HTTP/2

- a major revision of the HTTP.
  - Approved as a Proposed Standard on February 17, 2015.

- standardization effort supported by most major browsers
  - HTTP/2 support added by the end of 2015.

- As of Sep 2019, 40.7% of top 10 million websites supported HTTP/2*

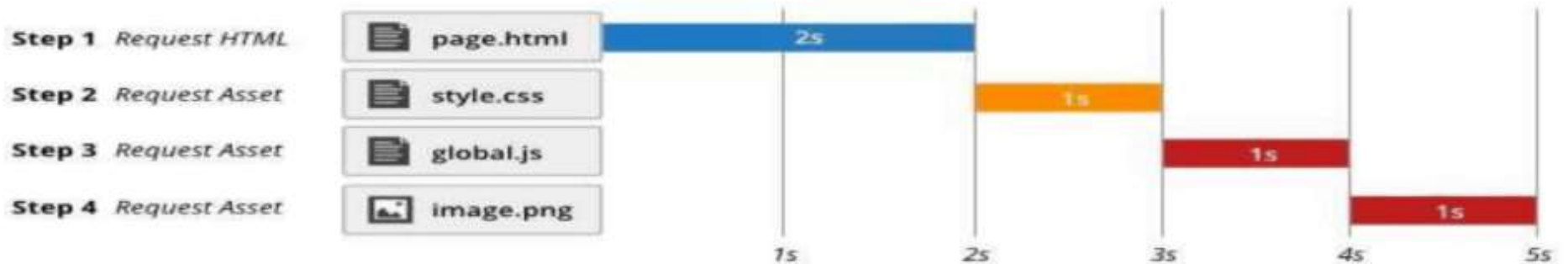*WorldWideWebTechnology Surveys*. W3Techs. Retrieved September 1, 2019

HTTP/2 CAPABILITIES

▶ **Maintain high-level compatibility with HTTP 1.1**

  ▶ All methods, status codes, and URIs, and most header fields supported.

▶ **Negotiation mechanism**

  ▶ Allows Web clients and servers to elect to use HTTP 1.1, 2.0, or potentially other non-HTTP protocols.

▶ **Decrease latency**

  ▶ improve page load speed in web browsers by introducing new features.

HTTP/2 - NEW FEATURES

▶ HTTP/2 Server Push

▶ Multiplexing multiple requests over a single TCP connection

▶ Fixing the head-of-line blocking problem in HTTP 1.x

▶ Support for desktop web browsers, mobile web browsers, web APIs, web servers at various scales, proxy servers, reverse proxy servers, firewalls, and content delivery networks.
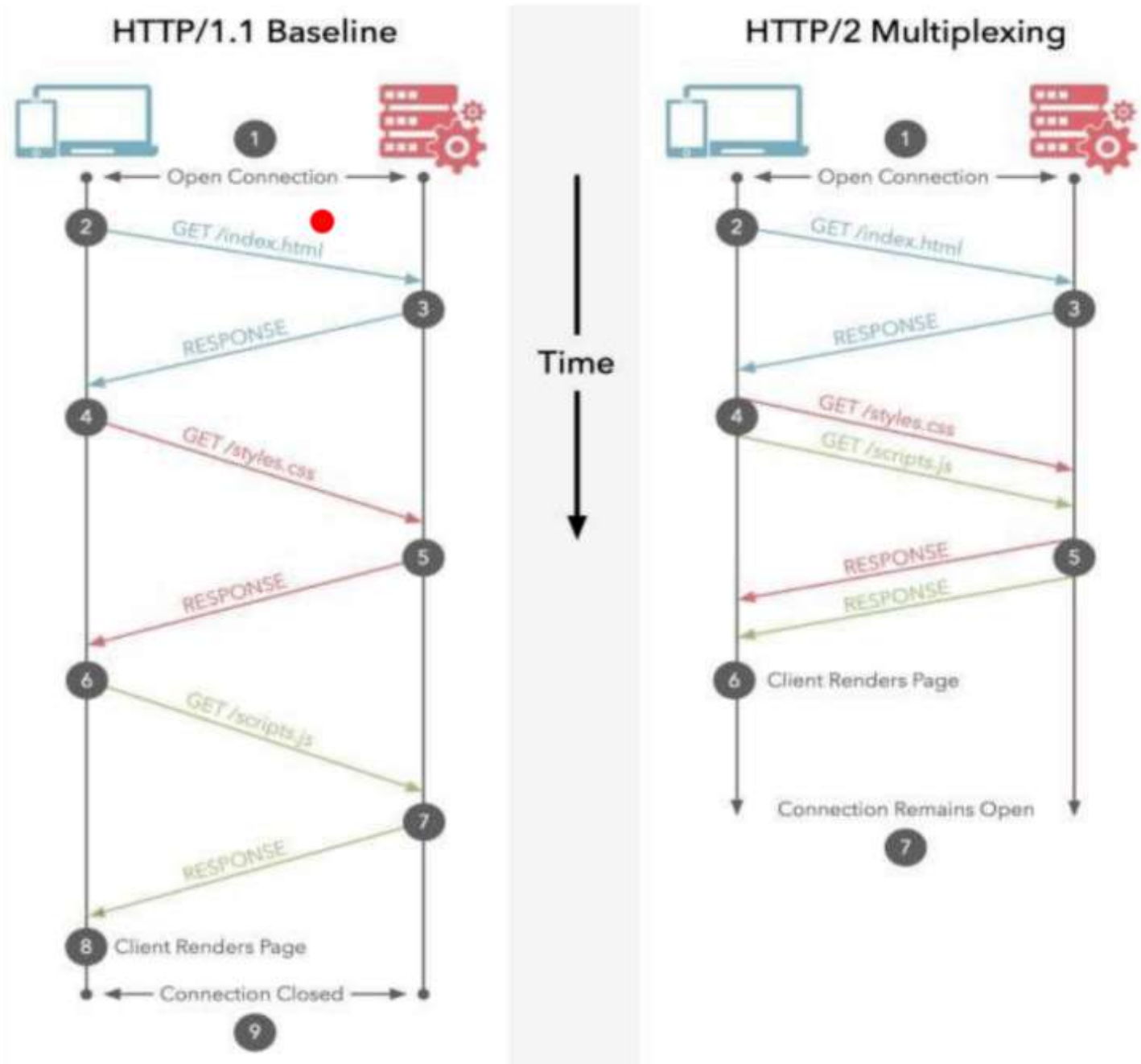
HTTP/2.0 NEW FEATURES - SERVER PUSH

HTTP/1.1

Step 1 *Request HTML*	page.html	2s	
Step 2 *Request Asset*	style.css	1s	
Step 3 *Request Asset*	global.js	1s	
Step 4 *Request Asset*	image.png	1s	

1s 2s 3s 4s 5s

HTTP/2 Without Server Push

Step 1 *Request HTML*	page.html	2s	
Step 2 *Request Assets*	style.css	1s	
	global.js	1s	
	image.png	1s	

1s 2s 3s

HTTP/2 With Server Push

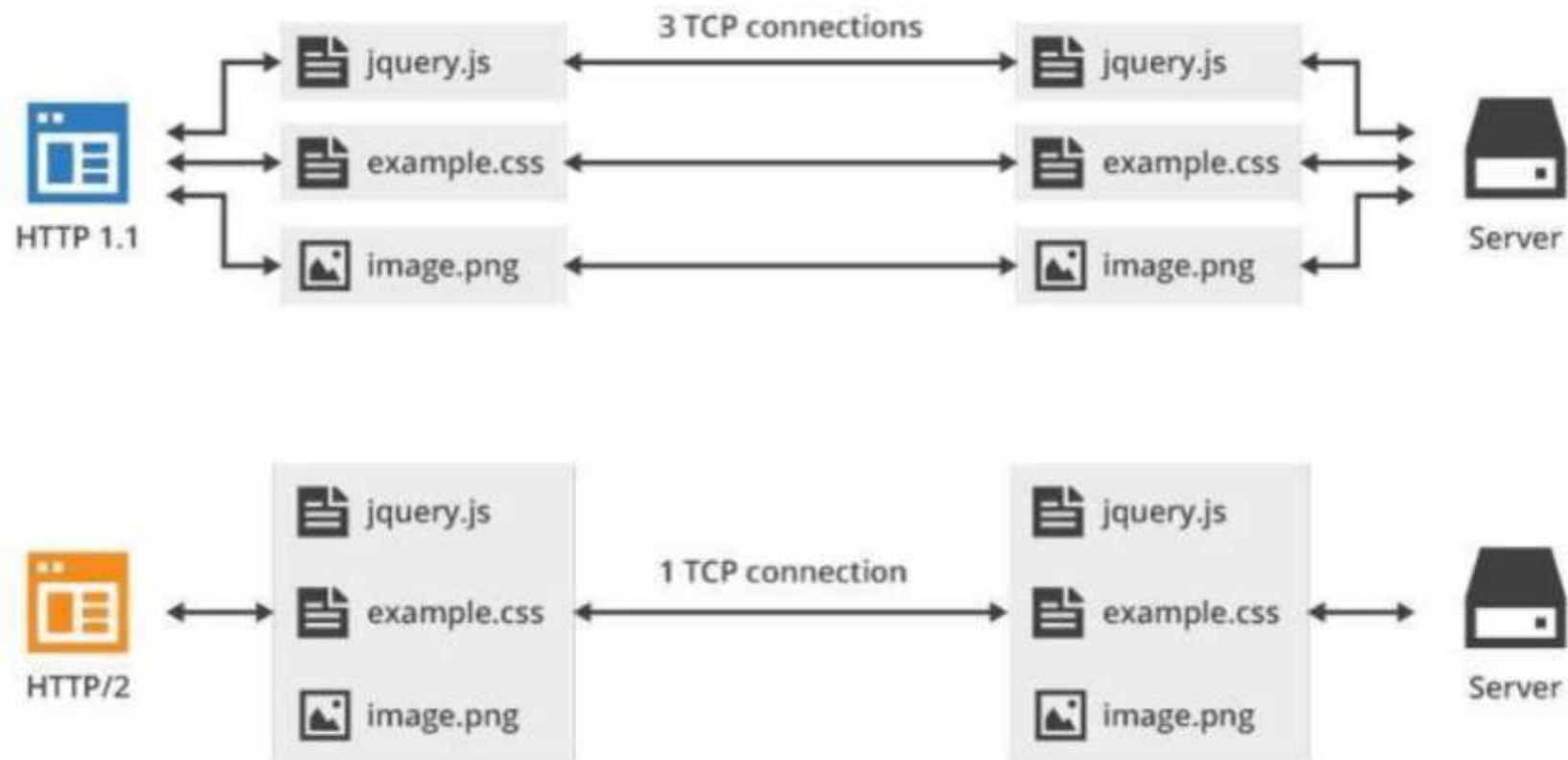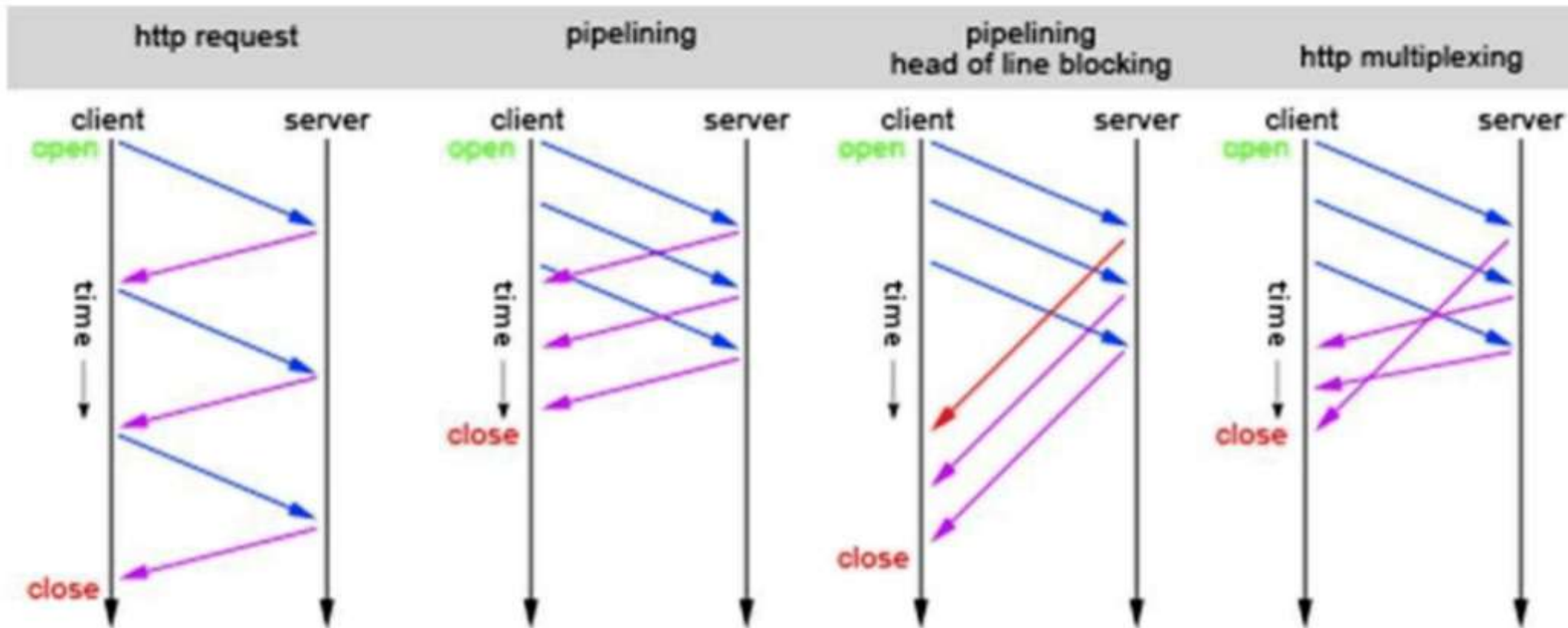|			
Step 1 *Request HTML*	page.html	2s	
(There is no step 2)	style.css	1s	
	global.js	1s	
	image.png	1s	

1s 2s

HTTP/2.0 NEW FEATURES - MULTIPLEXING

HTTP/2.0 NEW FEATURES
- ADDRESSING HEAD-OF-LINE BLOCKING

HTTP/2.0 NEW FEATURES
MULTIPLEXING & ADDRESSING HEAD-OF-LINE BLOCKING

HTTP/2.0 NEW FEATURES

- Support for
  - Desktop web browsers
  - Mobile web browsers
  - WebAPIs
  - Web servers at various scales
  - Firewalls
  - Proxy servers
  - Reverse proxy servers
  - Content delivery networks.