Fresh Drafts of the CTA/SVA

Chris Lemmons

CTA WAVE CMSD/CAT/SMT WG for IETF MOPS WG

2022-07-29

Fresh Drafts

▶ Combined effort of:
  ▶ Software Video Alliance; and
  ▶ Consumer Technology Association: Web Application Video Ecosystem
▶ Hot Stuff:
  ▶ Common Media Server Data (CMSD)
  ▶ Common Access Token (CAT)
  ▶ Streaming Media Tracing (SMT)

Common Media Server Data

- ▶ The other half of Common Media Client Data (CTA-5004)
- ▶ Nearing completion
- ▶ Carries data from origins toward clients
- ▶ Split into two headers:
    - ▶ CMSD-Static: Data about the media object.
    - ▶ CMSD-Dynamic: Data about the connection transferring the object.

CMSD-Static

List of keys:

- ▶ Origin ID
- ▶ Next Object, Path and Range (for pre-caching)
- ▶ Expected Request Range (for range-req alignment)
- ▶ Object Type
- ▶ Stream Type
- ▶ Streaming Format
- ▶ Availability Time

- ▶ Held Time (for LL-HLS)
- ▶ Duration
- ▶ Encoded Bitrate
- ▶ Init Segments
- ▶ Is Startup
- ▶ Session ID
- ▶ Target Latency
- ▶ Version

These are attributes of the object and the origin's response.

CMSD-Dynamic

List of keys:

- ▶ Estimated Throughput
- ▶ Round Trip Time
- ▶ Max Suggested Bitrate
- ▶ Time to First Byte Sent
- ▶ Duress (clients advised to shift away)
- ▶ Server-induced delay

These are attributes of the specific response and are added together
per-server, like Proxy-Status and Cache-Status.

Common Access Token

- ▶ URI Signing Token
- ▶ Focus on Streaming Media uses
- ▶ Goal is to have a single token that covers all the current use cases
- ▶ Adoption is key

Claims

Core:
- ▶ Issuer
- ▶ Subject
- ▶ Audience
- ▶ Expiration
- ▶ Not Before
- ▶ Issued At
- ▶ CWT ID

General:
- ▶ Version
- ▶ Network
- ▶ URI Regex
- ▶ URI Hash
- ▶ Method
- ▶ ALPN
- ▶ Header Regexes
- ▶ Geographic Country
- ▶ Geographic Detail
- ▶ TLS Public Key

Composition Claims

These are documented as CAT Claims, but are fully generic.

- ▶ Critical: reference to other required claims
- ▶ Encrypted: COSE object with other claims inside
- ▶ And, Or, and Nor: list of claims for boolean logic

Minimum limits for implementations require four levels of nesting and fifty list elements, but token length maximums can kick in sooner.

Action Claims

- ▶ Renewal: none, cookie, or header
  - ▶ Cookie renewal now has arbitrary parameters that can be specified
- ▶ `if`: control response when content is not served
  - ▶ Can be used to redirect or set specific error code
  - ▶ Still being worked on

Streaming Media Tracing

- ▶ Very new group, no specification language set yet
- ▶ Defines three major scopes
    - ▶ Pull: Tracing in-band for HTTP requests/responses
    - ▶ Export: Sending tracing data elsewhere
    - ▶ Push: Tracing in-band for media as it streams toward the origin
- ▶ Collect and report observational data, even if not immediately actionable.

Agglutinative Headers

- ▶ `Header: name;param=value, nextname;param=value`
- ▶ Existing work: Via, Cache-Status, Proxy-Status
- ▶ New stuff: CMSD-Dynamic, SMT Pull header
- ▶ Systems that support more than one of these should use the same value in each.

Thank You

Questions?