MIGRATING MEDIA WORKFLOWS TO THE CLOUD

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AGENDA: CLOUD MIGRATION: 30 MINUTES!

1. WHY? (5 min)
   a. Reduce IT & Video Workflow Complexity
   b. Increase Agility and Flexibility
   c. Reduce Costs through Scale
   d. Increase Storage Amount and Availability

2. WHAT? (10 min)
   a. The Cloud is a Service: SaaS vs. IaaS vs. PaaS
   b. Amazon Web Services
   c. Two Critical Concerns

3. HOW? (10 min)
   a. Elemental Cloud Platform
   b. Mapping an End-to-End workflow
   c. Two Migration Scenarios

4. Q & A (5 min)
WHAT’S DRIVING CLOUD MIGRATION?

**Complexity**
(BYOD, Security, Rendering, VR/HDR/HFR)

**Agility & Flexibility**
(Experiment with low cost / risk / overhead)

**Cost Reductions**
(Provision as-you-need; Pay as-you-use)

**Media Storage**
(4Kp60, Versioning, Disaster Recovery)
THE CLOUD IS A SERVICE

**SaaS (Services)**
- Direct application access only
- No administration of infrastructure or platform
- No visibility of resources
- Limited to features available in application

**PaaS (Platform)**
- No administration of infrastructure
- Allocate and deploy applications and resources by type and region
- Extensible through API or SDK

**IaaS (Marketplace AMIs)**
- Full control of compute and storage instances
- Full control of application environment
- Least amount of abstraction
# The Services of Amazon Web Services

### Core Services
- Compute (VMs, Auto-scaling & Load Balancing)
- Storage (Object, Block and Archival)
- Regions
- CDN
- Availability Zones
- Key Management & Storage
- Databases (Relational, NoSQL, Caching)
- Networking (VPC, DX, DNS)
- Points of Presence

### Platform Services
- Analytics
- App Services
- Developer Tools & Operations
- Mobile Services
- Infrastructure

### Technical & Business Support
- Professional Services
- Training & Certification
- Solutions Architects
- Security & Pricing Reports
- Business Email

### Enterprise Applications
- Mobile Services
- Identity
- Sync
- Mobile Analytics
- Push Notifications

### Administration & Security
- Network (VPC, DX, DNS)
- Key Management & Storage
- Identity
- Access Control

### Support
- Virtual Desktop
- Support
- Partner Ecosystem
- Sharing & Collaboration

### Resource & Usage Auditing
- Application Lifecycle Management
- Event-driven Computing

### Identity Management
- Mobile Analytics
- Push Notifications

### Monitoring & Logs
- Application Lifecycle Management
- Event-driven Computing

### Key Management & Storage
- Databases (Relational, NoSQL, Caching)
- Networking (VPC, DX, DNS)
- Points of Presence
- 12 Regions
- 30+ Availability Zones
- 52+ Edge locations
- Announced 2016: Ohio, India, Canada, London
- Elemental Cloud is not in all AWS regions yet
SECURITY IS IMPERATIVE

Cloud Security

- Organization & Management
- Operations
- Data Security

Certifications

- MPAA best practices alignment
  - MPAA Content Security Model
  - MPAA Content Security Best Practices
  - MPAA Delta: 2015 vs 2013

Facilities
- Physical security
- Physical infrastructure
- Network infrastructure
- Virtualization infrastructure

AWS

https://aws.amazon.com/compliance/mpaa/
Software-based Linux Architecture
High Performance with CPU or GPU
Faster Innovation / Upgradability
Lower Total Cost of Ownership
Infrastructure Agnostic
Real-time 4K HEVC
World-Class Customer Support and Customer Satisfaction Levels
Robust API and Documentation

10 patents granted/issued and 18 pending
Platform as a Service (PaaS) securely manages high-volume live and on demand video solutions with the scalability, elasticity, and flexibility of the cloud.

Provides automated provisioning and dynamic scaling of virtual Elemental systems in a configurable manner, enabling complete control over workflow components.
... WITH AWS MAPPINGS

**Acquisition**
- Elemental
- S3/Glacier
- CloudFront
- Snowball
- Direct Connect

**Digital Supply Chain**
- Elemental
- ETS
- S3/Glacier
- CloudFront
- EFS
- Snowball
- GPU EC2 Instances

**Broadcast Playout**
- Elemental
- EFS
- S3/Glacier
- CloudFront

**OTT**
- Elemental
- S3
- CloudFront

**Editorial and GFX**
- EC2
- S3
- EFS
- EBS
- GPU EC2 Instances
- Direct Connect
- PCoIP

**DAM & Archive**
- Snowball
- S3/Glacier
- EC2
- Direct Connect
- Lambda
- DynamoDB
- RDS

**Publishing**
- ELB
- S3/Glacier
- EC2
- CloudFront

**Analytics**
- Kinesis
- DynamoDB
- AML
- RedShift
- EMR
SCENARIO 1: REPLACE SATELLITE TRANSMISSION

On-Premise Sources

Amazon CloudFront

 Deliver Mux to IRD / STB

Amazon CloudFront
SCENARIO 1: REPLACE SATELLITE TRANSMISSION

Amazon S3

JIT DRM / Encryption

Amazon CloudFront

On-Premise Sources

Archive

Deliver Mux to IRD / STB
SCENARIO 1: REPLACE SATELLITE TRANSMISSION

Deliver OTT to Device(s)

Deliver Mux to IRD / STB

JIT DRM / Encryption

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On-Premise Sources

Amazon CloudFront

Motion Graphics Overlay

Deliver OTT to Device(s)

Deliver Mux to IRD / STB
SCENARIO 1: REPLACE SATELLITE TRANSMISSION

- Deliver OTT to Device(s)
- Deliver Mux to IRD / STB
- Motion Graphics Overlay
- Amazon S3
- Archive
- On-Premise Sources
- JIT DRM / Encryption
- Amazon CloudFront
- Disposable Infrastructure
- Workload specific Auto-scaling
- Auto-scaling
- Disposable Infrastructure

- Deliver OTT to Device(s)
SCENARIO 2: STORAGE & DISASTER RECOVERY

- Amazon Glacier (Life Cycle Policies)
- Archive
- On-Premise Media
- Direct Connect
- Amazon S3
SCENARIO 2: STORAGE & DISASTER RECOVERY

1. On-Premise Media
2. Direct Connect
3. Archive
4. Amazon S3
5. Transcode & Package
6. Metadata Insertion
7. Amazon Glacier (Life Cycle Policies)
SCENARIO 2: STORAGE & DISASTER RECOVERY

Amazon Glacier (Life Cycle Policies)

Editorial and GFX

On-Premise Media

Direct Connect

Transcode & Package

Archive

Workload specific Auto-scaling

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Metadata Insertion

Deliver OTT to Device(s)

Amazon S3

Editorial and GFX
THANK YOU!