SPLIT CONTENT AND METADATA
AND HOST CONTENT ANYWHERE

Responses don’t include real content

Content delivered using out of band content encoding

Plus integrity checks

Plus encryption
SLOWER
MAYBE
GO SLOWER
AND MAYBE, LATER, GO FASTER

Big resource, thin pipe, fat pipe
POSSIBLE APPLICATIONS

BIG STUFF

Applicable to distribution of content with large payloads

Video

Large downloads (no need for “official” mirrors)

Maybe down to large images on web pages
DRAFT-THOMSON-HTTP-BC

SELF

DELEGATION
DO IT YOURSELF

"IF YOU WANT SOMETHING DONE RIGHT
DO IT YOURSELF"

""
BUT

...WHY?

C  PROXY  S

NOT SAFE FOR PROXYING

SAFE FOR PROXYING

ENCRYPTED

INTEGRITY PROTECTED

ANONYMIZED
... LATER
SHARED CACHING!
Client makes requests with two indicators:

“I accept out of band content encoding”

“I have a proxy handy”

Server decides what to do about that

New signal for out of band: “using a proxy is OK”
All we needed to do was add a new mechanism for content delegation, slap on a whole bunch of crypto, and make a bunch of extra requests, plus a smattering of new signalling

... does it make things faster? Maybe, maybe not

... is it all worthwhile? Quite possibly
WHO NEEDS SERVERS?

DRAFT-TBD

http://www.flickr.com/photos/pinadd/2858659917/
THIS FIRST REQUEST
IS A REAL DRAG

C2 PROXY S
SPOT THE DIFFERENCE

http://www.flickr.com/photos/24340456@N03/3345977842/

https://en.wikipedia.org/wiki/Orange_(fruit)#/media/File:Orange-Whole-%26-Split.jpg
Lots of request-handling headers, or common values

Accept-Ranges: bytes
Age: 47451
Content-Type: image/jpeg
Strict-Transport-Security: max-age=31536000
Timing-Allow-Origin: *
Via: 1.1 varnish, 1.1 varnish, 1.1 varnish, 1.1 varnish
X-Cache: cp1049 hit(5), cp2005 hit(1), cp4007 hit(2), cp4005 frontend miss(0)
X-Firefox-Spdy: 3.1
X-Timestamp: 1443711458.04701
X-Trans-Id: txe34b67c455304376aeb09-0056fbd60c
access-control-allow-origin: *
access-control-expose-headers: Age, Date, Content-Length, Content-Range, X-Content-Duration, X-Cache, X-Varnish
x-analytics: WMF-Last-Access=31-Mar-2016;https=1
x-client-ip: 192.0.2.75
x-object-meta-sha1base36: 1d91dx0894wjewukeyxu56os5uhx4ph
x-varnish: 3535512625 3458104777, 3419142795 3407795571, 3968671036 3922511061, 3697758745

Remainder of metadata is small, and could change infrequently

Last-Modified, Etag, Content-Disposition, and x-object-meta-sha1base36 for these images
SO COMPRESS
A LOT

Without content in every response, h2 server push for large swathes of a site might be possible.

Test limits of hpack for very large numbers of resources.

   Maybe more practical with a custom format

...work in progress
A GRAPH