CDNI Rate Pacing

draft-caulfield-cdni-rate-pacing-00

CDNI Working Group
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Matt Caulfield (mcaulfie@cisco.com)
Rate Pacing Concept

uCDN may wish to control the rate at which a dCDN delivers content on its behalf

dCDN may be compensated per byte delivered.
∴ may send content faster than necessary
Progressive Download Use Case

User begins viewing a long piece of content but quits before the playback ends

For example:

Video encoded at 3 Mbps
6 Mbps link between User and dCDN
User begins watching but quits after 5 minutes

With rate pacing: dCDN delivered only 5 min of data
Without rate pacing: dCDN delivered 10 min of data
Rate Pacing Algorithm

Token bucket algorithm with two arguments:
1) Rate – number of tokens added per second
2) Size – maximum number of tokens in the bucket

dCDN need not implement token bucket but data must fit the envelope of a token bucket algorithm
## CDNI Interfaces Impact

<table>
<thead>
<tr>
<th>Interface</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCI</td>
<td>defines a new “RatePacing” capability</td>
</tr>
<tr>
<td>RRI</td>
<td>no direct impact</td>
</tr>
<tr>
<td>MI</td>
<td>defines a new “RatePacing” metadata object</td>
</tr>
<tr>
<td>LI</td>
<td>defines a new field “sc-rate” (next slide)</td>
</tr>
<tr>
<td>CI</td>
<td>no direct impact</td>
</tr>
</tbody>
</table>
Rate Pacing Logging Field

Is a new logging field necessary?

Logging draft defines:
- time-taken – time between start and completion of processing the request by the Surrogate
- sc-total-bytes – bytes sent including headers
- sc-entity-bytes – bytes sent excluding headers

Rate Pacing draft defines:
- sc-rate – the average rate at which a response was sent
Next Steps

Solicit comments on draft before next meeting