Using Wireshark to Analyze Core Applications – FTP, HTTPs, and TLS

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Module Overview

Let's talk FTP

- FTP vs. SFTP vs. TFTP
- Common issues in file transfers

Analyzing HTTPs

- Do we have to decrypt to troubleshoot?

Analyzing TLS

File Transfer Protocol

Simple File Transfer

FTP Client or built-in browser

File Transfer Methods

FTP

- Easy file transfer
- Not a secure protocol (clear text on wire)

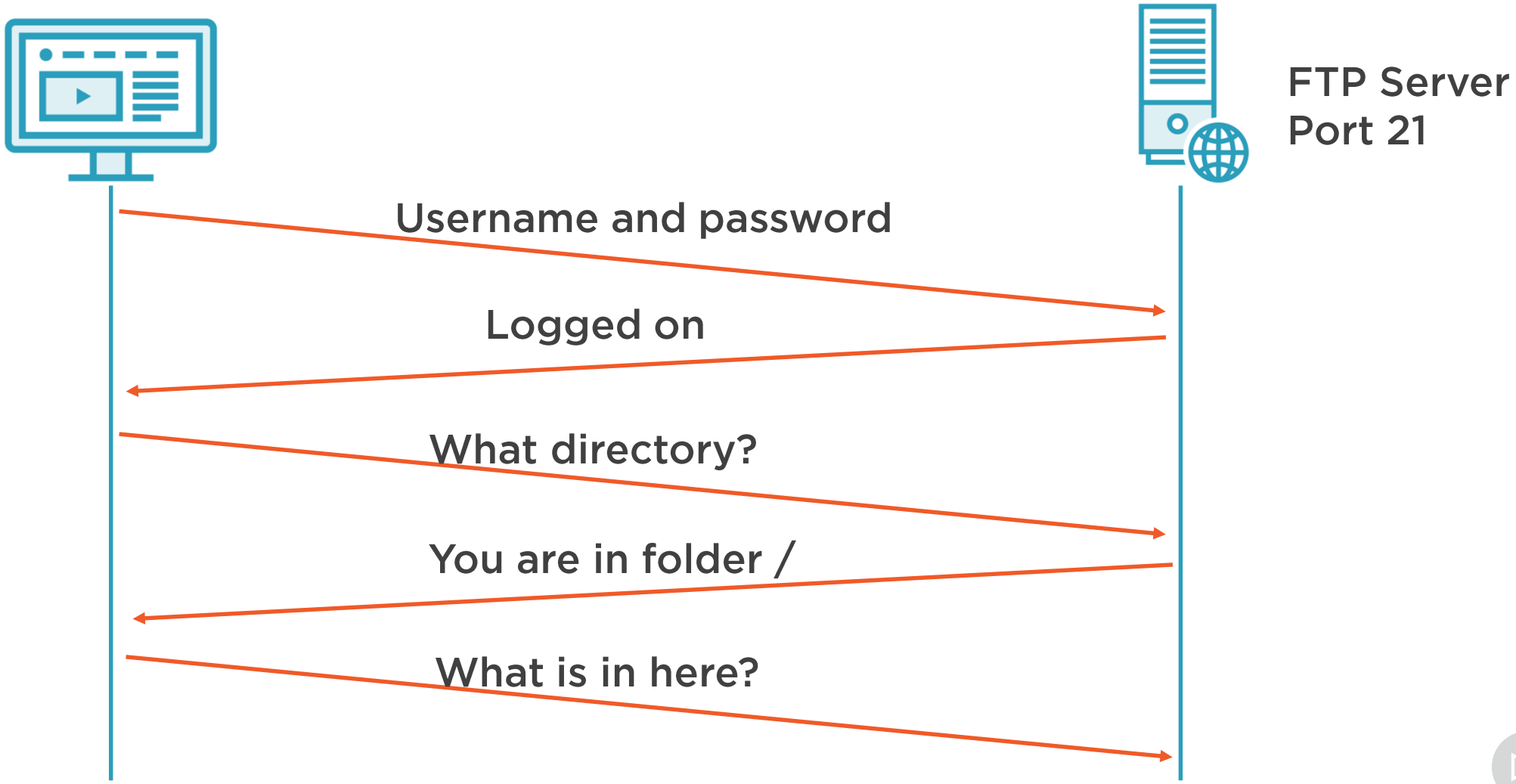
sFTP

- Secure FTP
- Adds a layer of transport security - SSH

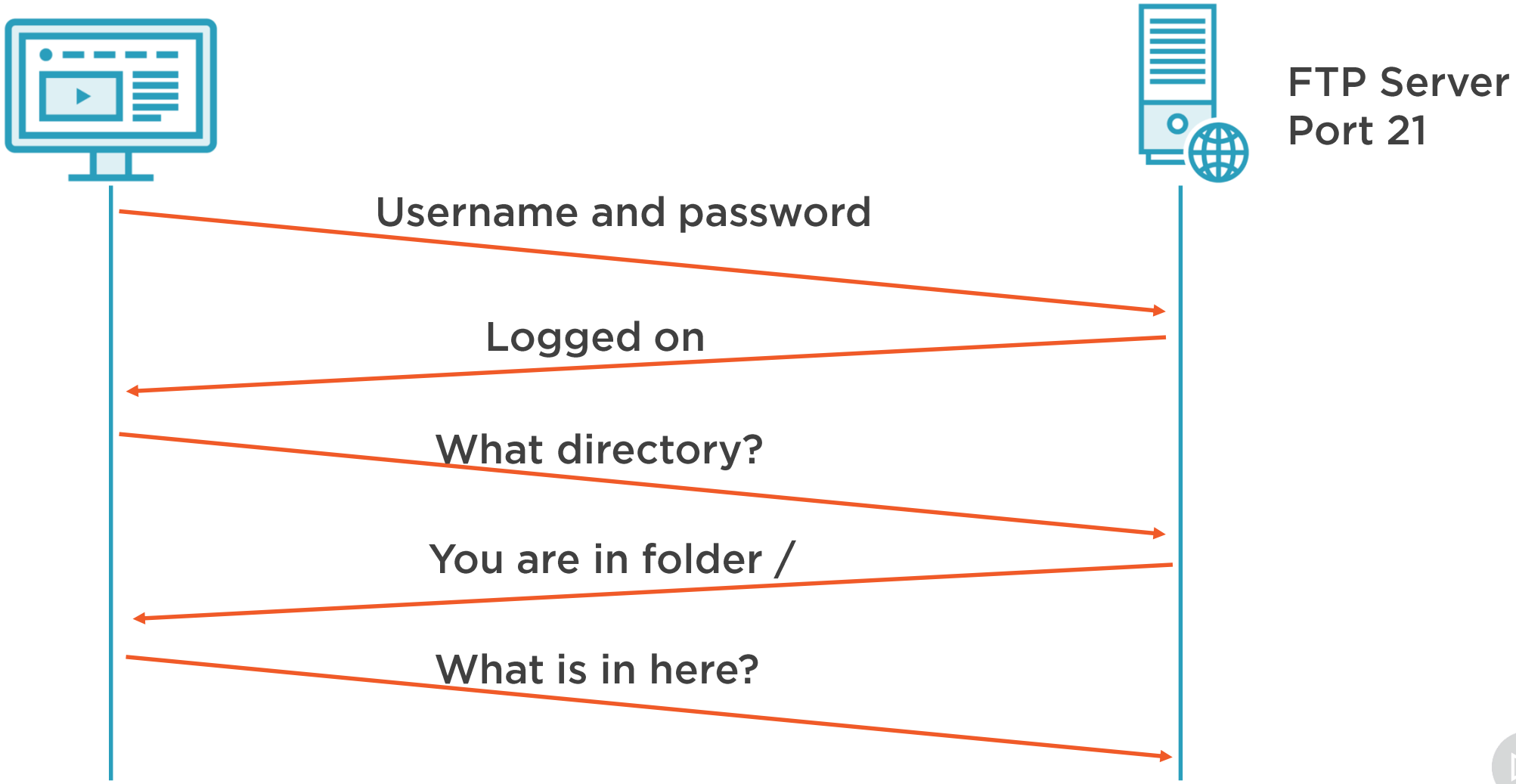
TFTP

- Trivial File Transfer Protocol – used within LAN over UDP
- Configuration files to network devices

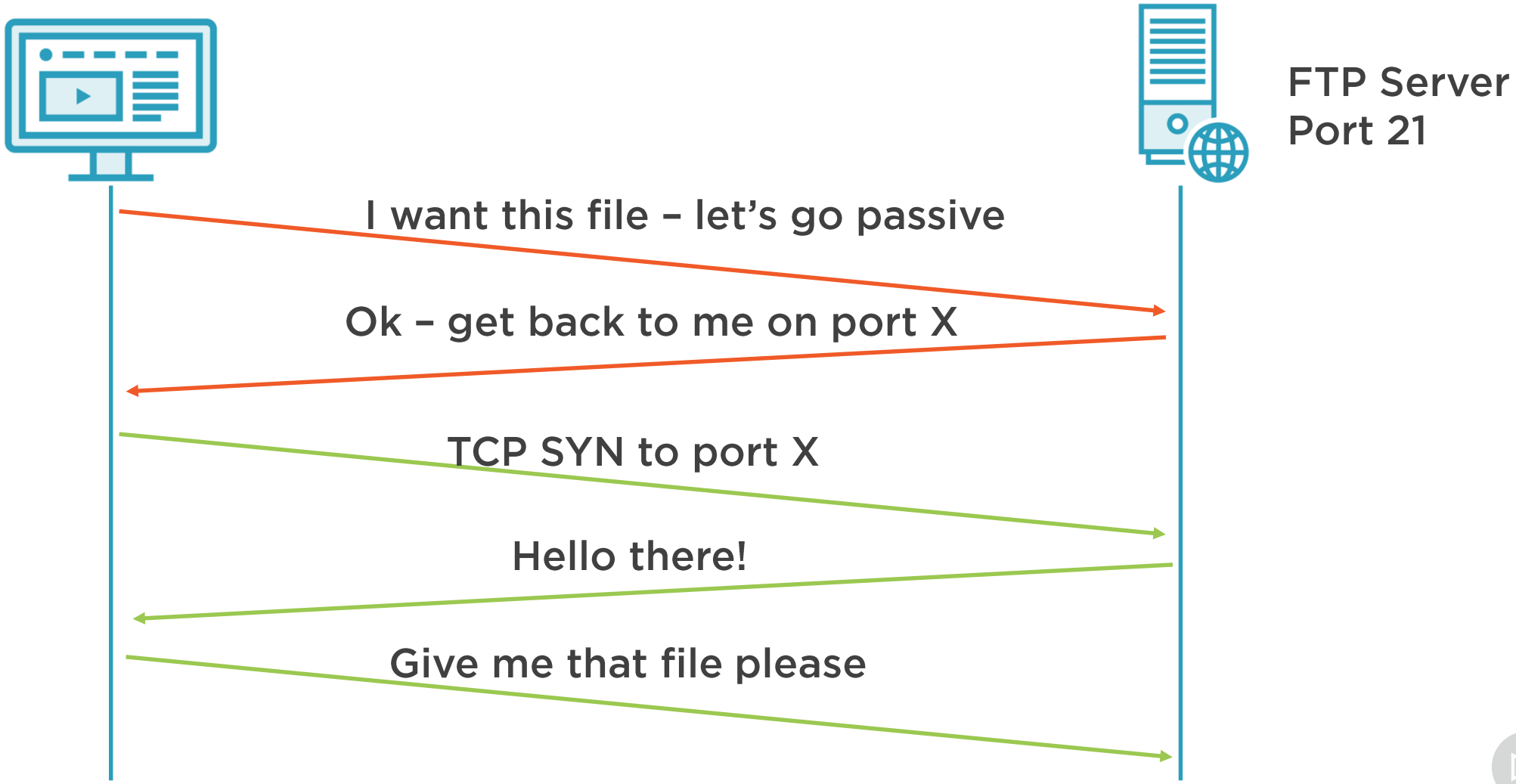
FTP Connect and Login



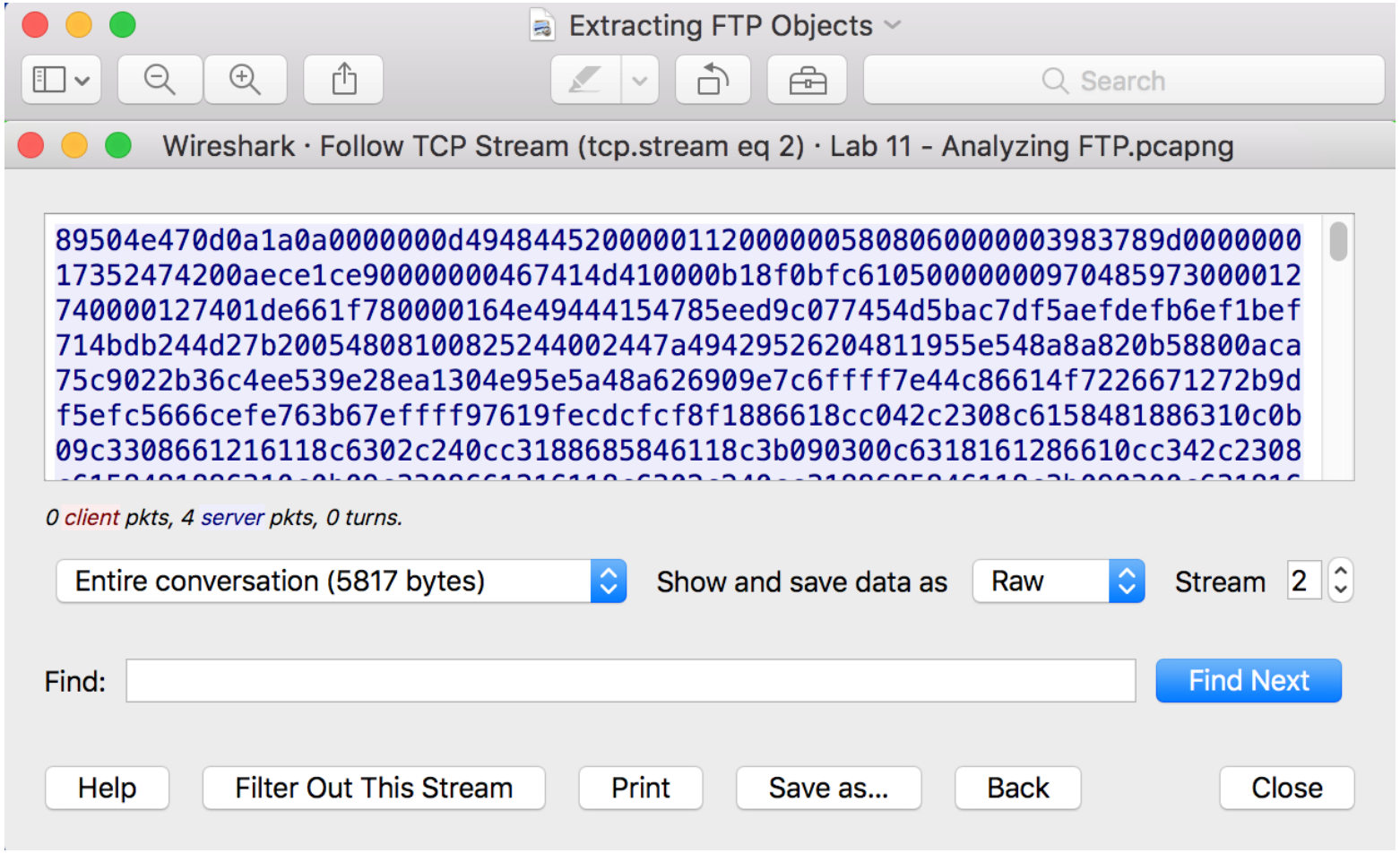
FTP Connect and Login



File Transfer



Exporting FTP Files in Wireshark

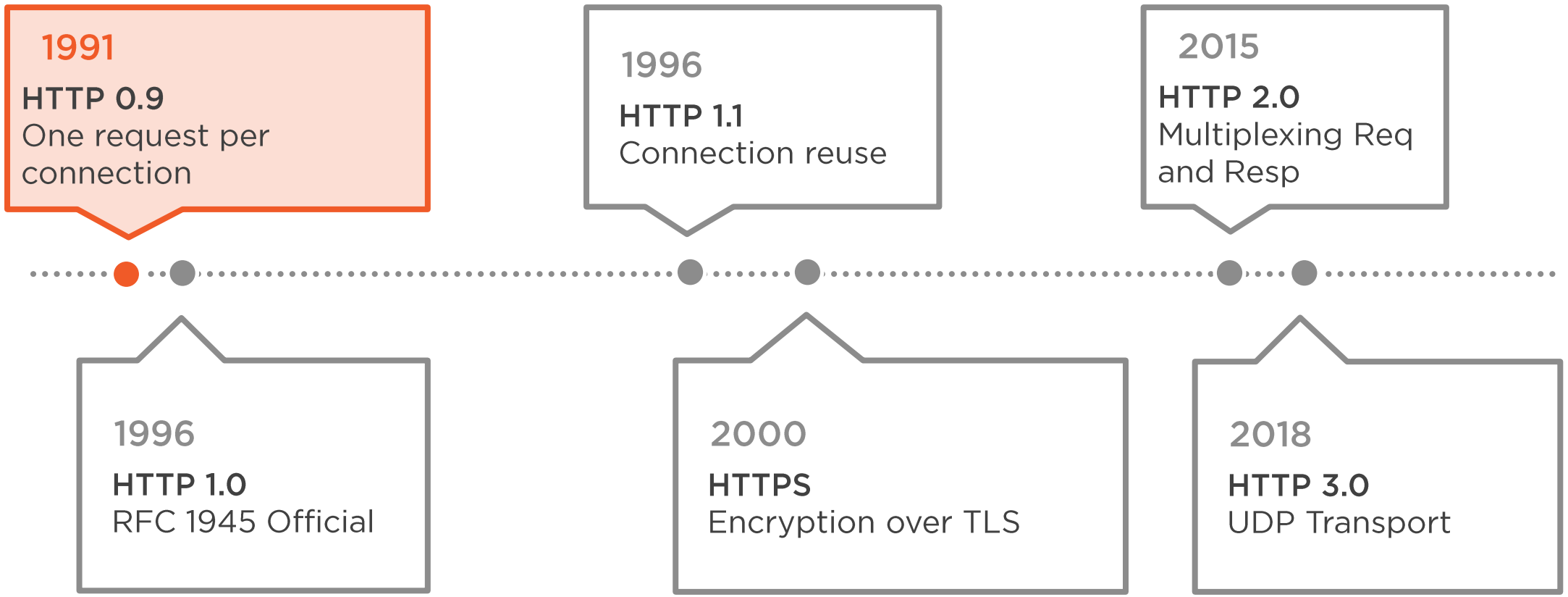


Demo

Analyzing FTP with Wireshark

HTTPs and TLS

Hypertext Transfer Protocol



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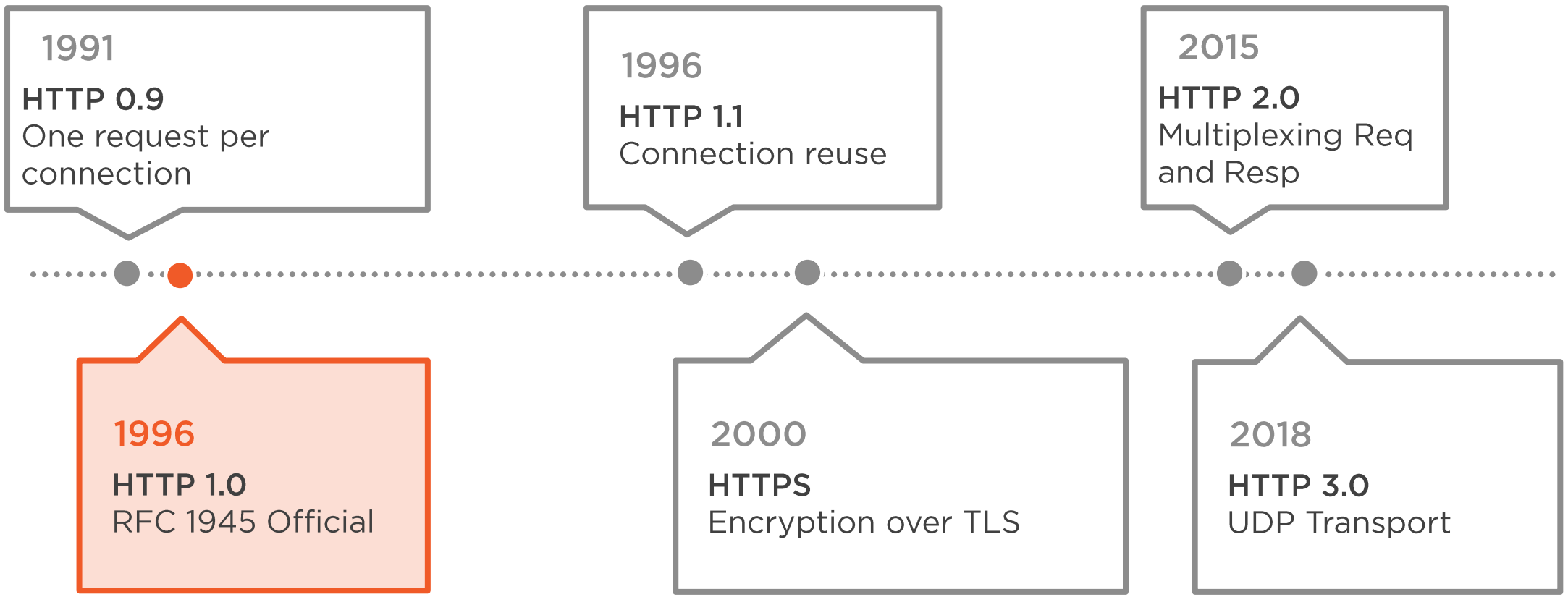
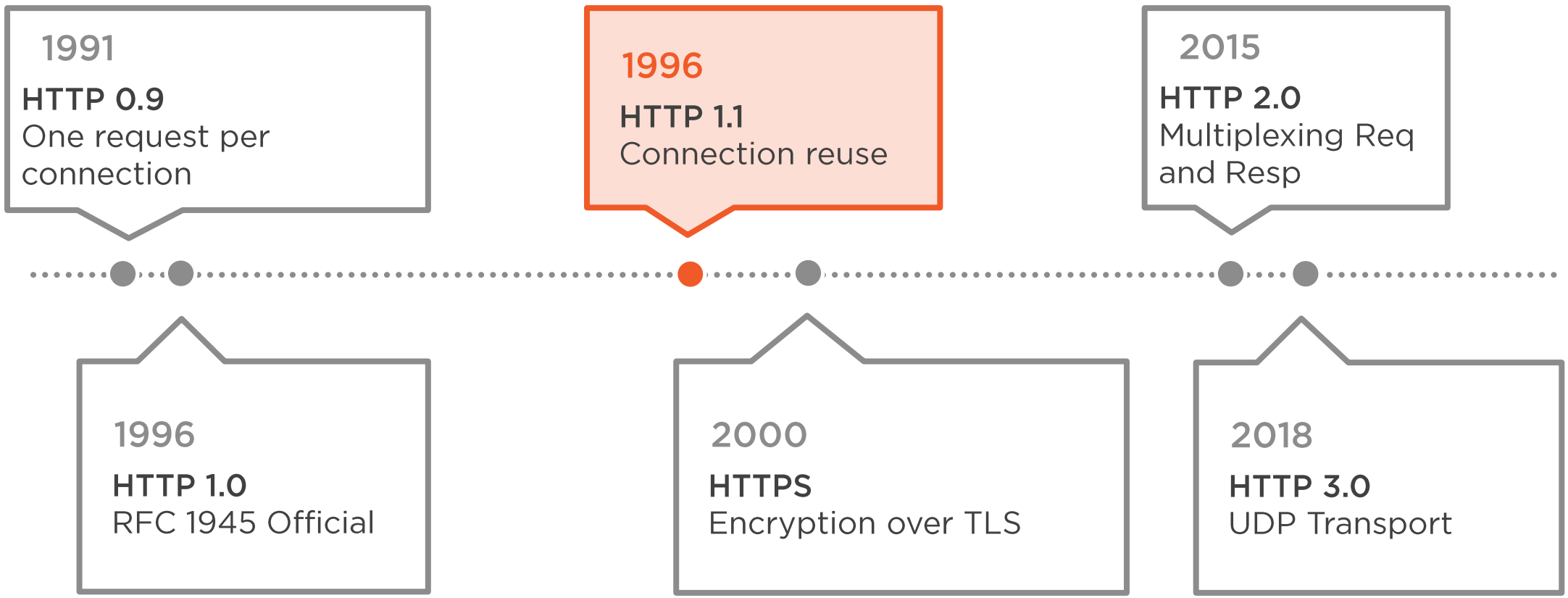
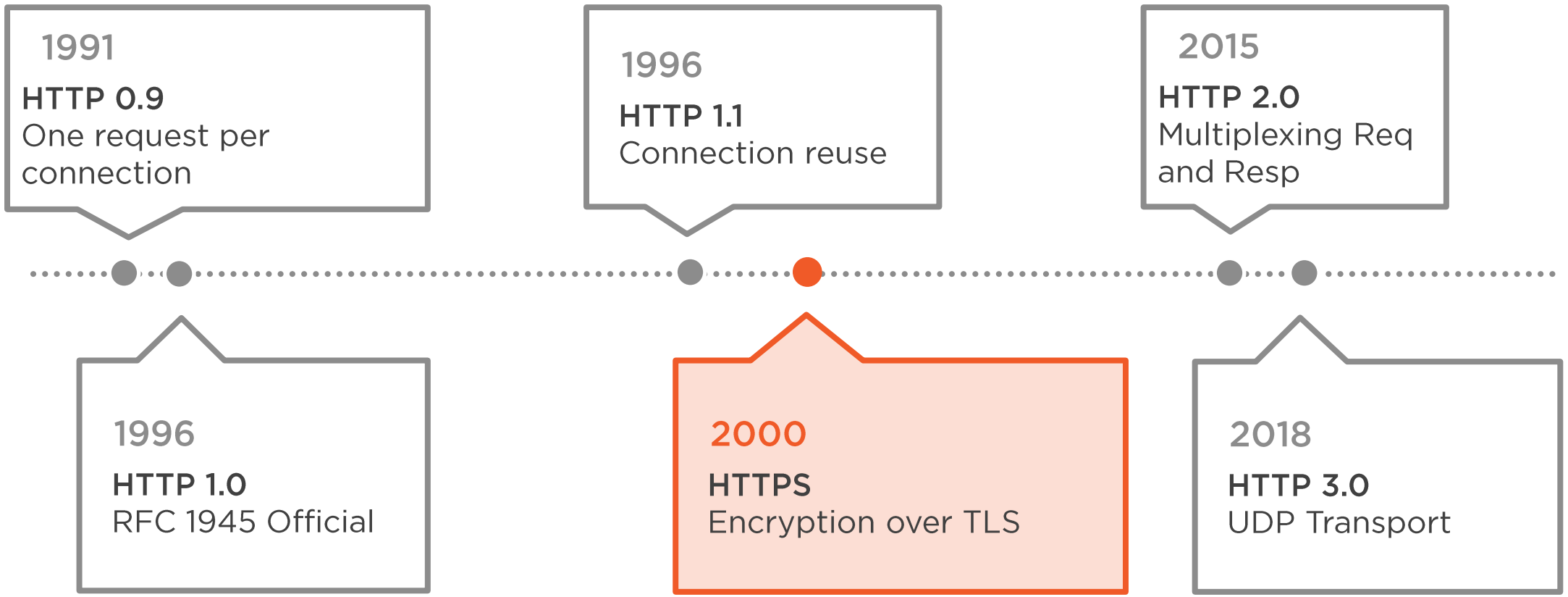


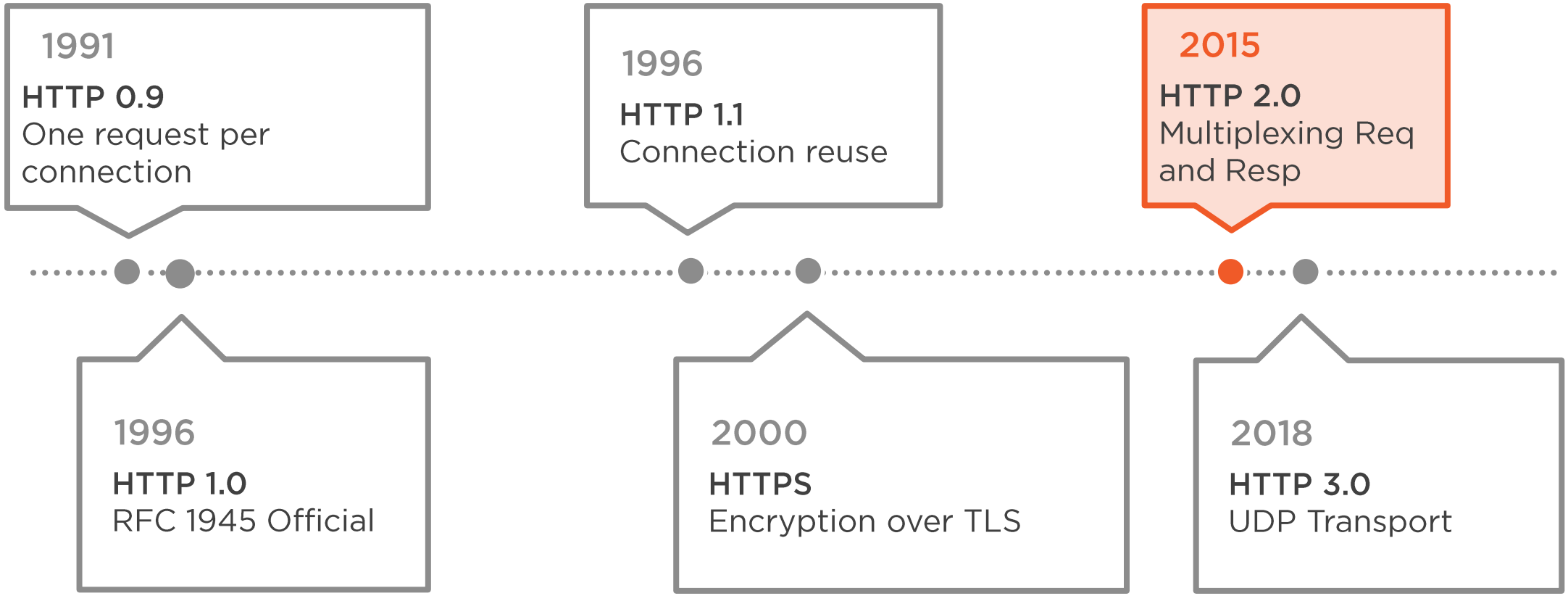
Hypertext Transfer Protocol



Hypertext Transfer Protocol



Hypertext Transfer Protocol



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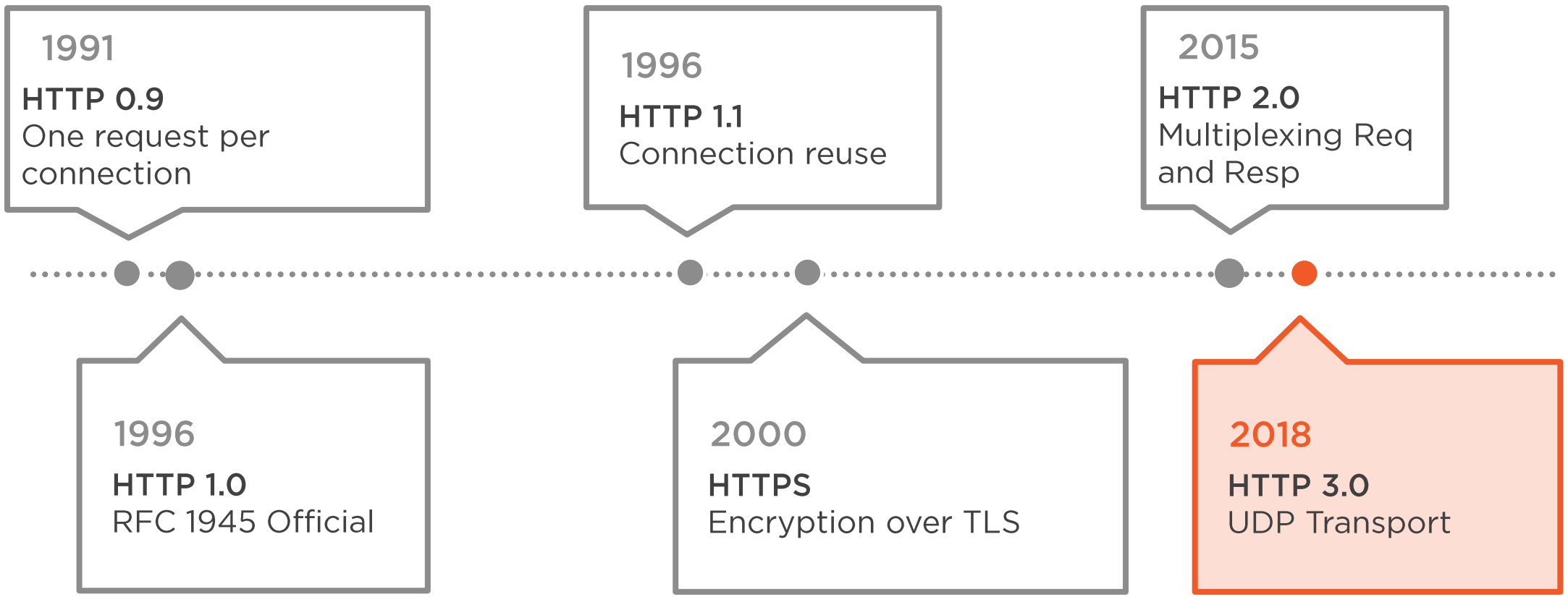
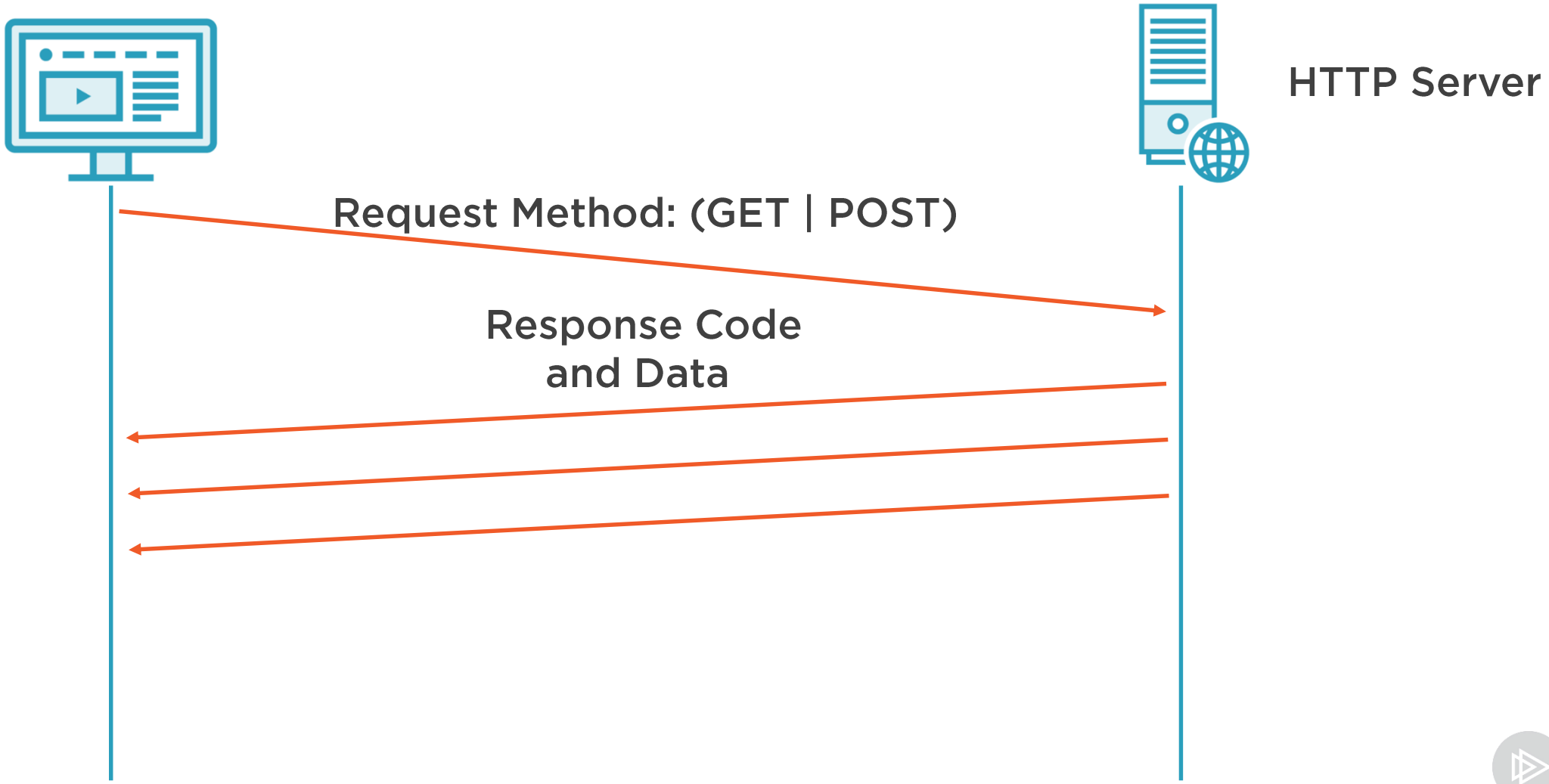


HTTP Request and Response



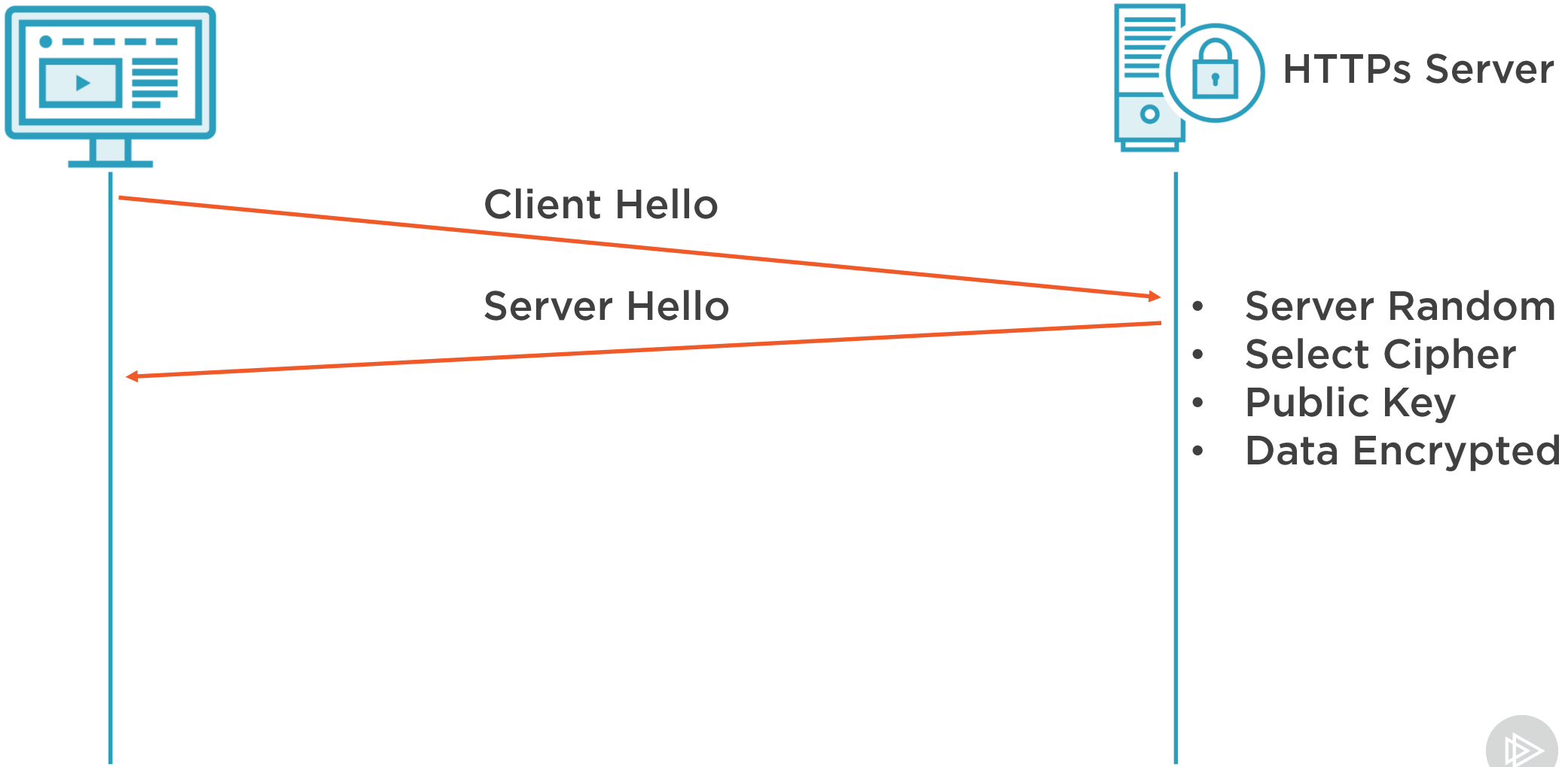
HTTP over TLS 1.3

HTTPs Server

Client Hello

- Client Key Gen
- Client Random
- Cipher Suites
- Public Keys
- Protocol Versions

HTTP over TLS 1.3



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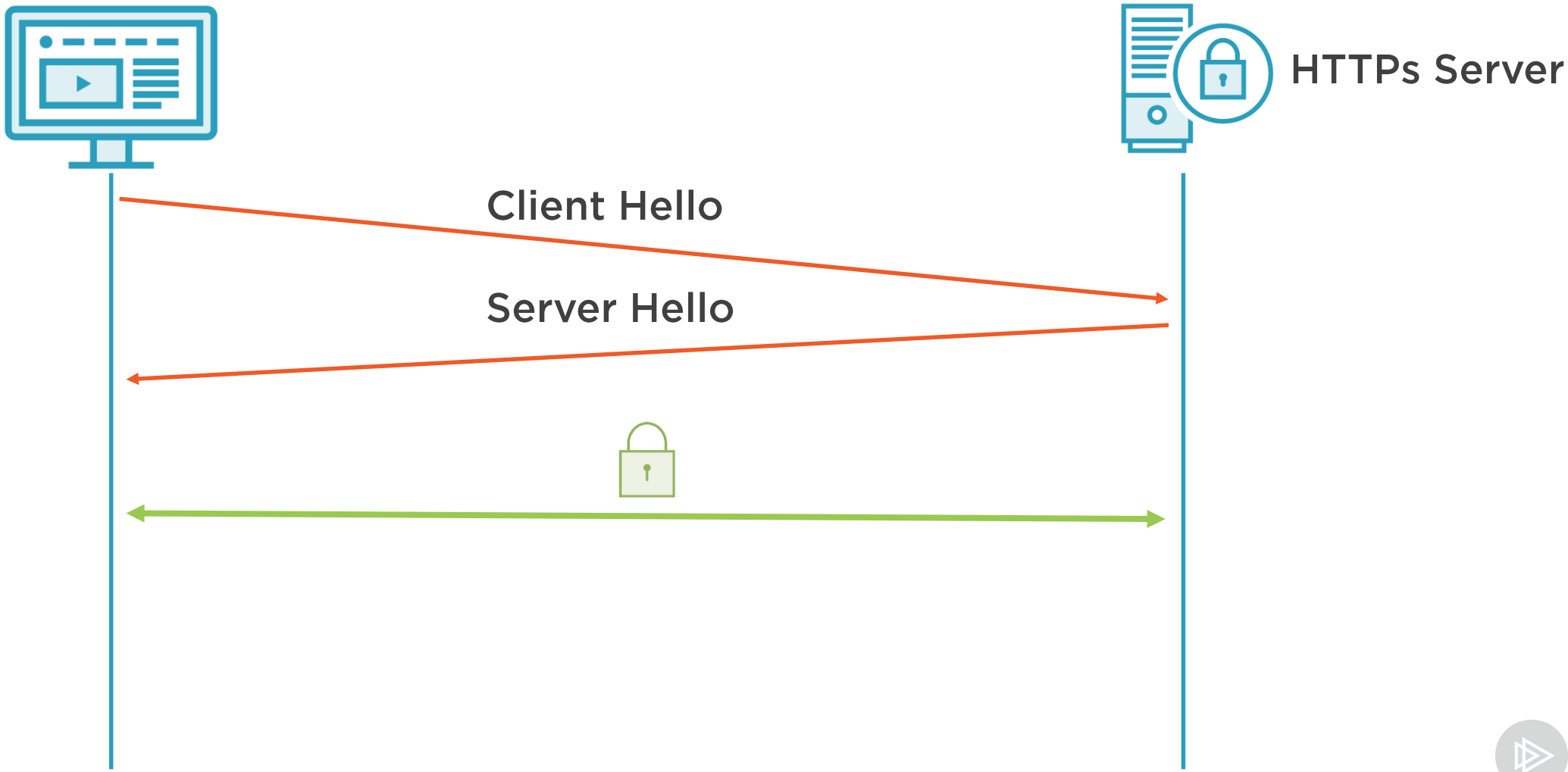
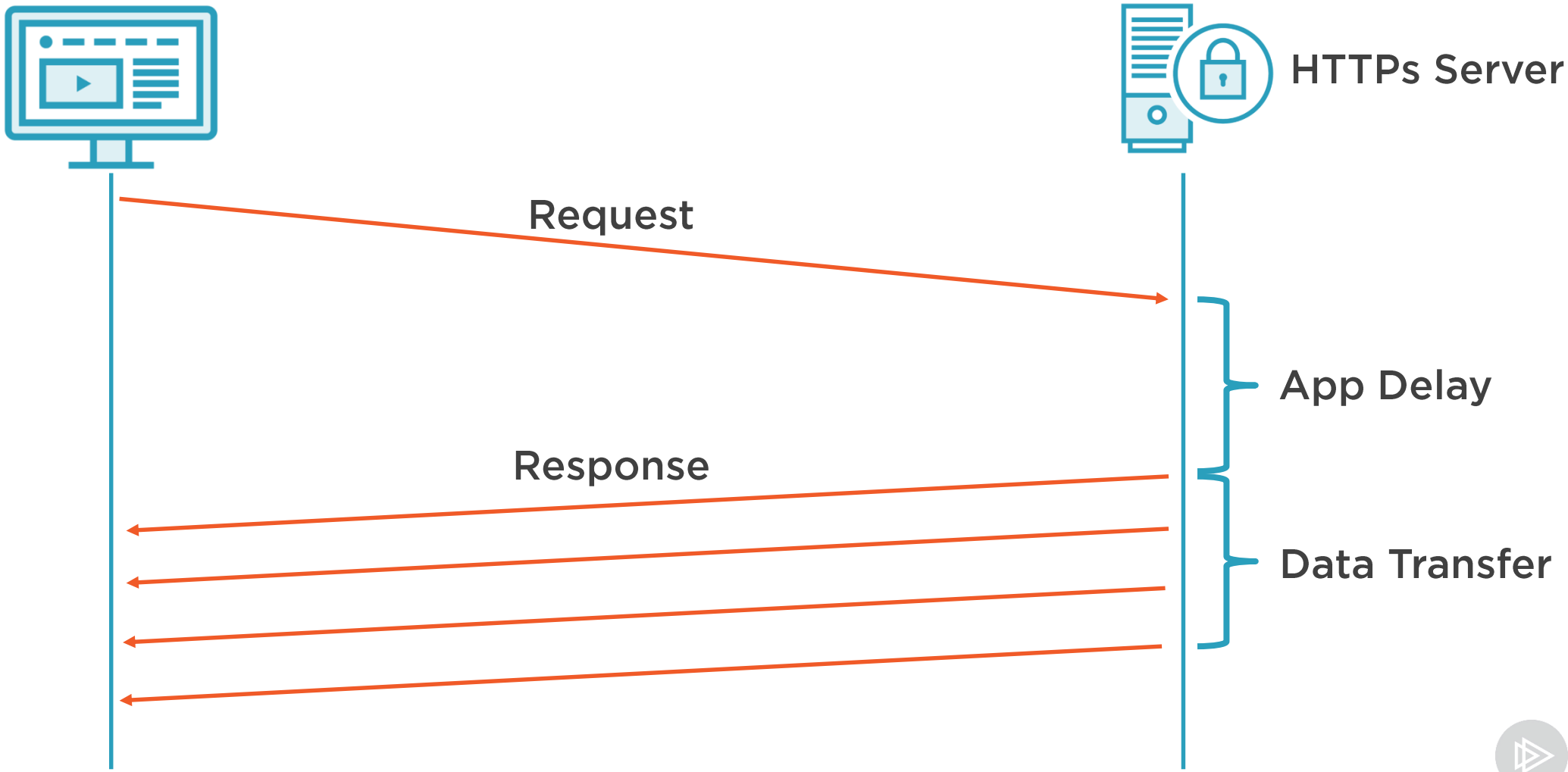


Do We Have to Decrypt?



Demo

Analyzing HTTPs over TLS

Review

FTP – Active vs. Passive

- File extraction and reassembly

Analyzing HTTPs

- Do we have to decrypt to troubleshoot?

Analyzing TLS