



# Media Delivery and the Cloud

David Hassoun - RealEyes



# WHO WE ARE

- RealEyes
- Specializing in Streaming Media Technologies and Development
- Client List: Oracle, Adobe, NBC, MLB, BASF (many more)



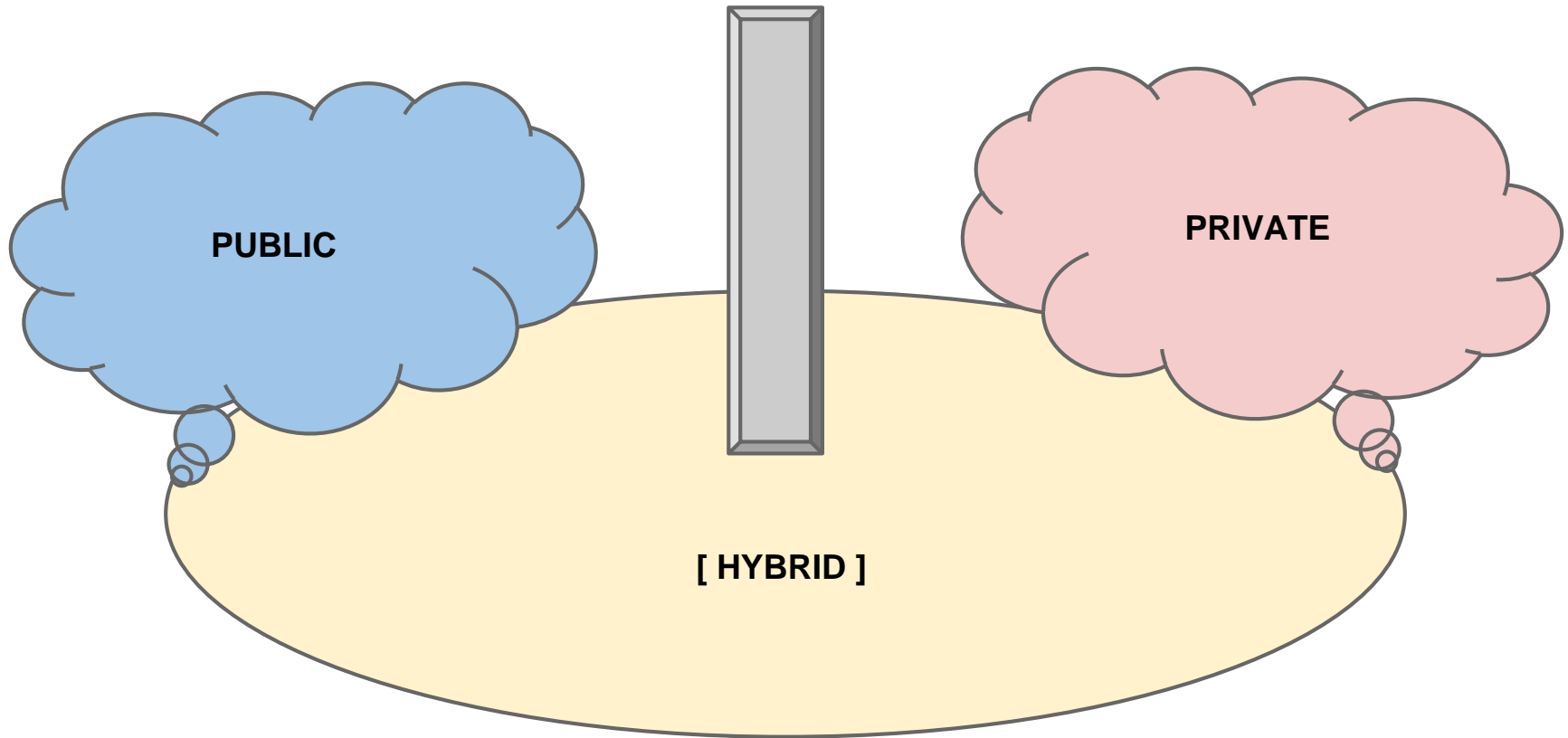
# Media Delivery and the Cloud

## OPENING THOUGHTS

# Media & Cloud

- Storage
- Ingest
- Delivery
- Protection
- Monetization
- Collaboration
- Experience

# Enterprise

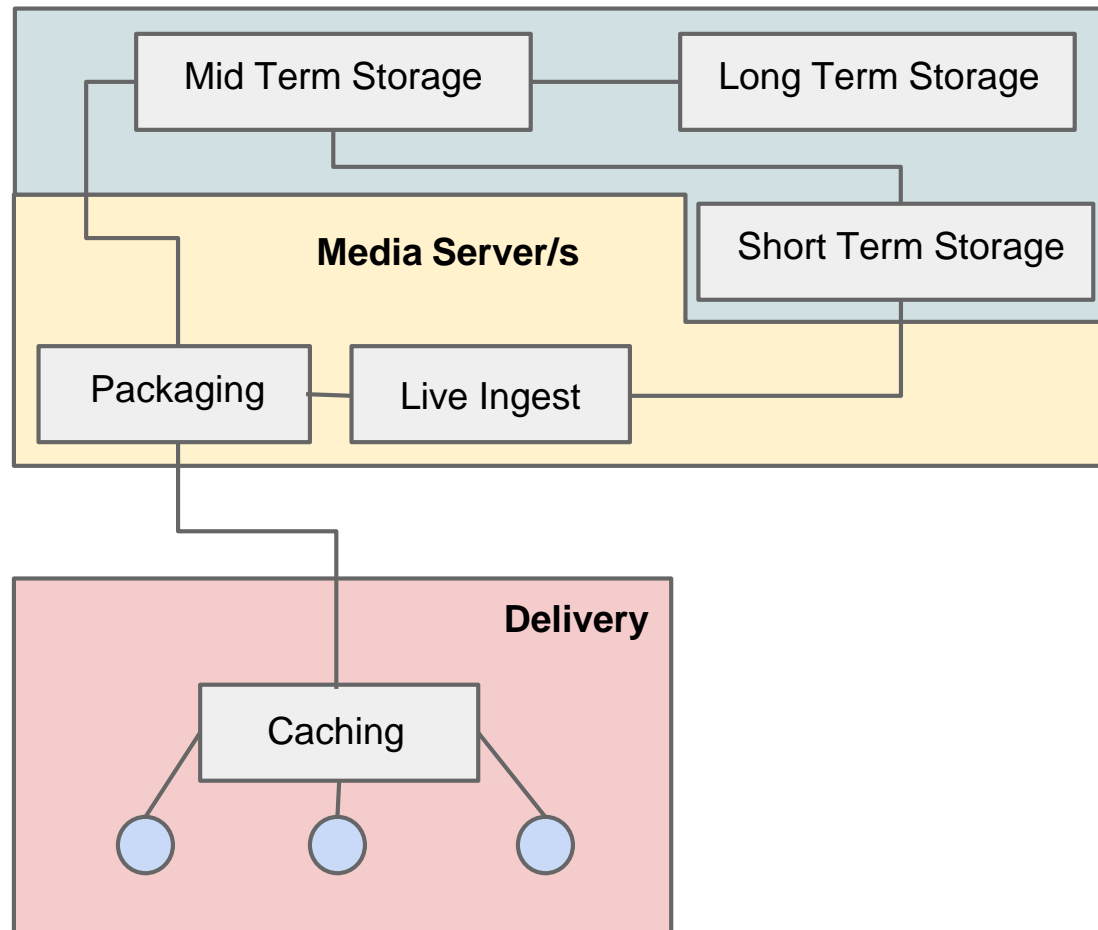




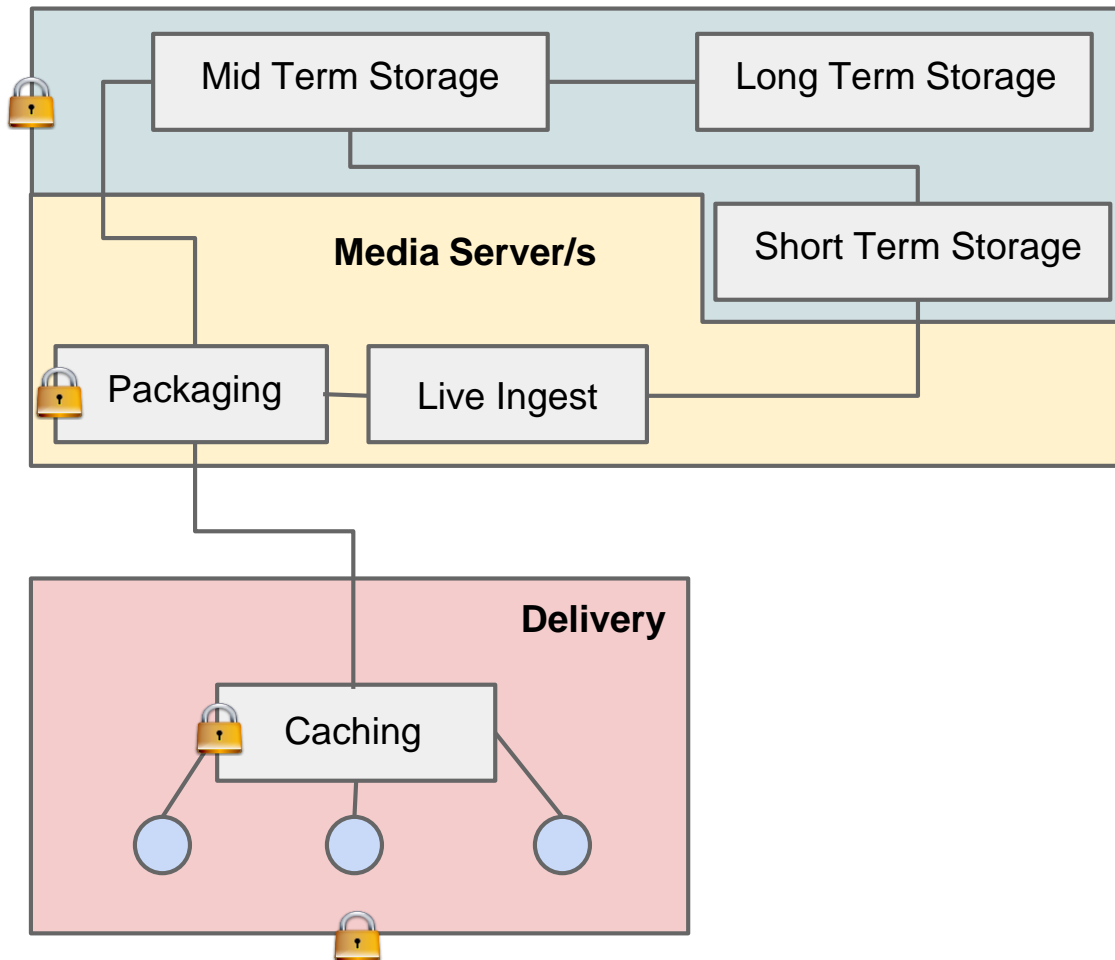
# Media Delivery and the Cloud

## Going a Bit Deeper

# Content Lifecycle



# Security Option Points





# Delivery

- Successful delivery is how money is made
  - Content needs to get to users efficiently
    - Edge/POP to deliver efficiently
  - Cache data where necessary
    - JIT-ed content is worth caching
    - Create edges and cache the content at the edge as well

# Caching

- Critical for scalability and cost effective POP
- Make sure your content can scale and is in close proximity to the end user:
  - Varnish (Varnish Partner)
  - Nginx
  - Amazon CloudFront
  - etc.

# Security

- Security is paramount to protecting assets
  - Over the wire
  - Player whitelisting
  - Content Encryption (DRM)
  - Token-based Access
  - URI Obfuscation

# Monetization

- Premium Content Access Control
  - Pay per view & Subscription
- Advertising
- Analytics

# Infrastructure Elasticity

- Fluctuating audience requires reliable and responsive deployment strategy
  - Responsive Scaling
    - Increased usage = servers scale up
    - Decreased usage = servers scale down
  - Reliable Configuration Management
    - Need to automate configuration
    - Need to insure configuration is idempotent

# Case Studies

- Some of the solutions we've helped bring to market:
  - Multi-screen Web/App CBT leveraging DRM and multiple CDN
  - Protected and adaptive live streaming from Azure to one of the largest audiences ever
  - Protected global hybrid eCDN
  - Enterprise Multicast Live Streaming



# Media Delivery and the Cloud

## WHERE WE'RE HEADED

# What's moving to Cloud?

- Delivery
- Transcoding
- Editing
- Collaboration
- Storage
- Delivery
- Analytics



# Future Focus

- **Quality**
  - Content
  - Service
- **Extending the Experience**
  - Synchronized Data
- **Unified & Seamless Experience**
  - Across screen, platforms, and devices
  - Standardization

# HTTP LIVE STREAMING

- **Single Delivery Format - Multiple Screens**
  - HLS is taking dominance across screens
  - Flash for Desktop is still king - but seeing more HLS in Flash
  - HDS still in use but dwindling

# Excited about: DASH

- **DASH**
  - **Dynamic Adaptive Streaming over HTTP**
  - Streaming from conventional web servers
  - Similar to Apple's HTTP Live Streaming (HLS) or Adobe's HTTP Dynamic Streaming (HDS) or Microsoft's Smooth Streaming
  - Apple may be a major roadblock

# Excited about: HEVC

- HEVC
  - High Efficiency Video Coding
  - A video compression standard that is a successor to H.264/MPEG-4 AVC
  - Same video quality we have today with double the data compression ratio!
  - 8K UHD and resolutions up to 8192x4320!

## Excited? about: HTML5 DRM

- HTML5 DRM
  - Media Source Extensions + Encrypted Media Extensions = Browsers that deliver adaptive streaming and digital rights management without plug-ins
  - Making progress on Safari, IE, Chrome, and Firefox
  - HTML5 DRM == Netflix viewing and longer battery life

## Excited about: WebRTC

- WebRTC
  - Web **R**eal-Time **C**ommunication
  - Peer-to-peer distributed streaming (e.g. Streamroot)
  - Not just for web browsers (Native Apps as well)
  - Still evolving, but worth the watch



# Media Delivery and the Cloud

WHAT REALEYES CAN DO FOR YOU

**CLOUDDEVELOPERS**

Mobile, Big Data & Service Models:  
Critical Take-Aways for Cloud Developers

SUMMIT & EXPO 2014

# Cloud Infrastructure

- Our solutions agnostically leverage cloud infrastructures:
  - Amazon Web Service (AWS)
  - Microsoft Azure
  - Google Cloud Platform
  - Internal Enterprise Infrastructure



# Streaming Live/VOD

- We're experts at building/delivering custom solutions:
  - Streaming/Delivery Architecture
  - Encoding & Content Pipeline
  - Partners:
    - Adobe Media Server
    - Kaltura Media Platform
    - Wowza Streaming Engine
    - Varnish Cache

# Ubiquitous Players

- We build and customize players tailored to fit your needs and play on the largest number of devices and browsers:
  - REPlayer
  - OSMF/Strobe
  - Adobe Primetime
  - JWPlayer
  - MediaElement.js
  - HTML 5 Video

# DevOps

- Expertise when it comes to automated and idempotent configuration management of your infrastructure:
  - OpsCode Chef
  - Amazon CloudFormation
  - Amazon OpsWorks
  - Knife-Azure

# Administration

- We are happy to help you figure out the most effective way to:
  - Monitor your infrastructure
  - Collect analytics on end users
  - Load test your systems



# Media Delivery and the Cloud

WRAPPING IT UP

**CLOUDDEVELOPERS**

Mobile, Big Data & Service Models:  
Critical Take-Aways for Cloud Developers

SUMMIT & EXPO 2014

# CONTACT US

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