Media Issues Taxonomy
draft-jholland-mops-taxonomy

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Motivation

- Doc I wish I had a few years ago
- Quick and painless orientation, if possible
- Reference for solutions
Sections

- Bandwidth
- Congestion Avoidance Strategies
- (Conferencing?)
- (Pointer to implementations?)
Bandwidth Requirements

• Per-receiver
  • Video, point cloud, audio

• Replication
  • Caching, multicast
  • Effects & challenges
  • Live vs. On-demand

• Asymmetric Links
Unicast Arithmetic (Live Video)

- 72 tbps = Akamai Traffic Record, Dec 2018*
- 40 mbps = 4k standard frame rate (35-45 mbps, 24-30fps)

\[
72 \times 10^{12} / 40 \times 10^6
\]

=> 1.8m simultaneous 4k viewers to set new traffic record

* Akamai estimated to deliver: 15-30% of total web traffic
Nielsen Audience Size by Title 2017-2018

#179/207 “The Resident”: 1.848m
Something has to give...

Overall:
• Fifa World Cup Finals 2018: 500m
• Cricket World Cup (India playing) 2015: 200-300m
• Super Bowl 2019: 100m

Online:
• Twitch concurrent viewers record, June 2018: 2.9m
• World Cup 2018 online Peak concurrent views: 9.7m
Congestion Avoidance

• ABR with reliable segments
  • Bit-rate detection: Challenges & approaches

• Feedback-driven streaming
  • RTP (explain flavors?)
  • Others?
Conferencing?

• Latency requirements

• Multi-directional options
  • Peer-to-peer
  • Hub & spoke
  • Hybrid? Tiered?
Implementations

• Pointer to web page/github repo?
• Criteria for listing?
Next Steps

• Useful?
• Adopt if WG?