
AWS
re:Invent

MDS202

State of media content distribution

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AWS

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Agenda

Media content distribution trends

Customer insights

Partner innovation

AWS highlights

Story of innovation

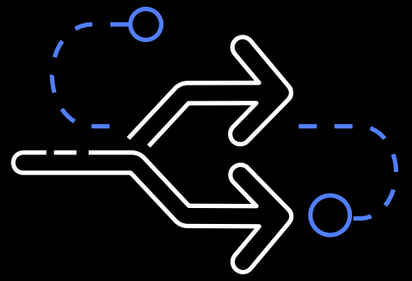


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Media content distribution trends



Increased demand for content, and consumers are able to shift platforms **faster than ever**. Broadcasters need to constantly adapt to consumer behavior.

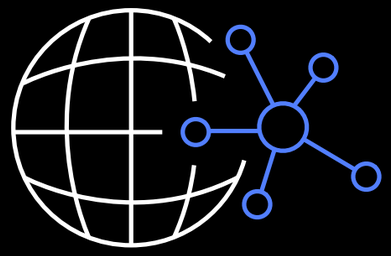


Foundational shift, not only to replace old hardware with new hardware, but a shift from hardware to software, and from **CapEx to OpEx.**

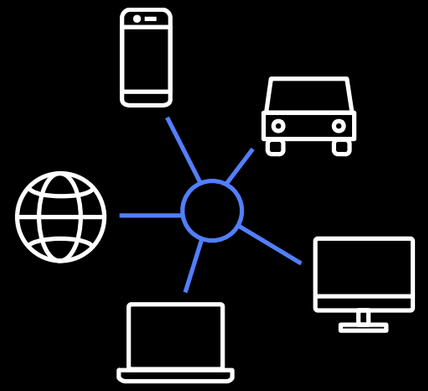


Experimenting with intent. It's estimated the cost to launch a new channel has been reduced by **97% over 20 years.**

Media content distribution trends



A globally disbursed, remote workforce. Conditions have forever changed and working environments are accelerating remote workflows and cloud migrations.



Next gen distribution: With the advent of new distribution channels (5G, ATSC 3.0, etc.), the acceptance of IP as a primary distribution mechanism is increasing, and adoption of these new technologies provides increased consumer **engagement** and **reach**.

Customer insights



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Fox partners with AWS on cloud broadcast and distribution operations

Customer: FOX Corporation
Industry: Media & Entertainment
Country: United States of America

Customer profile:

Fox Corporation is a media and entertainment company consisting of Fox Entertainment (formally Fox Television Group), Fox Television Stations Group consisting of 28 owned and operated TV stations, Fox News Media, and Fox Sports Media Group.

Headquartered in New York City, the "New Fox Corporation" was created following the sale of 21st Century Fox to The Walt Disney Company.

Challenges

- **Large capital investment -** It's difficult, expensive and time-consuming to add a channel to an on-premises broadcast facility.
- Traditional broadcast **workflows are tightly coupled**. Systems are typically interconnected in a manner that makes replacing a single system or service too arduous.
- **Relieve workflow bottlenecks** around OTT/VOD distributions, especially for time-sensitive workflows like C3/C7.

Solution

- **AWS delivers flexibility.** Launch additional channels or workflows quickly and dynamically. Decommission services when no longer needed.
- **AWS provides scalability.** Scale services to handle bursty traffic during special events or peak viewership periods
- **Leverage a loosely-coupled architecture** allowing deployment of best-of-breed solutions.

Results

- With a full, greenfield broadcast operation in the cloud, **Fox has created a modern and scalable operation** that includes broadcast, OTT, and VOD streaming workflows that can **be fully automated and agile.**
- By early 2021, the **Fox Network will launch a state of the art Network Operations Center** (NOC) with limited on-prem solutions where the **AWS cloud will be the primary gateway for playout.** The facility will provide a ground-based solution for all Fox owned broadcast network operations.

"We are pleased to announce this week the deal with AWS as the strategic partner to really lift our video workflows in terms of how we produce, create, and really importantly distribute our video to all of those partners, in a way that really transforms the way our creatives can work as well"

***– Paul Cheesbrough**, CTO & President of Fox Digital*

Technical Emmy® Award

Recognizes Discovery, FOX NE&O (Walt Disney Television), SDVI, AWS, and Evertz for pioneering a public cloud-based media supply chain for content ingest, management, and delivery.



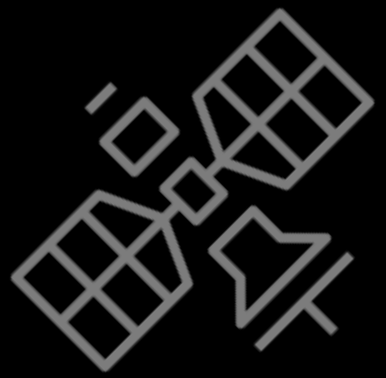
"This innovative approach results in significant time and resource savings for broadcasters and enables new kinds of viewing experiences for consumers."

With the SDVI media supply chain platform, Walt Disney Television is leveraging an AWS-resident resource management system to share media processing workloads across the group's existing facility and AWS to dynamically provision and scale resources.

Having Discovery's supply chain and content in the cloud allows the media leader to also move their playout into the AWS Cloud, which they have done using a combination of Evertz, AWS Media Services, and internally developed tools.

AWS broadcast



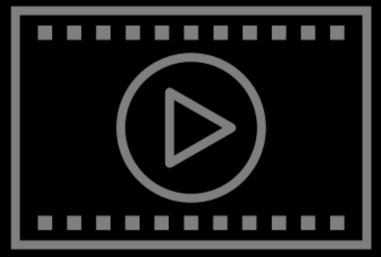


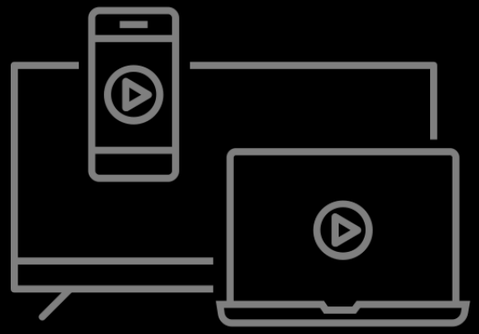


Our customers have 1600+ channels running on AWS









Creating a new and interactive live streaming experience

CHALLENGE

Food Network Kitchen needed to create a flexible digital channel that takes in multiple sources from various studio and remote production sites. They needed to ensure that the channel scaled and worked on any device their customers were using.

SOLUTION

Source video is sent to AWS Elemental MediaConnect, which then sends the streams to AWS Elemental MediaLive for encoding and source switching. They are then sent to AWS Elemental MediaPackage to be converted into HLS.

BENEFIT

- 10 weeks from idea to launch leveraging same live architecture used for Eurosport
- Have glass-to-glass control
- Are able to leverage Amazon Alexa Control/Interaction to increase customer engagement

"We wanted to create the best-in-class direct-to-consumer applications and platforms and to do that *we needed a video processing pipeline that's efficient, scalable and has the quality we want*. *It required a complex video chain, but using AWS Media Services allowed us to do it."*

Julian Daddy, Director, Digital Video Platforms, Discovery



About Food Network Kitchen

Food Network Kitchen allows you to cook along with Food Network chefs and other top culinary pros in Live and On-Demand classes. Find and save proven recipes, follow step-by-step how-to's and watch Food Network shows, all on one app.

Zee5 performs millions of ad insertions with AWS

CHALLENGE

- Zee5 is an ad-supported OTT platform that sought a solution to quickly launch server-side ad insertion (SSAI) without the heavy lifting of scaling infrastructure to meet the demand of millions of users.
- Needed to capture and report ad metrics and employ user level customization.
- Implement with its existing live linear and VOD workflows.
- Integrate with multiple CDNs and third-party services.

SOLUTION

- Zee5 uses AWS Elemental (AWSE) MediaLive to encode and deliver 80+ live channels to viewers and AWSE MediaConvert to transcode hundreds of hours of video on demand.
- AWSE MediaPackage for just-in-time packaging of 20+ channels.
- AWSE MediaTailor for SSAI on 18+ Live channels, delivering 100 million ads monthly.

BENEFIT

- Scale: scale and monetize unexpected high-demand viewing events with no up-front costs.
- Choice and ease-of-reporting: automated reporting measuring ad impressions and viewer behavior.
- Flexible integration: integrated with Amazon CloudFront, 3rd party CDN, ad decision server (ADS), client devices and 3rd party analysis platforms.

About Zee Entertainment

Zee Entertainment Enterprises Limited is one of India's leading television media & entertainment companies. It is among the largest producers and aggregators of Hindi programming in the world, with an extensive library housing over 260k+ hours of television content with more than a billion users across 173 countries. Zee Entertainment operates 41 domestic and 38 international channels.

Zee5 is an OTT service run by Zee Entertainment. Within two years of its launch, Zee5 has become one of the biggest OTT platforms in India with approximately 76 million monthly active users, 6.6 million daily active users, and more than 500 million video views per month.

Over 500 million subscribers worldwide are streaming media content on platforms powered by AWS.*



*Aggregate subscriber count based on publicly available subscribe numbers of top 20 streaming services running predominantly on AWS infrastructure

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Partner innovation



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Grass Valley AMPP Master Control and Playout

AGILE MEDIA PROCESSING PLATFORM



AMPP Master Control

- Fully elastic master control operations
- Increased monetization opportunities: spin up additional channels, regionalize content, test new services
- Remote, HTML5-based control and monitoring, including full multi-viewing experience.
- Distributed operations: control channels from anywhere, with just a browser and internet connection.

AMPP Playout

- Increased business agility: create new TV channels and playout streams in a matter of minutes
- Cloud-first, microservices-based architecture.
- Limitless scalability: provision one or hundreds of channels
- Self-healing, fault-tolerant architecture.
- Ultimate resiliency: all the benefits of elastic playout, without sacrificing reliability and SLAs



Use of AWS

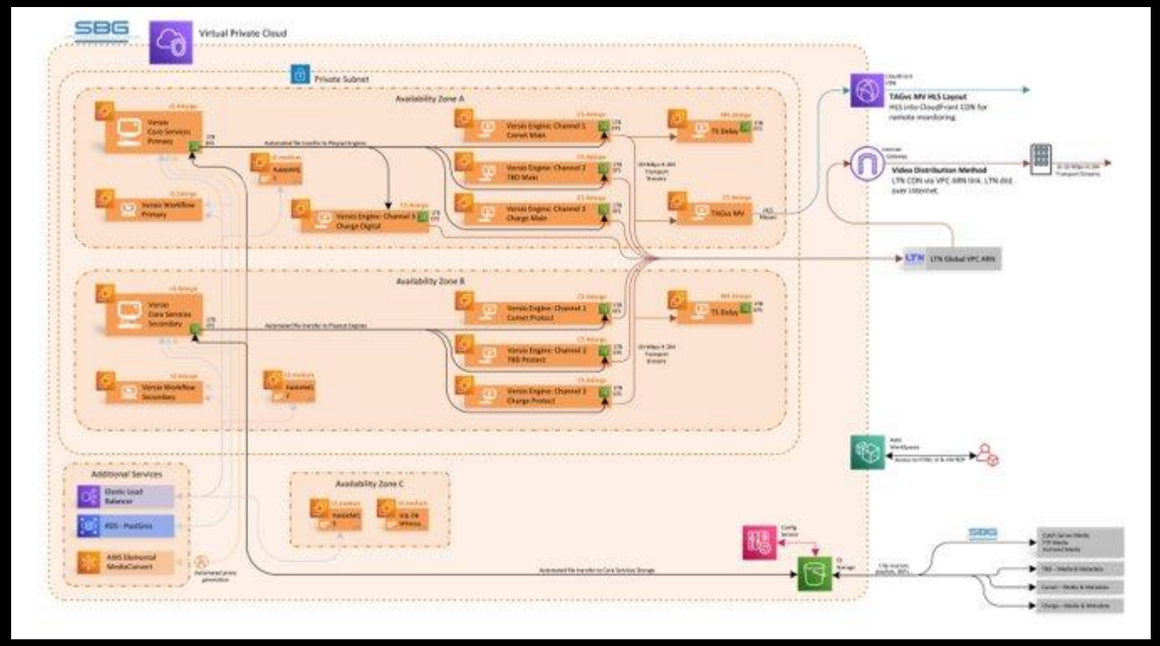
- Amazon Kinesis Data Firehose
- Amazon Elasticsearch Service
- AWS Lambda
- Amazon DocumentDB
- Amazon ElastiCache
- Amazon EKS
- Amazon Route 53

Sinclair Broadcast Group

Emerging networks migration to AWS

Sinclair Broadcast Group is the second largest television station operator in the US, with a total of 193 owned and operated stations across the country, in over 100 markets.

Their parent company, Sinclair Networks LLC, also operates Tennis Channel, as well as the regional sports networks that were acquired from Fox Sports Networks in 2019.



Problem

- Business need to migrate channel origination of three emerging networks out of on premises facility to AWS
- Distribute from AWS to affiliate stations via LTN

Use of AWS and Partner(s)

- AWS services: S3, EC2, AWS RDS Postgres Database, AWS MediaConvert, AWS WorkSpaces
- Imagine Communications:
  - Versio Automation and Playout
  - Versio Workflow
  - Versio Content Portal (Asset Management)
- LTN Global: Linear Distribution & CDN
- TAG Video Systems Multiviewer

Business benefits

- Scalable, secure, and resilient channel origination platform, deployed on AWS
- Imagine Communications deployed Versio in AWS, while leveraging several AWS service offerings to help manage the TCO

A+E Networks UK moves broadcast operations to AWS with Amagi

A+E Networks® UK has transitioned its playout and service delivery for its entire bouquet of 30 channels in Europe to Amagi's AWS cloud platform.

A+E Networks® UK is a leading media network reaching 58 million homes across 100 countries.

Problem

Initially set up as a business continuity playout option, the operation was transitioned to be the primary facility in a matter of weeks.

Over 50,000 hours of content was ingested on to the cloud, and playout and delivery

Use of AWS + Amagi

- Amazon S3 for storing content, graphics, and metadata
- AWS Lambda for auto QC, graphics processing
- Amazon RDS and IAM for access
- Amagi CLOUDPORT for channel playout

Business benefits

- Greater Flexibility and Scalability
- Multiple geographies covered with cost-effective cloud playout
- Manage broadcast operations remotely
- Improved operational insights at all stages of the broadcast workflow

"This partnership is an important milestone in our goal to create an effective, scalable, and future-facing operations in the cloud that is well positioned in our supply chain"

- Matt Westrup, Vice President of Technology & Operations, A+E Networks® EMEA

AWS highlights



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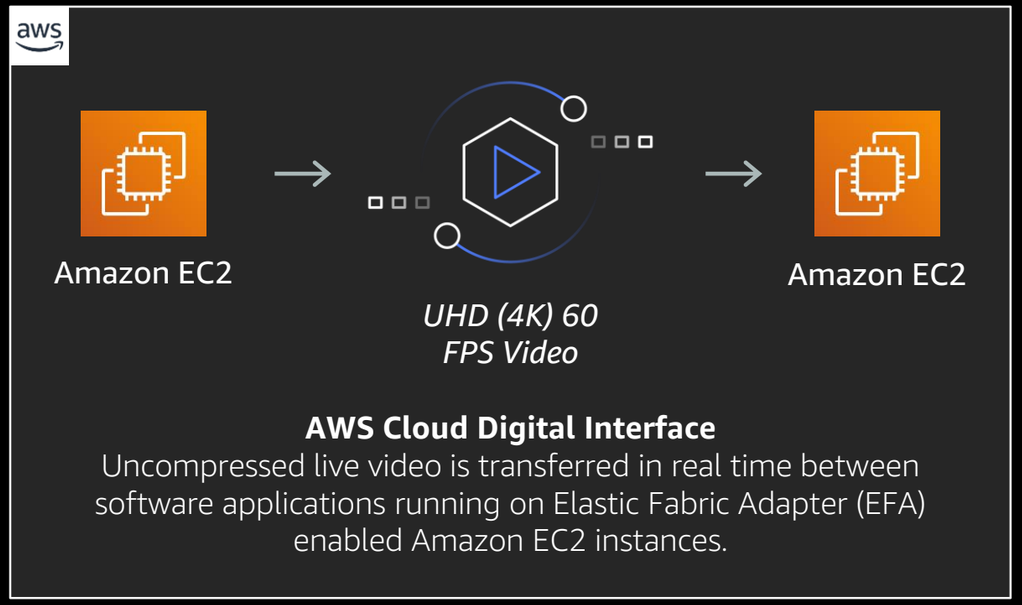
AWS Cloud Digital Interface (CDI)

TRANSPORT UNCOMPRESSED LIVE VIDEO BETWEEN PRODUCTS FOR REAL-TIME APPLICATIONS.

- **Move broadcast to cloud, at scale** by leveraging the Elastic Fabric Adapter and AWS's highly scalable network. AWS CDI supports up to UHD (4K) 60 fps live video with less than one frame of latency between Amazon EC2 instances.

- **Next gen cloud networking.** AWS CDI takes advantage of the AWS purpose built networking protocol Scalable Reliable Datagram (SRD) for reliable low latent packet transmission.

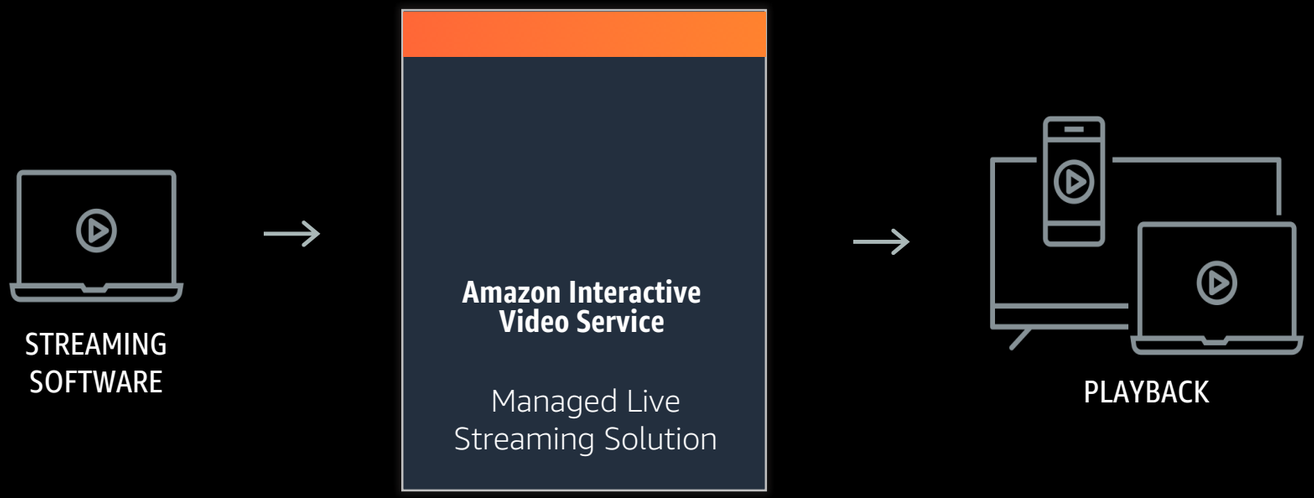
- **Remove barriers.** Our partners want to focus on a great viewer experience not network operations. AWS CDI offloads the complexity of inter and intra solution interoperability through a standardized transport method.



Learn more at http://aws.amazon.com/media-services/resources/cdi/
Find the GitHub repository at https://github.com/aws/aws-cdi-sdk

Amazon Interactive Video Service (IVS)

IS A SIMPLE-TO-USE LIVE STREAMING SOLUTION THAT LETS YOU BUILD INTERACTIVE EXPERIENCES WITH ULTRA-LOW-LATENCY LIVE VIDEO



Simple-to-use live video streaming

Create and configure live streams with just a few clicks, and start streaming in seconds

Build an engaging audience experience

Amazon IVS streams are designed to provide low latency live video 'out of the box'

Optimized for live streaming

Amazon IVS makes use of a managed global infrastructure that is optimized for live video ingest, processing, and delivery

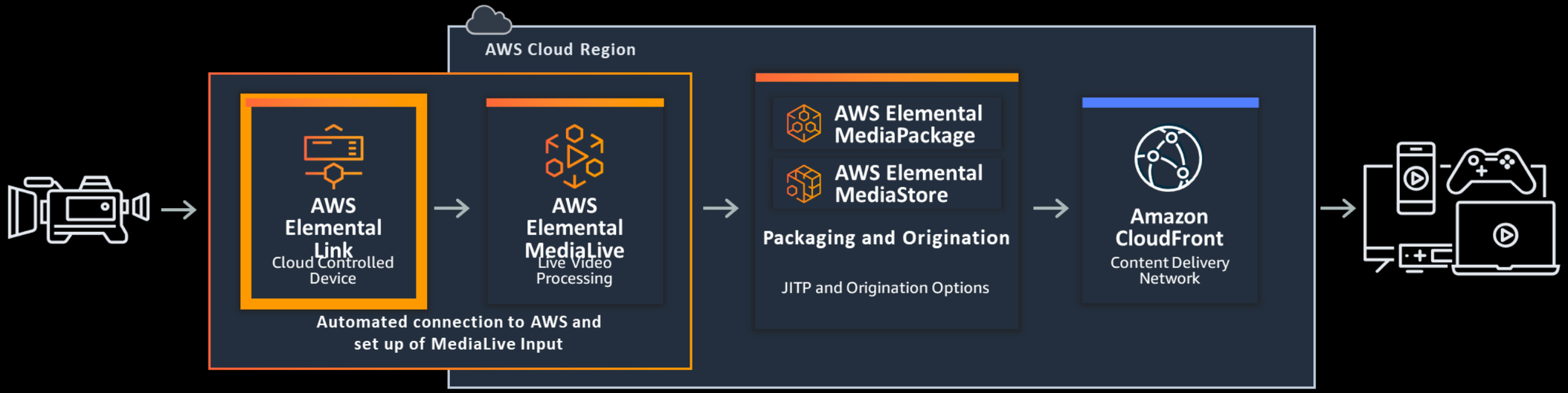
Easy integration into websites and apps

Get live streams into your iOS, Android, and web apps, quickly and easily with the player SDK

Learn more at www.aws.amazon.com/ivs
See Amazon IVS in action at www.amazon.com/live

AWS Elemental Link

SMALL, PORTABLE DEVICE THAT CONNECTS A LIVE VIDEO SOURCE TO AWS ELEMENTAL MEDIALIVE.



Fast and easy setup

AWS Elemental Link is shipped fully configured to your AWS Account

Scalable remote management

Stop, start, monitor, and create a channel from the MediaLive console or via API for a single device or hundreds of devices

High video quality

Link continuously adjusts bitrate based on conditions (1080p60 high end)

AWS Media & Entertainment



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Thank you!



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