

IETF 95, HTTP
DRAFT-THOMSON-HTTP-SCD

SECURE CONTENT DELEGATION



SPLIT CONTENT AND METADATA AND HOST CONTENT ANYWHERE

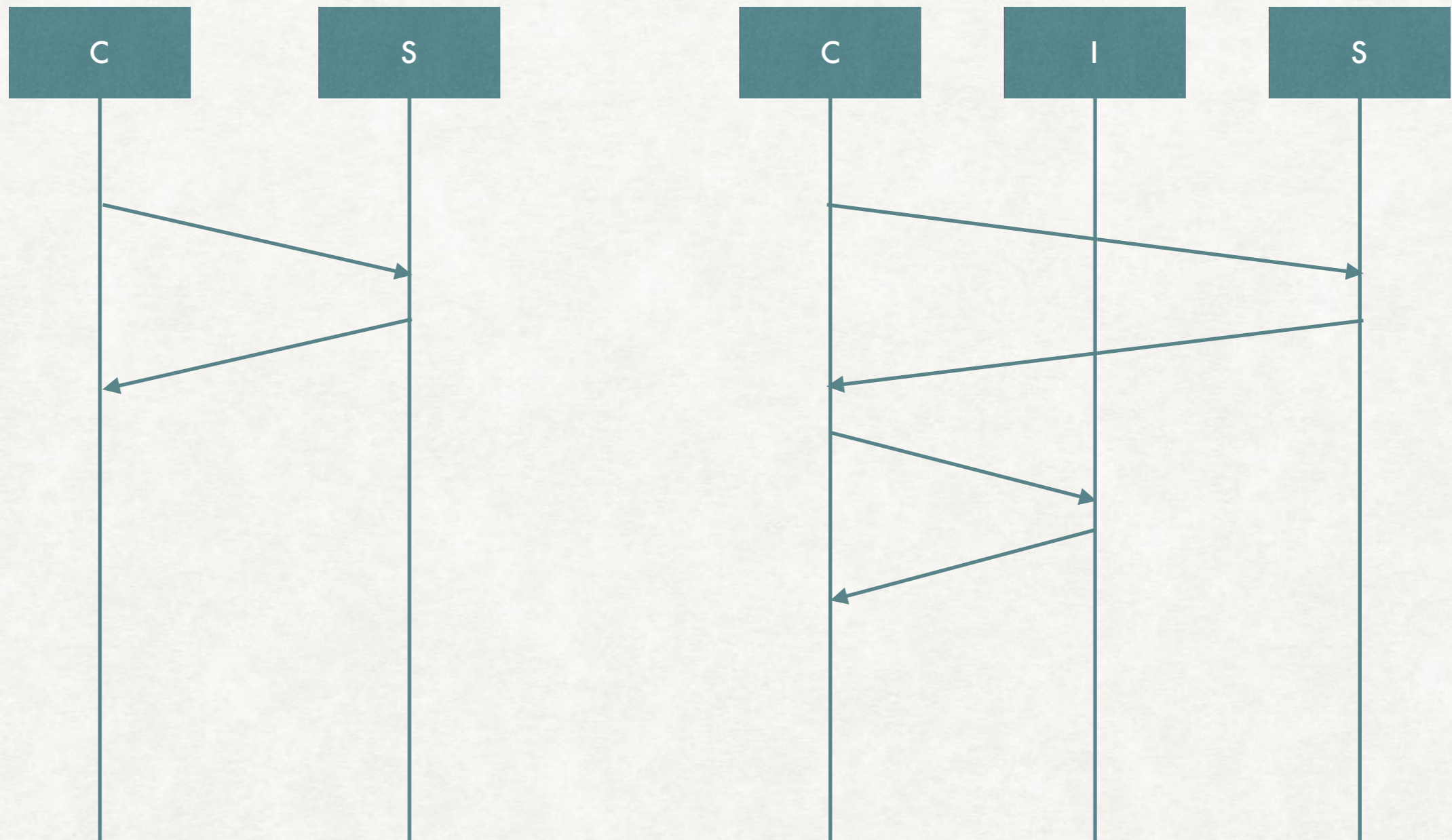
Responses don't include real content

Content delivered using out of band content encoding

Plus integrity checks

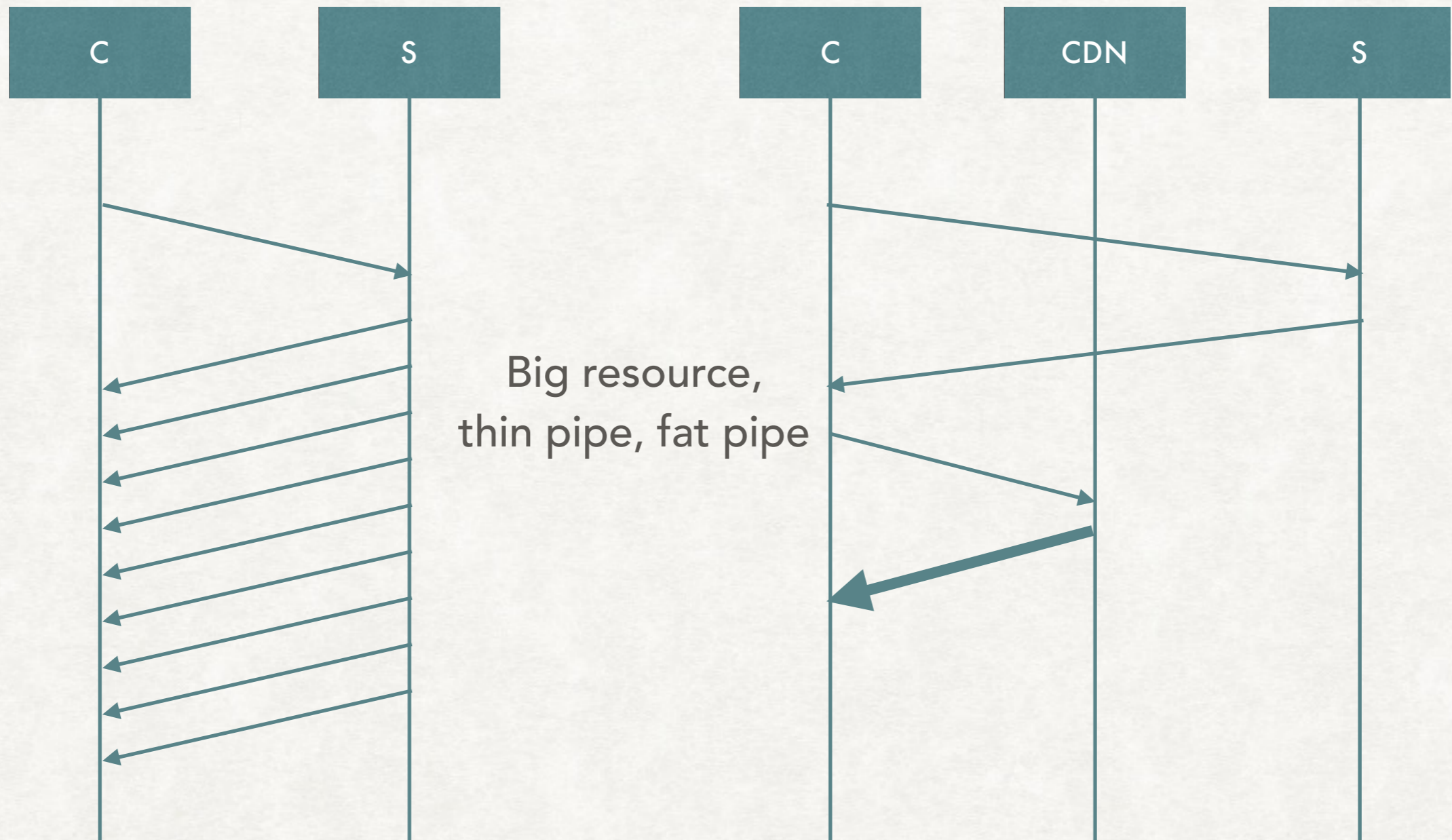
Plus encryption

SLOWER MAYBE



GO SLOWER

AND MAYBE, LATER, GO FASTER



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

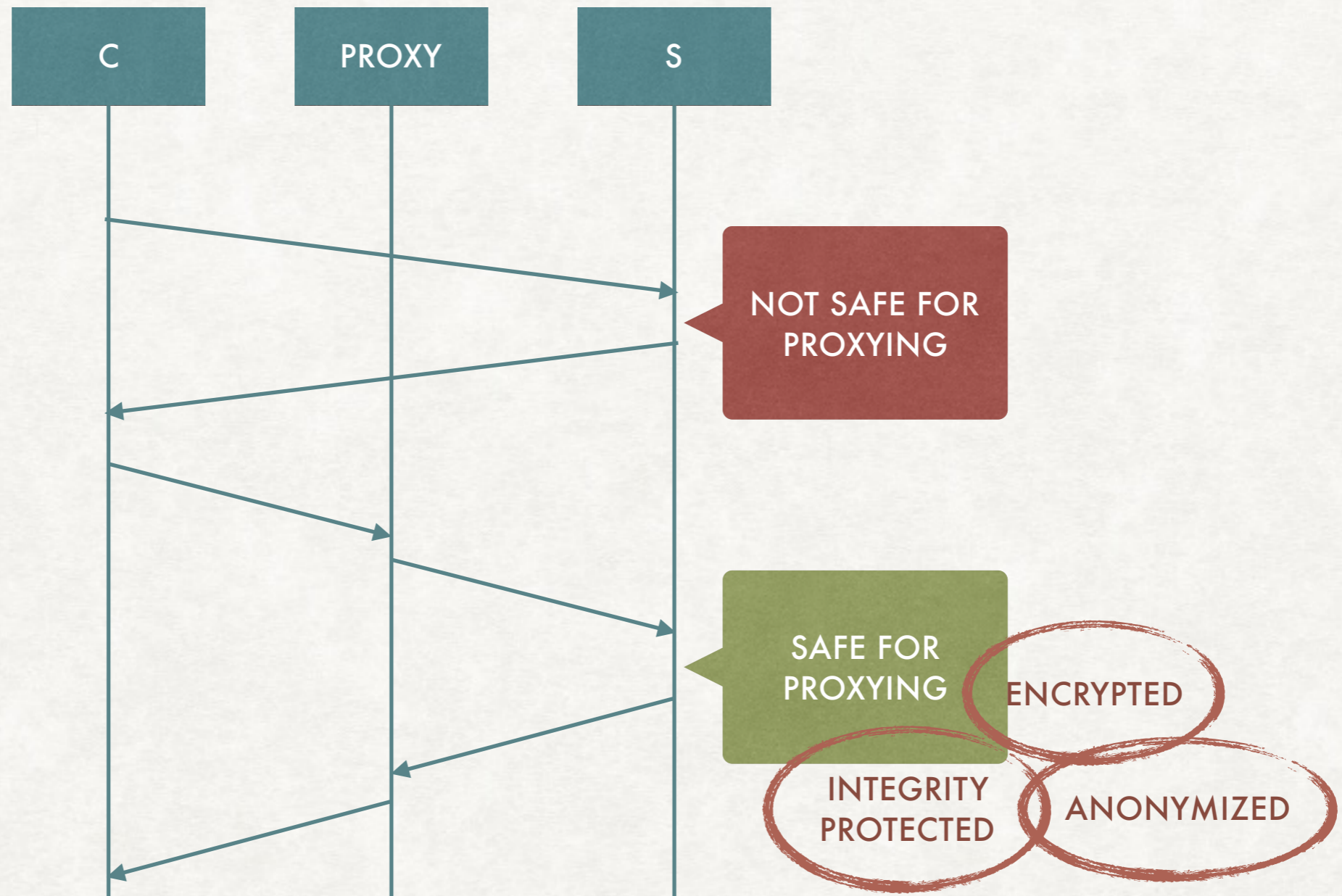


“

IF YOU WANT SOMETHING DONE RIGHT
DO IT YOURSELF

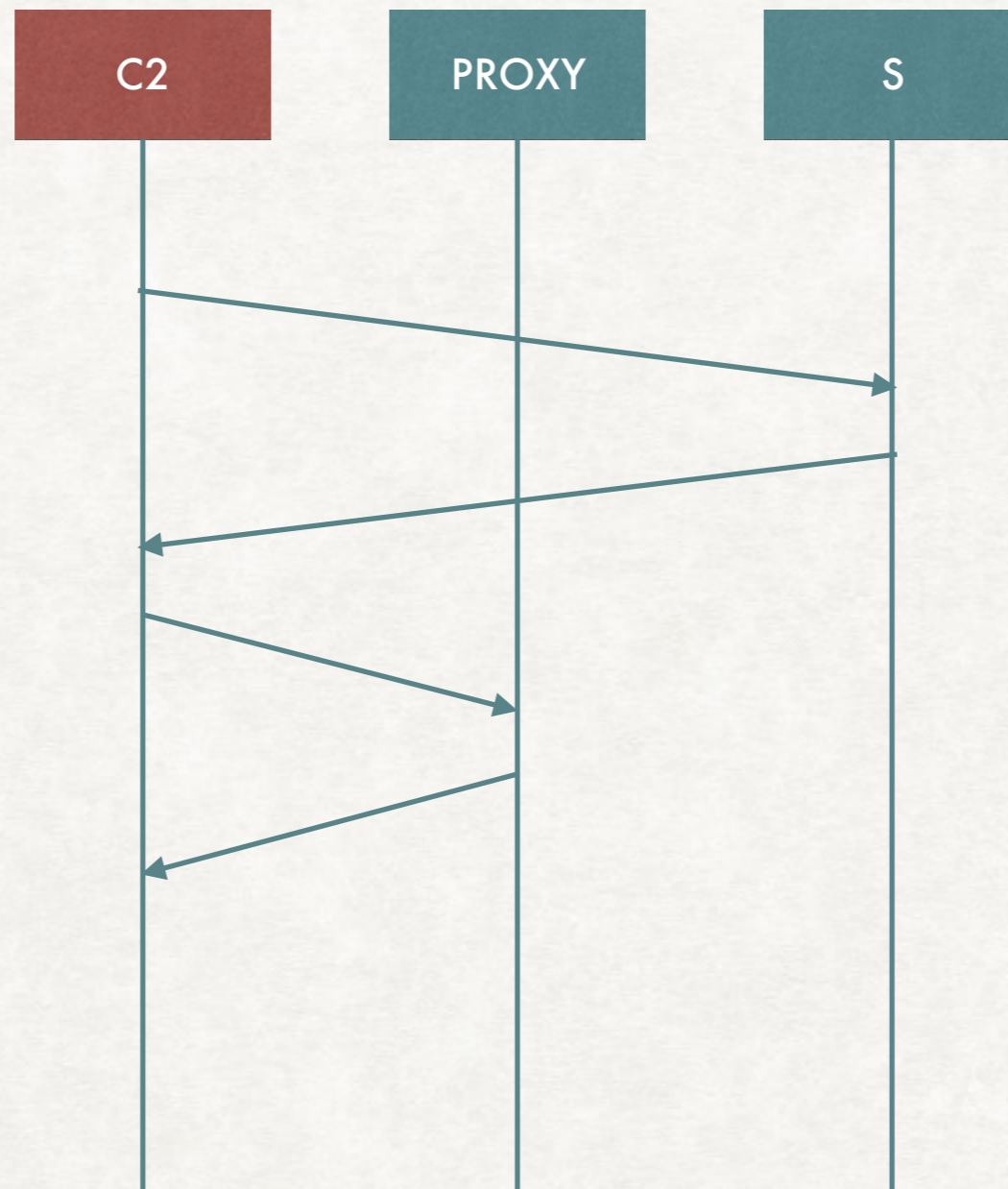
”

BUT ...WHY?



... LATER

SHARED CACHING!



HOW?

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”

OMFG

SHARED CACHING?!

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

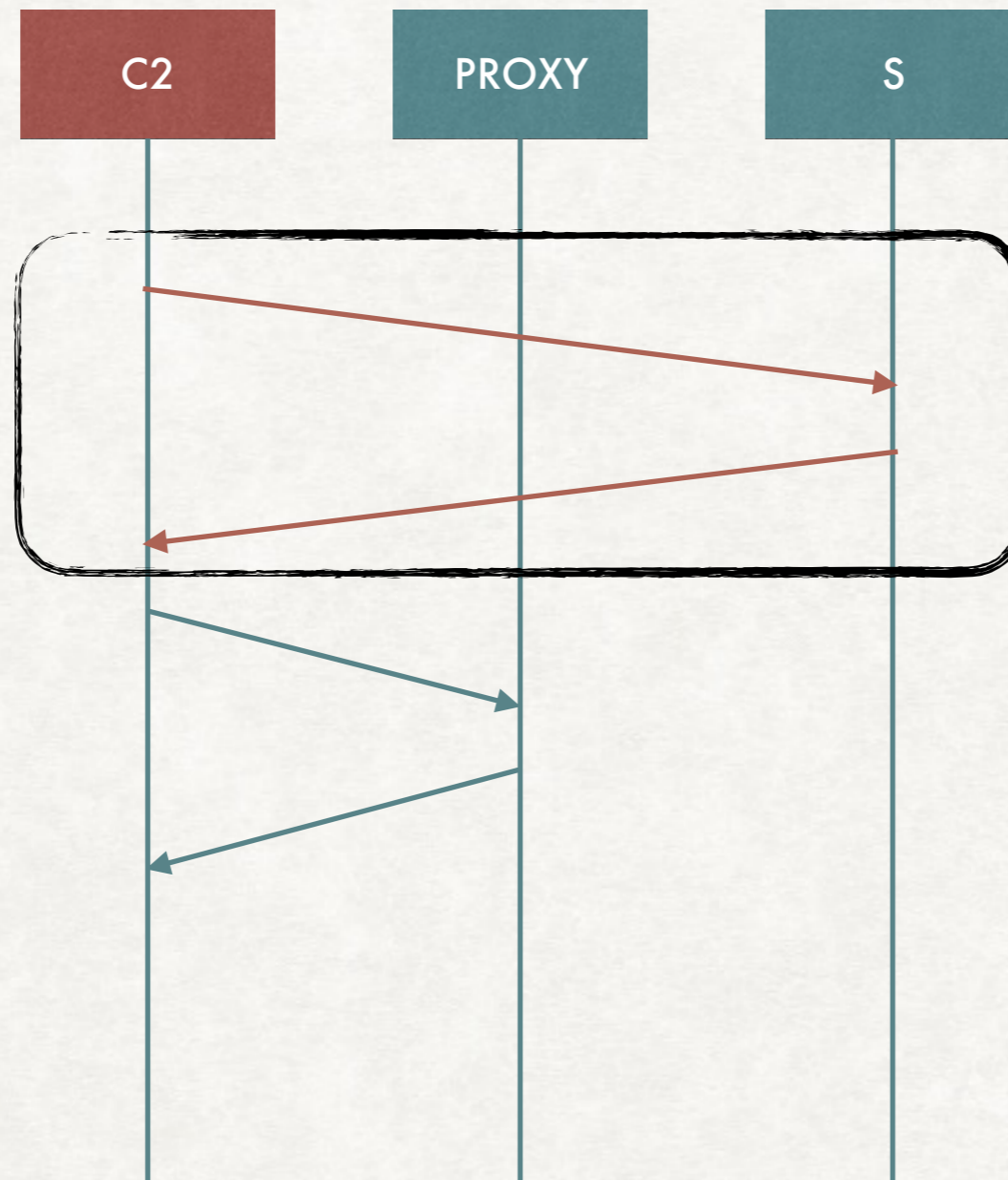
DRAFT-TBD

WHO NEEDS SERVERS?



<http://www.flickr.com/photos/pinadd/2858659917/>

THIS FIRST REQUEST IS A REAL DRAG



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](https://en.wikipedia.org/wiki/Orange_(fruit)#/media/File:Orange-Whole-%26-Split.jpg)

REMOVE CONTENT AND...

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, 3667758745
```

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

