IETF110 MOPS Update Streaming Video Alliance

Glenn Deen, Sanjay Mishra, Jason Thibeault

Open Caching Performance Measurement Specification

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- Open Caching is an edge caching architecture that allows Content Providers (CP) and/or Content Delivery Networks (CDN) to utilize caches deployed by Internet Service Providers at the edge of their network for delivering over-the-top streaming video content
- This specification outlines Key Performance Indicators related to quality of service metrics at the Open Caching Nodes (OCN) that is responsible for delivering the streaming content
- The specification primarily document KPIs for both at the ingress and the egress points of OCN

Open Caching architecture is a specific use case of IETF's CDNI WG where the CP and/or a CDN is the content delegation entity, or a uCDN, and the open caching nodes hosted within the the ISP are the dCDN. The open caching implementation is guided by CDNI RFCs

SVA Open Caching & CDNI Trigger Extensions

Streaming Video Alliance relies on RFC 8007, but proposes extensions:

- RFC 8007 allows a CDN to trigger activity in an interconnected CDN that is configured to deliver content on its behalf. That is, a trigger from an upstream CDN to a downstream CDN

- The upstream CDN can use this mechanism to request that the downstream CDN pre-position metadata or content as well as to request to invalidate or purge metadata or content

  https://datatracker.ietf.org/doc/draft-ietf-cdni-triggers-extensions adds ...

  - Regular expression to purge a specific content within a specific directory path
  - Granular controls for tasks like preposition and purge that can be localized such as
    - Location policy: Adds geo limit on content distribution
    - Time Policy: Allows to request prepositioning to take place between certain hours
  - Generic mechanism for future extensions to trigger execution

Best Practices for Reducing Video Streaming Latency

Published February 2021

https://www.streamingvideoalliance.org/document/best-practices-for-reducing-live-streaming-latency/

- Examines techniques to reduce live video stream latency in ABR Streaming and WebRTC
- Examines latency measurement techniques
- Impacts to latency reduction and overall Quality of Experience (QoE)
- Transports included: HTTP/2 and WebRTC
- Looks at Packaging, Origin Servers, Caches, Ad Insertion, Players, and network stack elements

Latency Definitions for this work:

Low Latency: 2s-5s | Ultra-low latency: 1s-2s | Near-live latency: < 1s

SVA Labs

https://labs.streamingvideoalliance.org

Open Source Code

- Reference code in various languages available in GitHub
- MIT License

    GEO IPv6 JSON - Available now

    Capacity Insight API - In process

    Request Routing API - In process

Geo-Data for IPv6

Published October 2019 (Updated March 2020)

https://www.streamingvideoalliance.org/document/geo-data-for-ipv6/

- Specification for Geo Data representation in JSON for IPv4 and IPv6

- Enables expression of geo-location and attribute association for IP blocks

- SVA Labs now includes a reference version based on this document

- References RFCs:

    4745, 5139, 5870, 6280, 6772, 7159, 7459, 7840, 7946

Streaming Industry Directions & Shared Points of Interest

Low-latency streaming of live content remains a focus area

- Many IETF Intersections with LL Streaming
- L4S being discussed in Transport (TSVWG) is a good example
  (https://datatracker.ietf.org/doc/draft-ietf-tsvwg-l4s-arch/)

QUIC / HTTP/3

- Remains an area being watched.
- Very few streaming services have adopted or announced plans to adopt

Streaming Video Alliance

Contacts:

Glenn Deen (Comcast-NBCUniversal)

- glenn_deen@comcast.com

Sanjay Mishra (Verizon)

- Sanjay.Mishra@verizon.com

Jason Thibeault (Streaming Video Alliance Exec.Dir)

- jt@streamingvideoalliance.org