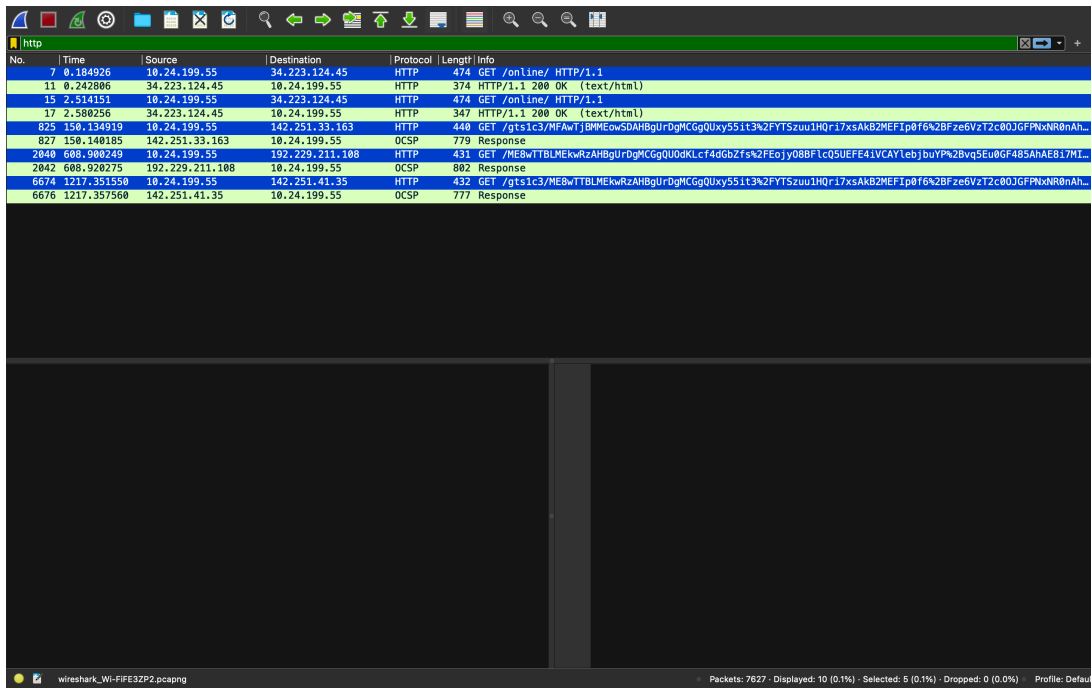


Name: Stuti Parmar  
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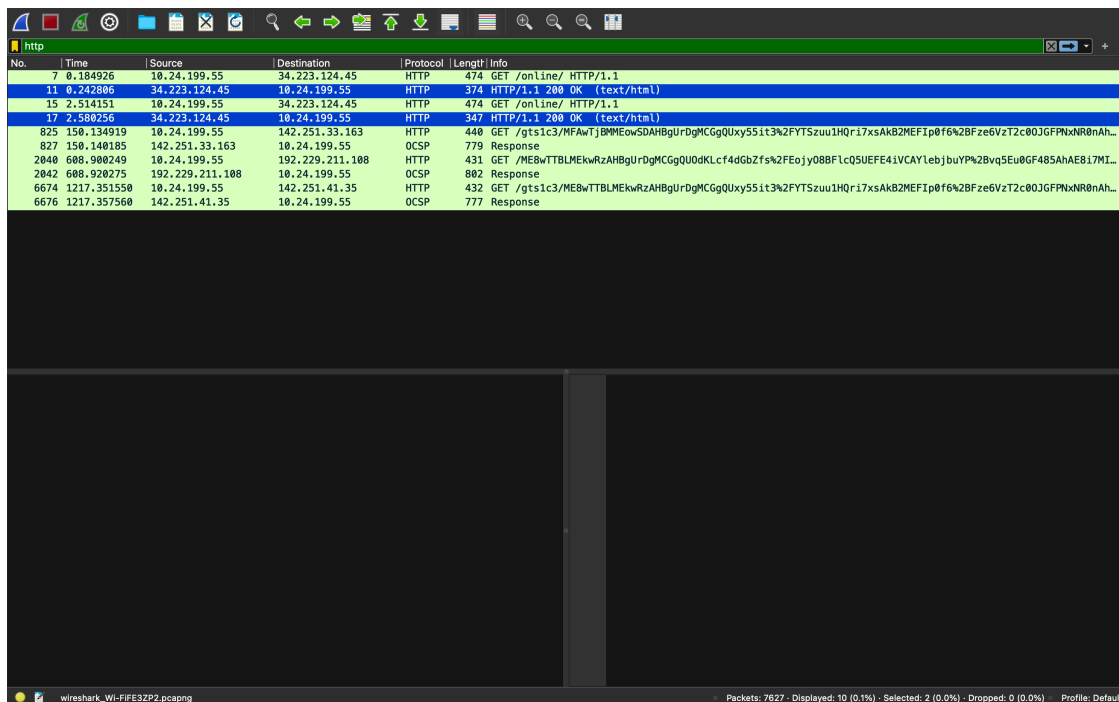
## Assignment 1 - EECS 3214

### QUESTION 1:

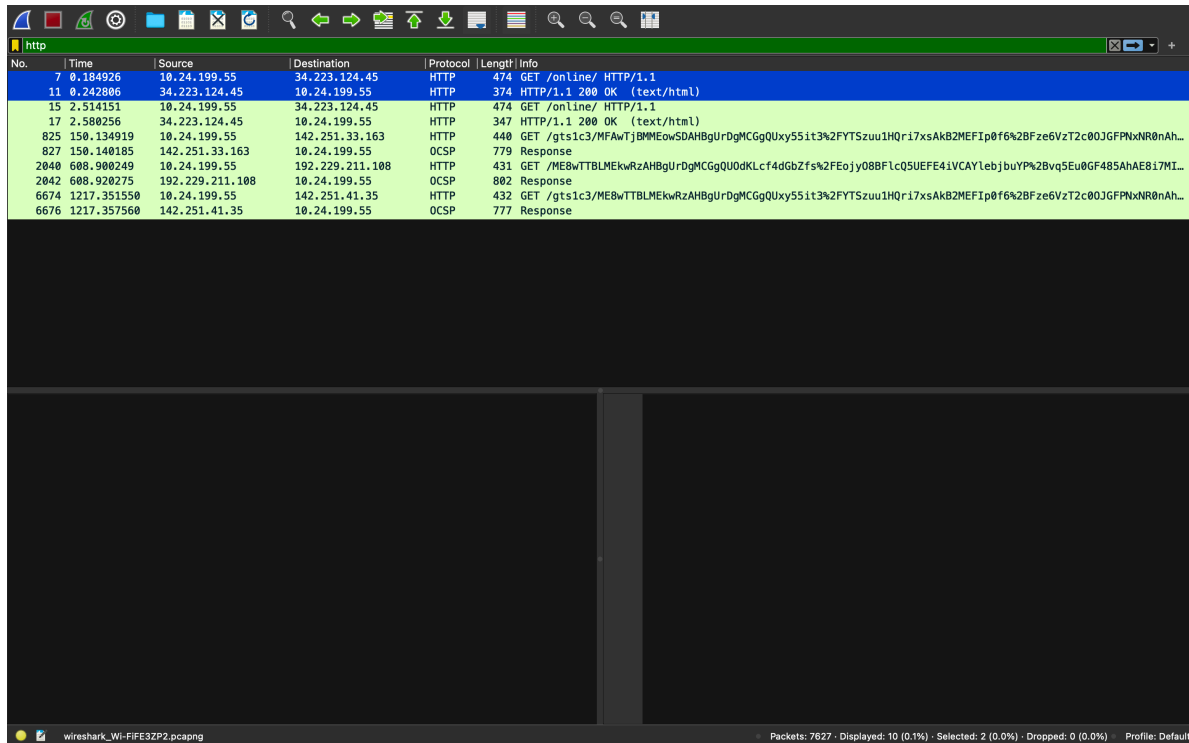
1-A) Wireshark screenshot with “GET” messages :-



Wireshark screenshot with “OK” messages :-



Selected file/object with 2 messages highlighted “GET” and “OK” message :-

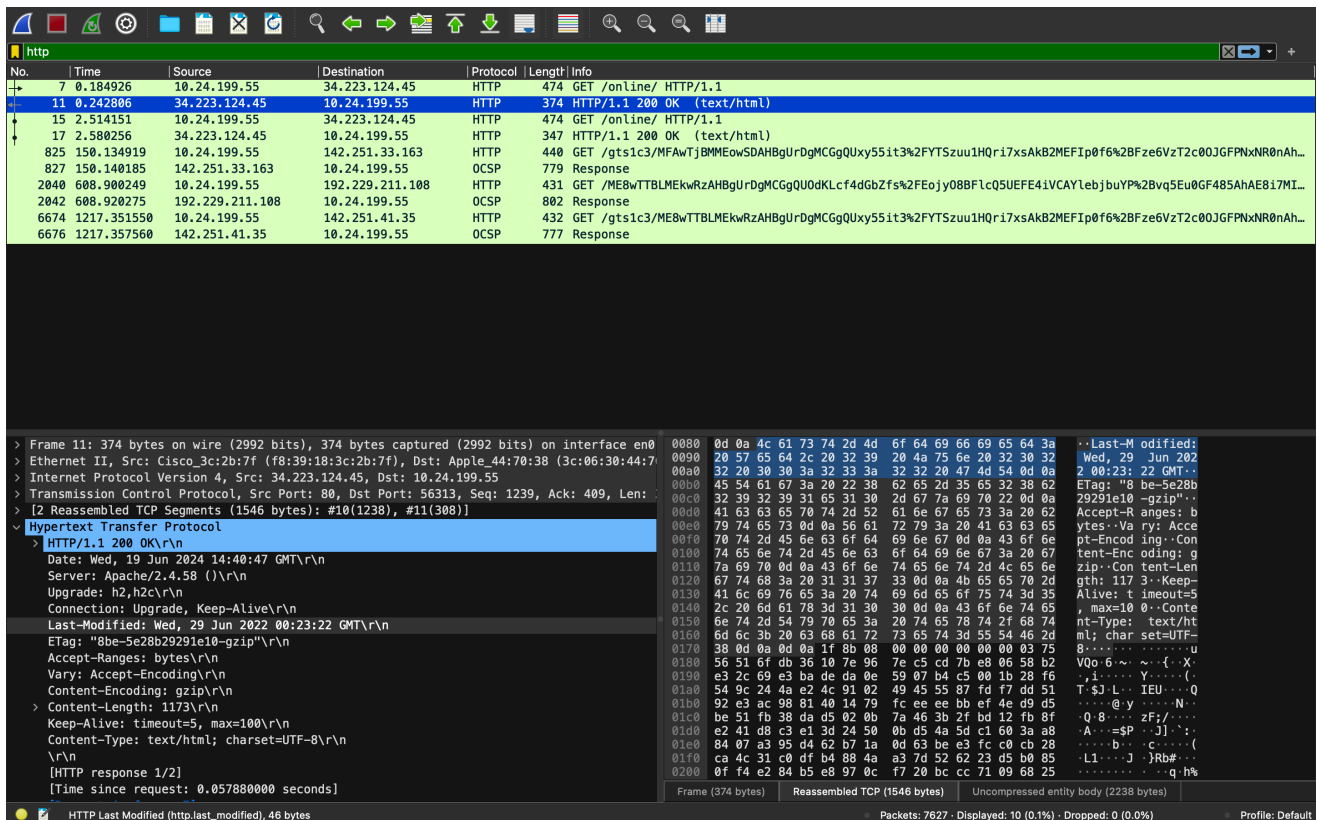


The screenshot shows a Wireshark packet capture of an HTTP transaction. The packet list table is as follows:

No.	Time	Source	Destination	Protocol	Length	Info
7	0.184926	10.24.199.55	34.223.124.45	HTTP	474	GET /online/ HTTP/1.1
11	0.242806	34.223.124.45	10.24.199.55	HTTP	374	HTTP/1.1 200 OK (text/html)
15	2.514151	10.24.199.55	34.223.124.45	HTTP	474	GET /online/ HTTP/1.1
17	2.580256	34.223.124.45	10.24.199.55	HTTP	347	HTTP/1.1 200 OK (text/html)
825	150.134919	10.24.199.55	142.251.33.163	HTTP	440	GET /gts1c3/MFAwTjBMMEowSDAHBgUrdgMCgQUxy55it3%2FYTSzuu1HQri7xsAkB2MEFIp0f6%2BFze6VzT2c00JGFPNxnR0nAh...
827	150.140185	142.251.33.163	10.24.199.55	OCSP	779	Response
2040	608.900249	10.24.199.55	192.229.211.108	HTTP	431	GET /ME8wTTBLMEkwrZAHBgUrdgMCgQU00dKlcF4dGbZfs%2FEojy08BF1cQ5UEFE41VCAYlebjuYP%2Bvq5Eu0GF485AhaE8i7MI...
2042	608.920275	192.229.211.108	10.24.199.55	OCSP	802	Response
6674	1217.351550	10.24.199.55	142.251.41.35	HTTP	432	GET /gts1c3/ME8wTTBLMEkwrZAHBgUrdgMCgQUxy55it3%2FYTSzuu1HQri7xsAkB2MEFIp0f6%2BFze6VzT2c00JGFPNxnR0nAh...
6676	1217.357560	142.251.41.35	10.24.199.55	OCSP	777	Response

1-B)

The file/object was modified on Wed, 29 Jun 2022 00:23:22 GMT. Attaching a screenshot below as evidence to support my answer.



The screenshot shows a Wireshark packet capture of an HTTP transaction, similar to the first one, but with additional details visible in the packet details pane. The packet list table is as follows:

No.	Time	Source	Destination	Protocol	Length	Info
7	0.184926	10.24.199.55	34.223.124.45	HTTP	474	GET /online/ HTTP/1.1
11	0.242806	34.223.124.45	10.24.199.55	HTTP	374	HTTP/1.1 200 OK (text/html)
15	2.514151	10.24.199.55	34.223.124.45	HTTP	474	GET /online/ HTTP/1.1
17	2.580256	34.223.124.45	10.24.199.55	HTTP	347	HTTP/1.1 200 OK (text/html)
825	150.134919	10.24.199.55	142.251.33.163	HTTP	440	GET /gts1c3/MFAwTjBMMEowSDAHBgUrdgMCgQUxy55it3%2FYTSzuu1HQri7xsAkB2MEFIp0f6%2BFze6VzT2c00JGFPNxnR0nAh...
827	150.140185	142.251.33.163	10.24.199.55	OCSP	779	Response
2040	608.900249	10.24.199.55	192.229.211.108	HTTP	431	GET /ME8wTTBLMEkwrZAHBgUrdgMCgQU00dKlcF4dGbZfs%2FEojy08BF1cQ5UEFE41VCAYlebjuYP%2Bvq5Eu0GF485AhaE8i7MI...
2042	608.920275	192.229.211.108	10.24.199.55	OCSP	802	Response
6674	1217.351550	10.24.199.55	142.251.41.35	HTTP	432	GET /gts1c3/ME8wTTBLMEkwrZAHBgUrdgMCgQUxy55it3%2FYTSzuu1HQri7xsAkB2MEFIp0f6%2BFze6VzT2c00JGFPNxnR0nAh...
6676	1217.357560	142.251.41.35	10.24.199.55	OCSP	777	Response

The packet details pane for the selected packet (No. 11) shows the following information:

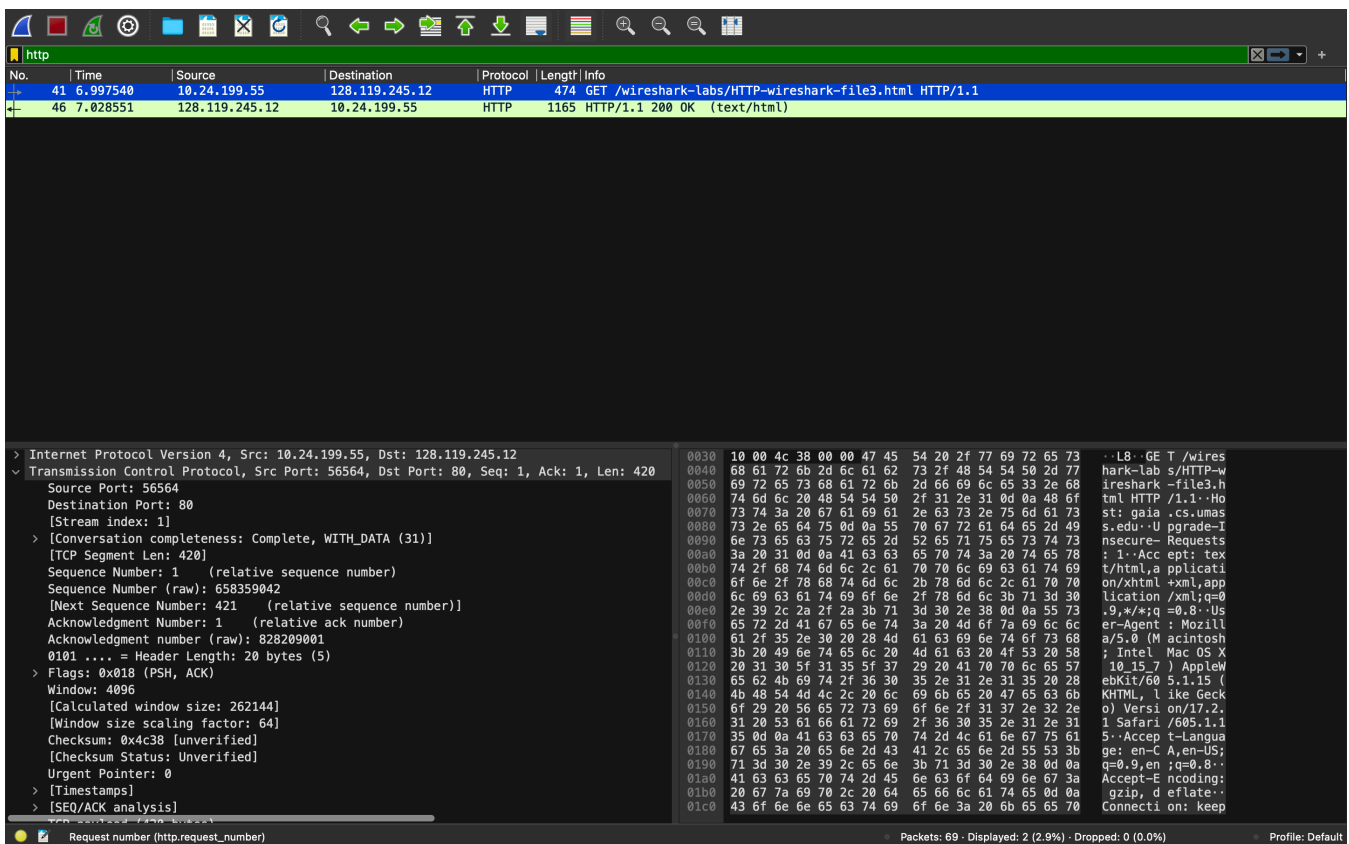
- Frame 11: 374 bytes on wire (2992 bits), 374 bytes captured (2992 bits) on interface en0
- Ethernet II, Src: Cisco\_3c:2b:7f (f8:39:18:3c:2b:7f), Dst: Apple\_44:70:38 (3c:06:30:44:70:38)
- Internet Protocol Version 4, Src: 34.223.124.45, Dst: 10.24.199.55
- Transmission Control Protocol, Src Port: 80, Dst Port: 56313, Seq: 1239, Ack: 409, Len: 374
- [2 Reassembled TCP Segments (1546 bytes): #10(1238), #11(308)]
- Hypertext Transfer Protocol
  - HTTP/1.1 200 OK\r\n
  - Date: Wed, 19 Jun 2022 14:40:47 GMT\r\n
  - Server: Apache/2.4.58 (Ubuntu)\r\n
  - Upgrade: h2,h2c\r\n
  - Connection: Upgrade, Keep-Alive\r\n
  - Last-Modified: Wed, 29 Jun 2022 00:23:22 GMT\r\n
  - ETag: "8be-5e28b29291e10-gzip"\r\n
  - Accept-Ranges: bytes\r\n
  - Vary: Accept-Encoding\r\n
  - Content-Encoding: gzip\r\n
  - Content-Length: 1173\r\n
  - Keep-Alive: timeout=5, max=100\r\n
  - Content-Type: text/html; charset=UTF-8\r\n
  - \r\n
  - [HTTP response 1/2]
  - [Time since request: 0.057880000 seconds]

The packet bytes pane shows the raw data of the packet, including the reassembled TCP segments and the uncompressed entity body.

## 1-C)

**Q.12) How many HTTP GET request messages did your browser send? Which packet number in the trace contains the GET message for the Bill or Rights?**

**ANS:-** The browser sent 1 HTTP GET request message. The packets that contained the GET message was packet number 41.



**Q.15) How many data-containing TCP segments were needed to carry the single HTTP response and the text of the Bill of Rights?**

**ANS:-** 3 data-containing TCP segments were needed to carry the single HTTP response and the text of the Bill of Rights. The length of TCP packets were 1304. Packet number of TCP packets were 43,44 and 45. The info had details like - Len = 1250 and had note that said: "TCP segment of a reassembled PDU". It was easy to search TCP packets by applying 'tcp.len > 0' to the filter bar.

Attached screenshot as evidence below:

tcp.len > 0

No.	Time	Source	Destination	Protocol	Length	Info
15	0.188626	23.43.243.147	10.24.199.55	TLSv1...	1188	Application Data, Application Data, Application Data
17	0.204000	10.24.199.55	23.43.243.147	TLSv1...	146	Change Cipher Spec, Application Data
18	0.206166	10.24.199.55	23.43.243.147	TLSv1...	949	Application Data
20	0.238213	23.43.243.147	10.24.199.55	TLSv1...	353	Application Data
21	0.238214	23.43.243.147	10.24.199.55	TLSv1...	353	Application Data
24	0.294048	23.43.243.147	10.24.199.55	TCP	1304	443 → 56563 [ACK] Seq=4173 Ack=1481 Win=64128 Len=1238 TSval=2161723681 TSecr=808757736 [TCP segment of a reassembled PDU]
25	0.294050	23.43.243.147	10.24.199.55	TCP	1304	443 → 56563 [ACK] Seq=5411 Ack=1481 Win=64128 Len=1238 TSval=2161723681 TSecr=808757736 [TCP segment of a reassembled PDU]
26	0.294051	23.43.243.147	10.24.199.55	TCP	1304	443 → 56563 [PSH, ACK] Seq=6649 Ack=1481 Win=64128 Len=1238 TSval=2161723681 TSecr=808757736 [TCP segment of a reassembled PDU]
27	0.294052	23.43.243.147	10.24.199.55	TCP	1304	443 → 56563 [ACK] Seq=7887 Ack=1481 Win=64128 Len=1238 TSval=2161723681 TSecr=808757736 [TCP segment of a reassembled PDU]
28	0.294053	23.43.243.147	10.24.199.55	TCP	1304	443 → 56563 [ACK] Seq=9125 Ack=1481 Win=64128 Len=1238 TSval=2161723681 TSecr=808757736 [TCP segment of a reassembled PDU]
29	0.294053	23.43.243.147	10.24.199.55	TCP	1304	443 → 56563 [PSH, ACK] Seq=10363 Ack=1481 Win=64128 Len=1238 TSval=2161723681 TSecr=808757736 [TCP segment of a reassembled PDU]
30	0.294054	23.43.243.147	10.24.199.55	TLSv1...	649	Application Data
41	6.997540	10.24.199.55	128.119.245.12	HTTP	474	GET /wireshark-labs/HTTP-wireshark-file3.html HTTP/1.1
43	7.028542	128.119.245.12	10.24.199.55	TCP	1304	80 → 56564 [ACK] Seq=1 Ack=421 Win=30336 Len=1250 [TCP segment of a reassembled PDU]
44	7.028544	128.119.245.12	10.24.199.55	TCP	1304	80 → 56564 [ACK] Seq=1251 Ack=421 Win=30336 Len=1250 [TCP segment of a reassembled PDU]
45	7.028546	128.119.245.12	10.24.199.55	TCP	1304	80 → 56564 [ACK] Seq=2501 Ack=421 Win=30336 Len=1250 [TCP segment of a reassembled PDU]
46	7.028551	128.119.245.12	10.24.199.55	HTTP	1165	HTTP/1.1 200 OK (text/html)
50	8.470628	17.248.207.65	10.24.199.55	TLSv1...	105	Application Data
51	8.470630	17.248.207.65	10.24.199.55	TLSv1...	90	Application Data
55	8.471159	10.24.199.55	17.248.207.65	TLSv1...	105	Application Data
56	8.471382	10.24.199.55	17.248.207.65	TLSv1...	90	Application Data

> Flags: 0x018 (PSH, ACK)  
Window: 4096  
[Calculated window size: 262144]  
[Window size scaling factor: 64]  
Checksum: 0x4c38 [unverified]  
[Checksum Status: Unverified]  
Urgent Pointer: 0

> [Timestamps]  
> [SEQ/ACK analysis]  
TCP payload (420 bytes)

▼ Hypertext Transfer Protocol

> GET /wireshark-labs/HTTP-wireshark-file3.html HTTP/1.1\r\n  
Host: gaia.cs.umass.edu\r\n  
Upgrade-Insecure-Requests: 1\r\n  
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,\*/\*;q=0.8\r\n  
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10\_15\_7) AppleWebKit/605.1.15 (KHTML, like Gecko) Version/17.2.1 Safari/605.1.15\r\n  
Accept-Language: en-CA,en-US;q=0.9,en;q=0.8\r\n  
Accept-Encoding: gzip, deflate\r\n  
Connection: keep-alive\r\n  
\r\n  
[Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file3.html]  
[HTTP request 1/1]

Request number (http.request\_number)

Packets: 69 · Displayed: 24 (34.8%) · Dropped: 0 (0.0%) · Profile: Default