Entity Tags

By Akshat Kukreti
Etags (Entity tags)

• Part of HTTP
• Used for Cache validation: Is the cached copy of a web page still good?
• Efficient caching as the server does not need to send a full response in case of no change
• Unique ID for a resource found at a URL
• A new Etag is associated with a resource whenever the resource is modified.
• Generation: Collision-resistant hash functions
  – A hash of the last modified timestamp.
Etags (Entity tags) contd...

- **Strong Etag**
  - Matching Etags mean that the contents of the resources being matched are identical byte-for-byte.
  - “string”

- **Weak Etag**
  - Matching resources are similar but not byte-for-byte. Not good for byte serving.
  - W/”string”
Etag header fields

• If-Match
  – If-Match: ("*" | Etag string)
  – If Etag string matches an Etag value of a resource or if "*" is given and a current version of the resource exists, the resource is returned
  – If Etag string does not match or if "*" is given and no current version of the resource does not exist, the server responds with a status of 412 (Pre-condition failed)
Etag header fields

- If-None-Match
  - If-None-Match("*" | Etag string)
  - If Etag string matches the Etag for the resource, the server responds with a status of **304 (Not modified)**
  - If the Etag string is different from the Etag of the resource, the resource is returned.
Other header fields

• If-Modified-Since
  – If-Modified-Since: Date
  – If a resource entity has not been modified since Date, the response is a status 304 (Not Modified)
  – If the resource entity has been modified since Date, the entity is returned.
Tracking with Entity tags

• Server can keep on returning the cached Etag whenever the client makes a request.
  – The Etag persists enabling the server to track the user even if cookies are disabled.

• Kissmetrics Etag Respawning
  (http://ashkansoltani.org/docs/respawn_redux.html)
  – Tracking user by using Etag as a persistent identifier.
Tracking with Entity tags

• Kissmetrics Etag Respawning
  – When the client makes the first request, a JavaScript generates a random value and returns it as an Etag and also sets a cookie with that value.
  – In the future when the client makes a request, a If-None-Match header with the Etag value is sent to the server.
  – The unique value can be used to track the user.