Before the request

During the request

For future requests

Ways to Redirect

Origins get too big for one node to cache

What to do?

- Redirect to URL on desired node – 3XX
  - Changes origin
- Cache hierarchy – fetch from a nearby node and route out
  - Routes all traffic through the node handling the connection
- QUIC multipath across multiple machines
  - Difficult to coordinate loss recovery across instances

There might be a better way to do delivery

Semi-trusted node very close to you

- On your airplane
- In your ISP

Alternate delivery protocol

- Multicast session
- IPFS

CDN

- Doesn't need data access

IETF 95, HTTP
DRAFT-THOMSON-HTTP-SCD

SECURE CONTENT DELEGATION

SPLIT CONTENT AND METADATA
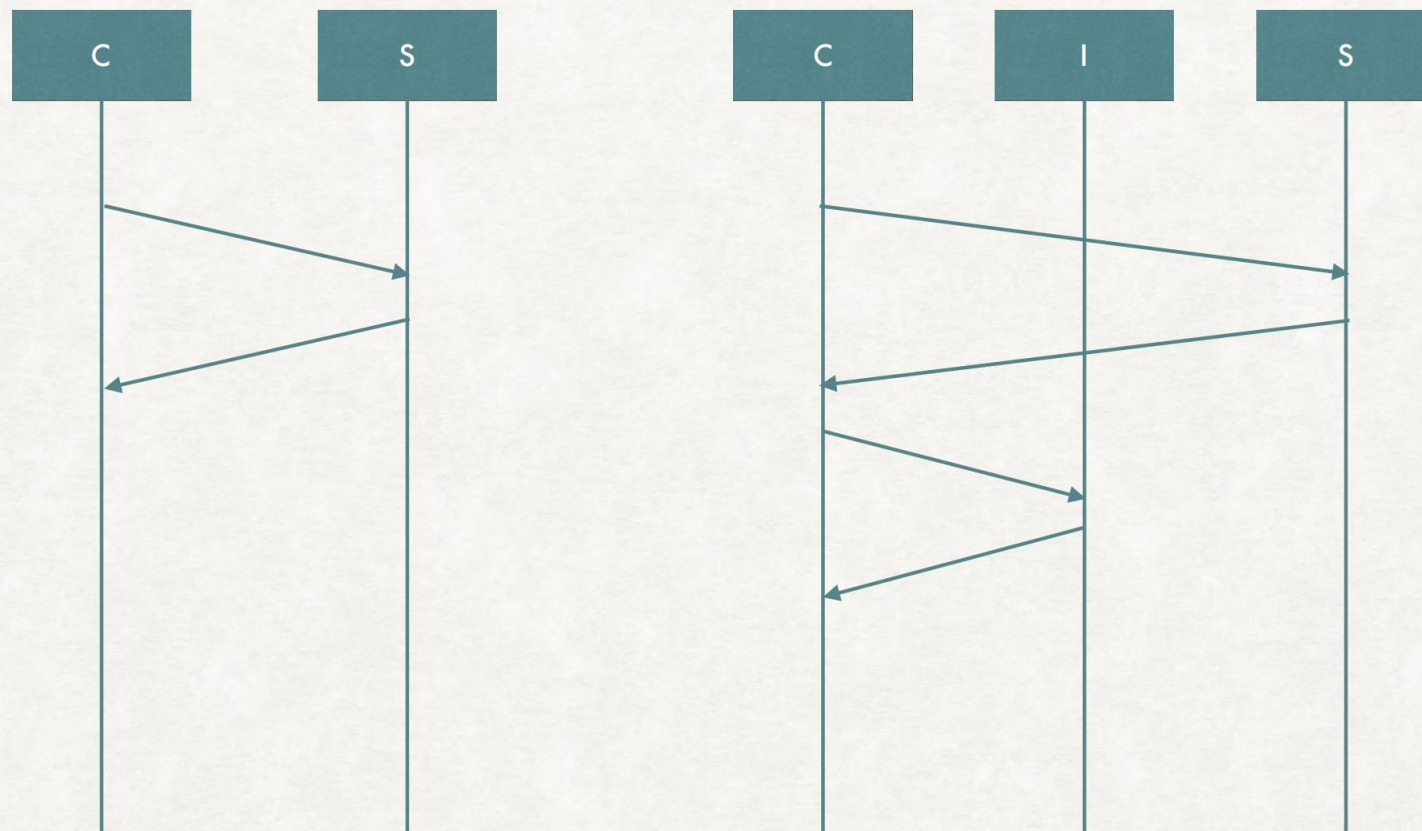## AND HOST CONTENT ANYWHERE

Responses don't include real content

    Content delivered using out of band content encoding

    Plus integrity checks
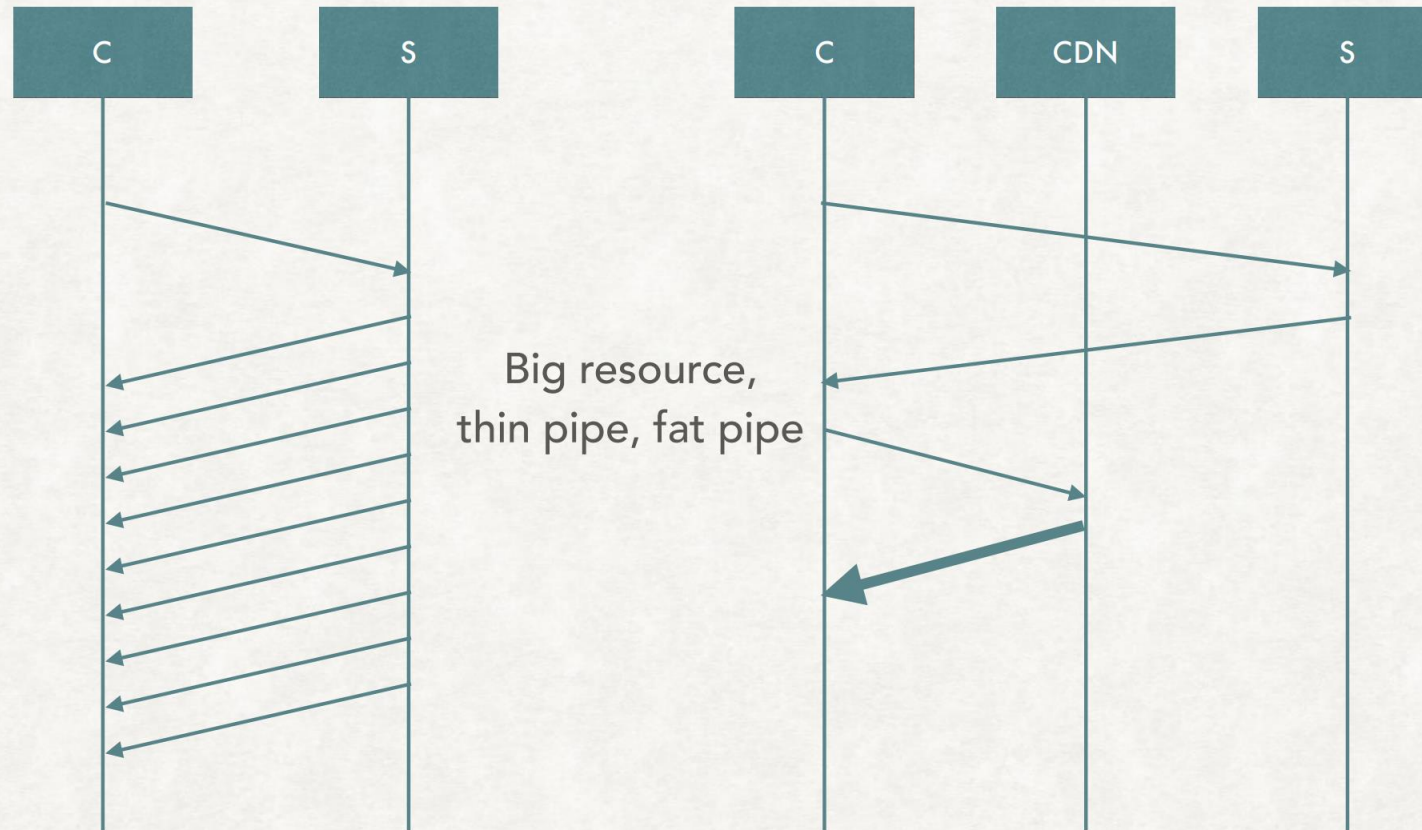
    Plus encryption

SLOWER

MAYBE

GO SLOWER

AND MAYBE, LATER, GO FASTER

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

Building Blocks

Out-of-Band Content Encoding

Something like draft-reschke-http-oob-encoding

Old design only contemplates full-file download; might want ability to do ranges
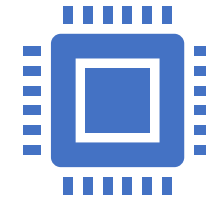
Might want ability to supply multiple retrieval sources, e.g. alternate protocols

Encrypted Content Encoding

RFC 8188

Optional; other node might be trusted to know what the content is

Incremental Integrity

Something like draft-thomson-http-mice

Again, might want ability to do ranges