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Live streaming amplified with AWS Purpose-Built Tools

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Agenda

- ✓ **Challenges of live streaming at scale**
- ✓ **Live streaming solutions on AWS**
- ✓ **Scalability features of AWS Media Services**
- ✓ **Generative AI in media and entertainment**
- ✓ **Stream events with AWS Countdown**
- ✓ **Key takeaways and additional resources**

Challenges of live streaming at scale



**Handling fluctuating
viewer demand**



**Delivering high-quality
streams globally**



**Scaling infrastructure resources
efficiently**



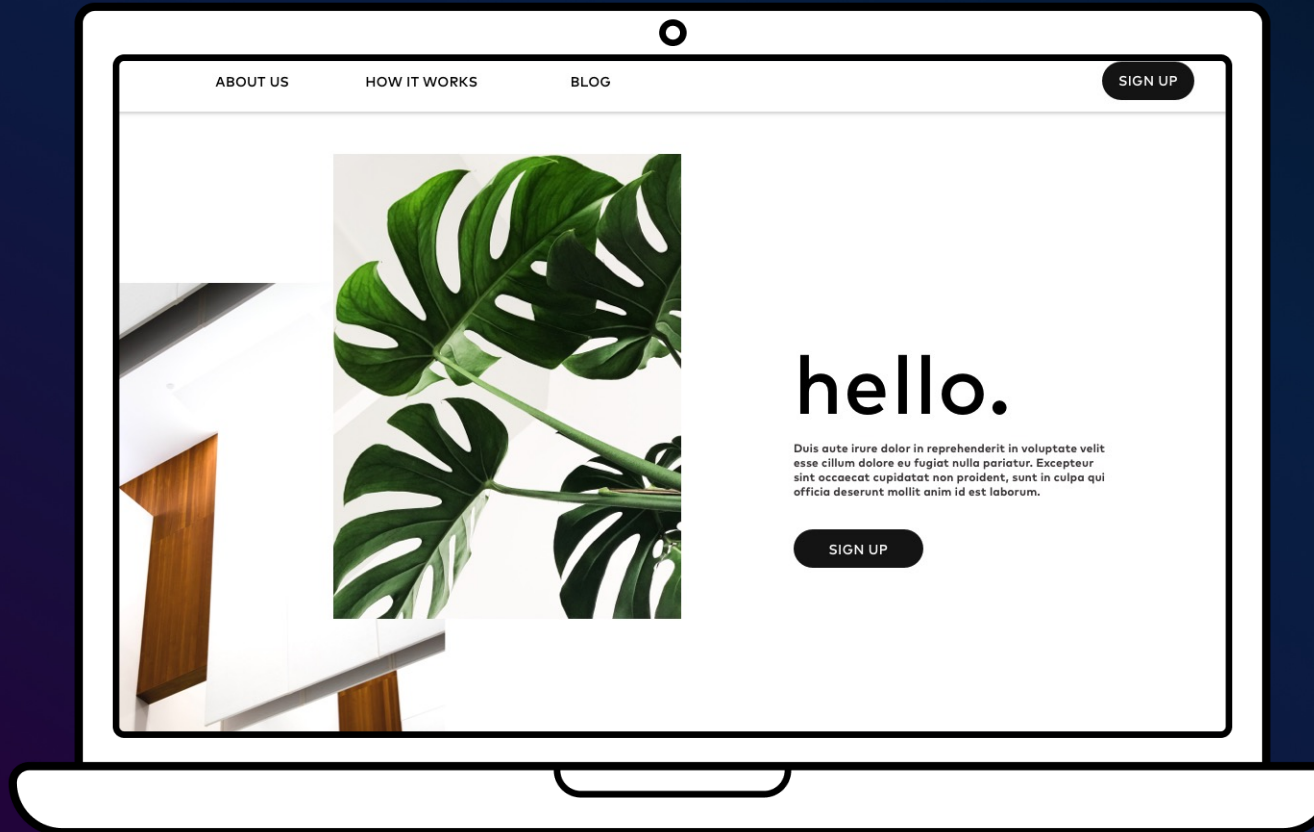
**Managing large volumes
of concurrent streams**



**Maintaining security and
compliance**

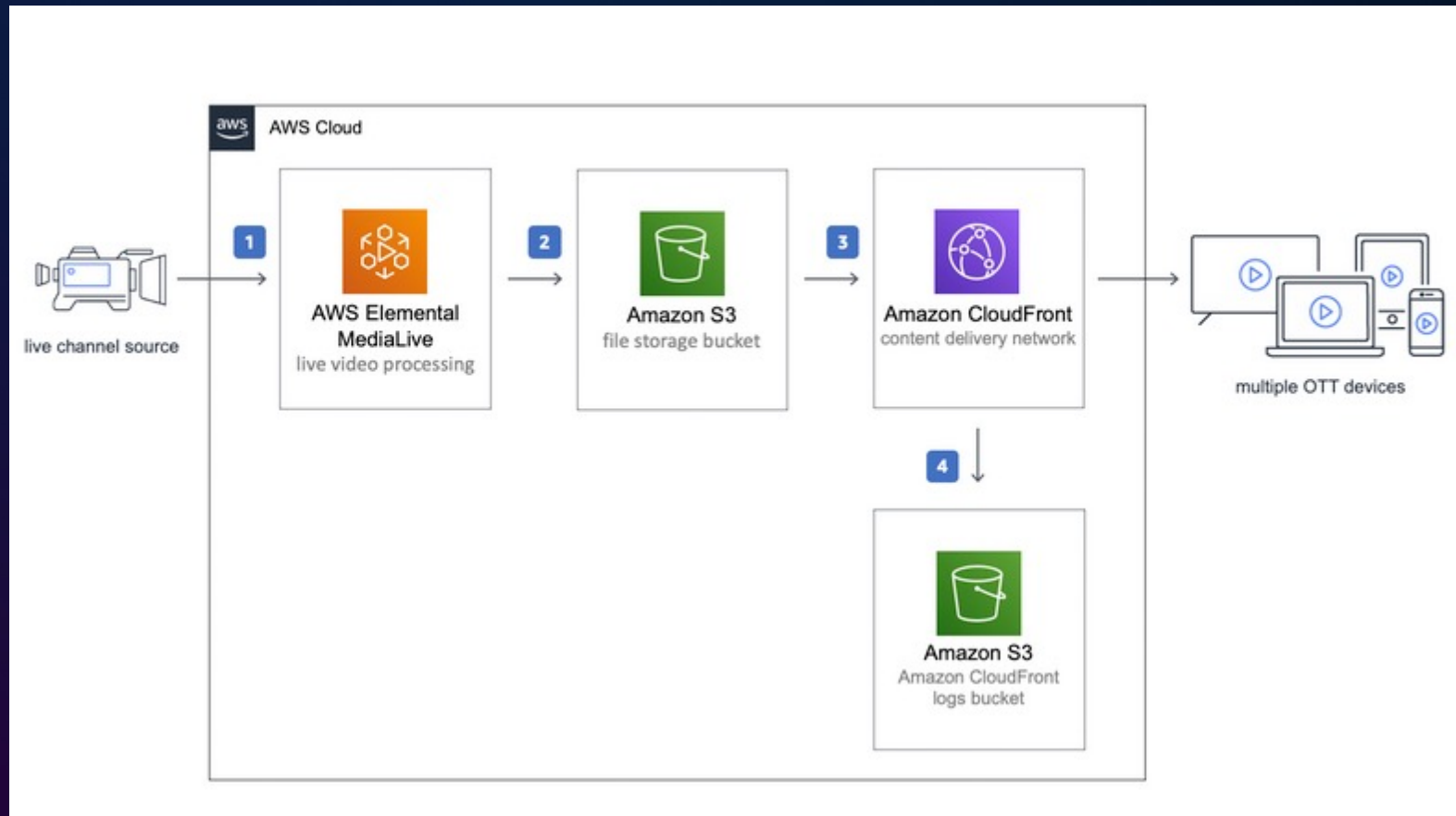
Live streaming solutions on AWS

AWS provides two live video streaming AWS Solutions to cost-effectively deliver media content to a global audience as part of the AWS Solutions Library.



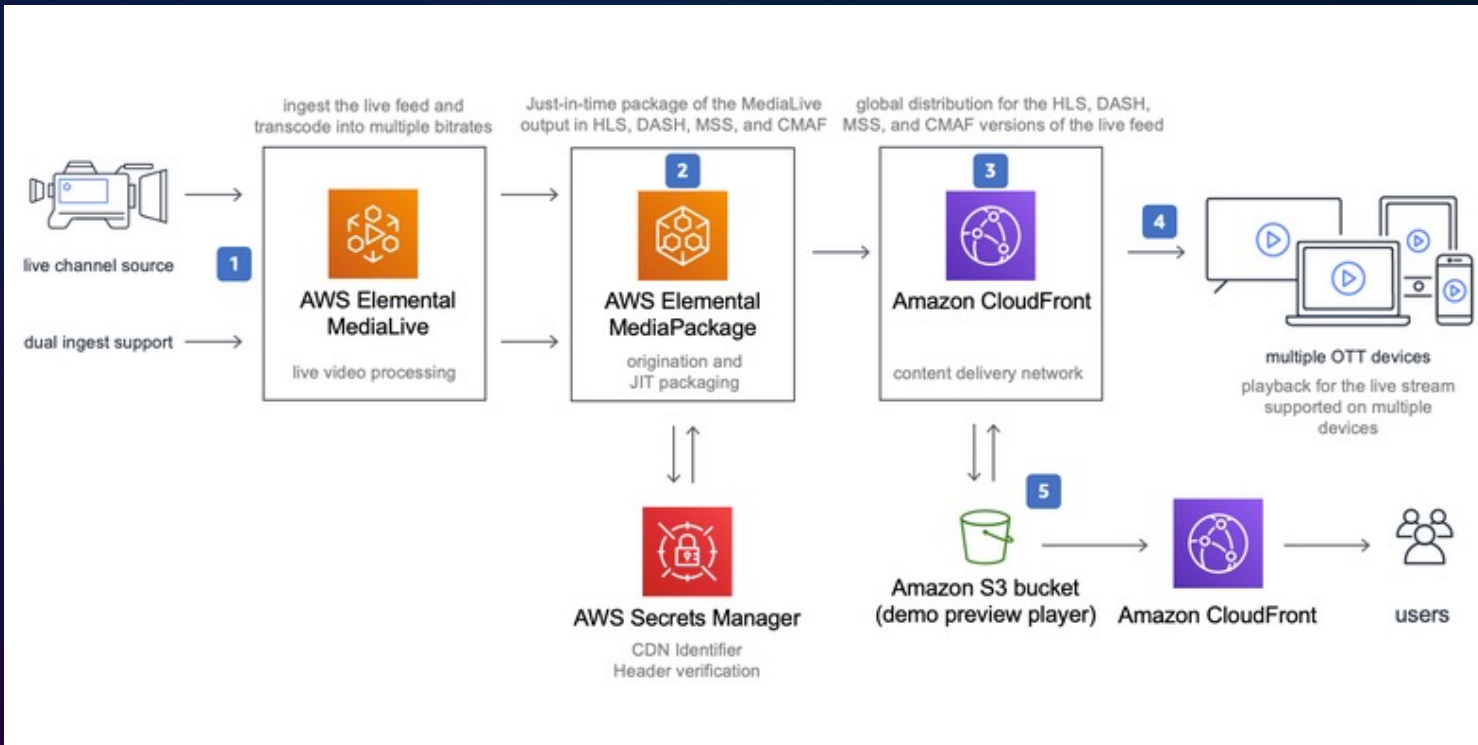
- Live streaming on AWS with Amazon S3 (AWS Elemental MediaLive) and Amazon Simple Storage Service (Amazon S3)
- Live Streaming on AWS (AWS Elemental MediaLive and AWS Elemental MediaPackage)

Solution 1: Live streaming on AWS with Amazon S3



- **Step 1:** AWS **Elemental MediaLive**, ingests an **input feed** and **transcodes** your content into one adaptive bitrate (ABR) HTTP Live Streaming (HLS) stream as output.
- **Step 2:** **Amazon Simple Storage Service (Amazon S3)** provides a scalable highly available storage bucket to **host the encoded segments**.
- **Step 3:** **Amazon CloudFront** distribution is configured to use the Amazon S3 custom endpoints as its origin. The Amazon CloudFront distribution delivers your live stream to viewers **with low latency and high transfer speeds**.
- **Step 4:** S3 bucket **stores** the CloudFront logs.

Solution 2: Live Streaming on AWS with media package



- **Step 1:** **AWS Elemental MediaLive**, which ingests two input feeds and transcodes your content into **two adaptive bitrate** (ABR) HTTP Live Streaming (HLS) streams as output.
- **Step 2:** **AWS Elemental MediaPackage** ingests the AWS Elemental MediaLive ABR output and **packages** the live stream into **HLS**, Dynamic Adaptive Streaming over HTTP (**DASH**), and Common Media Application Format (**CMAF**) formats that are delivered to three **MediaPackage custom endpoints**.
- **Step 3:** An **Amazon CloudFront** distribution is configured to use the **MediaPackage custom endpoints** as its origin and includes a content delivery network (**CDN**) **identifier** custom HTTP header to authenticate requests.
- **Step 4:** The **Amazon CloudFront** distribution delivers your live stream to viewers with **low latency** and **high transfer speeds**.
- **Step 5:** A **demo HTML preview player** is available to help you test the solution. The player is a static website hosted in an **S3 bucket**. CloudFront is used to restrict access to the solution's website bucket contents.

Scalability features of AWS Media Services

- Broadcasting capabilities for live video streams
- Live video workflow monitor
- Automated high availability
- Use independently or with other AWS Media Services
- Comprehensive video standards support



Which live streaming solution on AWS should I choose?

Feature	Solution 1	Solution 2
AWS services	AWS Elemental MediaLive Amazon Simple Storage Service (Amazon S3)	AWS Elemental MediaLive AWS Elemental MediaPackage
Customizations	Less	More
Inputs	Supports URL_PULL, RTMP_PUSH, RTP_PUSH, and Elemental Link device with no redundancy	Supports URL_PULL, RTMP_PUSH, RTMP_PULL, RTP_PUSH, and MediaConnect inputs with redundancy
Outputs	HLS only	Multiple outputs including CMAF, HLS, and DASH for playback support on different players
Support for content protection	N/A	DRM
DVR-like features		✓
Build live-to-VOD workflows		✓

Amazon IVS (Interactive Video Service)

Amazon IVS is a managed live streaming solution that makes low-latency or real-time video available to viewers around the world, allowing you to create engaging live experiences.

Features	Amazon IVS	Other media services (MediaLive, MediaPackage, etc.)
Interactivity	Interactivity is enabled via a flexible metadata API	Requires more custom work
Low Latency	Under 5 seconds	As low as 2 seconds
Content protection	Does not offer an option to encrypt content	Offer a wide range of content protection options
Ad insertion	Does not offer the ability to monetize streams	Provide comprehensive ad insertion functionality
Automatic stream start	Available for streaming within seconds	Must be started and in a running state

Generative AI for real-world tasks in media and entertainment

Benefits



Increase efficiency and productivity



Reduce time and cost to innovate



New customer experiences

Capabilities



Text transformation and generation: reading and writing assistance, script summarization, narrative generation from sports statistics



Accelerate production and post workflows, image, music, and video creation



Personalize content and auto ad generation to grow revenues

Generative AI in media and entertainment



Text: narrative generation from sports statistic and news



Audio: music generation, ADR, script reading, localization



Customer care and communications virtual assistant



Images and videos: super resolution (upscaling), frame interpolation, content restoration



Text: script summarization (pre- and postproduction, EPGs), reading and writing assistance



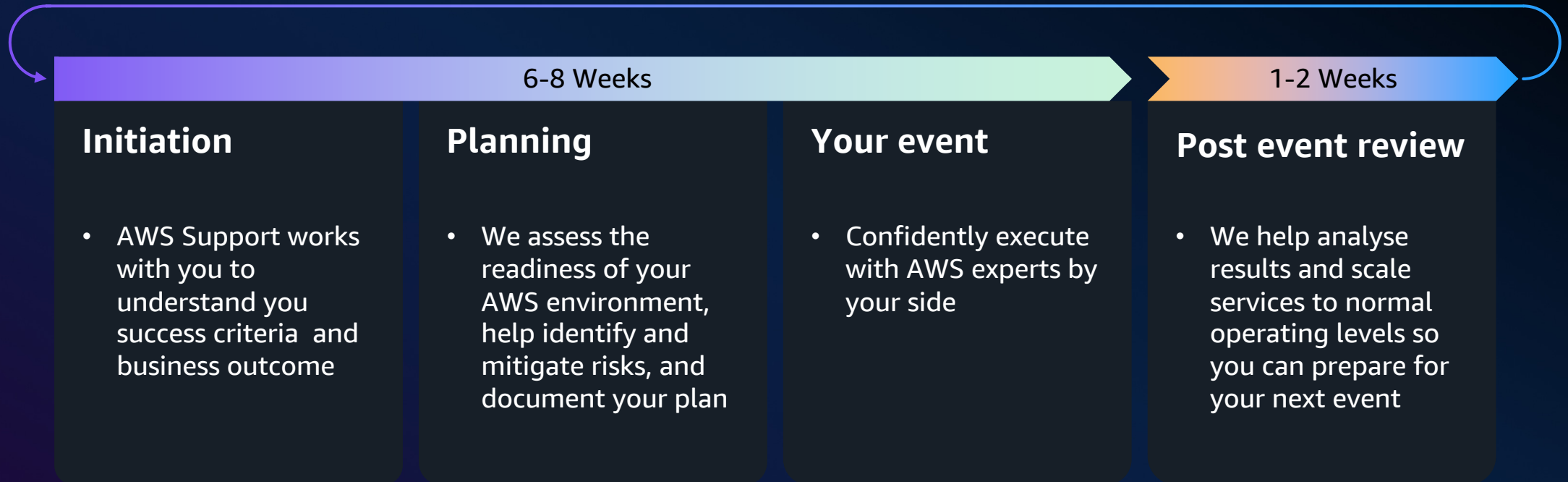
Images and videos: still image creation, 2D and 3D asset creation, character development, marketing and promo generation



Images and videos: "render from rough" storyboarding from sketches, rendering scenes from untextured 3D models

Stream events with AWS Countdown

STREAM EVENTS WITH SUPPORT FROM AWS EXPERTS AND DESIGNATED SPECIALIST ENGINEERS TO ENSURE THAT YOUR INFRASTRUCTURE SCALES EFFECTIVELY TO MANAGE RAPID TRAFFIC INCREASE



AWS Countdown premium

- AWS Countdown Premium offers additional critical support with designated engineers who provide guidance and troubleshooting.
- AWS Countdown provides access to proven artifacts, runbooks and decision templates to help optimize critical events

Key Takeaways & Additional resources

- ✓ Understand two live video streaming AWS Solutions
- ✓ How to cost-effectively deliver media content to a global audience as part of the AWS Solutions Library.
- ✓ Guidance to help you choose between the two live video streaming AWS Solutions to best fit your business needs
- ✓ Generative AI details w.r.t Media & Entertainment Segment
- ✓ Info on AWS Countdown



[Live Streaming on AWS](#)

Details on two live video streaming AWS Solutions



[Implementation Guide](#)

Implementation guide for building highly-available architecture that delivers a reliable real-time viewing experience



[AWS CloudFormation Template](#)

Download the CloudFormation template for seamless deployment



[Choosing the right AWS live streaming solution](#)

Based on your usecase, select the right streaming solution



[AWS Countdown](#)

Plan and execute successful streaming and go-live events with AWS Countdown

skillbuilder.aws 

Build beyond

Redeem your free 7-day
trial of AWS Skill Builder

Thank you!



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