

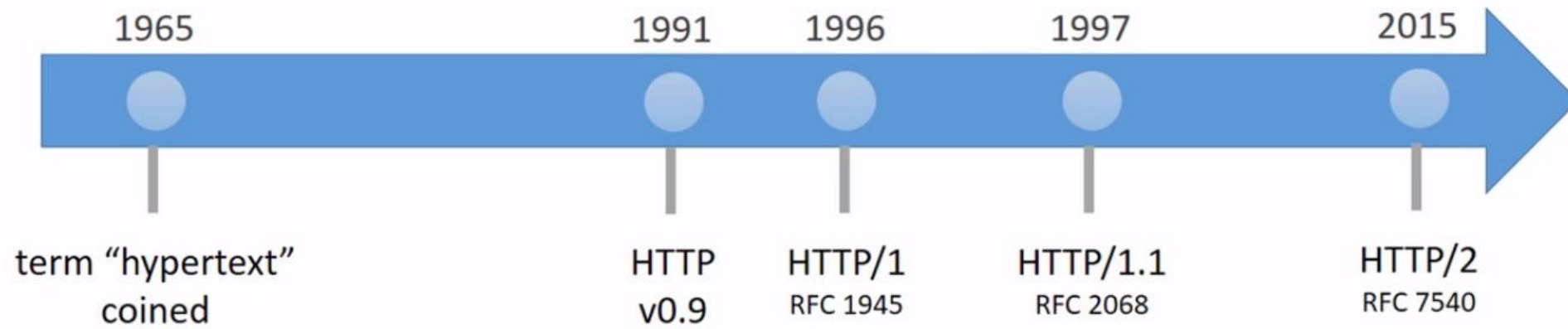
HTTP/2

The Evolution Continues



Agenda

1. HISTORY LESSON
2. HTTP 1.X ISSUES
3. WORKAROUNDS
4. HTTP2



Bird's eye view

The term "hypertext" was coined, based on Vannervar Bush's "memex", concept of shared memory.

1965

1991

HTTP v0.9 was released

1965 - 1991

TCP Based

ASCII
Protocol

Single-line
Request

Sequential
Request

HTTP v0.9



The diagram illustrates the structure of an HTTP request. It consists of three horizontal yellow bars, each with a white text label. To the left of each bar is a vertical line that connects to a horizontal line extending to the right, forming a bracket-like structure. The labels are 'Headers', 'Status Codes', and 'POST & HEAD' from top to bottom.

Headers

Status Codes

POST & HEAD

HTTP/1

1997 - HTTP/1.1

Reuse TCP
Connection

GET, POST

PUT, DELETE

OPTIONS

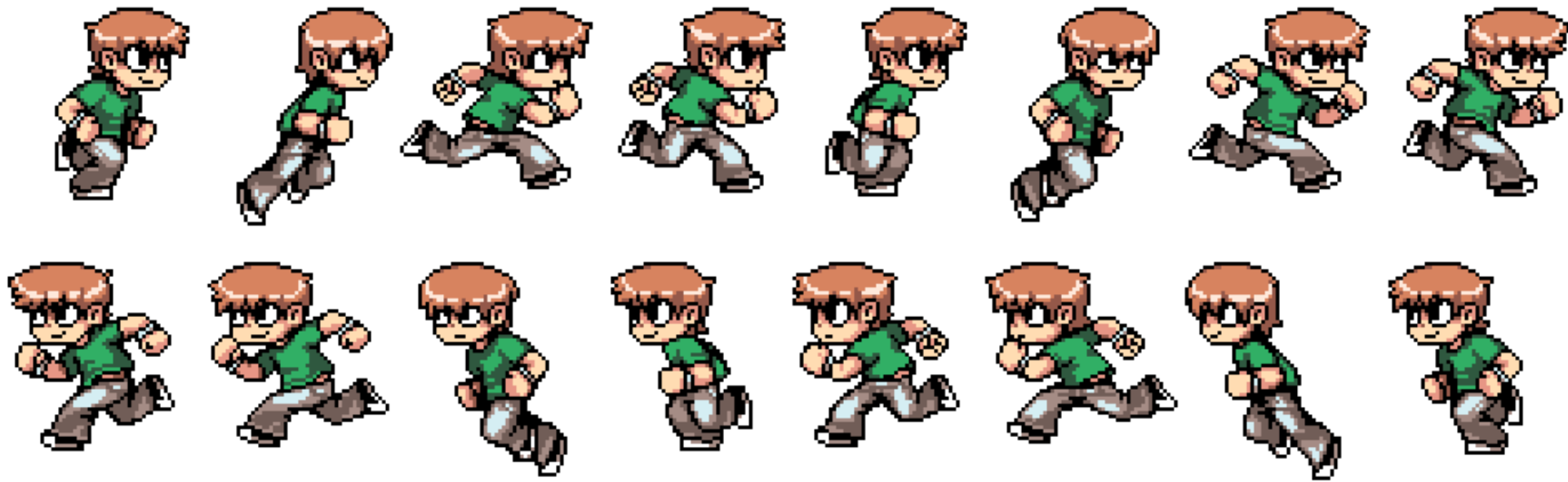
CONNECT

HEAD

TRACE

Issues with HTTP/1.X

- ▶ Head of line blocking
- ▶ Single Request/Response at a time
- ▶ Text based protocol(Uses ASCII encoding)
- ▶ Round-trip Bonanza
- ▶ Increased Latency



HTTP/1.X Workarounds

IMAGE SPRITING

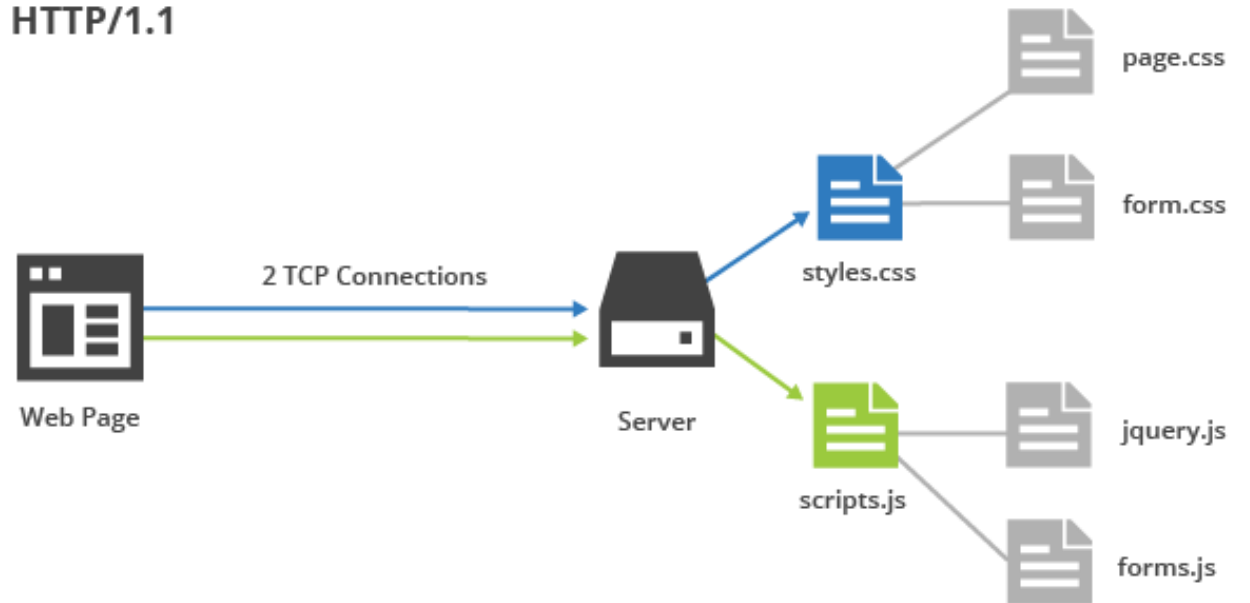
HTTP/1.X Workarounds

Inlining

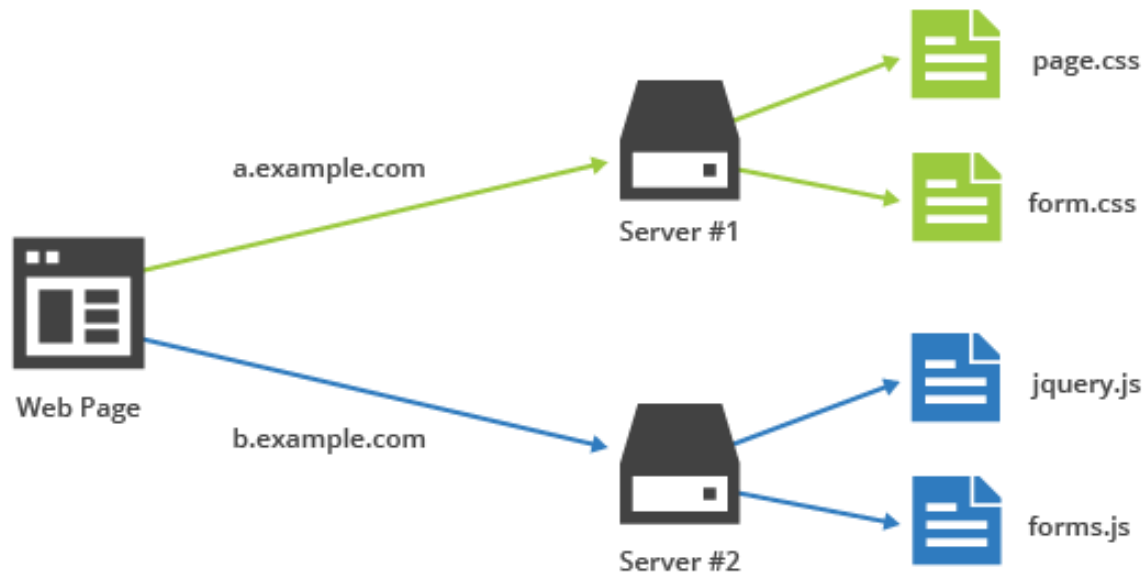
HTTP/1.X Workarounds

- File Concatination

HTTP/1.1



Domain Sharding



HTTP/1.X Workarounds

DOMAINSHARDING



**drum roll
please...**

HTTP/2

For Faster and Safer Internet

How does it help?

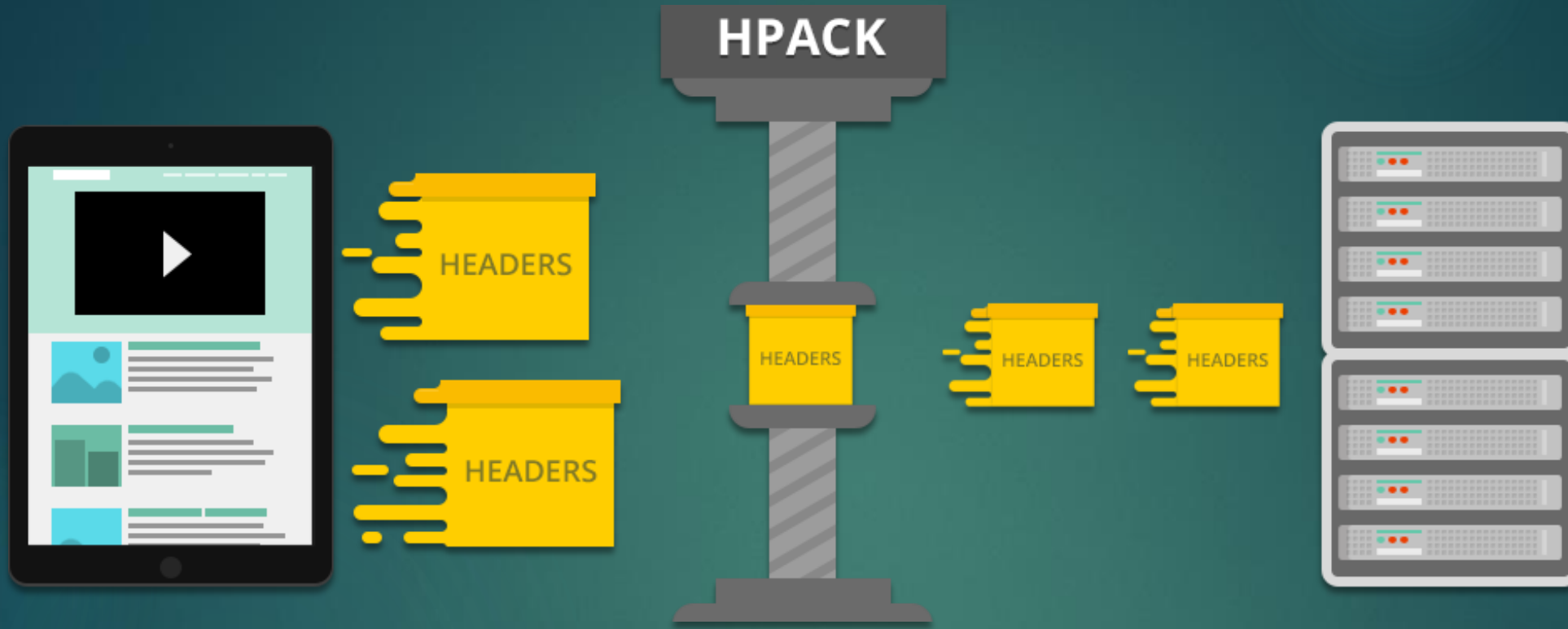
Single TCP
Connection

Binary
Protocol

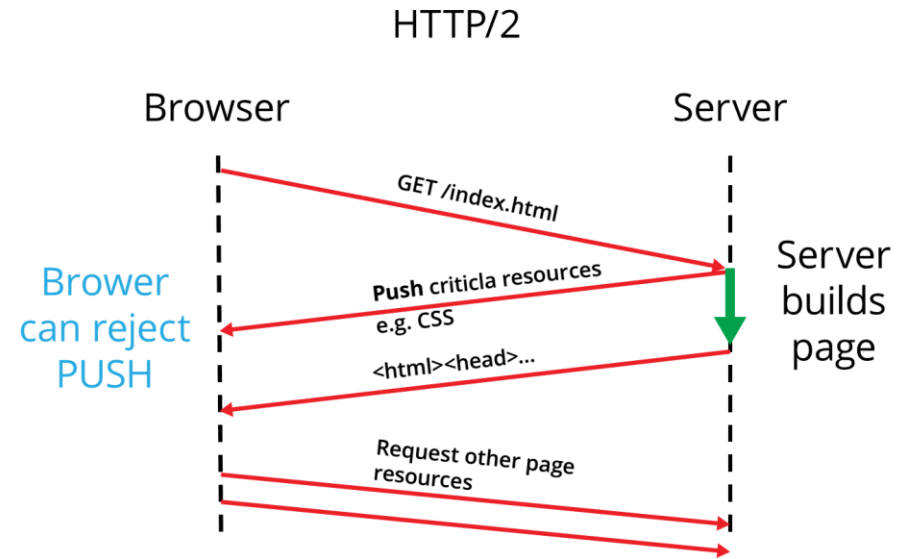
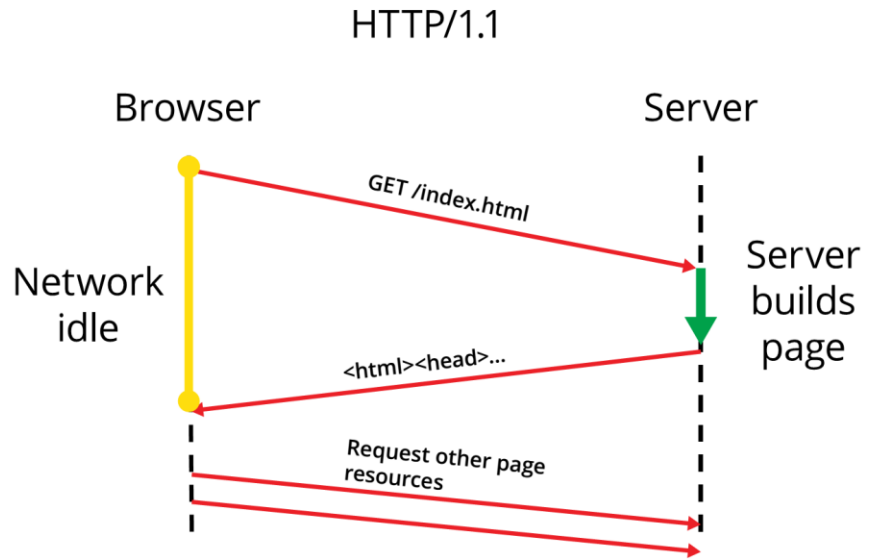
Fully
Multiplexed

Header
Compression

Server Push

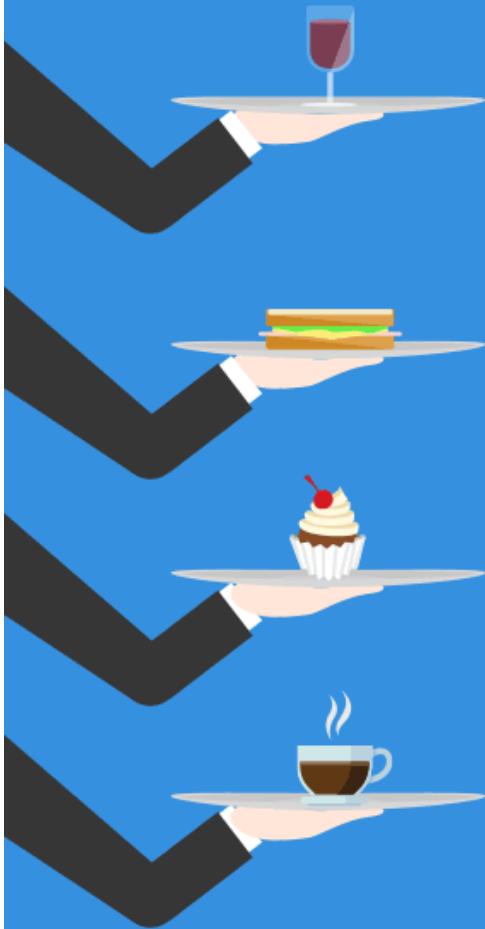


Header Compression



HTTP/2 Server Push

HTTP/1.1



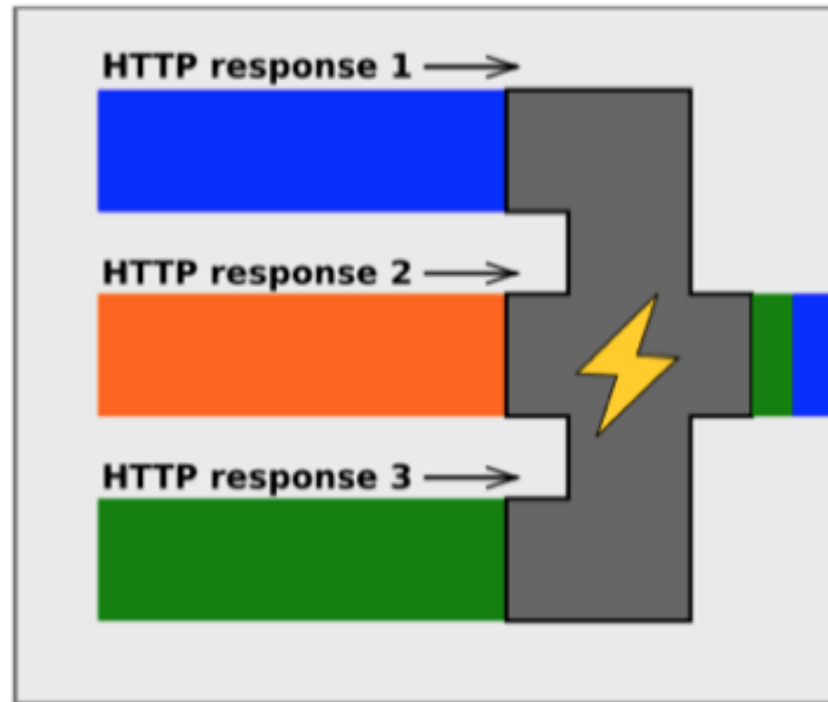
HTTP/2



Request
multi-
plexing

HTTP/2 Inside: multiplexing

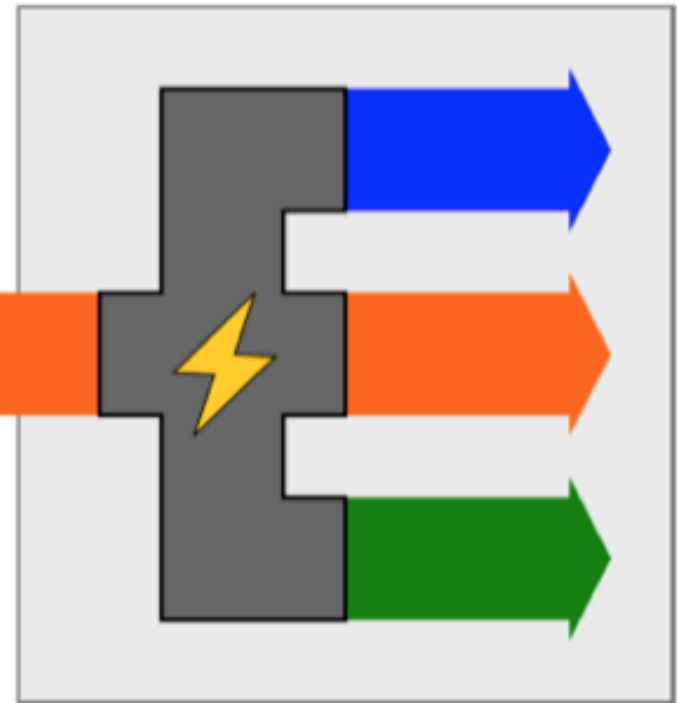
Server



HTTP/2 →

Single TCP connection

Client



Soo.... how does
that help us?

HTTP/2 on user-end

- ▶ Faster page loads
- ▶ More responsive loading
- ▶ Decreased bandwidth usage



HTTP/2 on developer's end

- ▶ No need for HTTP/1.X work-arounds
- ▶ Decreases CPU & Bandwidth usage on server end

SO CURIOUS

WOW

SUCH INQUISITIVE

MUCH WORK TO FIND OUT

MUST BE SO ANNOYED

Curious about HTTP/3?

IT MIGHT JUST HAPPEN SOONER THAN
IT TOOK US TO MOVE FROM HTTP/1.1
TO HTTP/2



THE END