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Phần 1: HTTP GET/ reponse cơ bản

Câu 1:

Trình duyệt đang sử dụng phiên bản HTTP 1.1

Server đang sử dụng phiên bản HTTP 1.1

No.	Time	Source	Destination	Protocol	Length	Info
1168	2.566215	10.45.229.69	128.119.245.12	HTTP	542	GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
1343	2.809405	128.119.245.12	10.45.229.69	HTTP	540	HTTP/1.1 200 OK (text/html)

Câu 2:

Trình duyệt hỗ trợ những ngôn ngữ: vi, en-US; q=0.9, en; q=0.8\r\n

```
▼ Hypertext Transfer Protocol
  > GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n
    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/106.0.0.0 Safari/537.36\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=0.9\r\n
    Accept-Encoding: gzip, deflate\r\n
    Accept-Language: vi,en-US;q=0.9,en;q=0.8\r\n
    \r\n
    [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]
    [HTTP request 1/1]
    [Response in frame: 1343]
```

Câu 3:

Địa chỉ IP của máy tính đang sử dụng là: 10.45.229.69

No.	Time	Source	Destination	Protocol	Length	Info
1168	2.566215	10.45.229.69	128.119.245.12	HTTP	542	GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
1343	2.809405	128.119.245.12	10.45.229.69	HTTP	540	HTTP/1.1 200 OK (text/html)

Địa chỉ IP của gaia.cs.umass.edu server là: 128.119.245.12

No.	Time	Source	Destination	Protocol	Length	Info
1168	2.566215	10.45.229.69	128.119.245.12	HTTP	542	GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
1343	2.809405	128.119.245.12	10.45.229.69	HTTP	540	HTTP/1.1 200 OK (text/html)

Câu 4:

Mã trạng thái (status code) trả về từ server là: 200

No.	Time	Source	Destination	Protocol	Length	Info
1168	2.566215	10.45.229.69	128.119.245.12	HTTP	542	GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
1343	2.809405	128.119.245.12	10.45.229.69	HTTP	540	HTTP/1.1 200 OK (text/html)

Câu 5:

Thời điểm file HTML được thay đổi lần cuối tại server là:

Wed, 12 Oct 2022 05:59:01 GMT\r\n

```
ICP payload (480 bytes)
▼ Hypertext Transfer Protocol
  > HTTP/1.1 200 OK\r\n
    Date: Wed, 12 Oct 2022 06:39:58 GMT\r\n
    Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.30 mod_perl/2.0.11 Perl/v5.16.3\r\n
    Last-Modified: Wed, 12 Oct 2022 05:59:01 GMT\r\n
    ETag: "80-5ead016e696ff"\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
```

Câu 6:

Server đã trả về cho trình duyệt 128 bytes nội dung

```
▼ Hypertext Transfer Protocol
  > HTTP/1.1 200 OK\r\n
    Date: Wed, 12 Oct 2022 06:39:58 GMT\r\n
    Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.30 mod_perl/2.0.11 Perl/v5.16.3\r\n
    Last-Modified: Wed, 12 Oct 2022 05:59:01 GMT\r\n
    ETag: "80-5ead016e696ff"\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
```

Phần 2: HTTP GET/ response có điều kiện

Câu 7: Không có

Câu 8:

Ở lần phản hồi đầu tiên của server, server trả về cho trình duyệt nội dung của file HTML.

Ở lần phản hồi thứ 2 của server, server không thật sự trả về nội dung của file HTML. Vì ở lần 1, server đã trả về gói tin với status code = 200 (Trình duyệt lúc này nhận được nội dung file HTML), ở lần 2 server đã trả về gói tin với status code = 304 (Not Modified), nội dung ở trình duyệt ta nhìn thấy lúc này chính là nội dung cũ của lần 1 (Đã được lưu trong bộ nhớ của trình duyệt).

No.	Time	Source	Destination	Protocol	Length	Info
1297	2.392164	10.45.229.69	128.119.245.12	HTTP	542	GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1
1349	2.800620	128.119.245.12	10.45.229.69	HTTP	784	HTTP/1.1 200 OK (text/html)
2804	4.508341	10.45.229.69	128.119.245.12	HTTP	654	GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1
3218	4.825049	128.119.245.12	10.45.229.69	HTTP	293	HTTP/1.1 304 Not Modified

Câu 9:

Có, giá trị của IF-MODIFIED-SINCE là: Wed, 12 Oct 2022 05:59:01 GMT\r\n

```

v Hypertext Transfer Protocol
  > GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n
    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)
    Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.
    Accept-Encoding: gzip, deflate\r\n
    Accept-Language: vi,en-US;q=0.9,en;q=0.8\r\n
    If-None-Match: "172_5ead016a68b47"\r\n
    If-Modified-Since: Wed, 12 Oct 2022 05:59:01 GMT\r\n
    \r\n

```

Phần 3: Truy cập các trang dài

Câu 10:

Trình duyệt đã gửi 1 HTTP GET.

No.	Time	Source	Destination	Protocol	Length	Info
1004	2.341393	10.45.229.69	128.119.245.12	HTTP	542	GET /wireshark-labs/HTTP-wireshark-file3.html HTTP/1.1
1171	2.612954	128.119.245.12	10.45.229.69	HTTP	535	HTTP/1.1 200 OK (text/html)

Dòng “THE BILL OF RIGHTS” được chứa trong gói tin phản hồi thứ nhất.

```

> [Timestamps]
v [SEQ/ACK analysis]
  [iRTT: 0.271493000 seconds]
  [Bytes in flight: 4861]
  [Bytes sent since last PSH flag: 4861]
  TCP payload (481 bytes)
  TCP segment data (481 bytes)
> [4 Reassembled TCP Segments (4861 bytes): #1168(1460), #1169(1460), #1170(1460), #1171(481)]
> Hypertext Transfer Protocol

```

1168	2.612954	128.119.245.12	10.45.229.69	TCP	1514 80 → 51417 [ACK] Seq=1 Ack=489 Win=30336 Len=1460 [TCP segment of a reassembled PDU]
1169	2.612954	128.119.245.12	10.45.229.69	TCP	1514 80 → 51417 [ACK] Seq=1461 Ack=489 Win=30336 Len=1460 [TCP segment of a reassembled PDU]
1170	2.612954	128.119.245.12	10.45.229.69	TCP	1514 80 → 51417 [ACK] Seq=2921 Ack=489 Win=30336 Len=1460 [TCP segment of a reassembled PDU]
1171	2.612954	128.119.245.12	10.45.229.69	HTTP	535 HTTP/1.1 200 OK (text/html)

01b0	74 6c 65 3e 48 69 73 74 6f 72 69 63 61 6c 20 44	tle>Hist orical D
01c0	6f 63 75 6d 65 6e 74 73 3a 54 48 45 20 42 49 4c	ocuments : THE BIL
01d0	4c 20 4f 46 20 52 49 47 48 54 53 3c 2f 74 69 74	L OF RIG HTS /tit
01e0	6c 65 3e 3c 2f 68 65 61 64 3e 0a 0a 0a 3c 62 6f	le></hea d>...<bo
01f0	64 79 20 62 67 63 6f 6c 6f 72 3d 22 23 66 66 66	dy bgcol or="#fff
0200	66 66 66 22 20 6c 69 6e 6b 3d 22 23 33 33 30 30	fff" lin k="#3300
0210	30 30 22 20 76 6c 69 6e 6b 3d 22 23 36 36 36 36	00" vlin k="#6666
0220	33 33 22 3e 0a 3c 70 3e 3c 62 72 3e 0a 3c 2f 70	33">.<p> .</p>
0230	3e 0a 3c 70 3e 3c 2f 70 3e 3c 63 65 6e 74 65 72	>.<p></p> ><center
0240	3e 3c 62 3e 54 48 45 20 42 49 4c 4c 20 4f 46 20	>THE BILL OF
0250	52 49 47 48 54 53 3c 2f 62 3e 3c 62 72 3e 0a 20	RIGHTS</ b> .
0260	20 3c 65 6d 3e 41 6d 65 6e 64 6d 65 6e 74 73 20	Ame ndments
0270	31 2d 31 30 20 6f 66 20 74 68 65 20 43 6f 6e 73	1-10 of the Cons

Câu 11:

Gói tin phản hồi thứ 1 có chứa mã trạng thái (200).

Ý nghĩa: Phản hồi tiêu chuẩn cho các yêu cầu HTTP thành công

▼ [4 Reassembled TCP Segments (4861 bytes): #1168(1460), #1169(1460), #1170(1460), #1171(481)]	
[Frame: 1168, payload: 0-1459 (1460 bytes)]	
[Frame: 1169, payload: 1460-2919 (1460 bytes)]	
[Frame: 1170, payload: 2920-4379 (1460 bytes)]	
[Frame: 1171, payload: 4380-4860 (481 bytes)]	
[Segment count: 4]	
[Reassembled TCP length: 4861]	
[Reassembled TCP Data: 485454502f312e3120323030204f4b0d0a46174653a205765642c203132204f63742032...]	
▼ Hypertext Transfer Protocol	
▼ HTTP/1.1 200 OK\r\n	
> [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]	
0000	48 54 54 50 2f 31 2e 31 20 32 30 30 20 4f 4b 0d HTTP/1.1 200 OK
0010	0a 44 61 74 65 3a 20 57 65 64 2c 20 31 32 20 4f Date: Wed, 12 Oct 2022 07:34:02
0020	63 74 20 32 30 32 32 20 30 37 3a 33 34 3a 30 32 GMT: Server: Apache/2.4.6 (Cent
0030	20 47 4d 54 0d 0a 53 65 72 76 65 72 3a 20 41 70 OS) Open SSL/1.0.
0040	61 63 68 65 2f 32 2e 34 2e 36 20 28 43 65 6e 74 2k-fips PHP/7.4.
0050	4f 53 29 20 4f 70 65 6e 53 53 4c 2f 31 2e 30 2e 30 mod_perl/2.0.
0060	32 6b 2d 66 69 70 73 20 50 48 50 2f 37 2e 34 2e 11 Perl/ v5.16.3
0070	33 30 20 6d 6f 64 5f 70 65 72 6c 2f 32 2e 30 2e Last-Modified: Wed, 12 Oct 2022
0080	31 31 20 50 65 72 6c 2f 76 35 2e 31 36 2e 33 0d 05:59:01 GMT--E
0090	0a 4c 61 73 74 2d 4d 6f 64 69 66 69 65 64 3a 20
00a0	57 65 64 2c 20 31 32 20 4f 63 74 20 32 30 32 32
00b0	20 30 35 3a 35 39 3a 30 31 20 47 4d 54 0d 0a 45

Câu 12:

Mã trạng thái của HTTP reponse là: 200

Ý nghĩa: Phản hồi tiêu chuẩn cho các yêu cầu HTTP thành công

No.	Time	Source	Destination	Protocol	Length	Info
1004	2.341393	10.45.229.69	128.119.245.12	HTTP	542	GET /wireshark-labs/HTTP-wireshark-file3.html HTTP/1.1
1171	2.612954	128.119.245.12	10.45.229.69	HTTP	535	HTTP/1.1 200 OK (text/html)

Câu 13:

Cần 4 TCP segments để chứa hết HTTP response và nội dung của The Bill of Rights (Gói tin có STT 1171 là TCP segments cuối cùng).

+	1169	2.612954	128.119.245.12	10.45.229.69	TCP	1514 80 → 51417 [ACK] Seq=1461 Ack=489 Win=30336 Len=1460 [TCP segment of a reassembled m...
+	1170	2.612954	128.119.245.12	10.45.229.69	TCP	1514 80 → 51417 [ACK] Seq=2921 Ack=489 Win=30336 Len=1460 [TCP segment of a reassembled m...
	1171	2.612954	128.119.245.12	10.45.229.69	HTTP	535 HTTP/1.1 200 OK (text/html)
+	1172	2.613000	10.45.229.69	128.119.245.12	TCP	54 51417 → 80 [ACK] Seq=489 Ack=4862 Win=132096 Len=0
	1173	2.615189	20.189.173.9	10.45.229.69	TLSv1.2	105 Change Cipher Spec, Encrypted Handshake Message
	1174	2.615413	10.45.229.69	20.189.173.9	TLSv1.2	1348 Application Data
	1175	2.615461	10.45.229.69	20.189.173.9	TLSv1.2	5615 Application Data

[Calculated window size: 30336]
[Window size scaling factor: 128]
Checksum: 0x34fa [unverified]
[Checksum Status: Unverified]
Urgent Pointer: 0
> [Timestamps]
✓ [SEQ/ACK analysis]
 [iRTT: 0.271493000 seconds]
 [Bytes in flight: 4861]
 [Bytes sent since last PSH flag: 4861]
 TCP payload (481 bytes)
 TCP segment data (481 bytes)
> [4 Reassembled TCP Segments (4861 bytes): #1168(1460), #1169(1460), #1170(1460), #1171(481)]

✓ **Hypertext Transfer Protocol**
0160 54 68 65 20 70 6f 77 65 72 73 20 6e 6f 74 20 64 The power is not d
0170 65 6c 65 67 61 74 65 64 20 74 6f 20 74 68 65 20 elegated to the
0180 55 6e 69 74 65 64 20 53 74 61 74 65 73 20 62 79 United States by
0190 20 74 68 65 20 43 6f 6e 73 74 69 74 75 74 69 6f the Constitutio
01a0 6e 2c 20 6e 6f 72 20 70 72 6f 68 69 62 69 74 65 n, nor p rohibite
01b0 64 20 0a 20 20 62 79 20 69 74 20 74 6f 20 74 68 d . by it to th
01c0 65 20 73 74 61 74 65 73 2c 20 61 72 65 20 72 65 e states , are re
01d0 73 65 72 76 65 64 20 74 6f 20 74 68 65 20 73 74 served t o the st
01e0 61 74 65 73 20 72 65 73 70 65 63 74 69 76 65 6c ates res pectivel
01f0 79 2c 20 6f 72 20 74 6f 20 74 68 65 20 70 65 6f y, or to the peo
0200 70 6c 65 2e 3c 2f 70 3e 0a 3c 2f 62 6f 64 79 3e ple.</p> </body>
0210 3c 2f 68 74 6d 6c 3e </html>