draft-ietf-cdni-logging
Open Discussion

Non-Real-Time vs Real-Time

- Observations:
  - Different understanding of what "real-time" means (sub-minute, sub-seconds, sub-100ms,..)
  - Loose understanding of requirements priority among application potentially requiring real-time logging and their respective requirements
  - e.g. does real-time analytics need sub-minutes or sub-seconds? What level of reliability does it require?
- Recommendations:
  - Clarify current version of document only addresses sub-hour (or lower frequency) , and does not address sub-minutes or sub-seconds or below
  - Specify records & fields semantics + file structure + file transfer
  - Acknowledge same CDNI file format could also be used to transfer records in real-time in proprietary transport protocols (until we specify one)
  - Do not wait until we've converged or second-guessed which protocol might be used for real-time logging in the future (in the hope of shaping non-real-time so it is more easily extensible to real-time)

Logging for Request Routing

- Do we need to specify Logs for Request Routing performed by dCDN?
  - Observation:
    - Probably can be generalized to the requirement for "event" logging:
      - dCDN request Router not able to redirect
      - dCDN cannot acquire metadata
      - dCDN cannot aquire content
  - Recommendation:
    - Try first specify what events and what information needs to be exchanged.
    - Depending on progress include in initial logging spec or not
    - i.e. handle as a [MED] requirement

Logging Fields for Delivery Record

```
+-----------------------------+------------------------------------------+
| Name                        | Mandatory/Optional                       |
+-----------------------------+------------------------------------------+
| Start-time                  | Mandatory                                |
| Duration                    | Mandatory                                |
| Client-IP                   | Mandatory                                |
| Client-port                 | Optional                                 |
| Destination-IP              | Mandatory→Optional ; if Destination-Hostname is |
|                             | absent                                   |
| Destination-Hostname        | Mandatory→Optional if Destination-IP is absent |
| Destination-port            | Mandatory→Optional                       |
| Operation→log type          | Mandatory   (*)                          |
| URI_full→delivery URI       | Mandatory if URI_part is absent→Optional |
| URI_part→uCDN-centric URI   | Mandatory if URI_full is absent→Mandatory|
| Protocol                    | Mandatory if protocol is different to    |
|                             | HTTP/1.1  → MAndatory                    |
| Request-method              | Mandatory                                |
| Status                      | Mandatory                                |
```

(*) some field might end up being defaulted, or encoded in header, but that is an encoding/syntax optimisation question

Logging Fields for Delivery Record

```
| Total-Bytes-Sent      | Mandatory                                    |
| Entity-Bytes-Sent     | Optional (validate off-line what
                          is used in practise for charging)    |
| Bytes-received        | Optional → DROP
  Referrer             | Optional ⌉
  User-Agent           | Optional |→Generic Header encoding |
  Cookie               | Optional |- (no header mandatory)         |
  Byte-Range           | Optional (can only exist with 206 )???
  Cache-control        | Optional ⌋
  Record-digest        | ?     -→DROP IT (Digest at file level)
  CCID                   Optional.  Only applicable to HTTP
                         Adaptive Streaming delivery.
  SID                    Optional.  Only applicable to HTTP
                         Adaptive Streaming delivery.
  Cache-bytes            Optional →DROP
  Action→              | Mandatory→Optional (cache Hit/Miss);
                           partial cache must be set as a miss
| MIME-Type             | Optional → bundled with headers
+----------------------+-------------------------------------
```

Delivery Logging Fields Syntax

- Based on W3C

- Leverage CLF+ELF

- Define similar-style syntax for CDNI fields not covered in W3C yet.

- Does W3C have a specific mechanism/provision/registry for defining new fields?

- Define how to deal with Optional fields and customisable logs

CDNI File Format - Header

Field	Description	Examples
Format	Identification of CDNI Log format.	standard_cdni_errors_http_v1
Fields	A description of the record format (list of fields).	
Log-ID	Identifier for the CDNI Log file (facilitates detection of duplicate Logs and tracking in case of aggregation).	abcdef1234
Log-Timestamp	Time, in milliseconds, the CDNI Log was generated.	[20/Feb/2012:00:29.510+0200]
Log-Origin	Identifier of the authority (e.g., dCDN or uCDN) providing the Log--ging	cdn1.cdni.example.com

CDNI File Format - Footer

Field	Description	Examples
Log Digest	Digest of the complete Log (facilitates detection of Log corruption)	

Time Format

- The format for Time is still to be agreed on. RFC 5322 (Section 3.3) format could be used or ISO 8601 formatted date and time in UTC (same format as proposed in [draft-caulfield-cdni-metadata-core-00]). Also see RFC5424 Section 6.2.3.

Kevin's comments

- how are errors handled ? If the client gets handed a bunch of 403s and 404s, but still gets the content eventually, without triggering an event, are those still logged? For Bytes-Sent, if there were aborted requests, do those get counted as well? Not all client behavior can be correlated with the simplified log

2nd Informal Meeting
on cdni-logging

- Thursday, 9:00am
- Meet at the IETF Registration desk

CDNI Logging Fields

- Start-time
- End-time
- Duration
- Client-IP
- Client-port
- Destination-IP
- Destination-hostname
- Destination-port
- Operation
- URI_full
- URI_part
- Protocol

- Request-method
- Status
- Bytes-Sent
- Headers-Sent
- Bytes-received
- Referrer
- User-Agent
- Cookie
- Byte-Range
- Cache-control
- Record-digest
- CCID
- SID

- uCDN-ID
- Delivering-CDN-ID
- Cache-Bytes
- Action
- MIME-type
- dCDN-ID
- Caching-Date
- Validity-hearders
- Lookup-duration
- Delay-to-first-bit
- Delay-to-last-bit