Experiments on HTTP Adaptive Streaming over interconnected Content Delivery Networks

draft-famaey-cdni-has-experiments-00

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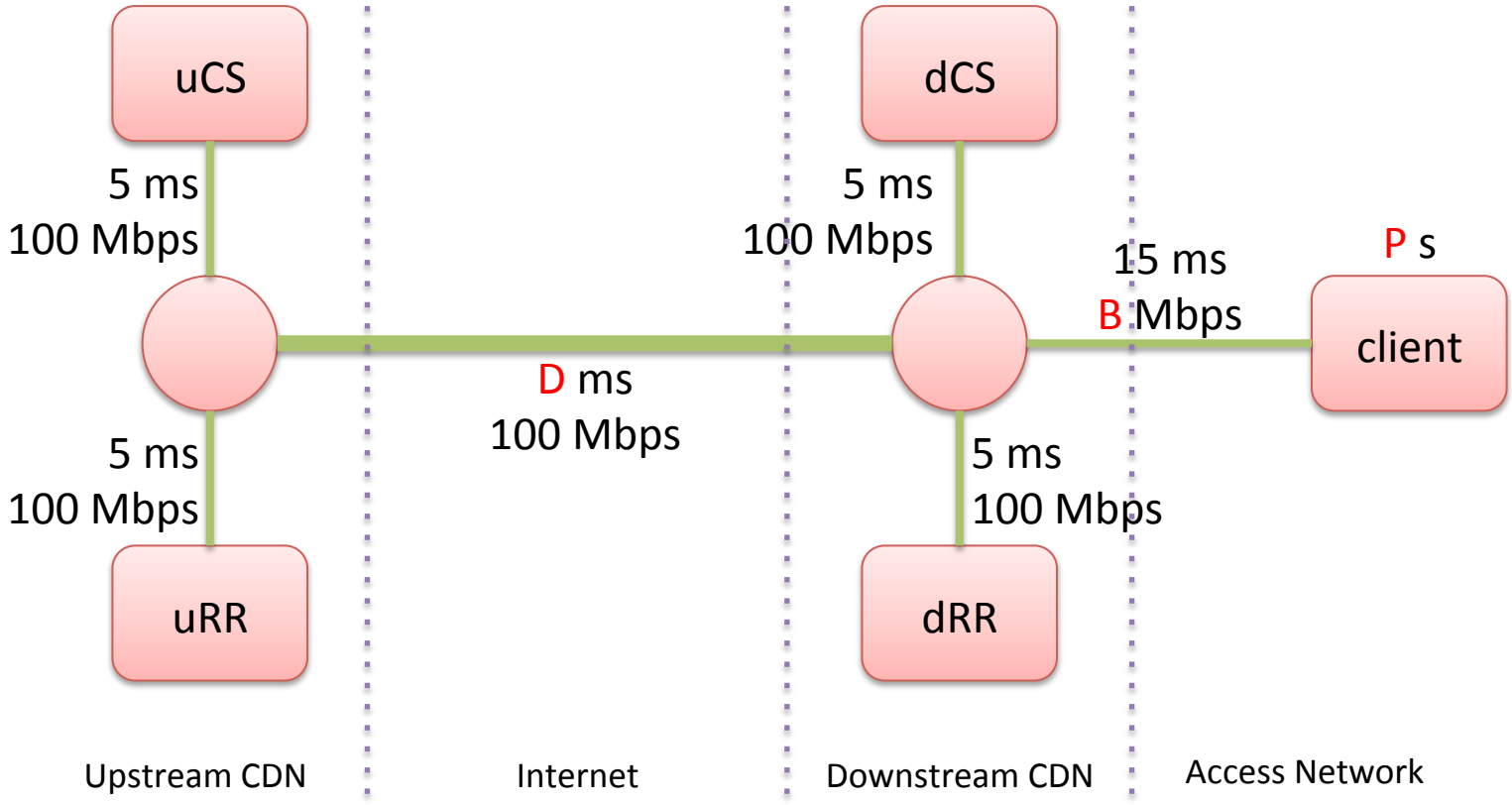
Goal

Characterize the impact of inter-CDN request routing and HTTP redirection on the quality of HTTP Adaptive Streaming services

NS3 Simulations

Using Smooth Streaming client algorithms



Parameters:

- D = Internet delay
- B = Client bandwidth
- P = Client buffer size

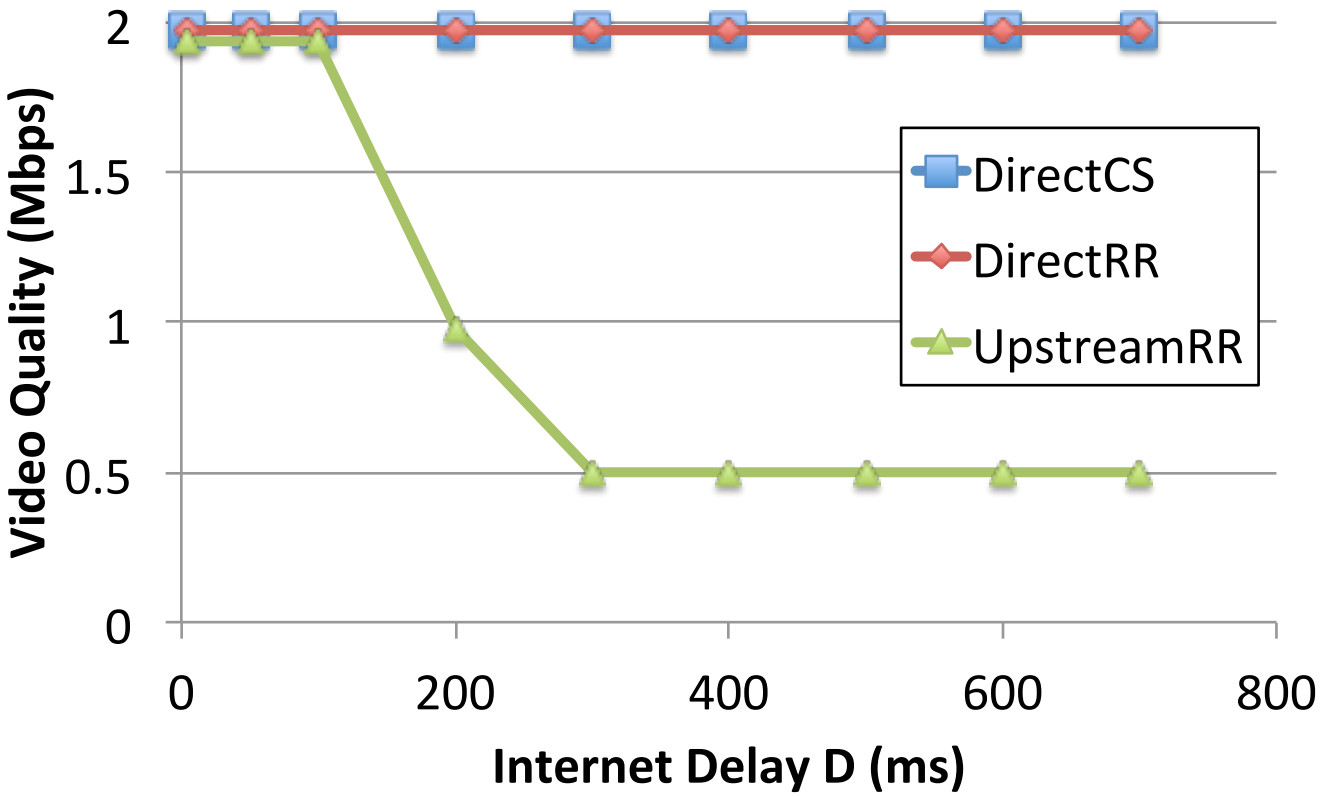
HAS Video:

- LD: 500 kbps
- SD: 1 Mbps
- HD: 2 Mbps

Evaluated request routing approaches

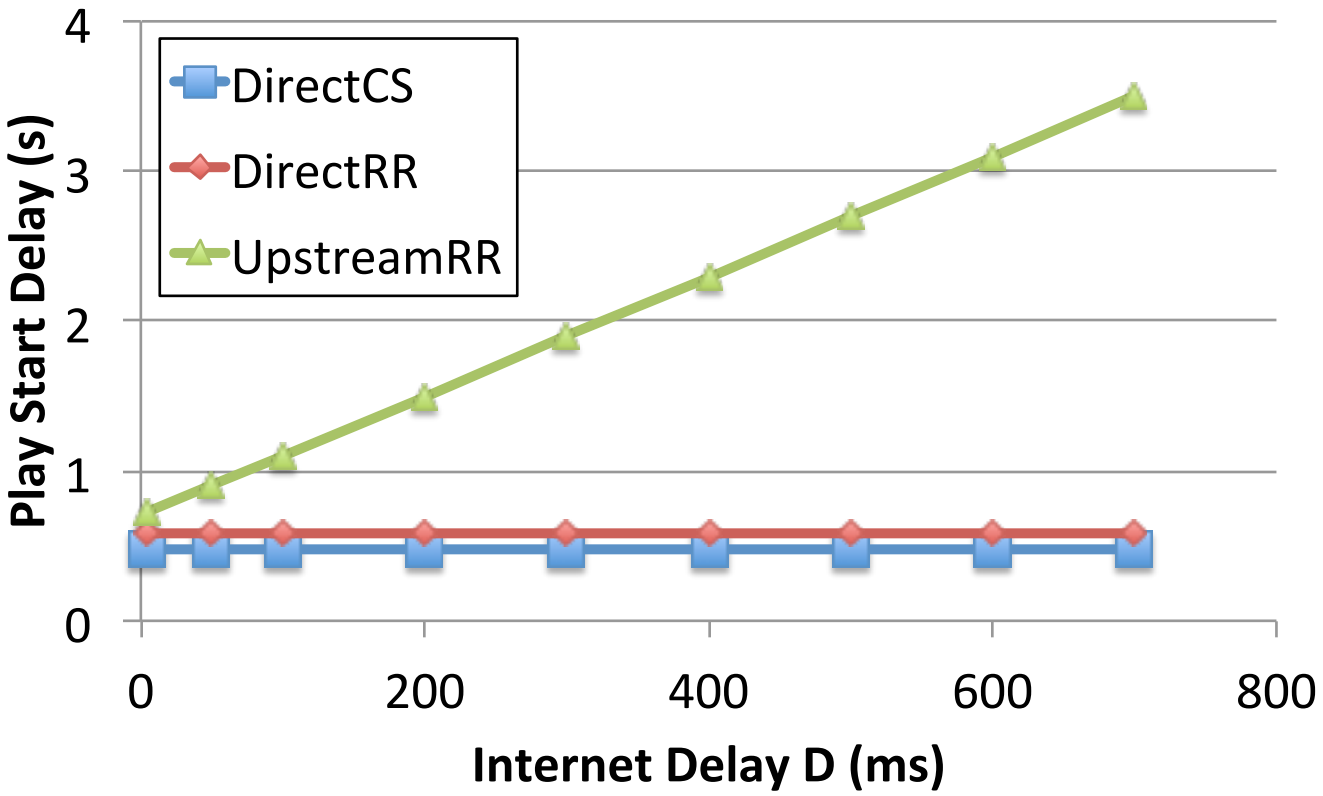
- UpstreamRR
  - Content at upstream CDN: uRR -> uCS
  - Content at downstream CDN: uRR -> dRR -> dCS
- DirectRR
  - Content at upstream CDN: uRR -> uCS
  - Content at downstream CDN: dRR -> dCS
- DirectCS
  - Content at upstream CDN: uCS
  - Content at downstream CDN: dCS

Effect on video quality



B = 5Mbps, P = 6s

Effect on play start delay



B = 5Mbps, P = 6s

Conclusion

- Requesting HAS segments through the upstream request router clearly impacts HAS performance
  - Video quality reductions at high upstream latencies
  - Start delay increases even at lower upstream latencies
- Future planning for next versions of ID
  - Evaluate a wider range of parameters and values
  - Include results on real implementations in addition to simulations

Questions and remarks:
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