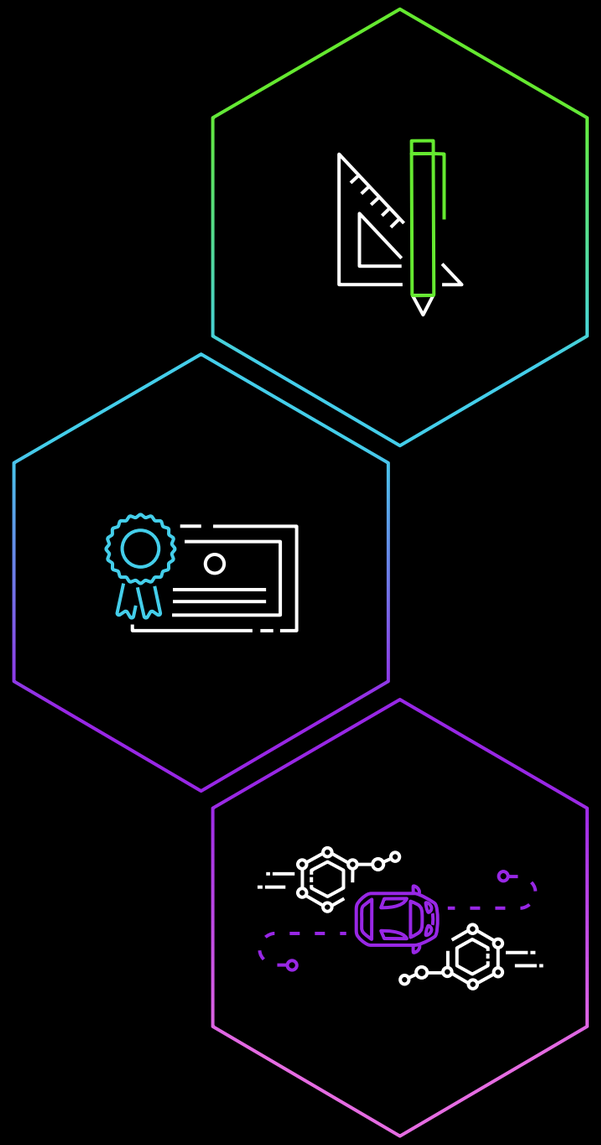
Can move 4K 60fps live video between EC2 instances with **less than** one frame of latency

Purpose built for the cloud

Leverages AWS SRD networking technology for non-blocking **reliable** packet transmission



AWS Cloud Digital Interface



AWS CDI is available as an **SDK** for both **Windows and Linux**

SDK is available as an **open source project released under the 2-clause BSD license;** customers only pay for EFA enabled EC2 instance usage

For **increased** inter-vendor **interop,** the SDK includes a schema-based Audio-Visual Metadata (AVM) layer

Thank you!

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