

HỌ TÊN: NGUYỄN XUÂN TRỰC

MSSV: 1513804

=====00=====

## LAB\_2A\_HTTP

- 1) Is your browser running HTTP version 1.0 or 1.1? What version of HTTP is the server running?

### SOLUTION

Both of them are version 1.1

Source:

No.	Time	Source	Destination	Protocol	Length	Info
6	07:47:27.530811	10.228.217.54	13.107.4.52	HTTP	165	GET /connecttest.txt HTTP/1.1
8	07:47:27.557324	13.107.4.52	10.228.217.54	HTTP	566	HTTP/1.1 200 OK (text/plain)
115	07:47:57.604422	10.228.217.54	13.107.4.52	HTTP	165	GET /connecttest.txt HTTP/1.1
117	07:47:57.604422	10.228.217.54	13.107.4.52	HTTP	165	GET /connecttest.txt HTTP/1.1
158	07:48:21.000000					
160	07:48:21.000000					
186	07:48:51.000000					
188	07:48:51.000000					
234	07:49:21.000000					
236	07:49:21.000000					
308	07:49:51.000000					
309	07:49:51.000000					
311	07:49:51.000000					
314	07:49:51.000000					

Wireshark - Packet 6 · WiFi

> Internet Protocol Version 4, Src: 10.228.217.54, Dst: 13.107.4.52  
> Transmission Control Protocol, Src Port: 58543, Dst Port: 80, Seq: 1, Ack: 1, Len: 111  
▼ Hypertext Transfer Protocol  
  ▼ GET /connecttest.txt HTTP/1.1\r\n    [Expert Info (Chat/Sequence): GET /connecttest.txt HTTP/1.1\r\n    [GET /connecttest.txt HTTP/1.1\r\n    [Severity level: Chat]  
    [Group: Sequence]  
    Request Method: GET  
    Request URI: /connecttest.txt  
    Request Version: HTTP/1.1  
    Connection: Close\r\n    User-Agent: Microsoft NCSI\r\n    Host: www.msftconnecttest.com\r\n    \r\n

Destination:

No.	Time	Source	Destination	Protocol	Length	Info
6	07:47:27.530811	10.228.217.54	13.107.4.52	HTTP	165	GET /connecttest.txt HTTP/1.1
8	07:47:27.557324	13.107.4.52	10.228.217.54	HTTP	566	HTTP/1.1 200 OK (text/plain)
115	07:47:57.604422					
117	07:47:57.604422					
158	07:48:27.72					
160	07:48:27.75					
186	07:48:57.84					
188	07:48:57.87					
234	07:49:27.94					
236	07:49:27.98					
308	07:49:51.27					
309	07:49:51.27					
311	07:49:51.57					
314	07:49:51.57					

Wireshark - Packet 6 · WiFi

> Internet Protocol Version 4, Src: 10.228.217.54, Dst: 13.107.4.52  
> Transmission Control Protocol, Src Port: 58543, Dst Port: 80, Seq: 1, Ack: 1, Len: 111  
▼ Hypertext Transfer Protocol  
  ▼ GET /connecttest.txt HTTP/1.1\r\n    [Expert Info (Chat/Sequence): GET /connecttest.txt HTTP/1.1\r\n    [GET /connecttest.txt HTTP/1.1\r\n    [Severity level: Chat]  
    [Group: Sequence]  
    Request Method: GET  
    Request URI: /connecttest.txt  
    Request Version: HTTP/1.1  
    Connection: Close\r\n    User-Agent: Microsoft NCSI\r\n    Host: www.msftconnecttest.com\r\n    \r\n

2) What languages (if any) does your browser indicate that it can accept to the server?

SOLUTION

en-US

A Wireshark capture showing an HTTP request. The request is for the URL /multi/check.php. The 'Info' pane shows the full request, including the 'Accept-Language: en-US\r\n' header, which is highlighted with a red box.

3) What is the IP address of your computer? Of the gaia.cs.umass.edu server?

SOLUTION

My computer : 10.228.217.54

gaia.cs.umass.edu : 128.119.245.12

A Wireshark capture showing an HTTP request from my computer to the gaia.cs.umass.edu server. The 'Info' pane shows the request details, including the source IP (10.228.217.54) and destination IP (128.119.245.12), both of which are highlighted with red boxes.

4) What is the status code returned from the server to your browser?

SOLUTION

Status code: 304

Wireshark - Packet 21 · WiFi

No.	Time
17	07:58:2
21	07:58:2

```

> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 10.228.217.54
> Transmission Control Protocol, Src Port: 80, Dst Port: 50023, Seq: 1, Ack: 614, Len: 239
< Hypertext Transfer Protocol
  < HTTP/1.1 304 Not Modified\r\n
    < [Expert Info (Chat/Sequence): HTTP/1.1 304 Not Modified\r\n]
      [HTTP/1.1 304 Not Modified\r\n]
      [Severity level: Chat]
      [Group: Sequence]
      Response Version: HTTP/1.1
      Status Code: 304
        [Status Code Description: Not Modified]
        Response Phrase: Not Modified
      Date: Mon, 12 Oct 2020 00:58:23 GMT\r\n
      Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.10 mod_perl/2.0.11 Perl/v5.16.3\r\n
      Connection: Keep-Alive\r\n
  
```

5) When was the HTML file that you are retrieving last modified at the server?

### SOLUTION

Mon, 12 Oct 2020

Wireshark - Packet 21 · WiFi

No.	Time
17	07:58:2
21	07:58:2

```

> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 10.228.217.54
> Transmission Control Protocol, Src Port: 80, Dst Port: 50023, Seq: 1, Ack: 614, Len: 239
< Hypertext Transfer Protocol
  < HTTP/1.1 304 Not Modified\r\n
    < [Expert Info (Chat/Sequence): HTTP/1.1 304 Not Modified\r\n]
      [HTTP/1.1 304 Not Modified\r\n]
      [Severity level: Chat]
      [Group: Sequence]
      Response Version: HTTP/1.1
      Status Code: 304
        [Status Code Description: Not Modified]
        Response Phrase: Not Modified
      Date: Mon, 12 Oct 2020 00:58:23 GMT\r\n
      Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.10 mod_perl/2.0.11 Perl/v5.16.3\r\n
      Connection: Keep-Alive\r\n
  
```

6) How many bytes of content are being returned to your browser?

### SOLUTION

Length: 496459

Wireshark - Packet 21 · WiFi

No.	Time
17	07:58:2
21	07:58:2

```

< 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, 12 Oct 2020 00:32:44 GMT\r\n
      Server: Apache/2.4.29 (Ubuntu)\r\n
      Last-Modified: Mon, 22 Feb 2016 21:37:15 GMT\r\n
      ETag: "7934b-52c62a2eaaab42"\r\n
      Accept-Ranges: bytes\r\n
      < Content-Length: 496459\r\n
        [Content length: 496459]
        Keep-Alive: timeout=5, max=100\r\n
        Connection: Keep-Alive\r\n
        Content-Type: application/pdf\r\n
      \r\n
      [HTTP response 1/1]
  
```

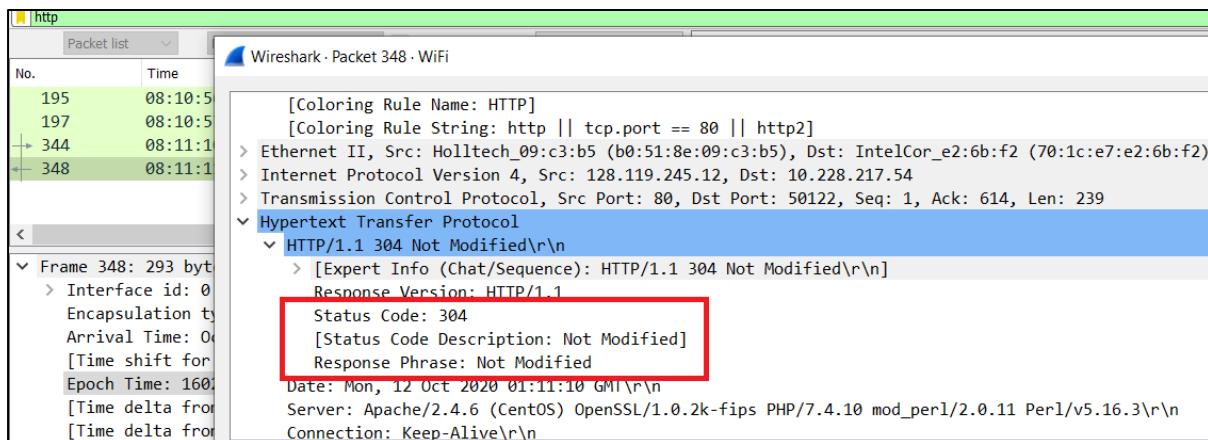
7) What is the server's response (status code and phrase) in response to the initial HTTP GET message from your browser?

### SOLUTION

We got a response that said 'HTTP/1.1 304 Not Modified'.

Status code: 304

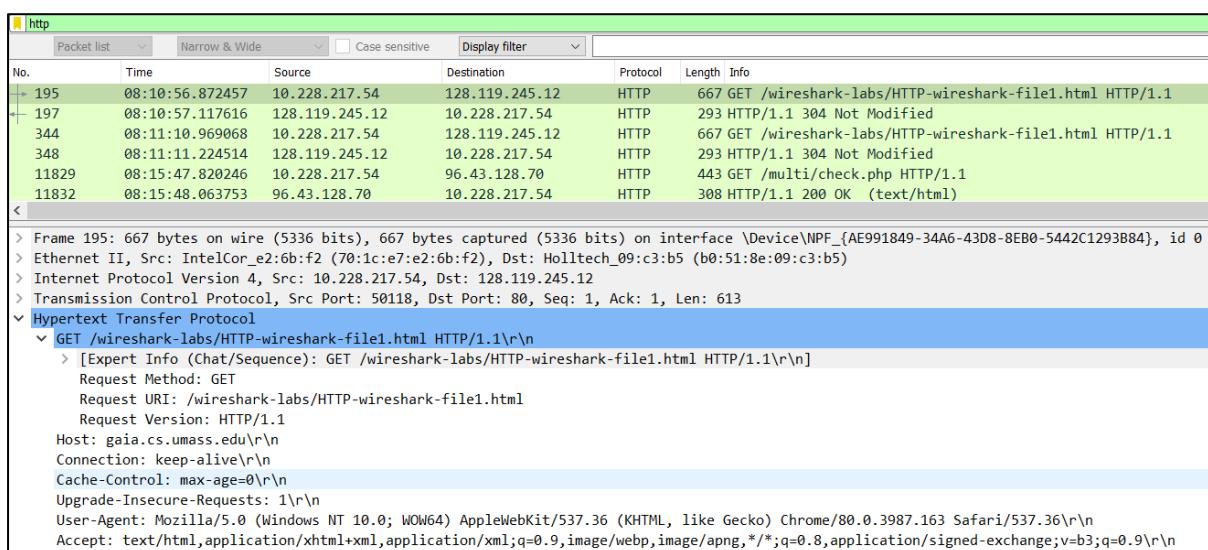
Response Phrase: Not Modified



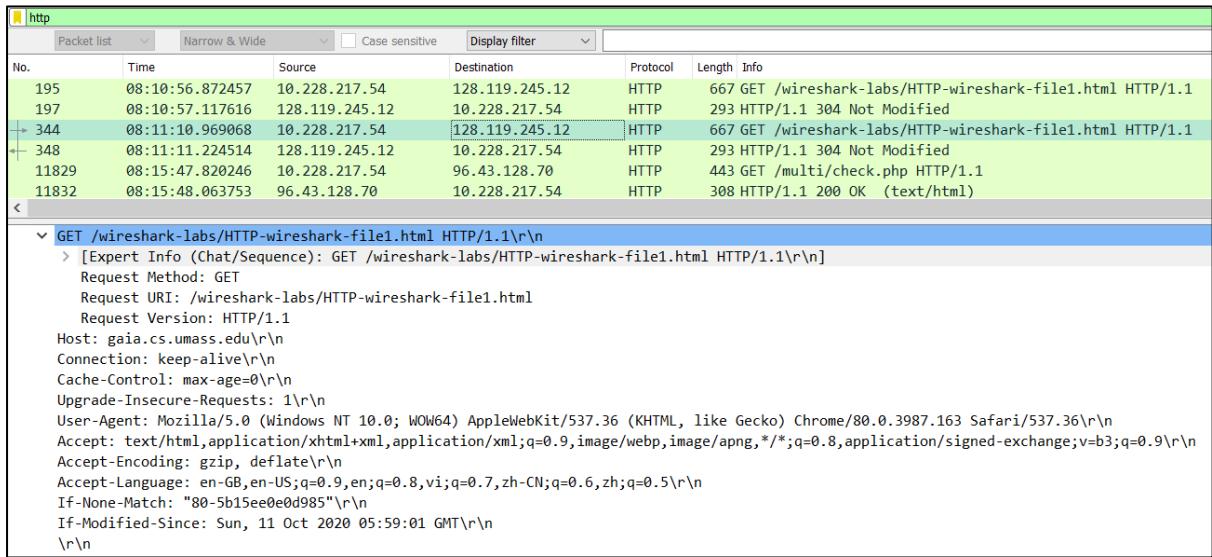
8) When your browser sends the HTTP GET message for the second time, what new field is included in the HTTP GET message?

### SOLUTION

The screenshot of first HTTP GET message:



The screenshot of second HTTP GET message:



A screenshot of the Wireshark interface, specifically the 'http' display filter. The packet list shows several HTTP requests and responses. The second request from the list is highlighted. The details pane shows the full GET request message, which includes the URL '/wireshark-labs/HTTP-wireshark-file1.html', the HTTP version 'HTTP/1.1', and various headers such as Host, Connection, Cache-Control, and User-Agent.

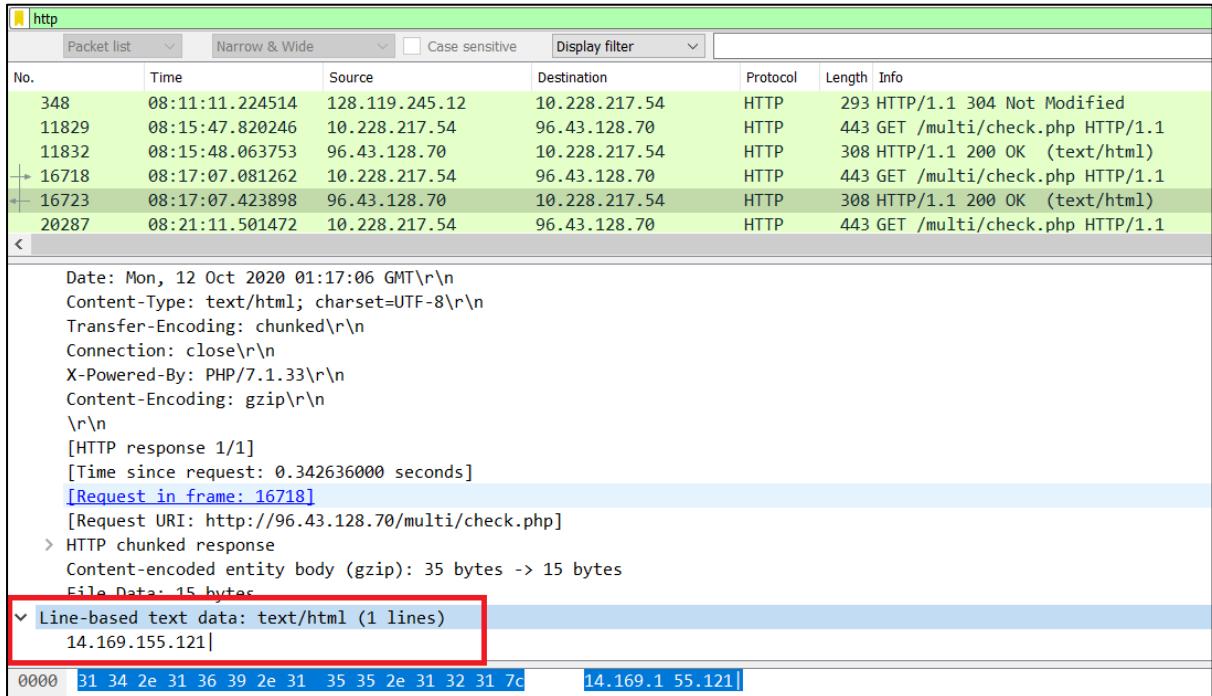
```
No. Time Source Destination Protocol Length Info
195 08:10:56.872457 10.228.217.54 128.119.245.12 HTTP 667 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
197 08:10:57.117616 128.119.245.12 10.228.217.54 HTTP 293 HTTP/1.1 304 Not Modified
344 08:11:10.969068 10.228.217.54 128.119.245.12 HTTP 667 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
348 08:11:11.224514 128.119.245.12 10.228.217.54 HTTP 293 HTTP/1.1 304 Not Modified
11829 08:15:47.820246 10.228.217.54 96.43.128.70 HTTP 443 GET /multi/check.php HTTP/1.1
11832 08:15:48.063753 96.43.128.70 10.228.217.54 HTTP 308 HTTP/1.1 200 OK (text/html)

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
Cache-Control: max-age=0\r\n
Upgrade-Insecure-Requests: 1\r\n
User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.163 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: en-GB,en-US;q=0.9,en;q=0.8,vi;q=0.7,zh-CN;q=0.6,zh;q=0.5\r\n
If-None-Match: "80-5b15ee0e0d985"\r\n
If-Modified-Since: Sun, 11 Oct 2020 05:59:01 GMT\r\n
\r\n
```

9) Inspect the contents of the server response. Did the server explicitly return the contents of the file? How can you tell?

### SOLUTION

Not explicitly



A screenshot of the Wireshark interface, specifically the 'http' display filter. The packet list shows several HTTP requests and responses. The fourth response from the list is highlighted. The details pane shows the full HTTP response message, which includes the status code '200 OK', the content type 'text/html', and the content itself. A red box highlights the 'Line-based text data: text/html (1 lines)' section, which contains the byte sequence '14.169.155.121|'. The bytes pane at the bottom shows the raw binary data corresponding to the highlighted text.

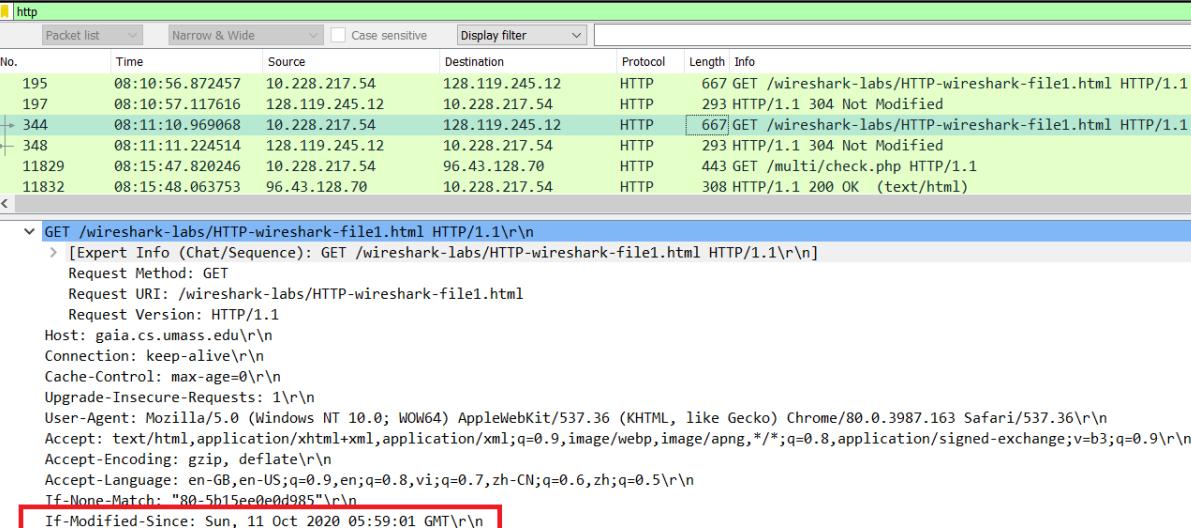
```
No. Time Source Destination Protocol Length Info
348 08:11:11.224514 128.119.245.12 10.228.217.54 HTTP 293 HTTP/1.1 304 Not Modified
11829 08:15:47.820246 10.228.217.54 96.43.128.70 HTTP 443 GET /multi/check.php HTTP/1.1
11832 08:15:48.063753 96.43.128.70 10.228.217.54 HTTP 308 HTTP/1.1 200 OK (text/html)
16718 08:17:07.081262 10.228.217.54 96.43.128.70 HTTP 443 GET /multi/check.php HTTP/1.1
16723 08:17:07.423898 96.43.128.70 10.228.217.54 HTTP 308 HTTP/1.1 200 OK (text/html)
20287 08:21:11.501472 10.228.217.54 96.43.128.70 HTTP 443 GET /multi/check.php HTTP/1.1

Date: Mon, 12 Oct 2020 01:17:06 GMT\r\n
Content-Type: text/html; charset=UTF-8\r\n
Transfer-Encoding: chunked\r\n
Connection: close\r\n
X-Powered-By: PHP/7.1.33\r\n
Content-Encoding: gzip\r\n
\r\n
[HTTP response 1/1]
[Time since request: 0.342636000 seconds]
[Request in frame: 16718]
[Request URI: http://96.43.128.70/multi/check.php]
> HTTP chunked response
Content-encoded entity body (gzip): 35 bytes -> 15 bytes
File Data: 15 bytes
< Line-based text data: text/html (1 lines)
14.169.155.121|
```

10) Now inspect the contents of the second HTTP GET request from your browser to the server. Do you see an “IF-MODIFIED-SINCE:” line in the HTTP GET? If so, what information follows the “IF-MODIFIED-SINCE:” header?

### SOLUTION

Yes in the second HTTP message an IF-MODIFIED-SINCE line is included. The information that follows is the date and time that I last accessed the webpage.



The screenshot shows a Wireshark capture of network traffic. The second row of the packet list is highlighted, corresponding to the expanded details below. The details pane shows the HTTP request for file1.html. The 'If-Modified-Since' header is visible in the request payload, with its value ('Sun, 11 Oct 2020 05:59:01 GMT') highlighted by a red box.

```

No. Time Source Destination Protocol Length Info
195 08:10:56.872457 10.228.217.54 128.119.245.12 HTTP 667 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
197 08:10:57.117616 128.119.245.12 10.228.217.54 HTTP 293 HTTP/1.1 304 Not Modified
344 08:11:10.969068 10.228.217.54 128.119.245.12 HTTP 667 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
348 08:11:11.224514 128.119.245.12 10.228.217.54 HTTP 293 HTTP/1.1 304 Not Modified
11829 08:15:47.820246 10.228.217.54 96.43.128.70 HTTP 443 GET /multi/check.php HTTP/1.1
11832 08:15:48.063753 96.43.128.70 10.228.217.54 HTTP 308 HTTP/1.1 200 OK (text/html)

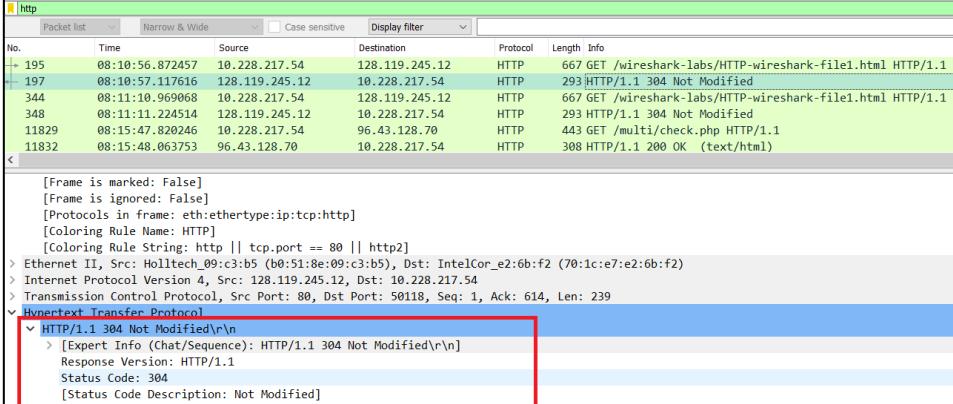
GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n
> [Expert Info (Chat/Sequence): GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n]
Request Method: GET
Request URI: /wireshark-labs/HTTP-wireshark-file1.html
Request Version: HTTP/1.1
Host: gaia.cs.umass.edu\r\n
Connection: keep-alive\r\n
Cache-Control: max-age=0\r\n
Upgrade-Insecure-Requests: 1\r\n
User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.163 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: en-GB,en-US;q=0.9,en;q=0.8,vi;q=0.7,zh-CN;q=0.6,zh;q=0.5\r\n
Tf-None-Match: "80-5b15ee0e0d985"\r\n
If-Modified-Since: Sun, 11 Oct 2020 05:59:01 GMT\r\n

```

11) What is the HTTP status code and phrase returned from the server in response to this second HTTP GET? Did the server explicitly return the contents of the file? Explain.

### SOLUTION

- + The HTTP status code is “304: Not Modified”
- + The server did not return the contents of the file because the browser simply retrieved the contents from its cache. Had the file been modified since it was last accessed, it would have returned the contents of the file, instead it simply told my browser to retrieve the old file from its cached memory.



The screenshot shows a Wireshark capture of network traffic. The second row of the packet list is highlighted, corresponding to the expanded details below. The details pane shows the HTTP response for file1.html. The status line ('HTTP/1.1 304 Not Modified') is highlighted by a red box.

```

No. Time Source Destination Protocol Length Info
195 08:10:56.872457 10.228.217.54 128.119.245.12 HTTP 667 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
197 08:10:57.117616 128.119.245.12 10.228.217.54 HTTP 293 HTTP/1.1 304 Not Modified
344 08:11:10.969068 10.228.217.54 128.119.245.12 HTTP 667 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
348 08:11:11.224514 128.119.245.12 10.228.217.54 HTTP 293 HTTP/1.1 304 Not Modified
11829 08:15:47.820246 10.228.217.54 96.43.128.70 HTTP 443 GET /multi/check.php HTTP/1.1
11832 08:15:48.063753 96.43.128.70 10.228.217.54 HTTP 308 HTTP/1.1 200 OK (text/html)

[Frame is marked: False]
[Frame is ignored: False]
[Protocols in frame: eth:ethertype:ip:tcp:http]
[Coloring Rule Name: HTTP]
[Coloring Rule String: http || tcp.port == 80 || http2]
> Ethernet II, Src: Holltech_09:c3:b5 (b0:51:8e:09:c3:b5), Dst: IntelCor_e2:6b:f2 (70:1c:e7:e2:6b:f2)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 10.228.217.54
> Transmission Control Protocol, Src Port: 80, Dst Port: 50118, Seq: 1, Ack: 614, Len: 239
< 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]
```

## **LAB\_2B\_DNS**

- 1) Run nslookup to obtain the IP address of a Web server in Asia. What is the IP address of that server?

### SOLUTION

I performed nslookup for [www.vnexpress.net](http://www.vnexpress.net)

```
C:\Users\TRUC BK>nslookup www.vnexpress.net
Server:  dns.google
Address: 8.8.8.8

Non-authoritative answer:
Name:    vnexpress.net
Address: 111.65.250.2
Aliases: www.vnexpress.net
```

- 2) Run nslookup to determine the authoritative DNS servers for a university in Europe.

### SOLUTION

I performed nslookup for a European University in Ioannina Greece

```
C:\Users\TRUC BK>nslookup -type=NS uoi.gr
Server:  dns.google
Address: 8.8.8.8

Non-authoritative answer:
uoi.gr  nameserver = sns1.grnet.gr
uoi.gr  nameserver = sns0.grnet.gr
uoi.gr  nameserver = kouzina.noc.uoi.gr
uoi.gr  nameserver = marina.noc.uoi.gr
```

- 3) Run nslookup so that one of the DNS servers obtained in Question 2 is queried for the mail servers for Yahoo! mail. What is its IP address?

### SOLUTION

```
C:\Users\TRUC BK>nslookup mail.yahoo.com dns.google
Server:  dns.google
Address: 8.8.8.8

Non-authoritative answer:
Name:    edge.gycpi.b.yahoodns.net
Addresses: 2406:2000:a8:800::e6
           2406:2000:a8:800::e7
           119.161.8.11
           119.161.8.12
Aliases:  mail.yahoo.com
```

4) Locate the DNS query and response messages. Are they sent over UDP or TCP?

SOLUTION

Screenshot for DNS query:

No.	Time	Source	Destination	Protocol	Length	Info
99	08:10:42.622238	8.8.8	10.228.217.54	DNS	186	Standard query response 0xe32d A data.alexa.com A 34.228.183.78 A 54.236.79.133
154	08:10:56.009898	10.228.217.54	8.8.8	DNS	74	Standard query 0x8ccf A www.google.com
155	08:10:56.049121	8.8.8	10.228.217.54	DNS	90	Standard query response 0x8ccf A www.google.com A 172.217.26.132
206	08:11:03.308733	10.228.217.54	8.8.8	DNS	75	Standard query 0xf411 A ssl.gstatic.com
207	08:11:03.315731	8.8.8	10.228.217.54	DNS	91	Standard query response 0xf411 A ssl.gstatic.com A 172.217.31.227
230	08:11:04.058227	10.228.217.54	8.8.8	DNS	79	Standard query 0x8da9 A clients6.google.com

> User Datagram Protocol, Src Port: 53, Dst Port: 58643  
 ✓ Domain Name System (response)  
     Transaction ID: 0x7ed1  
     > Flags: 0x8180 Standard query response, No error  
     Questions: 1  
     Answer RRs: 2  
     Authority RRs: 0  
     Additional RRs: 0  
 ✓ Queries  
     translate.google.com: type A, class IN  
         Name: translate.google.com  
         [Name Length: 20]  
         [Label Count: 3]  
         Type: A (Host Address) (1)  
         Class: IN (0x0001)

Screenshot for DNS response:

No.	Time	Source	Destination	Protocol	Length	Info
43	08:10:38.050319	10.228.217.54	8.8.8	DNS	80	Standard query 0x7ed1 A translate.google.com
44	08:10:38.103175	8.8.8	10.228.217.54	DNS	117	Standard query response 0x7ed1 A translate.google.com CNAME www3.l.google.com A 216.58.199.110
98	08:10:42.552339	10.228.217.54	8.8.8	DNS	74	Standard query 0xe32d A data.alexa.com
99	08:10:42.622238	8.8.8	10.228.217.54	DNS	106	Standard query response 0xe32d A data.alexa.com A 34.228.183.78 A 54.236.79.133
154	08:10:56.009898	10.228.217.54	8.8.8	DNS	74	Standard query 0x8ccf A www.google.com
155	08:10:56.049121	8.8.8	10.228.217.54	DNS	90	Standard query response 0x8ccf A www.google.com A 172.217.26.132

Additional RRs: 0  
 ✓ Queries  
     > translate.google.com: type A, class IN  
 ✓ Answers  
     translate.google.com: type CNAME, class IN, cname www3.l.google.com  
         Name: translate.google.com  
         Type: CNAME (Canonical NAME for an alias) (5)  
         Class: IN (0x0001)  
         Time to live: 21091 (5 hours, 51 minutes, 31 seconds)  
         Data length: 9  
         CNAME: www3.l.google.com  
 ✓ www3.l.google.com: type A, class IN, addr 216.58.199.110  
     Name: www3.l.google.com  
     Type: A (Host Address) (1)  
     Class: IN (0x0001)  
     Time to live: 74 (1 minute, 14 seconds)  
     Data length: 4  
     Address: 216.58.199.110  
 [Request In: 43]  
 [Time: 0.052856000 seconds]

0000 70 1c e7 e2 6b f2 b0 51 8e 09 c3 b5 08 00 45 20 p...k Q .....  
 0010 00 67 a4 cb 00 00 72 11 af 70 08 08 08 08 0a e4 g...r...p.....  
 0020 d9 36 00 35 e5 13 00 53 d7 28 7e d1 81 80 00 01 6...S ...  
 0030 00 02 00 00 00 00 09 74 72 61 6e 73 6c 61 74 65 .....t ranslate  
 0040 06 67 6f 6f 67 6c 05 03 63 6f 6d 00 00 01 00 01 -google.com.....  
 0050 c0 0c 00 05 00 01 00 00 52 63 00 00 04 04 77 77 77 .....Rc--www  
 0060 33 01 6c c0 16 c0 32 00 01 00 01 00 00 00 4a 00 3...l...2...J..  
 0070 ..40 ..72 ..

They are sent over UDP.

5) What is the destination port for the DNS query message? What is the source port of DNS response message?

SOLUTION

```
C:\Users\TRUC BK>ipconfig -all

Windows IP Configuration

Host Name . . . . . : TrucBK
Primary Dns Suffix . . . . . :
Node Type . . . . . : Mixed
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : hcmut.edu.vn

Ethernet adapter Ethernet:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . . . . :
Description . . . . . : Realtek PCIe GbE Family Controller
Physical Address. . . . . : 98-40-BB-38-DC-A6
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . . : Yes

Ethernet adapter Ethernet 2:

Connection-specific DNS Suffix . . . . . :
Description . . . . . : VirtualBox Host-Only Ethernet Adapter
Physical Address. . . . . : 0A-00-27-00-00-15
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::cc1d:2181:6db1:1254%21(Preferred)
IPv4 Address. . . . . : 192.168.56.1(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
DHCPv6 IAID . . . . . : 722075687
DHCPv6 Client DUID. . . . . : 00-01-00-01-23-3A-AF-B3-98-40-BB-38-DC-A6
DNS Servers . . . . . : fec0:0:0:ffff::1%1
                         fec0:0:0:ffff::2%1
                         fec0:0:0:ffff::3%1
NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter VirtualBox Host-Only Network #2:

Connection-specific DNS Suffix . . . . . :
Description . . . . . : VirtualBox Host-Only Ethernet Adapter #2
Physical Address. . . . . : 0A-00-27-00-00-0A
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::1449:39ea:d222:3a91%10(Preferred)
IPv4 Address. . . . . : 192.168.99.1(Preferred)
```

- 6) To what IP address is the DNS query message sent? Use ipconfig to determine the IP address of your local DNS server. Are these two IP addresses the same?

### SOLUTION