

Media Over IP in the Cloud

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(he/him)

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Global Media & Telecom Partners
AWS



Agenda

Broadcast
trends

Broadcast
workflow

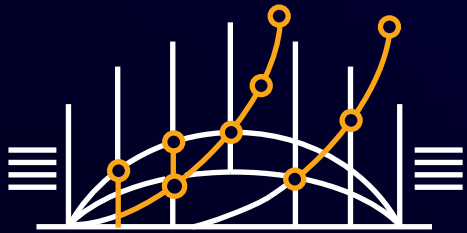
AWS Well-
Architected
Framework

Cloud
Best
Practices

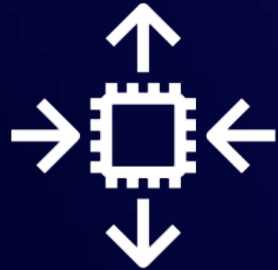
Getting
Started



Broadcast Trends



Cost
Optimization



Scalability &
Agility



Experimentation
& Innovation

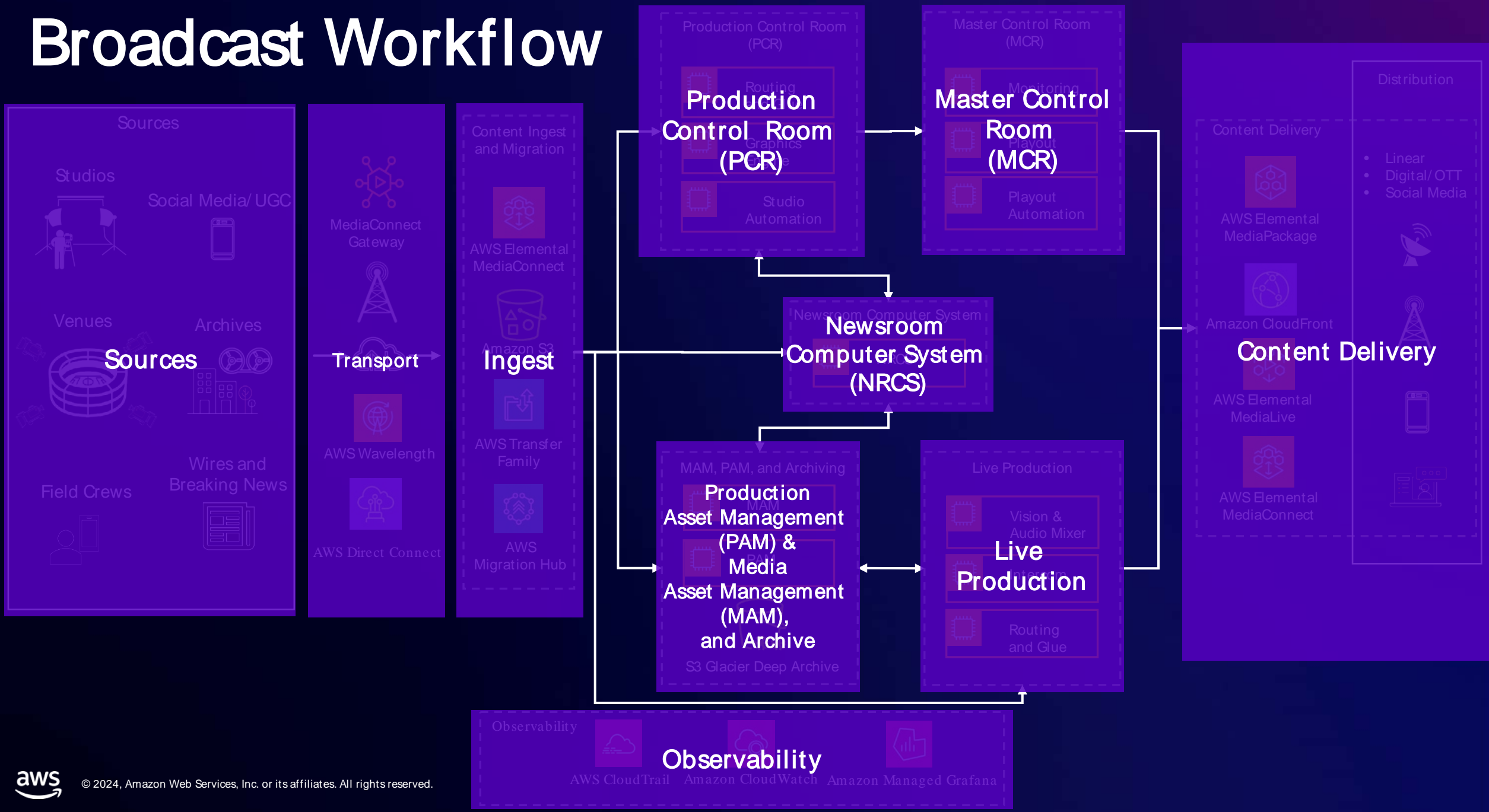


Sustainable
workflows

Broadcast Workflow



Broadcast Workflow



Live Streaming

File Transcode and VOD Streaming

Broadcast and B2B Distribution



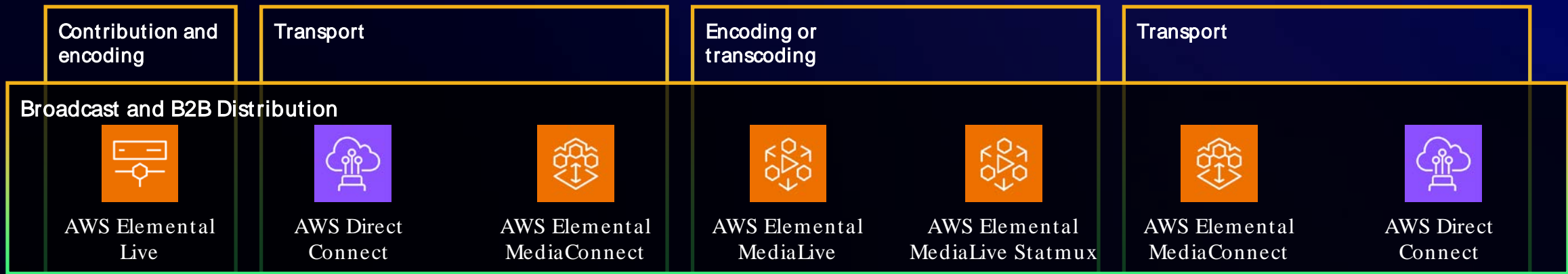
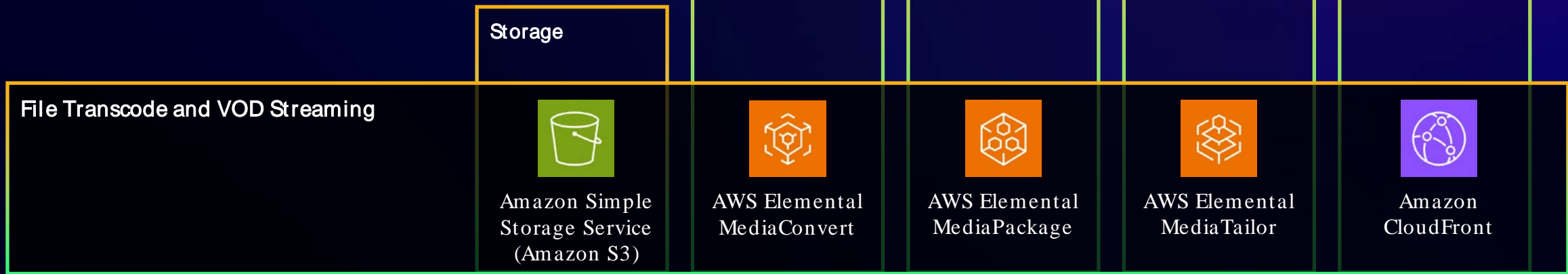
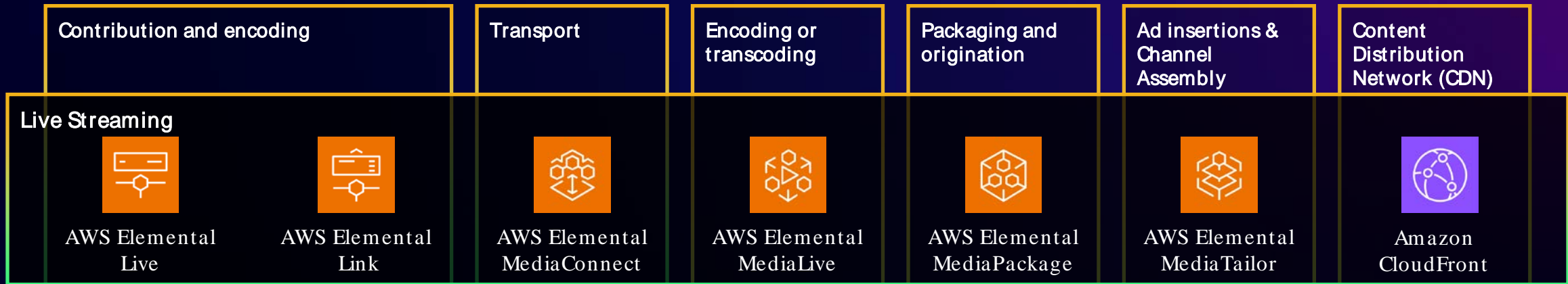
Live Streaming

File Transcode and VOD Streaming

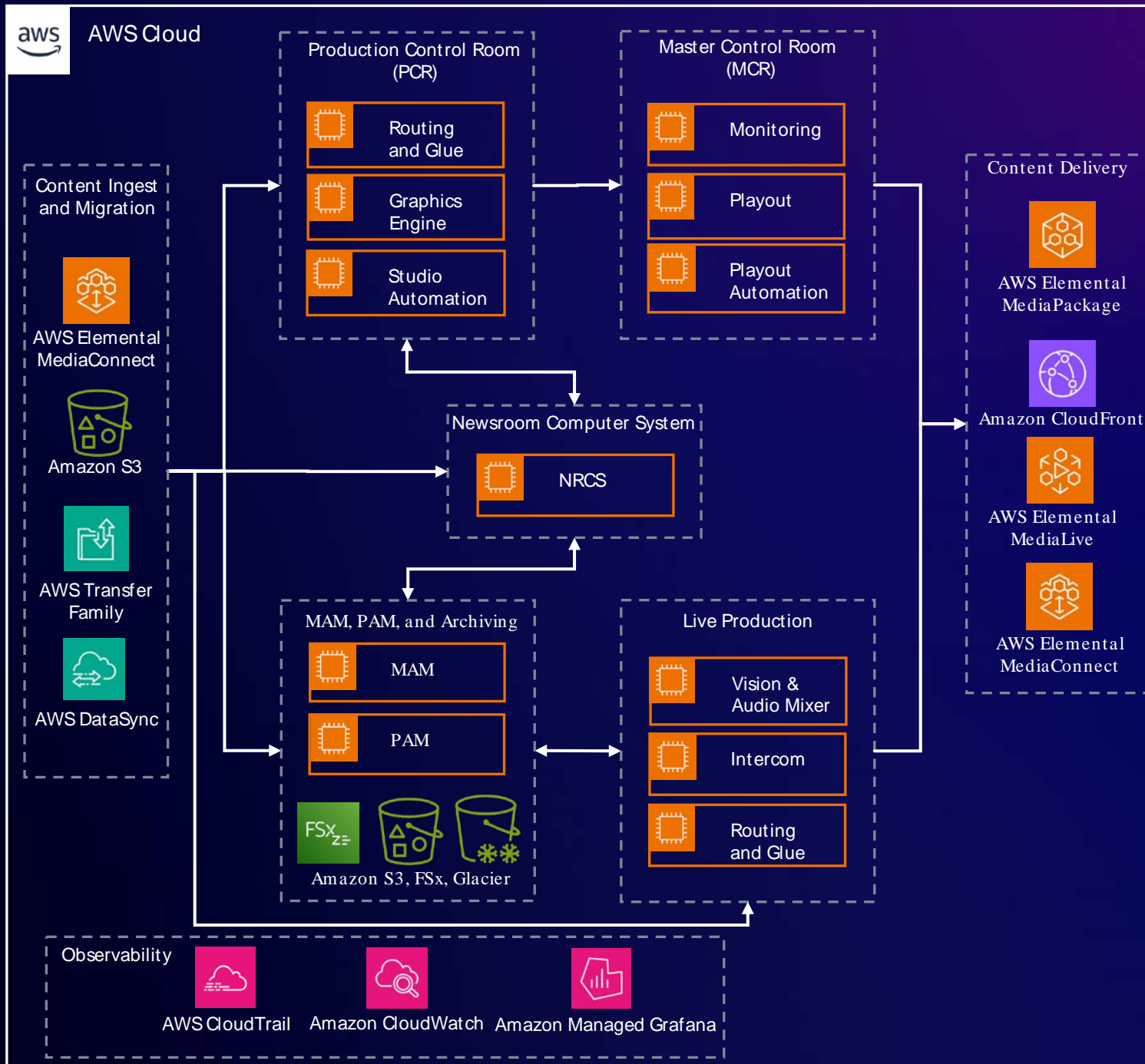
Broadcast and B2B Distribution







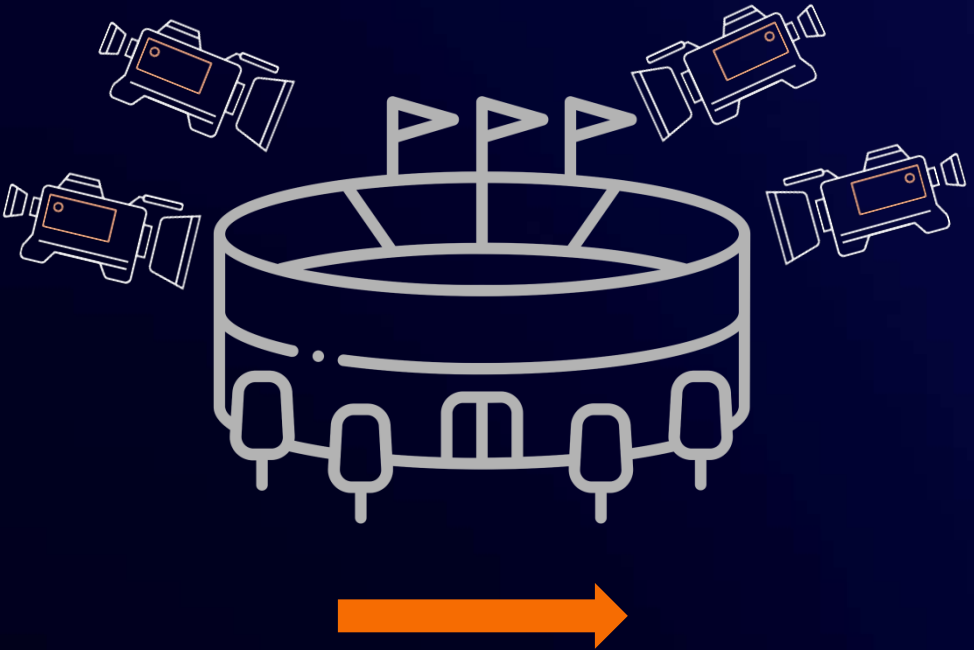
Broadcast Workflow on AWS



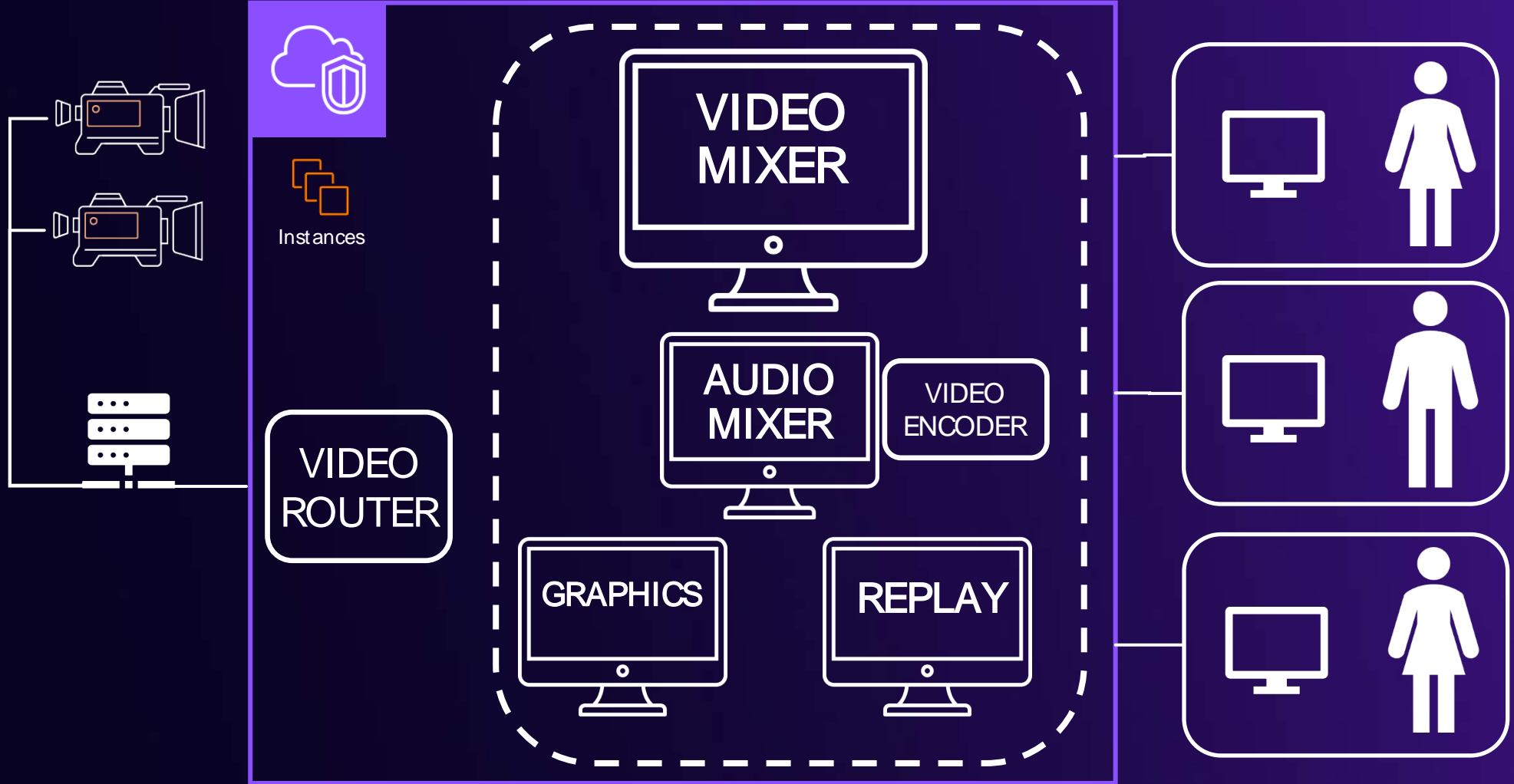
Examples: Live cloud production



Examples of Live Production



Live Cloud Production



Multi-location Remote Operations

Technical Director



Audio



Replay



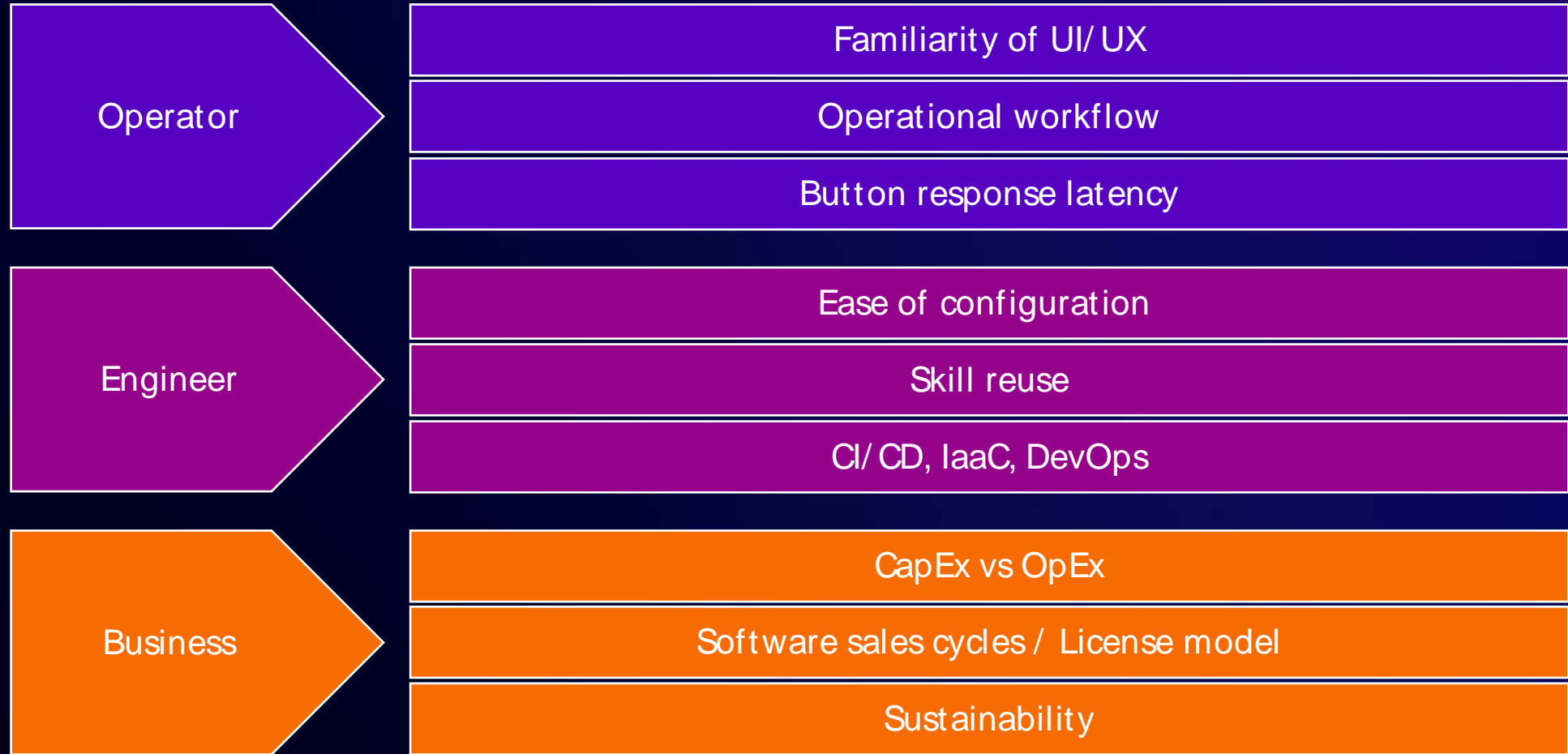
Graphics



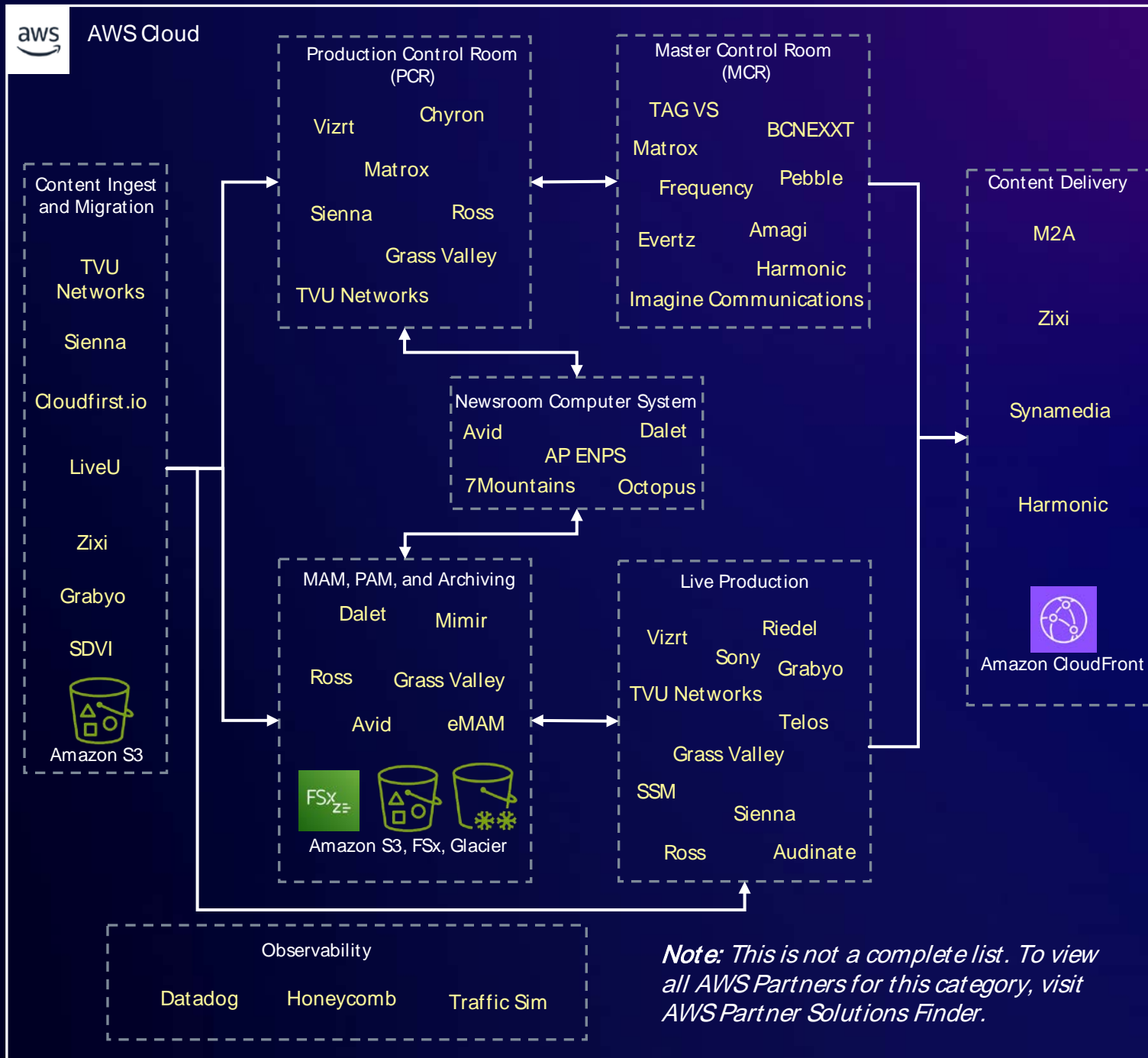
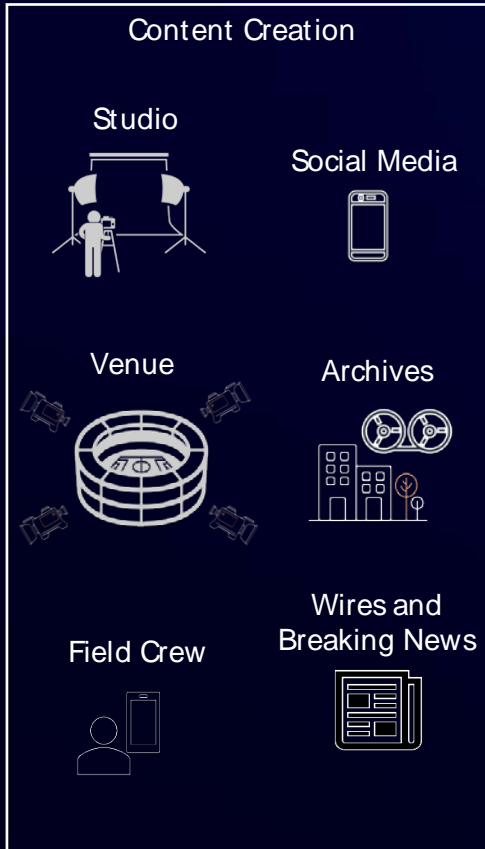
AWS Engineering Station



User Personas



AWS Partner Examples



Note: This is not a complete list. To view all AWS Partners for this category, visit [AWS Partner Solutions Finder](#).



The Well-Architected Framework



Why use the AWS Well-Architected Framework?



Build and deploy faster



Lower or mitigate risks



Make informed decisions

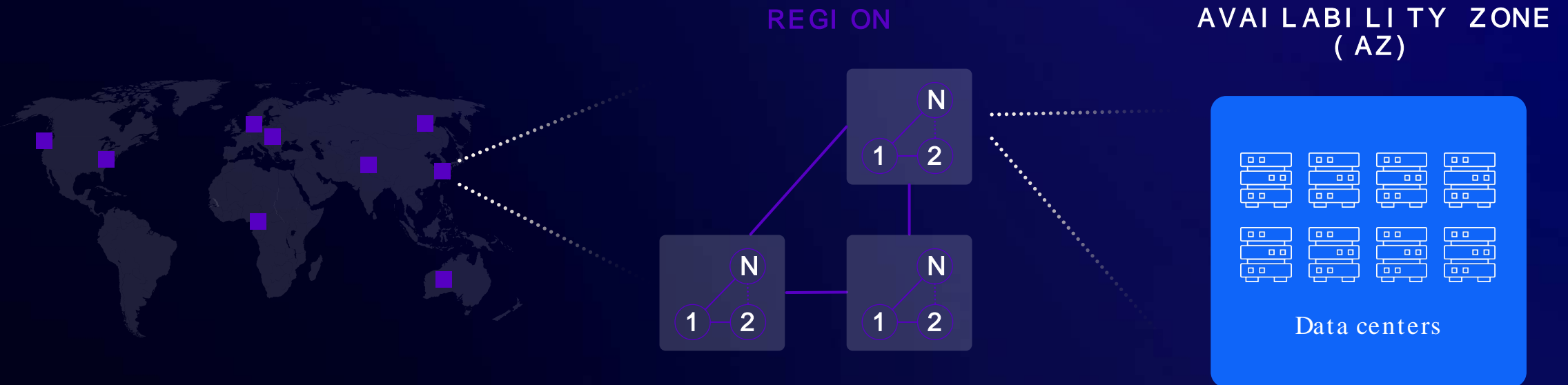


Learn AWS best practices

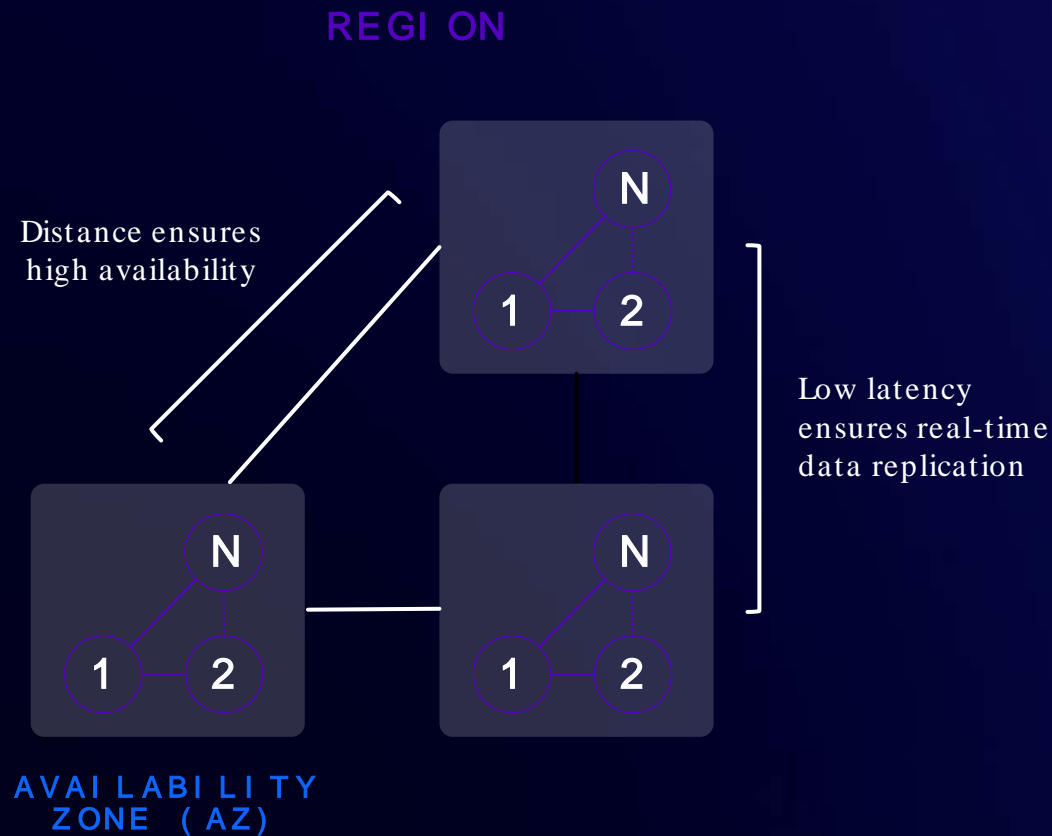


AWS Region design

AWS Regions are comprised of multiple AZs for **high availability**, **high scalability**, and **high fault tolerance**. Applications and data are replicated in real time and consistent in the different AZs.



Availability zones design for resiliency



100K+ servers at scale

I SOLATED PARTITION

Fully isolated with one or more datacenters

POWER

Highly available, fault tolerant, and scalable

DI STANCE

Physically separated by a meaningful distance – all within 60 miles (100km) of each other

I NTERCONNECTI ON

Datacenters connected via fully redundant and isolated metro fiber

AWS Global Infrastructure Regions & AZs



NORTH AMERICA

- Canada Central 3
- Canada West 3
- GovCloud US-East 3
- GovCloud US-West 3
- Northern California 3
- Northern Virginia 6
- Ohio 3
- Oregon 4
- Mexico



EUROPE

- Frankfurt 3
- Ireland 3
- London 3
- Milan 3
- Paris 3
- Spain 3
- Stockholm 3
- Zurich 3
- Germany



ASIA PACIFIC

- *Beijing 3
- *Ningxia 3
- Hong Kong 3
- Hyderabad 3
- Jakarta 3
- Mumbai 3
- Osaka 3
- Seoul 4
- Singapore 3
- Tokyo 4
- Malaysia
- Taipei
- Thailand



AFRICA

- Cape Town 3



MIDDLE EAST

- Bahrain 3
- Tel Aviv 3
- UAE 3
- Kingdom of Saudi Arabia



SOUTH AMERICA

- São Paulo 3



AUSTRALIA & NEW ZEALAND

- Melbourne 3
- Sydney 3
- Auckland

● Available Region ● Announced # Availability Zone



AWS Global Infrastructure Local Zones



N AMERICA

Atlanta (2)
Boston
Chicago (2)
Dallas (2)
Denver
Honolulu
Houston (2)
Kansas City

Las Vegas
Los Angeles (2)
Miami
Minneapolis
New York City
Philadelphia
Phoenix (2)
Portland

Querétaro
Seattle
Toronto
Vancouver



EUROPE

Copenhagen
Hamburg
Helsinki
Warsaw
Amsterdam
Athens
Brussels
Lisbon

Oslo
Prague
Vienna



ASIA PACIFIC

Bangkok
Delhi
Kolkata
Manila
Taipei
Hanoi



AFRICA

Lagos
Johannesburg
Nairobi



MIDDLE EAST

Muscat



S AMERICA

Buenos Aires
Lima
Santiago
Bogotá
Rio de Janeiro



AUSTRALIA & NEW ZEALAND

Auckland
Perth



Available Local Zone



Announced Local Zone



AWS Direct Connect



N AMERICA

Ashburn (2) El Segundo
Atlanta (2) Houston
Aurora Kansas City
Boston Kapolei
Chicago (2) Las Vegas (2)
Columbus Los Angeles
Dallas Miami
Denver Milpitas

Minneapolis
Montréal (2)
New York
Newark
Philadelphia
Phoenix (2)
Portland (2)
Reston

San Jose (2)
Santa Clara
Seattle (3)
Secaucus
Segundo
Toronto (2)
Vancouver



EUROPE

Amsterdam (2) Helsinki
Berlin London (3)
Copenhagen Madrid (2)
Dubai Manchester
Dublin (3) Marseille
Frankfurt (2) Milano (2)
Haifa Munich
Hamburg Oslo

Paris (4)
Prague
Slough (2)
Stockholm (2)
Vienna
Warsaw
Zurich (2)



ASIA PACIFIC

Auckland
Bangalore
Bangkok
Canberra (2)
Chennai
Delhi
Hong Kong SAR (2)
Hyderabad

Inzai
Jakarta (2)
Kolkata
Kuala Lumpur
Makati City
Melbourne (2)
Mumbai (4)
Osaka

Perth
Seoul (3)
Singapore (2)
Sydney (3)
Taipei (2)
Tokyo (2)



MIDDLE EAST

Fujairah
Herzliya
Manama (2)
Muscat



AFRICA

Cape Town
Johannesburg
Lagos



S AMERICA

Bogota
Buenos Aires
Lima
Rio de Janeiro
Santiago
Sao Paulo (2)



AUSTRALIA & NEW ZEALAND

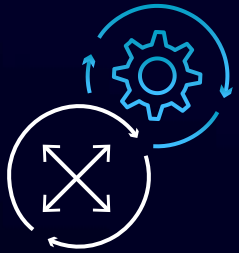
Auckland
Canberra
Melbourne (2)
Perth
Sydney (3)

● Direct Connect location





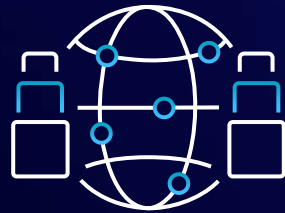
Pillars of The Well-Architected Framework



Operational
Excellence



Security



Reliability



Performance
Efficiency



Cost
Optimization

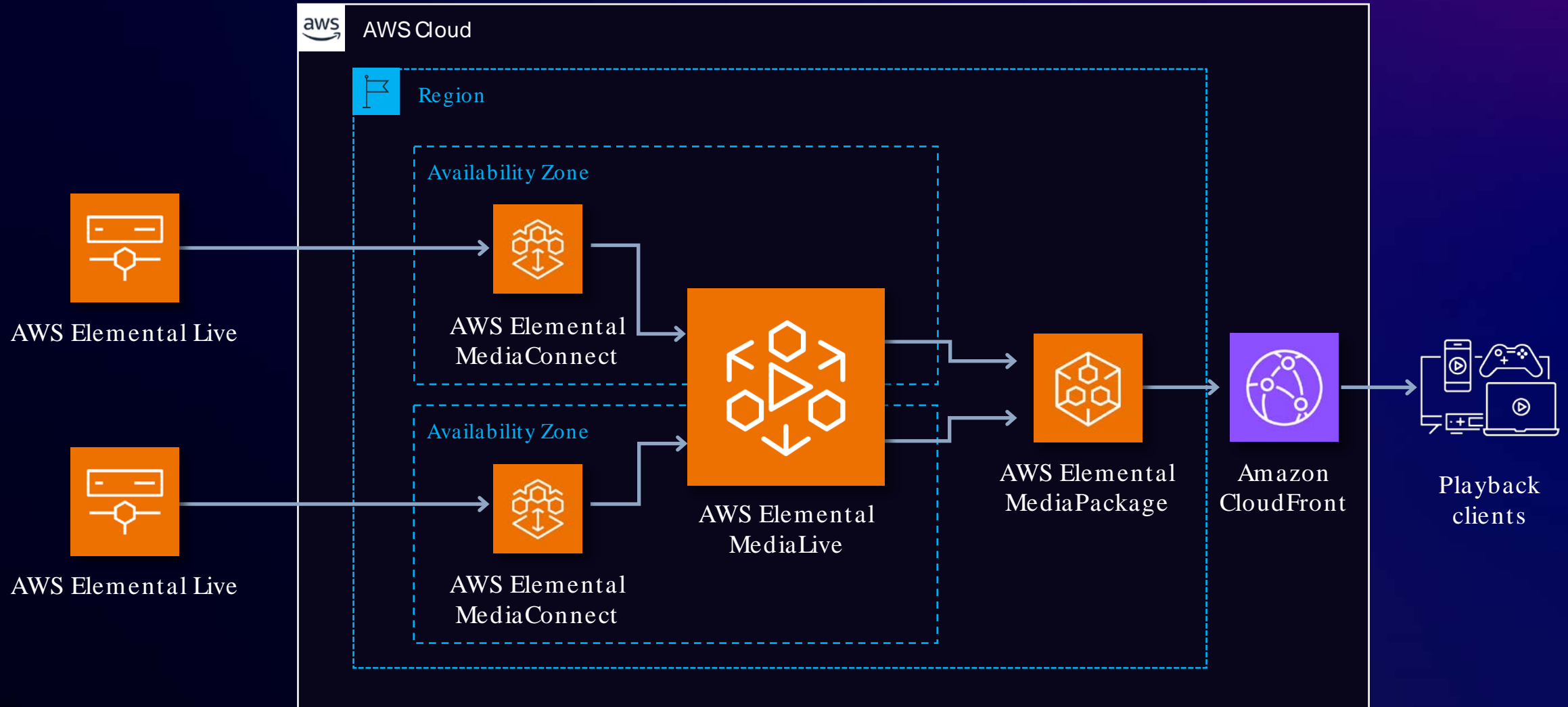


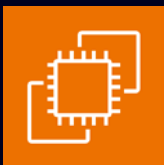
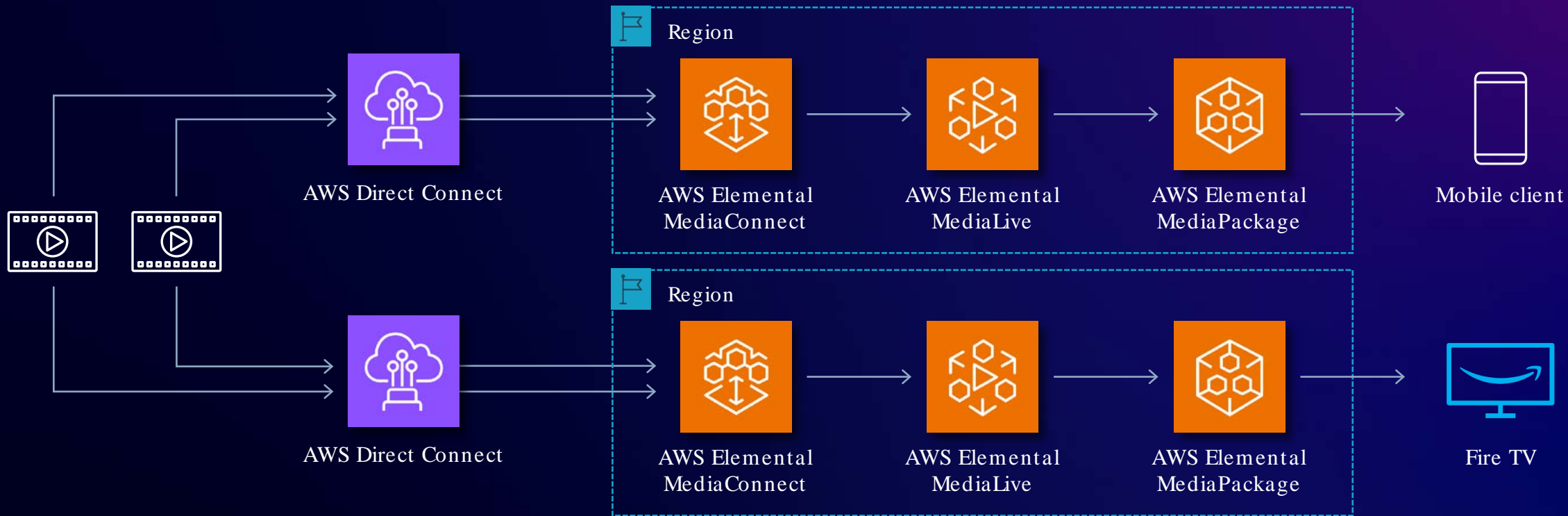
Sustainability

Implementing best practices



AWS Elemental MediaLive with MediaPackage





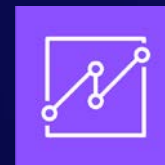
Amazon Elastic Compute Cloud (Amazon EC2)



Amazon Simple Storage Service (Amazon S3)



Amazon CloudWatch

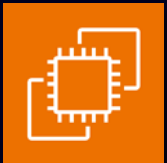
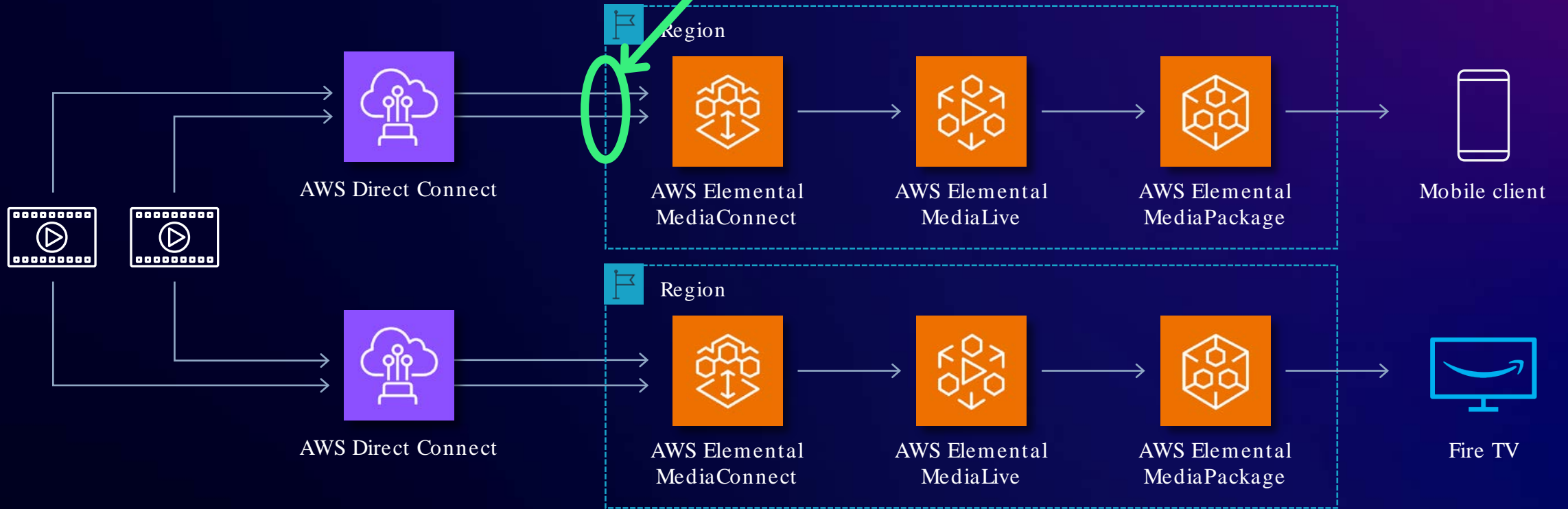


Amazon QuickSight



AWS Cost & Usage Report

Source Failover



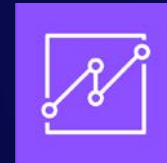
Amazon Elastic Compute Cloud (Amazon EC2)



Amazon Simple Storage Service (Amazon S3)



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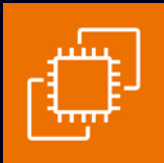
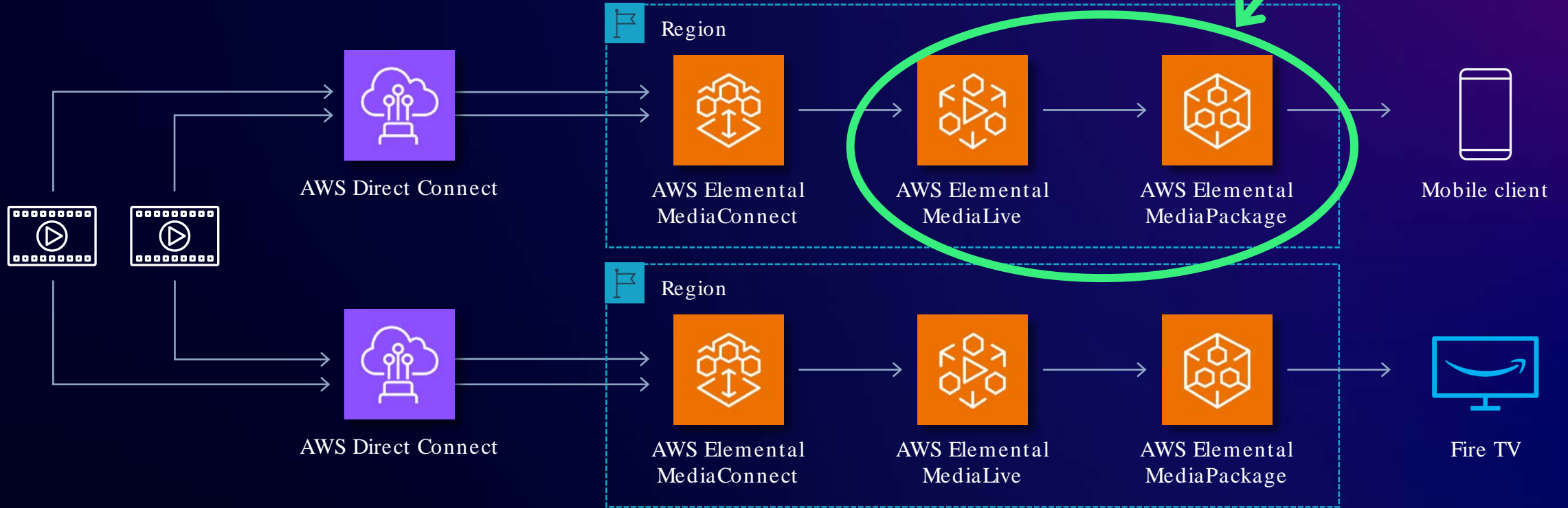
Amazon QuickSight



AWS Cost & Usage Report



Server-Side Failover



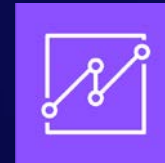
Amazon Elastic Compute Cloud (Amazon EC2)



Amazon Simple Storage Service (Amazon S3)



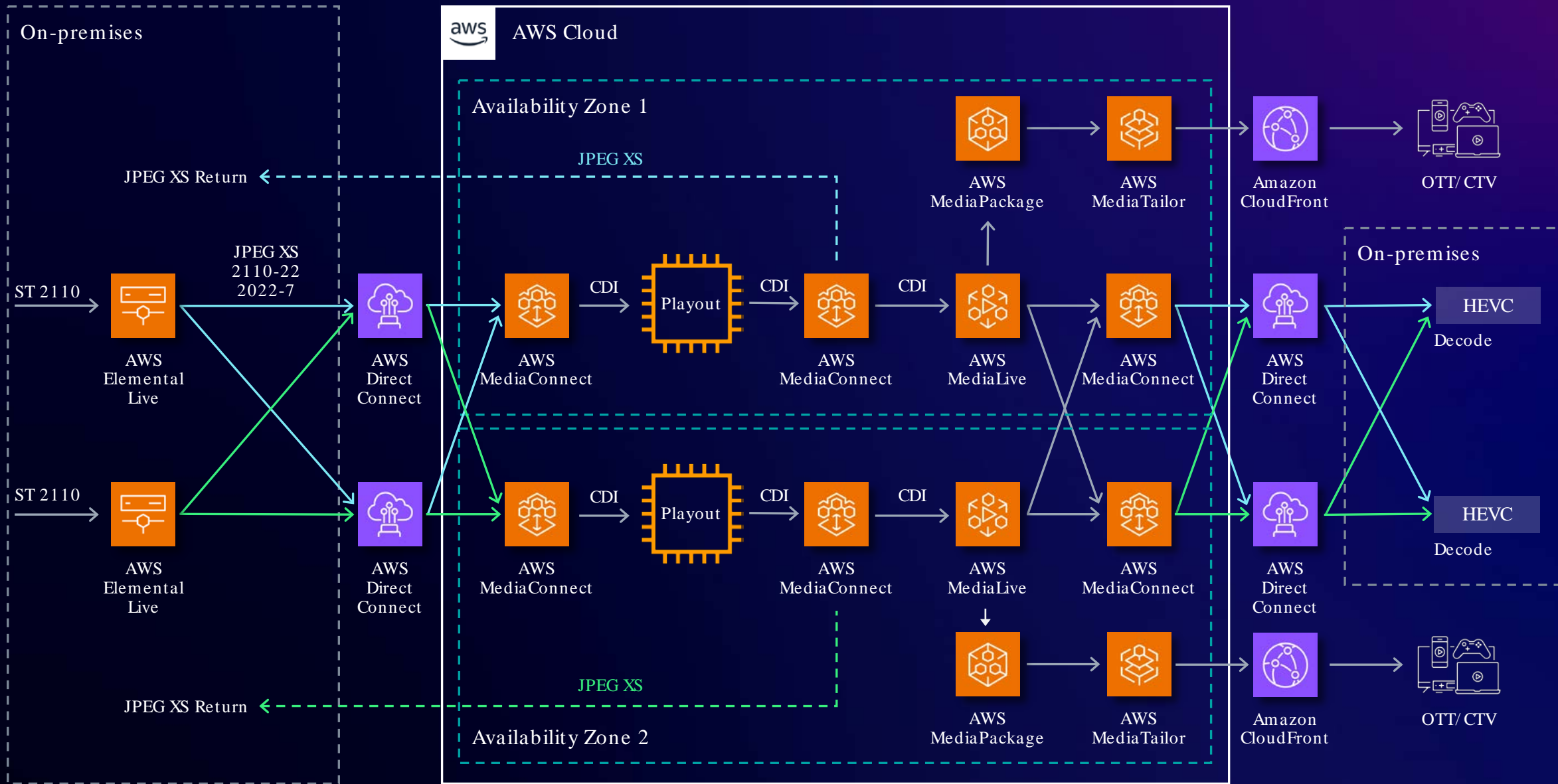
Amazon CloudWatch



Amazon QuickSight



AWS Cost & Usage Report



Sustainability Pillar



A data-driven approach to sustainability strategy, enabled by cloud computing



Sustainability **of** the cloud

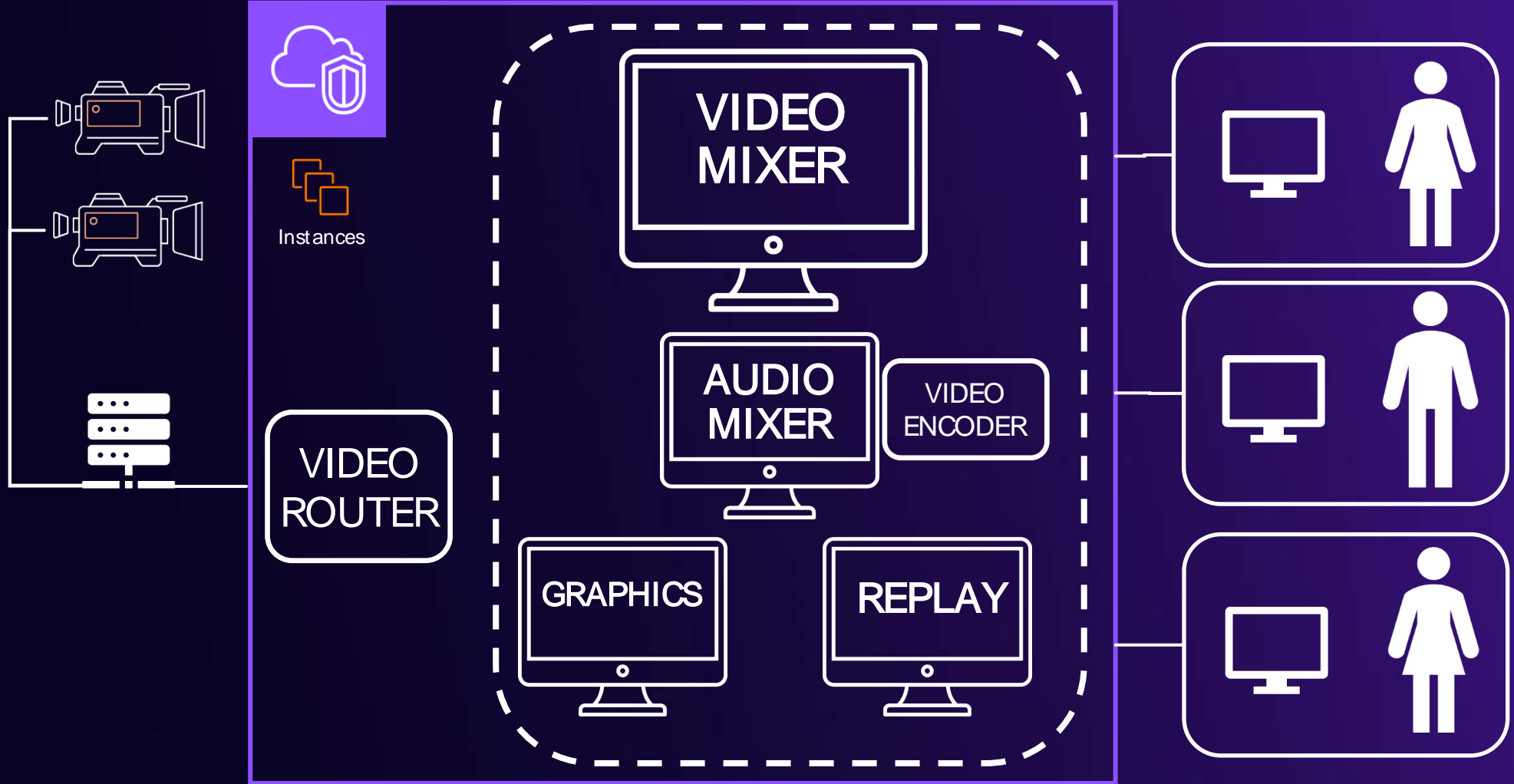


Sustainability **in** the cloud



Sustainability **through** the cloud

Live Cloud Production



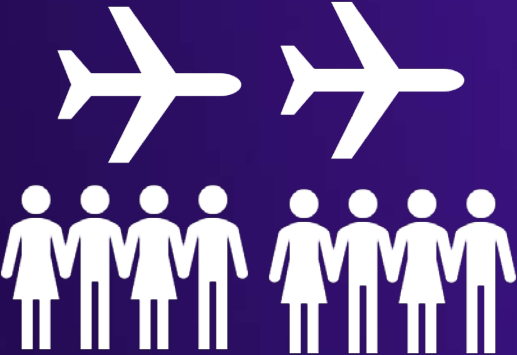
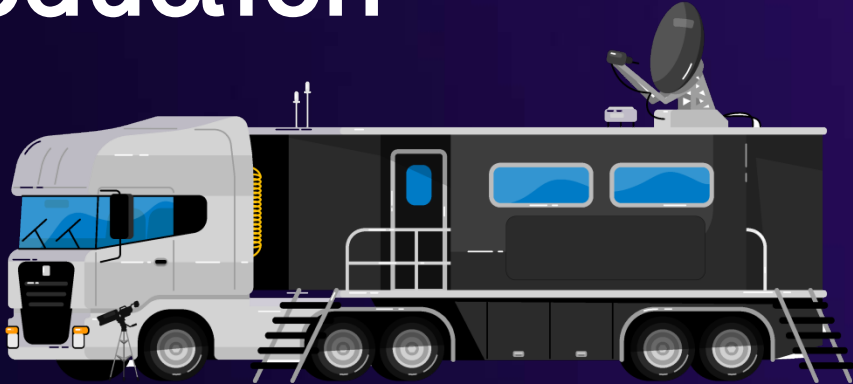
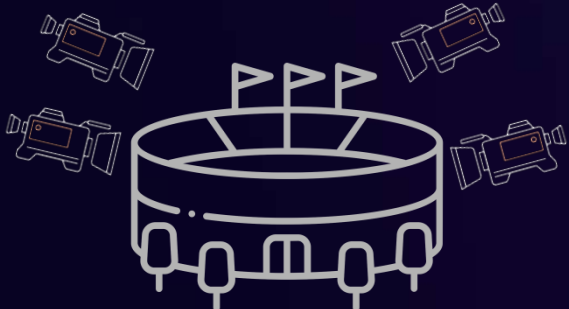
“

Travel remains the largest part of a production's footprint.

Source: albert, Annual Review 2021
https://wearealbert.org/wp-content/uploads/2023/01/albert-AR-2021_Finalv2.pdf

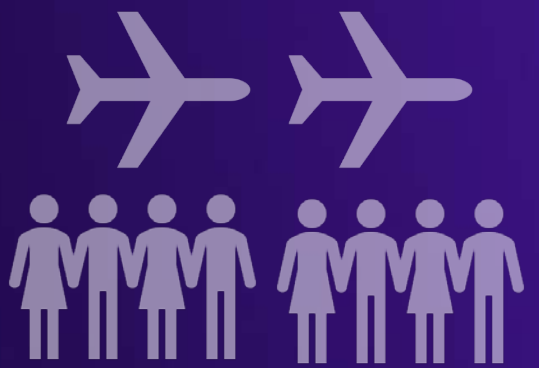
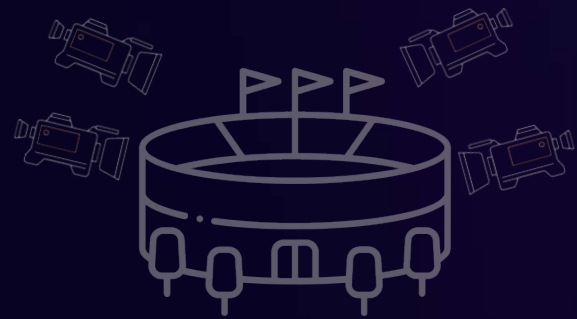


Legacy compared with Live Cloud Production

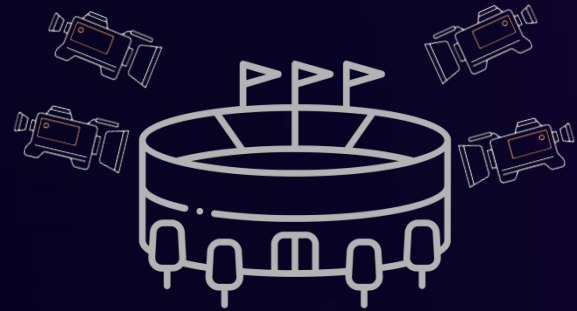


Onsite production crew

Legacy compared with Live Cloud Production



Onsite production crew



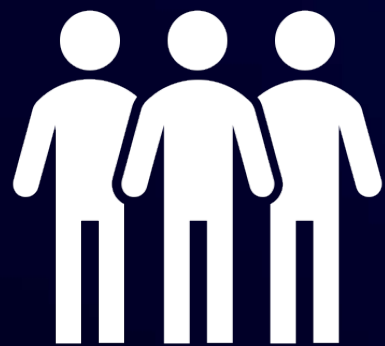
Onsite production crew



Remote production crew



Rough estimation of avoided air travel emissions



X



X



≈

Avoided



Number of people no longer traveling

Carbon intensity of mode of travel

Number of games

Estimate of avoided emissions

5

X

.127*

Example metric tons CO2e/ roundtrip flight

X

45

games with air travel

≈

28.6

metric tons CO2e

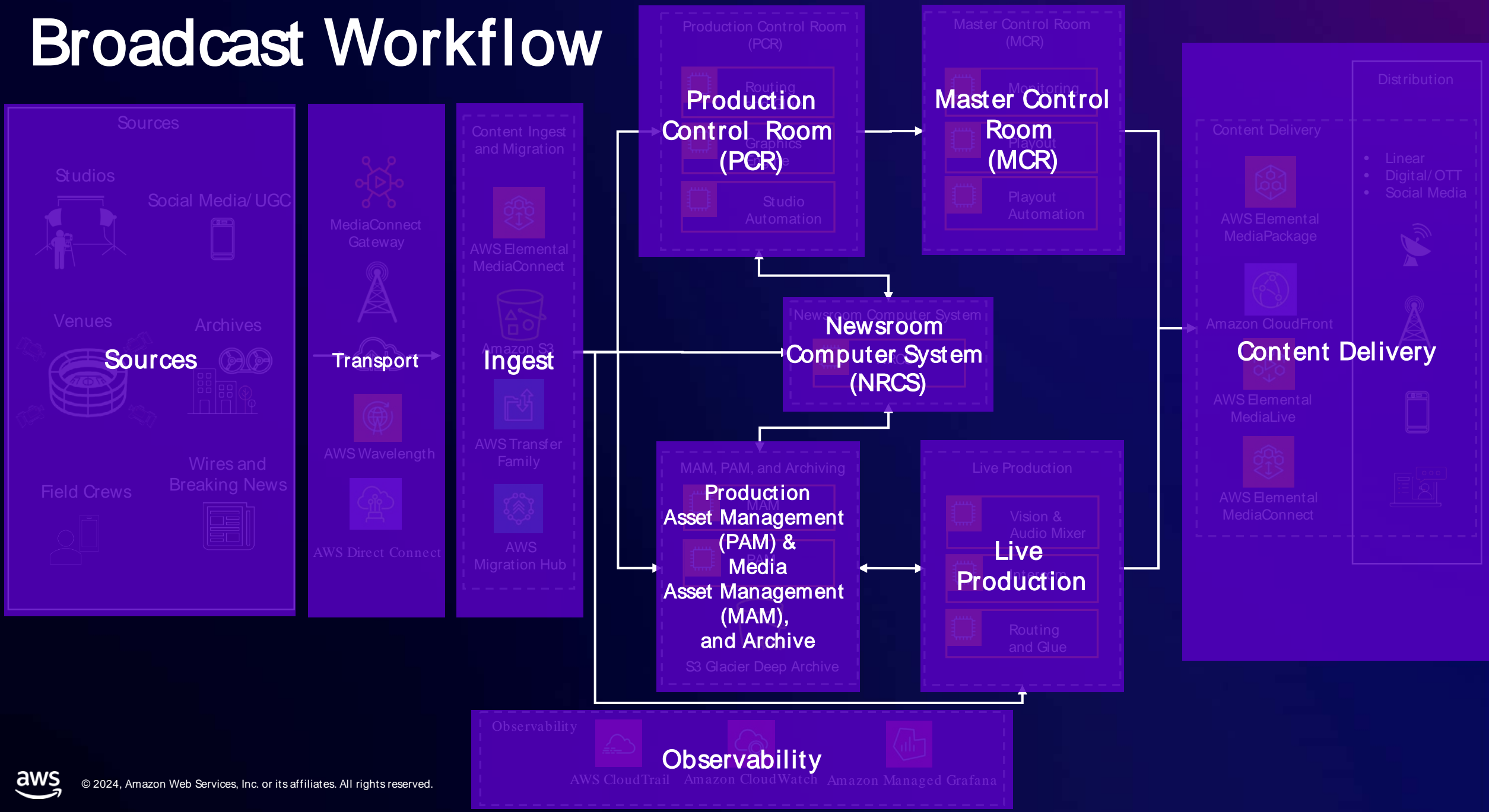
*Calculation and figures for demonstration purposes only. Actual carbon intensity from mode of travel will vary between modes and locations.



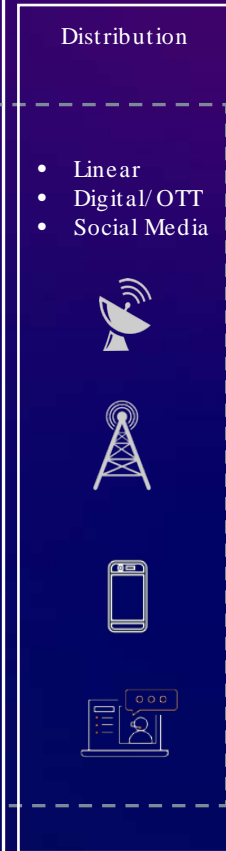
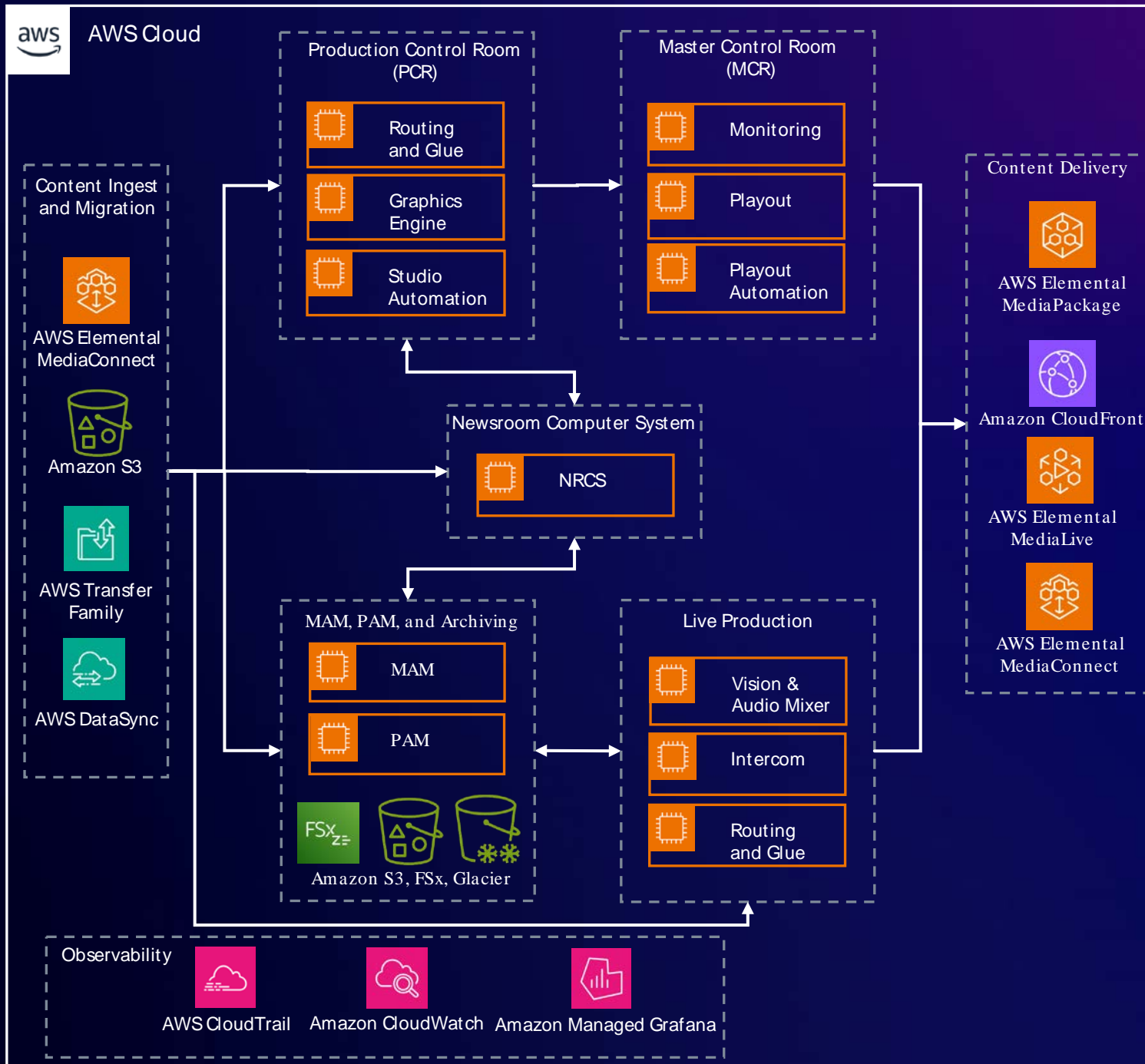
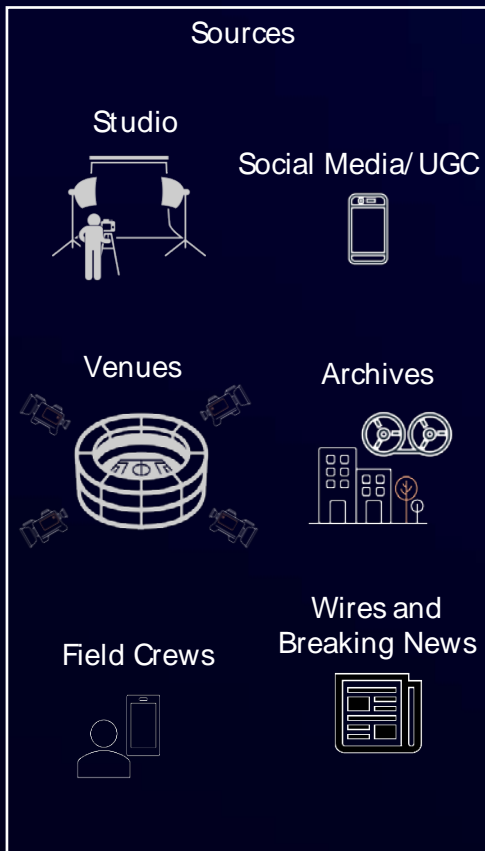
Conclusion



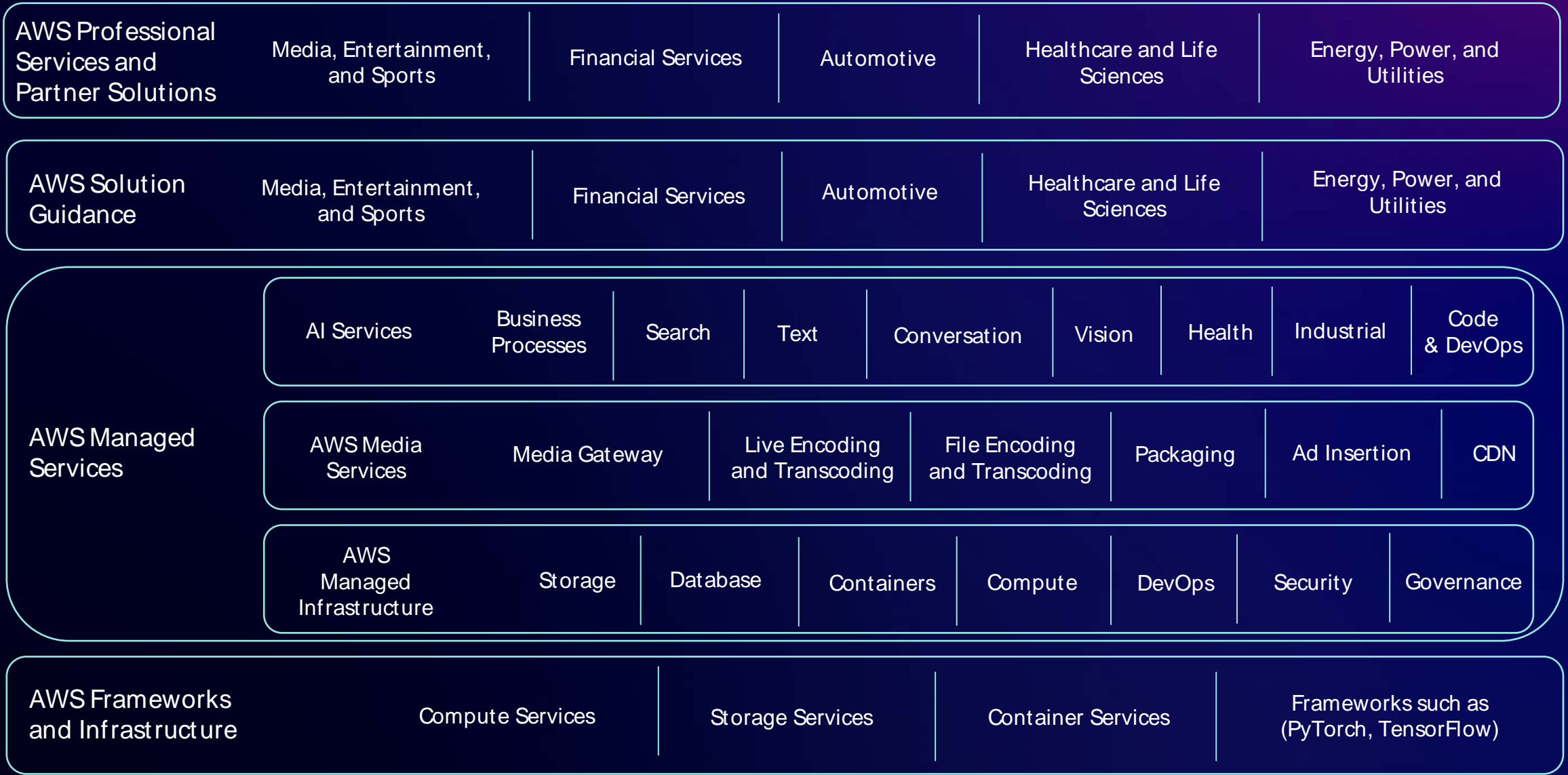
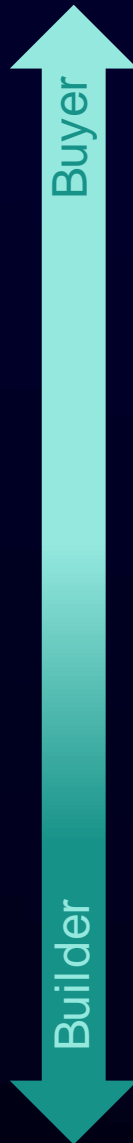
Broadcast Workflow



Broadcast Workflow on AWS



Broad set of solutions and capabilities



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- ✓ Comprehensive Reporting





AWS Workshops



AWS Blogs & Videos



AWS Broadcast Solutions



Thank you!

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