

URLs and HTTP Response Forms for Multicast

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David Singer and Ali C. Begen

singer@apple.com, abegen@cisco.com

Multicast Delivery Protocols: System or Transport?

- Traditionally viewed as a system (vertical)
- Yet we could view them as a transport (horizontal)
- **What does it take to view them as a transport protocol that fits in?**

Fitting into the Transport Landscape

- Available resources are ideally addressed by URLs
- The ‘threads’ of the Web *are* URL references; we can also redirect into a multicast
- Relative URLs are important for dynamism (e.g., rehosting)
- If we use DNS names we can also get some dynamic capability
- It is also really convenient to get explicit status (HTTP-like); we can then re-direct out of multicast
- Given these, it could have system software support with very similar API interface to HTTP

What Does a URL Form Need?

- Today multicasts are addressed by ‘header files’ (e.g., SDP)
- Classes of information in them:
 - needed to *get going* (addresses etc.)
 - needed to know whether it’s *worth trying* (e.g., availability period)
 - alternatives
 - repair services, feedback addresses, etc.
- Propose we focus on the first two: the minimum ‘hook’
- Other info can be in higher layer (e.g., in a manifest or program guide), or carried in-band (e.g., repair information)

Requirements for the URL Form

- Data needed by ALC/LCT (see the RFC) to get going
- Validity information (time period, ideally network where the multicast is available)
- URLs must be valid to the specifications, and support relative forms
- Steer clear of query and fragment parts (we do not own them)

Draft Form

- {prefix}{mid}{suffix}

- prefix:

fcast://destination:port/source:TSI

- mid: /name:value pairs e.g., start-time

- suffix: /label: and the URI label of the file in the multicast

- Example:

fcast://232.0.0.1:5620/broadcast.example.com:527353
/start:35776638264/network:media.example.com
/label:http://news.example.com/stuff.mp4

Result Codes

- Fcast metainformation has HTTP headers EXCEPT the result code
- We propose a new metainformation format that puts the status line (including result code) back
- Example useful codes:
 - Success
 - Partial content
 - Redirect
 - Not found (here)

Open Questions

- Details, escaping, exact syntax
- What is in what layer: document enclosing the URI, the URI, carried in-band in the multicast
- Leveraging DNS
- How to constrain relative URLs (e.g., how far up can “..” go?)