CDNI Metadata Interface

draft-cjlmw-cdni-metadata-00

CDNI Working Group
IETF 84 Vancouver, Canada
July 31, 2012

Matt Caulfield(mcaulfie@cisco.com)
Ben Niven-Jenkins (ben@velocix.com)
Result of Two Merged Drafts

draft-caulfield-cdni-metadata-core-00
  Matt Caulfield, Kent Leung, Francois Le Faucheur

draft-jenkins-cdni-metadata-00
  Ben Niven-Jenkins, Grant Watson, Rob Murray
Metadata Overview

• Metadata helps a CDN respond to:
  – Redirection Requests (i.e. request routing)
  – Content Requests

• Metadata includes:
  – Acquisition policies (origin server info)
  – Delivery policies (availability window, geo-blocking)

• Metadata Interface enables:
  – exchange of Metadata between CDNs
Design Principles

1. Metadata Object Cacheability
2. Deterministic Mapping from Content to Metadata
3. Natural Fit for both HTTP and DNS Redirection
4. Minimal Duplication of Metadata
5. Leverage Existing Protocols (HTTP, XML, JSON)
Data Model Assumptions

• Each Host served by a CDN will have distinct metadata
  – abc.example.com and xyz.example.com have different policies

• Metadata will vary based on resource path
  – http://abc.example.com/hd/* and http://abc.example.com(sd/* have different policies
Data Model

Host Index
- abc.example.com
- xyz.example.com
- ...

Host Metadata
- Acquisition Policies
- Delivery Policies
- /hd/*
- /sd/*

Path Metadata
- Acquisition Policies
- Delivery Policies

URL: http://abc.example.com/hd/movie.mpg
Data Model

Host Metadata
- Acquisition Policies
- Delivery Policies
- /hd/*
- /sd/*

HostIndex
- abc.example.com
- xyz.example.com
- ...

PathMetadata
- Acquisition Policies
- Delivery Policies

http://abc.example.com/music/track.mp3
Transport

• HostIndex serves as starting point for all metadata lookups
• Downstream CDN is configured with or discovers the URI of the upstream CDN’s HostIndex
  – e.g. http://ucdn.example.com/metadata/index
• HTTP GET used to fetch HostIndex then HostMetadata, etc
Encoding

- XML vs. JSON
- Draft provides examples of both encodings
- **Goal**: select a single encoding for next revision
Metadata Properties

• Properties derived from requirements document:
  – Content Acquisition Sources
  – Location Availability
  – Time Window Availability
  – Client Authentication
  – Delivery Protocol

• Draft enables extensibility for custom / proprietary properties
Next Steps

• XML vs JSON decision
• Extensibility rules clean-up
• Inheritance rules clean-up