

Author: Jeremy Vuong
Course: CSC 138-03
Professor: Jun Dai
Date: 03/05/2023

Wireshark Lab 2-HTTP

1. My browser is running HTTP version 1.1.
The server is running HTTP version 1.1.
2. My browser indicates that it can accept the language en-US.
3. The IP address of my computer is 10.0.0.96 and the IP address of the gaia.cs.umass.edu server is 128.119.245.12.
4. The status code returned from the server to my browser is Status Code: 200.
5. The HTML file was last modified Sun, 05 Mar 2023 03:59:01 GMT.
6. 128 bytes of content are being returned to my browser.
7. I do not see any headers within the data that are not displayed in the packet-listing window

```
No.      Time            Source            Destination      Protocol Length Info
 373 19:51:13.486174 10.0.0.96         128.119.245.12   HTTP           533   GET /wireshark-labs/HTTP-wireshark-file1.html
HTTP/1.1
Frame 373: 533 bytes on wire (4264 bits), 533 bytes captured (4264 bits) on interface \Device\NPF_{2748DDCA-
E1DE-4281-80C4-430F4323F5A7}, id 0
Ethernet II, Src: Giga-Byt_07:19:d9 (d8:5e:d3:07:19:d9), Dst: Technico_ac:2b:0c (dc:eb:69:ac:2b:0c)
Internet Protocol Version 4, Src: 10.0.0.96, Dst: 128.119.245.12
Transmission Control Protocol, Src Port: 63278, Dst Port: 80, Seq: 1, Ack: 1, Len: 479
Hypertext Transfer Protocol
  GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n
  [Expert Info (Chat/Sequence): GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n]
  Request Method: GET
  Request URI: /wireshark-labs/HTTP-wireshark-file1.html
  Request Version: HTTP/1.1
  Host: gaia.cs.umass.edu\r\n
  Connection: keep-alive\r\n
  Upgrade-Insecure-Requests: 1\r\n
  User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/110.0.0.0 Safari/537.36 Edg/
110.0.1587.63\r\n
  Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-
exchange;v=b3;q=0.7\r\n
  Accept-Encoding: gzip, deflate\r\n
  Accept-Language: en-US,en;q=0.9\r\n
\r\n
[Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]
[HTTP request 1/2]
[Response in frame: 380]
[Next request in frame: 382]
```

No.	Time	Source	Destination	Protocol	Length	Info
380	19:51:13.576435	128.119.245.12	10.0.0.96	HTTP	540	HTTP/1.1 200 OK (text/html)

Frame 380: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits) on interface \Device\NPF_{2748DDCA-E1DE-4281-80C4-430F4323F5A7}, id 0
 Ethernet II, Src: Technico_ac:2b:0c (dc:eb:69:ac:2b:0c), Dst: Giga-Byt_07:19:d9 (d8:5e:d3:07:19:d9)
 Internet Protocol Version 4, Src: 128.119.245.12, Dst: 10.0.0.96
 Transmission Control Protocol, Src Port: 80, Dst Port: 63278, Seq: 1, Ack: 480, Len: 486
 Hypertext Transfer Protocol
 HTTP/1.1 200 OK\r\n
 [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
 Response Version: HTTP/1.1
 Status Code: 200
 [Status Code Description: OK]
 Response Phrase: OK
 Date: Mon, 06 Mar 2023 03:51:13 GMT\r\n
 Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
 Last-Modified: Sun, 05 Mar 2023 06:59:01 GMT\r\n
 ETag: "80-5f621b69a28c6"\r\n
 Accept-Ranges: bytes\r\n
 Content-Length: 128\r\n
 Keep-Alive: timeout=5, max=100\r\n
 Connection: Keep-Alive\r\n
 Content-Type: text/html; charset=UTF-8\r\n
 \r\n
 [HTTP response 1/2]
 [Time since request: 0.090261000 seconds]
 [Request in frame: 373]
 [Next request in frame: 382]
 [Next response in frame: 392]
 [Request URI: http://gaia.cs.umass.edu/favicon.ico]
 File Data: 128 bytes
 Line-based text data: text/html (4 lines)

8. No, I do not see an “IF-MODIFIED-SINCE” line in the HTTP GET.

```

> Frame 204: 533 bytes on wire (4264 bits), 533 bytes captured (4264 bits) on interface \Device\NPF_{2748DDCA-E1DE-4281-80C4-430F4323F5A7}, id 0
> Ethernet II, Src: Giga-Byt_07:19:d9 (d8:5e:d3:07:19:d9), Dst: Technico_ac:2b:0c (dc:eb:69:ac:2b:0c)
> Internet Protocol Version 4, Src: 10.0.0.96, Dst: 128.119.245.12
> Transmission Control Protocol, Src Port: 63534, Dst Port: 80, Seq: 1, Ack: 1, Len: 479
v Hypertext Transfer Protocol
  v GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n
    > [Expert Info (Chat/Sequence): GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n]
    Request Method: GET
    Request URI: /wireshark-labs/HTTP-wireshark-file2.html
    Request Version: HTTP/1.1
    Host: gaia.cs.umass.edu\r\n
    Connection: keep-alive\r\n
    Upgrade-Insecure-Requests: 1\r\n
    User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/110.0.0.0 Safari/537.36 Edg/110.0.1587.63\r\n
    Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7\r\n
    Accept-Encoding: gzip, deflate\r\n
    Accept-Language: en-US,en;q=0.9\r\n
    \r\n
    [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
    [HTTP request 1/1]
  
```

9. Yes, the server explicitly returned the contents of the file. The section named “Line-based text data” shows exactly what is displayed in my browser when I opened the webpage (gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html) into my browser.

No.	Time	Source	Destination	Protocol	Length	Info
224	19:57:28.098106	128.119.245.12	10.0.0.96	HTTP	784	HTTP/1.1 200 OK (text/html)

Frame 224: 784 bytes on wire (6272 bits), 784 bytes captured (6272 bits) on interface \Device\NPF_{2748DDCA-E1DE-4281-80C4-430F4323F5A7}, id 0
Ethernet II, Src: Technico_ac:2b:0c (dc:eb:69:ac:2b:0c), Dst: Giga-Byt_07:19:d9 (d8:5e:d3:07:19:d9)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 10.0.0.96
Transmission Control Protocol, Src Port: 80, Dst Port: 63534, Seq: 1, Ack: 480, Len: 730
Hypertext Transfer Protocol
HTTP/1.1 200 OK\r\n
[Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
Response Version: HTTP/1.1
Status Code: 200
[Status Code Description: OK]
Response Phrase: OK
Date: Mon, 06 Mar 2023 03:57:28 GMT\r\n
Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
Last-Modified: Sun, 05 Mar 2023 06:59:01 GMT\r\n
ETag: "173-5f621b69a20f6"\r\n
Accept-Ranges: bytes\r\n
Content-Length: 371\r\n
Keep-Alive: timeout=5, max=100\r\n
Connection: Keep-Alive\r\n
Content-Type: text/html; charset=UTF-8\r\n
\r\n
[HTTP response 1/2]
[Time since request: 0.101599000 seconds]
[Request in frame: 204]
[Next request in frame: 227]
[Next response in frame: 242]
[Request URI: http://gaia.cs.umass.edu/favicon.ico]
File Data: 371 bytes
Line-based text data: text/html (10 lines)
\r\n
<html>\r\n
\r\n
Congratulations again! Now you've downloaded the file lab2-2.html.
\r\n
This file's last modification date will not change. <p>\r\n
Thus if you download this multiple times on your browser, a complete copy
\r\n
will only be sent once by the server due to the inclusion of the IN-MODIFIED-SINCE
\r\n
field in your browser's HTTP GET request to the server.\r\n
\r\n
</html>\r\n

10. Yes, I see an "IF-MODIFIED-SINCE:" line in the HTTP GET. The information that follows the "IF-MODIFIED-SINCE:" header is the date and time that I last accessed the link/webpage.

No.	Time	Source	Destination	Protocol	Length	Info
1405	19:57:44.422190	10.0.0.96	128.119.245.12	HTTP	645	GET /wireshark-labs/HTTP-wireshark-file2.html

HTTP/1.1
Frame 1405: 645 bytes on wire (5160 bits), 645 bytes captured (5160 bits) on interface \Device\NPF_{2748DDCA-E1DE-4281-80C4-430F4323F5A7}, id 0
Ethernet II, Src: Giga-Byt_07:19:d9 (d8:5e:d3:07:19:d9), Dst: Technico_ac:2b:0c (dc:eb:69:ac:2b:0c)
Internet Protocol Version 4, Src: 10.0.0.96, Dst: 128.119.245.12
Transmission Control Protocol, Src Port: 63535, Dst Port: 80, Seq: 1, Ack: 1, Len: 591
Hypertext Transfer Protocol
GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n
[Expert Info (Chat/Sequence): GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n]
Request Method: GET
Request URI: /wireshark-labs/HTTP-wireshark-file2.html
Request Version: HTTP/1.1
Host: gaia.cs.umass.edu\r\n
Connection: keep-alive\r\n
Cache-Control: max-age=0\r\n
Upgrade-Insecure-Requests: 1\r\n
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/110.0.0.0 Safari/537.36 Edg/110.0.1587.63\r\n
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7\r\n
Accept-Encoding: gzip, deflate\r\n
Accept-Language: en-US,en;q=0.9\r\n
If-None-Match: "173-5f621b69a20f6"\r\n
If-Modified-Since: Sun, 05 Mar 2023 06:59:01 GMT\r\n
\r\n
[Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
[HTTP request 1/1]
[Response in frame: 1414]

11. The HTTP status code is 304. No, the server did not explicitly return the contents of the file. Because the file had not been modified since it was last accessed, the browser retrieved the old file from its cached memory.

```
No.      Time                Source                Destination           Protocol Length Info
1414 19:57:44.525108    128.119.245.12       10.0.0.96             HTTP      294      HTTP/1.1 304 Not Modified
Frame 1414: 294 bytes on wire (2352 bits), 294 bytes captured (2352 bits) on interface \Device\NPF_{2748DDCA-
E1DE-4281-80C4-430F4323F5A7}, id 0
Ethernet II, Src: Technico_ac:2b:0c (dc:eb:69:ac:2b:0c), Dst: Giga-Byt_07:19:d9 (d8:5e:d3:07:19:d9)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 10.0.0.96
Transmission Control Protocol, Src Port: 80, Dst Port: 63535, Seq: 1, Ack: 592, Len: 240
Hypertext Transfer Protocol
  HTTP/1.1 304 Not Modified\r\n
  [Expert Info (Chat/Sequence): HTTP/1.1 304 Not Modified\r\n]
  Response Version: HTTP/1.1
  Status Code: 304
  [Status Code Description: Not Modified]
  Response Phrase: Not Modified
  Date: Mon, 06 Mar 2023 03:57:44 GMT\r\n
  Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
  Connection: Keep-Alive\r\n
  Keep-Alive: timeout=5, max=100\r\n
  ETag: "173-5f621b69a20f6"\r\n
  \r\n
  [HTTP response 1/1]
  [Time since request: 0.102918000 seconds]
  [Request in frame: 1405]
  [Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
```

12. My browser sent 1 HTTP GET requests. The packet that contains the GET message for the Bill of Rights is packet number 951.

No.	Time	Source	Destination	Protocol	Length	Info
951	20:20:49.927253	10.0.0.96	128.119.245.12	HTTP	533	GET /wireshark-labs/HTTP-wireshark-file3.html HTTP/1.1
970	20:20:50.017072	128.119.245.12	10.0.0.96	HTTP	535	HTTP/1.1 200 OK (text/html)
977	20:20:50.045835	10.0.0.96	128.119.245.12	HTTP	479	GET /favicon.ico HTTP/1.1
997	20:20:50.142737	128.119.245.12	10.0.0.96	HTTP	538	HTTP/1.1 404 Not Found (text/html)

13. The packet that contains the status code and phrase associated with the response to the HTTP GET request is packet number 970.

No.	Time	Source	Destination	Protocol	Length	Info
951	20:20:49.927253	10.0.0.96	128.119.245.12	HTTP	533	GET /wireshark-labs/HTTP-wireshark-file3.html HTTP/1.1
970	20:20:50.017072	128.119.245.12	10.0.0.96	HTTP	535	HTTP/1.1 200 OK (text/html)
977	20:20:50.045835	10.0.0.96	128.119.245.12	HTTP	479	GET /favicon.ico HTTP/1.1
997	20:20:50.142737	128.119.245.12	10.0.0.96	HTTP	538	HTTP/1.1 404 Not Found (text/html)

>	Frame 970: 535 bytes on wire (4280 bits), 535 bytes captured (4280 bits) on interface \Device\NPF_{2748DDCA-E1DE-4281-80C4-430F4323F5A7}, id 0
>	Ethernet II, Src: Technico_ac:2b:0c (dc:eb:69:ac:2b:0c), Dst: Giga-Byt_07:19:d9 (d8:5e:d3:07:19:d9)
>	Internet Protocol Version 4, Src: 128.119.245.12, Dst: 10.0.0.96
>	Transmission Control Protocol, Src Port: 80, Dst Port: 64401, Seq: 4381, Ack: 480, Len: 481
>	[4 Reassembled TCP Segments (4861 bytes): #966(1460), #967(1460), #969(1460), #970(481)]
▼	Hypertext Transfer Protocol
▼	HTTP/1.1 200 OK\r\n
▼	[Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
	[HTTP/1.1 200 OK\r\n]
	[Severity level: Chat]
	[Group: Sequence]
	Response Version: HTTP/1.1
	Status Code: 200
	[Status Code Description: OK]
	Response Phrase: OK
	Date: Mon, 06 Mar 2023 04:20:49 GMT\r\n
	Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
	Last-Modified: Sun, 05 Mar 2023 06:59:01 GMT\r\n
	ETag: "1194-5f621b699de8d"\r\n
	Accept-Ranges: bytes\r\n
>	Content-Length: 4500\r\n
	Keep-Alive: timeout=5, max=100\r\n
	Connection: Keep-Alive\r\n
	Content-Type: text/html; charset=UTF-8\r\n
	\r\n
	[HTTP response 1/2]
	[Time since request: 0.089819000 seconds]
	[Request in frame: 951]
	[Next request in frame: 977]
	[Next response in frame: 997]
	[Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file3.html]
	File Data: 4500 bytes
▼	Line-based text data: text/html (98 lines)
	<html><head> \n
	<title>Historical Documents:THE BILL OF RIGHTS</title></head>\n
	\n
	\n
	<body bgcolor="#ffffff" link="#330000" vlink="#666633">\n
	<p> \n
	</p>\n
	<p></p><center>THE BILL OF RIGHTS \n

14. The status code is **200** and the phrase is **OK** in the response.

No.	Time	Source	Destination	Protocol	Length	Info
970	20:20:50.017072	128.119.245.12	10.0.0.96	HTTP	535	HTTP/1.1 200 OK (text/html)

Frame 970: 535 bytes on wire (4280 bits), 535 bytes captured (4280 bits) on interface \Device\NPF_{2748DDCA-E1DE-4281-80C4-430F4323F5A7}, id 0
 Ethernet II, Src: Technico_ac:2b:0c (dc:eb:69:ac:2b:0c), Dst: Giga-Byt_07:19:d9 (d8:5e:d3:07:19:d9)
 Internet Protocol Version 4, Src: 128.119.245.12, Dst: 10.0.0.96
 Transmission Control Protocol, Src Port: 80, Dst Port: 64401, Seq: 4381, Ack: 480, Len: 481
 [4 Reassembled TCP Segments (4861 bytes): #966(1460), #967(1460), #969(1460), #970(481)]

Hypertext Transfer Protocol

```

HTTP/1.1 200 OK\r\n
  [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
    [HTTP/1.1 200 OK\r\n]
    [Severity level: Chat]
    [Group: Sequence]
  Response Version: HTTP/1.1
  Status Code: 200
  [Status Code Description: OK]
  Response Phrase: OK
  Date: Mon, 06 Mar 2023 04:20:49 GMT\r\n
  Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
  Last-Modified: Sun, 05 Mar 2023 06:59:01 GMT\r\n
  ETag: "1194-5f621b699de8d"\r\n
  Accept-Ranges: bytes\r\n
  Content-Length: 4500\r\n
  Keep-Alive: timeout=5, max=100\r\n
  Connection: Keep-Alive\r\n
  Content-Type: text/html; charset=UTF-8\r\n
  \r\n
  [HTTP response 1/2]
  [Time since request: 0.089819000 seconds]
  [Request in frame: 951]
  [Next request in frame: 977]
  [Next response in frame: 997]
  [Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file3.html]
  File Data: 4500 bytes
  
```

15. There were 4 data-containing TCP segments needed to carry the single HTTP response and the text of the Bill of Rights.


```

No.      Time      Source      Destination      Protocol Length Info
 970 20:20:50.017072 128.119.245.12 10.0.0.96 HTTP 535 HTTP/1.1 200 OK (text/html)
Frame 970: 535 bytes on wire (4280 bits), 535 bytes captured (4280 bits) on interface \Device\NPF_{2748DDCA-
E1DE-4281-80C4-430F4323F5A7}, id 0
Ethernet II, Src: Technico_ac:2b:0c (dc:eb:69:ac:2b:0c), Dst: Giga-Byt_07:19:d9 (d8:5e:d3:07:19:d9)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 10.0.0.96
Transmission Control Protocol, Src Port: 80, Dst Port: 64401, Seq: 4381, Ack: 480, Len: 481
[4 Reassembled TCP Segments (4861 bytes): #966(1460), #967(1460), #969(1460), #970(481)]
Hypertext Transfer Protocol
HTTP/1.1 200 OK\r\n
  [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
    [HTTP/1.1 200 OK\r\n]
    [Severity level: Chat]
    [Group: Sequence]
  Response Version: HTTP/1.1
  Status Code: 200
  [Status Code Description: OK]
  Response Phrase: OK
  Date: Mon, 06 Mar 2023 04:20:49 GMT\r\n
  Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
  Last-Modified: Sun, 05 Mar 2023 06:59:01 GMT\r\n
  ETag: "1194-5f621b699de8d"\r\n
  Accept-Ranges: bytes\r\n
  Content-Length: 4500\r\n
  Keep-Alive: timeout=5, max=100\r\n
  Connection: Keep-Alive\r\n
  Content-Type: text/html; charset=UTF-8\r\n
\r\n
[HTTP response 1/2]
[Time since request: 0.089819000 seconds]
[Request in frame: 951]
[Next request in frame: 977]
[Next response in frame: 997]
[Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file3.html]
File Data: 4500 bytes

```

16. My browser sent 3 HTTP GET request messages.

- 128.119.245.12 (wireshark-labs/HTTP-wireshark-file4.html)
- 128.119.245.12 (pearson.png)
- 178.79.137.164 (/8E_cover_small.jpg)

No.	Time	Source	Destination	Protocol	Length	Info
471	20:44:35.937157	10.0.0.96	128.119.245.12	HTTP	533	GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1
496	20:44:36.035012	128.119.245.12	10.0.0.96	HTTP	1355	HTTP/1.1 200 OK (text/html)
497	20:44:36.040604	10.0.0.96	128.119.245.12	HTTP	479	GET /pearson.png HTTP/1.1
523	20:44:36.139623	128.119.245.12	10.0.0.96	HTTP	745	HTTP/1.1 200 OK (PNG)
718	20:44:36.712402	10.0.0.96	178.79.137.164	HTTP	446	GET /8E_cover_small.jpg HTTP/1.1
730	20:44:36.869442	178.79.137.164	10.0.0.96	HTTP	225	HTTP/1.1 301 Moved Permanently

17. Yes, the two images were downloaded serially. The first image's HTTP GET request was completed before the second image's HTTP GET request was sent.

No.	Time	Source	Destination	Protocol	Length	Info
471	20:44:35.937157	10.0.0.96	128.119.245.12	HTTP	533	GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1
496	20:44:36.035012	128.119.245.12	10.0.0.96	HTTP	1355	HTTP/1.1 200 OK (text/html)
497	20:44:36.040604	10.0.0.96	128.119.245.12	HTTP	479	GET /pearson.png HTTP/1.1
523	20:44:36.139623	128.119.245.12	10.0.0.96	HTTP	745	HTTP/1.1 200 OK (PNG)
718	20:44:36.712402	10.0.0.96	178.79.137.164	HTTP	446	GET /8E_cover_small.jpg HTTP/1.1
730	20:44:36.869442	178.79.137.164	10.0.0.96	HTTP	225	HTTP/1.1 301 Moved Permanently

18. The server's response code is 401 Unauthorized.

No.	Time	Source	Destination	Protocol	Length	Info
8557	21:02:54.715512	128.119.245.12	10.0.0.96	HTTP	771	HTTP/1.1 401 Unauthorized (text/html)

Frame 8557: 771 bytes on wire (6168 bits), 771 bytes captured (6168 bits) on interface \Device\NPF_{2748DDCA-E1DE-4281-80C4-430F4323F5A7}, id 0
Ethernet II, Src: Technico_ac:2b:0c (dc:eb:69:ac:2b:0c), Dst: Giga-Byt_07:19:d9 (d8:5e:d3:07:19:d9)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 10.0.0.96
Transmission Control Protocol, Src Port: 80, Dst Port: 49891, Seq: 1, Ack: 496, Len: 717
Hypertext Transfer Protocol

```

HTTP/1.1 401 Unauthorized\r\n
[Expert Info (Chat/Sequence): HTTP/1.1 401 Unauthorized\r\n]
[HTTP/1.1 401 Unauthorized\r\n]
[Severity level: Chat]
[Group: Sequence]
Response Version: HTTP/1.1
Status Code: 401
[Status Code Description: Unauthorized]
Response Phrase: Unauthorized
Date: Mon, 06 Mar 2023 05:02:54 GMT\r\n
Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
WWW-Authenticate: Basic realm="wireshark-students only"\r\n
Content-Length: 381\r\n
Keep-Alive: timeout=5, max=100\r\n
Connection: Keep-Alive\r\n
Content-Type: text/html; charset=iso-8859-1\r\n
\r\n
[HTTP response 1/1]
[Time since request: 0.087438000 seconds]
[Request in frame: 8540]
[Request URI: http://gaia.cs.umass.edu/wireshark-labs/protected_pages/HTTP-wireshark-file5.html]
File Data: 381 bytes
Line-based text data: text/html (12 lines)

```

19. The new field that is included is the **authorization** field.

No.	Time	Source	Destination	Protocol	Length	Info
9142	21:03:11.260688	10.0.0.96	128.119.245.12	HTTP	634	GET /wireshark-labs/protected_pages/HTTP-wireshark-file5.html HTTP/1.1

Frame 9142: 634 bytes on wire (5072 bits), 634 bytes captured (5072 bits) on interface \Device\NPF_{2748DDCA-E1DE-4281-80C4-430F4323F5A7}, id 0
Ethernet II, Src: Giga-Byt_07:19:d9 (d8:5e:d3:07:19:d9), Dst: Technico_ac:2b:0c (dc:eb:69:ac:2b:0c)
Internet Protocol Version 4, Src: 10.0.0.96, Dst: 128.119.245.12
Transmission Control Protocol, Src Port: 49890, Dst Port: 80, Seq: 1, Ack: 1, Len: 580
Hypertext Transfer Protocol

```

GET /wireshark-labs/protected_pages/HTTP-wireshark-file5.html HTTP/1.1\r\n
[Expert Info (Chat/Sequence): GET /wireshark-labs/protected_pages/HTTP-wireshark-file5.html HTTP/1.1\r\n]
[GET /wireshark-labs/protected_pages/HTTP-wireshark-file5.html HTTP/1.1\r\n]
[Severity level: Chat]
[Group: Sequence]
Request Method: GET
Request URI: /wireshark-labs/protected_pages/HTTP-wireshark-file5.html
Request Version: HTTP/1.1
Host: gaia.cs.umass.edu\r\n
Connection: keep-alive\r\n
Cache-Control: max-age=0\r\n
Authorization: Basic d2lyZXNoYXJrLXN0dWR1bnRzOm5ldHdvcm5=\r\n
Upgrade-Insecure-Requests: 1\r\n
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/110.0.0.0 Safari/537.36 Edg/110.0.1587.63\r\n
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7\r\n
Accept-Encoding: gzip, deflate\r\n
Accept-Language: en-US,en;q=0.9\r\n
\r\n
[Full request URI: http://gaia.cs.umass.edu/wireshark-labs/protected_pages/HTTP-wireshark-file5.html]
[HTTP request 1/2]
[Response in frame: 9151]
[Next request in frame: 9152]

```