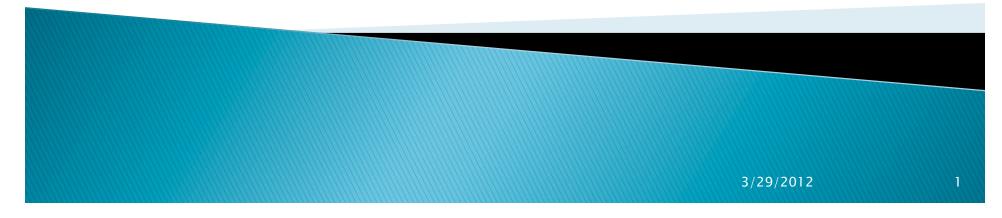
#### **CDNI Framework** draft-davie-cdni-framework-01.txt L. Peterson



#### Overview

- Explains how do all the pieces fit together
  Records and justifies architectural decisions
- Explores design choices
  - Informs how pieces are designed
  - Informed by experience building the pieces



# Locus of Control

- Locus of control remains with upstream CDN
  - dCDN queries uCDN in-line (Conditional GET)
  - HTTP If-Modify-Since + X-Forwarded-For

#### VS

- Locus of control delegated to downstream CDN
  via Metadata interface
- Hybrid approach lowers the bar for what MUST be supported by the Metadata interface
  - Add "check with me" parameter to the metadata



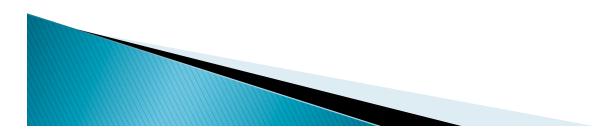
# **Delegated Authorization**

- VRL signing is prime example
  - Have to propagate keys
- Modest proposal start with simple case
  - CSP authorizes
  - Annotates URL accordingly
  - CDNs simply validate



## In-Line Metatdata Exchange

- Piggyback metadata on RRI messages
- Rationale for disallowing
  - More efficient (likely many more RRI exchanges)
  - May need to piggyback a substantial amount of metadata
  - RR and Metadata Interfaces evolve independently



# Cascading CDNs

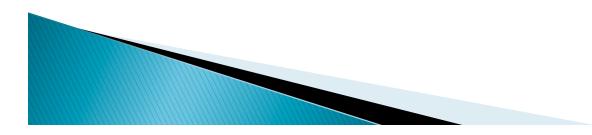
- Explicit (visible) cascading is not necessary
  - RESTful behavior implies CDNs stack transparently
  - All peer CDNs are directly connected

VS

- Full generality of cascading CDNs is supported
- Discussion points...
  - General: Must solve anyway vs Not our problem
  - Specific: DNS/HTTP x Cascade-or-Not x CDN Topology
    - Acknowledge limitation of one case: DNS x Cascade x Diamond

## **Out-Sourced Discussions**

- CDN Capabilities RR Semantics
- Control vs Metadata Triggers
  - That triggers return Status is a key differentiator
  - Meaning?  $\rightarrow$  Transfer of responsibility (liability)
  - Does that mean Metadata is advisory only?
- Handling ABR content Next Talk



# CDNI-wide Data Model

- Need to express the resources (assets) to which policy is to be applied
  - Metadata Availability Directives
  - Request Routing Redirection Directives
  - Logging Aggregate event records
- Need an "aggregation" construct logical asset set
  - e.g., collection of segments in a single video
  - e.g., collection of videos to be treated in the same way
- How to represent?
  - Top-level: CDN-Domain (FQDN at beginning of URI)
  - Subsets: Regular expressions? Manifest files?

#### Next Steps

- Discuss and resolve open issues
- Re-post as WG draft

