

CDNI Requirements

(draft-ietf-cdni-requirements-05)

CDNI Working Group
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Change History

Version -05

- Published on Feb 23, 2013
- Incorporated requirements from authors of these drafts:
 - draft-brandenburg-cdni-has
 - draft-bertrand-cdni-logging
 - draft-ietf-cdni-logging
 - draft-ietf-cdni-metadata

Requirements Added

- Multiple content items identified by Content Collection ID to support HTTP Adaptive Streaming (HAS)
- Upstream CDN rewrites manifest file (including re-signing URIs)
- Authorization ID and HTTP cookie used to identify HAS content for URI Signing
- Session ID field and customizable CDNI logging

Requirements Removed

- Logging of distribution performed by the Upstream CDN as a result of acquisition request by the Downstream CDN
- Indication by the Downstream CDN to the Upstream CDN of whether the CDNI metadata is accepted or rejected

Next Step

- Confirm requirement changes in draft
- Last call in WG for requirements
- Goal: Jun 2013 - Submit CDNI requirements to IESG as Informational

UPDATED REQUIREMENTS

CDNI Control Interface

NEW:

- CNTL-12 [MED] The CDNI Control interface should allow for multiple content items identified by a Content Collection ID to be purged using a single Content Purge action

Request Routing Interface

NEW:

- REQ-15 [HIGH] The CDNI Request-Routing interface shall allow for per-chunk request routing of HTTP Adaptive Streaming content. [Ed: chunk is treated as any content, is this needed?]
- REQ-16 [MED] The CDNI Request-Routing interface should allow the Upstream CDN to use the information conveyed by the Downstream CDN during the Recursive Request Routing process to rewrite an HTTP Adaptive Streaming manifest file. [Ed: should this be LOW?]
- REQ-17 [MED] The CDNI Request-Routing interface should allow the Upstream CDN to re-sign the invariant portion of the chunk URIs embedded in the HTTP Adaptive Streaming manifest file. [Ed: should this be LOW?]

CDNI Request Routing Interface

- REQ-18 [MED] The CDNI Request-routing interface should allow the use of HTTP cookie to associate the chunks with the HTTP Adaptive Stream manifest file (which is verified by the URI signature) based on the Authorization Group ID (which is an identifier used to correlate the manifest file to the related chunks). [Ed: should this be LOW?]
- REQ-19 [MED] The CDNI Request-Routing interface may allow for an efficient method of transferring request routing information for multiple chunks from the Downstream CDN to the Upstream CDN as part of the recursive request routing process. [Ed: should this be LOW?]
- REQ-20 [MED] The CDNI Request-Routing/Footprint and Advertising interface shall support advertisement of the following capabilities:
 - support for customized CDNI Logging
 - support of Content Collection ID logging
 - support for Session ID logging

CDNI Metadata Interface

REMOVED:

- META-13 [HIGH] The CDNI Metadata Distribution interface shall provide indication by the Downstream CDN to the Upstream CDN of whether the CDNI metadata (and corresponding future request redirections) is accepted or rejected. When rejected, the CDNI Metadata Distribution protocol Must allow the Downstream CDN to provide information about the cause of the rejection.

NEW:

- META-19 [HIGH] The CDNI Metadata interface shall provide indication of related content (e.g. HTTP Adaptive Bit Rate chunks) by the Content Collection ID (CCID) metadata. This could be used by the Downstream CDN for operations on the group of content. For example, this could potentially include:
 - content acquisition for the entire set of files when one piece of content is requested

CDNI Metadata Interface

- local file management and storage bundles all the files for the content
 - purging the entire set of files associated with the content
 - logging of the delivery of the content for the session when at least one file in the set was delivered
- META-20 [HIGH] The CDNI Metadata Distribution interface shall support an OPTIONAL mechanism allowing the Upstream CDN to indicate to the Downstream CDN which CDNI Log fields are to be provided for all, for specific sets of, or for specific content items delivered using HTTP. A CDNI implementation that does not support this optional CDNI Metadata Distribution Interface mechanism MUST ignore this log format indication and generate CDNI logging format for HTTP Adaptive Streaming using the default set of CDNI Logging fields.

CDNI Metadata Interface

- META-21 [MED] The CDNI Metadata Distribution interface shall allow the Upstream CDN to signal to the Downstream CDN the Content Collection ID value for all, for specific sets of, or for specific content items delivered using HTTP. Whenever the Downstream CDN is instructed by the Upstream CDN to report the Content Collection ID field in the log records, the Downstream CDN is to use the value provided through the CDNI Metadata interface for the corresponding content. Note the Session ID field along with Content Collection ID may be used for HTTP Adaptive Streaming content.
- META-22 [MED] The CDNI Metadata Distribution interface shall allow the Upstream CDN to signal to the Downstream CDN the Authorization Group ID value for all the related HTTP Adaptive Streamin content (i.e. manifest file and chunks). The authorization result of a content (e.g. manifest file) is transferred over to related content (e.g. chunks). [Ed: need to improve wording?]

CDNI Logging Interface

REMOVED:

- LOG-4 [HIGH] The CDNI Logging interface shall provide logging of distribution performed by the Upstream CDN as a result of acquisition request by the Downstream CDN.

NEW:

- LOG-17 [HIGH] The CDNI Logging interface shall support the notification from Downstream CDN to Upstream CDN for the event that the logging retention duration or maximum size of logging data has exceeded.
- LOG-18 [MED] The CDNI Logging interface should support the ability for the Downstream CDN to include the Content Collection ID and Session ID fields in CDNI log entries generated for HTTP Adaptive Streaming content. This fields can be supported by the "customizable" log format which is expected to be defined independently of HTTP Adaptive Streaming.