SVTA Configuration Interface

IETF/CDNi Metadata Model Extensions Update

March 2024 (IETF 119)

Metadata Model Extension Drafts

Draft	Status
draft-power-metadata-expression-language-01	Minor update from IETF-118
draft-goldstein-processing-stages-metadata-01	Minor update from IETF-118
draft-ietf-cdni-cache-control-metadata-01	Minor update from IETF-118
draft-chaudhari-source-access-control-metadata-00	New individual draft
draft-chaudhari-client-access-control-metadata-01	New individual draft
draft-ietf-cdni-edge-control-metadata-00	Unchanged since IETF-118
draft-bichot-delivery-metadata-00	New individual draft
draft-warshavsky-private-features-metadata-00	New individual draft
draft-ietf-cdni-protected-secrets-metadata-01	Minor update from IETF-118

Metadata Expression Language (MEL)

- draft-power-metadata-expression-language-01

- Changes since last draft:
  - clarification on description of MI.SetVariable variable-value property

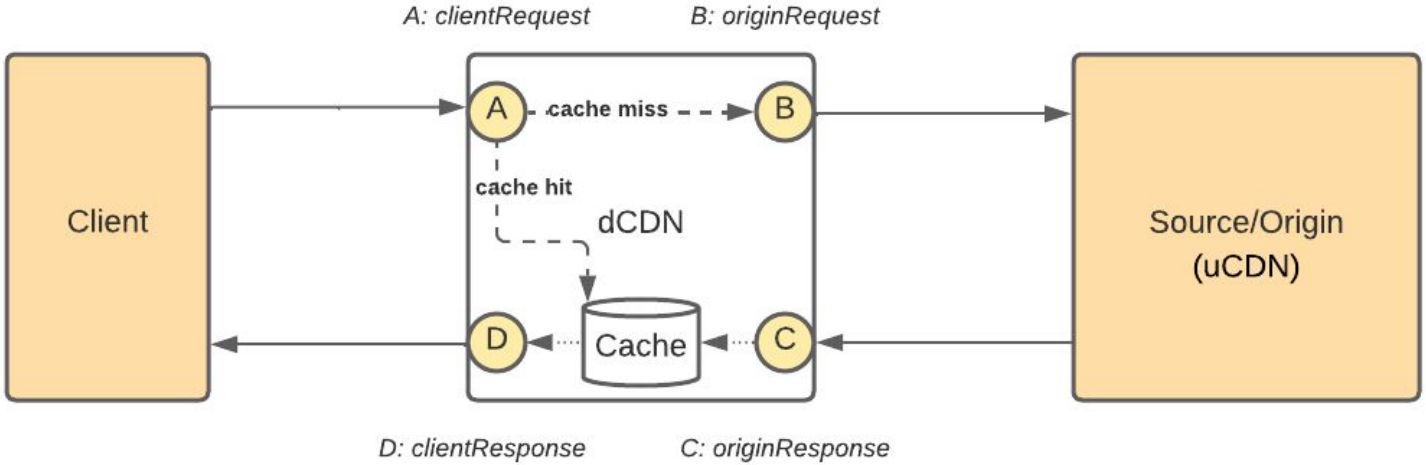
- Next Steps:
  - Need review & feedback from CDNI WG members
  - Move to adopt as a WG Draft

Processing Stages Metadata

- draft-goldstein-processing-stages-metadata-01

- Changes since last draft:
  - Added Arnon Warshavsky as author
  - Minor typos fixed
  - Figure 1: added dCDN & uCDN terms to the figure, as requested by CDNI WG chairs (see next slide).
  - Figure 1: SVG version added.
  - Figure 3 : added to describe processing stages order of execution
  - Documentation on MI.SyntheticResponse clarified to indicate that response-status value is either an integer or a string containing a MEL expression.
  - Documentation on MI.StageRules expanded to clarify processing order and termination of execution (with new diagram).
  - Documentation on MI.StageMetadata expanded to call out use of FCI.MetadataExtended to restrict scope. generic-metadata property documentation extended to discuss inheritance and override.
  - Additional Informative References: private features (SVTA2038), FCI.MetadataExtended (SVTA2041)
- Next Steps:
  - Need review & feedback from CDNI WG members
  - Move to adopt as a WG Draft

Processing Stages Metadata Context



clientRequest - Rules run on the inbound client HTTP request prior to further processing.

originRequest - Rules run prior to making an HTTP request to the origin upon a cache miss.

originResponse - Rules run after an HTTP response is received from the origin and before being placed in the cache or forwarded to the client.

clientResponse - Rules run prior to sending the HTTP response to the client. If the response is from the cache, rules are applied to the response retrieved from the cache prior to sending to the client.

Cache Control Metadata

- draft-ietf-cdni-cache-control-metadata-01

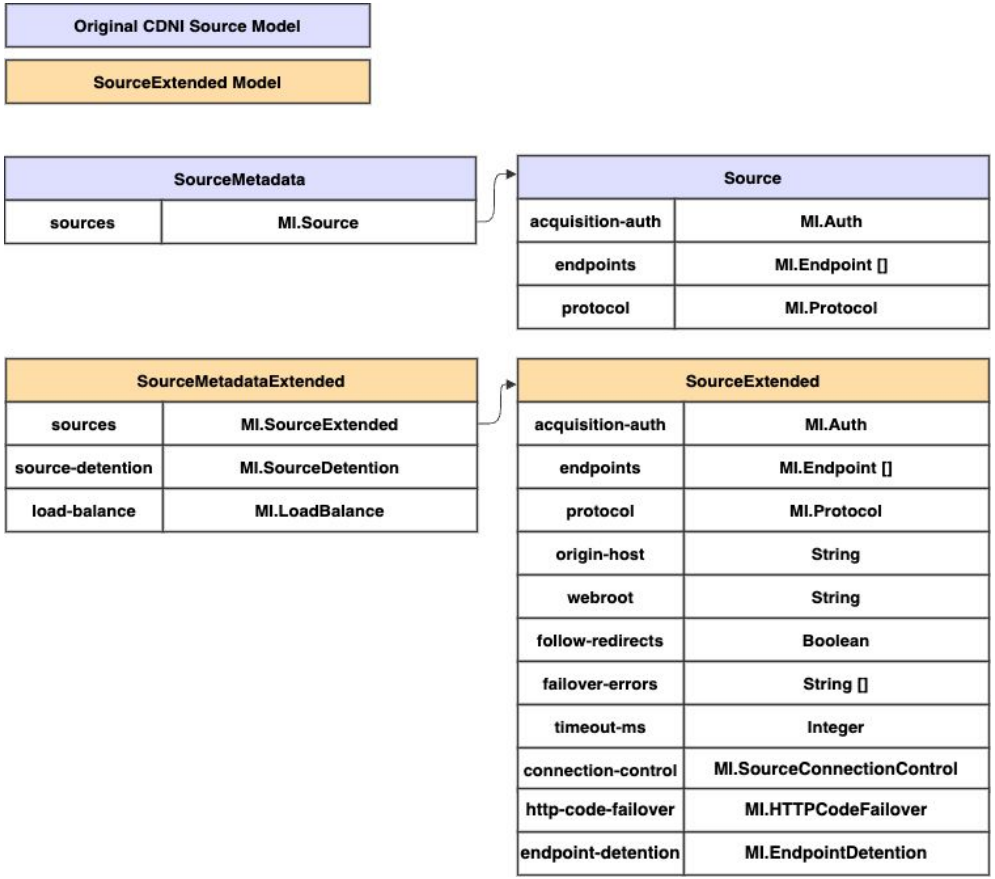
- Changes since last draft:
  - MI.CachePolicy.internal and external documentation updated to indicate either integer or string values allowed.

- Next Steps:
  - Since the draft has already received extensive review and feedback from WG Chairs in earlier IETF sessions, we request this draft be moved to WG last call.

Source Access Control Metadata NEW

- draft-chaudhari-source-access-control-metadata-00
- Abstract:
  This specification provides an alternative to the `MI.SourceMetadata` objects defined in [RFC8006], providing greatly extended capabilities with regards to defining multiple sources, load balancing, and failover rules across those sources, as well as a mechanism for a content delivery network (CDN) to monitor source health and pull unhealthy sources out of rotation. Additionally, new methods are defined for authentication access to an upstream source/origin.
- Next Steps:
  - Move to accept as a WG Draft

Source Access Control Model



Major Extensions:

- Configurable rules for balancing across multiple origins and handling failover.
- Ability to track the health of endpoints and place unhealthy endpoints into detention.
- Connection control properties to handle source connection errors and timeouts.
- Several additional Source properties typical of commercial CDNs.

Client Access Control Metadata

- draft-chaudhari-client-access-control-metadata-01
  - Updated from version 00 to address minor wording issue raised by IANA Operations Manager

- Abstract:

  This specification adds to the basic client access control metadata in [RFC8006], providing content providers and upstream content delivery networks (uCDNs) extended capabilities in defining location and time window restrictions. Support is also provided to define required Transport Layer Security (TLS) certificates and encryption levels.

- New Protocol Types:
  - RFC-8006 specified 2 types: http/1.1and https/1.1
  - This draft proposes the following additions:
    - 3 variations of h2 names: **http/2**, **https/2**, **h2**
    - 2 variations of h3names: **https/3**, **h3**

- Next Steps:
  - Note: Upon publication of the CTA-WAVE Common Access Token (CAT) specification, this draft will be amended to include MI items for configuring CAT metadata.
  - Move to accept as a WG Draft

Edge Control Metadata

- draft-ietf-cdni-edge-control-metadata-00
- Changes since last draft:
  - no updates since IETF-118 submission
- Next Steps:
  - Since the draft has already received extensive review and feedback from WG Chairs in earlier IETF sessions, we request this draft be moved to WG last call.

Delivery Metadata NEW

- draft-bichot-delivery-metadata-00
- Abstract:
  This specification adds to the core set of configuration metadata defined in [RFC8006], providing delivery metadata to define traffic types, Open Caching request delegation behavior for Open Caching node selection, and request routing modes of traffic delegation.
- Next Steps:
  - Move to accept as a WG Draft

Private Features Metadata NEW

- draft-warshavsky-private-features-metadata-00
- Abstract:
  This specification defines a mechanism for downstream content delivery networks (dCDNs) to define private extensions to the metadata model that are mutually agreed upon between participating upstream content delivery networks (uCDNs) and dCDNs.
- Next Steps:
  - Move to accept as a WG Draft

Private Features Metadata: Example

MI.PrivateFeatureList and **MI.PrivateFeature** objects configuring the feature.

Object configuration expressed as a single named private feature.

```
{
  "generic-metadata-type": "MI.PrivateFeatureList",
  "generic-metadata-value": {
    "features": [
      {
        "feature-oid": "Broadpeak",
        "feature-type": "S4Streaming",
        "feature-value": {
          "footprint": {
            "footprint-type": "ipv4cidr",
            "footprint-value": [
              "192.0.2.0/24",
              "198.51.100.0/24"
            ]
          },
          "activation": "ON",
          "mode": "transparent",
          "policy": "bandwidth-max"
        }
      }
    ]
  }
}
```

```
{
  "generic-metadata-type":
"MI.PrivateFeature.Broadpeak.S4Streaming" ,
  "generic-metadata-value": {
        "footprint": {
          "footprint-type":  "ipv4cidr",
          "footprint-value": [
            "192.0.2.0/24",
            "198.51.100.0/24"
          ]
        },
        "activation":  "ON",
        "mode":  "transparent",
        "policy":  "bandwidth-max"
    }
}
```

Protected Secrets Metadata

- draft-ietf-cdni-protected-secrets-metadata-01
- Changes since last draft:
  - Sequence diagrams corresponding to workflow examples.
- Next Steps:
  - Need review & feedback from CDNI WG members.