

New Player Behaviors

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Player-Side Objectives

- Different use cases have different priorities
 - Sports and second screen requires synchronized latency
 - Gambling and competitive (esports/trivia) require minimum latency
- Minimize poor user experiences
 - Avoid buffering
 - Avoid audio/video glitches

New Player Behaviors and Challenges



- Conventional statistical methods based on segment download weren't designed to work for segments that are still being written
- Different audiences may have wildly different capability to support low latency
- DRM and security are still untested
- Low latency approaches are more demanding on MSE implementations, and may produce more issues

New Adaptive Methods

- ACTE: ABR for Chunked Transfer Encoding
- ABR over WebSocket
- Apple Low-Latency HLS
- DASH part 6 (Stanford Puffer)
- Numerous proprietary methods

Different Audiences Have Different Support



- No Low Latency technology and approach is going to work for every use case
- Some audiences may be better able to utilize more aggressive latency than others if their network supports it
- Some use cases may not care as much about dropping frames/jarring user experiences to be closer to live
- Analytics analysis is needed to determine appropriateness for audiences

Security Is Unclear

- The impact of DRM license servers (and their response time) is untested
- No way to reliably enforce latency when clients are expected to respect target latency

Devices Are Inconsistent

- Not all MSE implementations are identical
- Large footprint of legacy devices (Smart TVs) may respond poorly, especially when changing playback speed