



DASH and HTTP/2

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Canon

DASH – Dynamic Adaptive Streaming over HTTP

- DASH: Streaming media content over the Internet
 - Defines media description and media segments formats
 - Adaptation and streaming controlled by the client
- FDH (Full-Duplex HTTP based Protocols)
 - Core Experiment for taking advantage of bi-directional communication protocols
 - Example: HTTP/2, WebSocket
 - Investigate the use of new features of HTTP/2
 - Example: Server Push
 - Was discussed during MPEG 111 Meeting, Feb. 16–20
 - First working draft was produced

FDH Draft Overview

- **Goal: reduce streaming latency**
 - Shorter segments enable lower latency, but induce more requests
- **How: 1 request for several media segments**
 - Reduced number of requests
 - Reduced media latency for live events
- **Implementation**
 - Client requests 1 segment
 - Indicates what it would like the server to push

FDH for HTTP/2

- Client's Push Expectation described in new HTTP Header: DASH-PUSH
- DASH-PUSH parameters
 - Push-next K segments
 - DASH-PUSH: `push-next; K=5`
 - Use case: request 1 segment and receive $1+K$ contiguous segments
 - Push-time T seconds
 - DASH-PUSH: `push-next; T=10`
 - Use case: request 1 segment and receive T seconds of media

Possible Extensions – 1 / 2

■ Extensions to DASH-PUSH parameters

● URI list

- DASH-PUSH: `uri-list; seg-1.mp4; seg-2.mp4; seg-3.mp4`
- Simple and generic: applicable to DASH, HTML pages...
- Use case: request 1 resource and receives several other resources (whose names are known beforehand)

● URI template

- DASH-PUSH: `uri-template; seg-{1}.mp4; 1: 2: 3`
- DASH-PUSH: `uri-template; seg-{1}.mp4; { 1 - 3 }`
- DASH-PUSH: `uri-template; seg-rep-{1}-{2}.mp4; R1: R2; { 1 - 3 }`
- More compact than listing all URIs
- Can be powerful (list of values, several template variables...)

● URI wildcard

- DASH-PUSH: `uri-wildcard; text/css`
- May select more than expected
- Use case: receives all the resource corresponding to a given type

Possible Extensions - 2/2

■ Can target other headers

● Header value

- DASH-PUSH: header; Range; 501-1000; 1001-1500
- Similar to URI list, but for other headers
- Could be extended to support templates

Conclusion

- Current design is DASH specific
- It can be extended to a more generic design
 - Is it useful outside of DASH?
- Any recommendation?