SVTA Configuration Interface Project

IETF-116 (March 2023)
The SVTA Configuration Interface Plan

• **Problem Statement:** The need for an industry-standard API and configuration metadata model becomes increasingly important as content and service providers:
  ○ Continue to leverage multiple CDNs
  ○ Leverage Open Caching Systems that need to interoperate with CDNs
  ○ Automate their operations

• **Scope:** CDNs and Open Caching Systems have similar configuration metadata definitions and challenges - let’s tackle them together in a single standard.

• **Don’t start from scratch:** Extend the IETF CDNI work started back in 2006

• **Share:** Contribute our extensions back to the IETF to be incorporated onto the CDNI standard. That’s why we are here today.
Project History

- July 2021 - IETF Draft posted with SVTA proposed CDNI Metadata Model Extensions
  - draft-goldstein-cdni-metadata-model-extensions-00 (with 2 revisions)
  - Received good feedback, with a key message: This thing is way too big, cut it up into smaller parts that can be evaluated individually. Message received!

- Feb 2022 - SVTA Configuration Interface Version 1.0 Published as a 3 part document set
  - Part 1: Overview & Architecture
  - Part 2: CDNI Metadata Model Extensions (a mirror of the IETF draft)
  - Part 3: Simple Configuration Metadata API (MI from RFC8006 with “push” extensions).

- Remainder of 2022 till present
  - Lessons learned as a working testbed was created and several SVTA members built real implementations. Many lessons learned! Metadata model and APIs improved.
  - Work underway on Version 2.0, targeting publication Summer 2023.
  - The first 3 smaller IETF drafts (each with a set of MI objects) are being presented today.
  - Another round of IETF draft metadata model extensions planned for IETF-117.
SVTA Configuration Interface V 2.0

Part 1: Overview & Architecture
Part 2: CDNI Metadata Model Extensions
  ● 2.a Metadata Expression Language (CDNI-MEL)
  ● 2.b Processing Stages Metadata
  ● 2.c Cache Control Metadata*
  ● 2.d Source Access Control Metadata
  ● 2.e Client Access Control Metadata
  ● 2.f Edge Control Metadata*
  ● 2.g Open Caching Metadata
  ● 2.h Private Features Metadata
  ● 2.i Protected Secrets Metadata*

Part 3: Simple Configuration Metadata API
Part 4: Service Configuration Model (a layer above Mi.HostIndex for common definitions)
Part 5: Metadata Capabilities (an extended FCI.Metadata)
Part 6: Orchestration API (Decouples configuration publishing and deployment)
Part 7: Terraform Interface (Industry Standard Terraform Resource definitions for SVTA/CDNI)

* Part 2 sub-parts in red are the first 3 drafts submitted for IETF-116
Configuration Interface V 2.0 Architecture

Content Providers & uCDNs

Overview & Architecture (Part 1)

Query dCDN for Metadata Capabilities

Capabilities Advertisement (Parts 2,5) [RFC 8008]

OC-FCI API (Footprint & Capability Spec)

Simple Metadata API (Part 3)

Configuration Metadata API (Part 2) [RFC 8006]

Service Configuration (Part 4)

SVTA Terraform Integration (Part 7)

Metadata Orchestration API (Part 6)

Option 1: Use Simple Metadata API to publish Configuration Metadata to dCDN

Option 2: Use Terraform to orchestrate dCDNs

Service Configuration (Part 4)

Metadata Orchestration API (Part 6)

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Configuration Metadata (Part 2) [RFC 8006]

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Overview & Architecture (Part 1)