**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ**

**НАВЧАЛЬНО-НАУКОВИЙ КОМПЛЕКС**

**«ІНСТИТУТ ПРИКЛАДНОГО СИСТЕМНОГО АНАЛІЗУ»**

**НАЦІОНАЛЬНОГО ТЕХНІЧНОГО УНІВЕРСИТЕТУ УКРАЇНИ**

**«КИЇВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ ІМЕНІ ІГОРЯ СІКОРСЬКОГО»**

**КАФЕДРА МАТЕМАТИЧНИХ МЕТОДІВ СИСТЕМНОГО АНАЛІЗУ**

**Практична робота №2**

**з курсу «Комп'ютерні мережі»**

**Виконав студент 3 курсу**

**групи КА-71**

**Сандига Я. С.**

**Прийняв Кухарєв С.О.**

**Київ – 2020 р.**

**lab2\_request**

No. Time Source Destination Protocol Length Info

39 9.603688 192.168.8.101 128.119.245.12 HTTP 465 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1

Frame 39: 465 bytes on wire (3720 bits), 465 bytes captured (3720 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb), Dst: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26)

Internet Protocol Version 4, Src: 192.168.8.101, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 43886, Dst Port: 80, Seq: 1, Ack: 1, Len: 399

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

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:73.0) Gecko/20100101 Firefox/73.0\r\n

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,\*/\*;q=0.8\r\n

Accept-Language: ru-RU,ru;q=0.8,en-US;q=0.5,en;q=0.3\r\n

Accept-Encoding: gzip, deflate\r\n

Connection: keep-alive\r\n

Upgrade-Insecure-Requests: 1\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: 41]

[Next request in frame: 42]

**lab2\_response**

No. Time Source Destination Protocol Length Info

41 9.750065 128.119.245.12 192.168.8.101 HTTP 552 HTTP/1.1 200 OK (text/html)

Frame 41: 552 bytes on wire (4416 bits), 552 bytes captured (4416 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26), Dst: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.8.101

Transmission Control Protocol, Src Port: 80, Dst Port: 43886, Seq:1,Ack: 400, 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: Fri, 03 Apr 2020 11:21:53 GMT\r\n

Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 mod\_perl/2.0.11 Perl/v5.16.3\r\n

Last-Modified: Fri, 03 Apr 2020 05:59:03 GMT\r\n

ETag: "80-5a25c9d4dfa88"\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: 0.146377000 seconds]

[Request in frame: 39]

[Next request in frame: 42]

[Next response in frame: 44]

[Request URI: http://gaia.cs.umass.edu/favicon.ico]

File Data: 128 bytes

Line-based text data: text/html (4 lines)

<html>\n

Congratulations. You've downloaded the file \n

http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html!\n

</html>\n

Контрольні запитання:

1. Яку версію протоколу HTTP використовує ваш браузер (1.0 чи 1.1)?

**1.1 (GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1)**

Яку версію протоколу використовує сервер?

**1.1 (HTTP/1.1 200 OK (text/html))**

2. Які мови (якщо вказано) браузер може прийняти від сервера?

**ru,uk;q=0.8,en-US;q=0.5,en;q=0.3**

3. Які IP-адреси вашого комп’ютера та цільового веб-сервера?

**192.168.0.104, 128.119.245.12**

4. Який статусний код сервер повернув у відповіді вашому браузеру?

**200**

5. Коли на сервері в останній раз був модифікований файл, який запитується

браузером?

**Thu, 14 May 2020 05:59:02 GMT**

6. Скільки байт контенту повертається сервером?

**128**

7. Переглядаючи нерозібраний байтовий потік пакету, чи бачите ви деякі заголовки в

потоці, які не відображаються у вікні деталей пакету? Якщо так, назвіть один з них.

**-**

**Повторний запит**

**lab2\_re-request**

No. Time Source Destination Protocol Length Info

10 0.131507 192.168.8.101 128.119.245.12 HTTP 576 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1

Frame 10: 576 bytes on wire (4608 bits), 576 bytes captured (4608 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb), Dst: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26)

Internet Protocol Version 4, Src: 192.168.8.101, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 43891, Dst Port: 80, Seq: 1, Ack: 1, Len: 510

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

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:73.0) Gecko/20100101 Firefox/73.0\r\n

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,\*/\*;q=0.8\r\n

Accept-Language: ru-RU,ru;q=0.8,en-US;q=0.5,en;q=0.3\r\n

Accept-Encoding: gzip, deflate\r\n

Connection: keep-alive\r\n

Upgrade-Insecure-Requests: 1\r\n

If-Modified-Since: Fri, 03 Apr 2020 05:59:03 GMT\r\n

If-None-Match: "80-5a25c9d4dfa88"\r\n

Cache-Control: max-age=0\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: 12]

**lab2\_re-response**

No. Time Source Destination Protocol Length Info

12 0.279149 128.119.245.12 192.168.8.101 HTTP 305 HTTP/1.1 304 Not Modified

Frame 12: 305 bytes on wire (2440 bits), 305 bytes captured (2440 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26), Dst: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.8.101

Transmission Control Protocol, Src Port: 80, Dst Port: 43891, Seq: 1, Ack: 511, 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]

C:\Users\User\Documents\Wireshark\Lab2\lab2\_2.pcapng 27 total packets, 2 shown

Response Phrase: Not Modified

Date: Fri, 03 Apr 2020 11:22:23 GMT\r\n

Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 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: "80-5a25c9d4dfa88"\r\n

\r\n

[HTTP response 1/1]

[Time since request: 0.147642000 seconds]

[Request in frame: 10]

[Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]

8. Перевірте вміст першого запиту HTTP GET від вашого браузера до сервера. Чи є в

ньому заголовок IF-MODIFIED-SINCE?

**Ні**

9. Перевірте вміст першої відповіді сервера. Чи повернув сервер вміст файлу

безпосередньо у відповіді?

**Так**

10. Перевірте вміст другого запиту HTTP GET. Чи є в ньому заголовок IF-MODIFIED-SINCE?

Якщо так, яке значення йому відповідає?

If-Modified-Since: Thu, 14 May 2020 05:59:02 GMT\r\n

11. Який код та опис статусу другої відповіді сервера? Чи повернув сервер вміст файлу

безпосередньо у відповіді?

**404 Not Found, ні.**

**lab2\_image\_request**

No. Time Source Destination Protocol Length Info

4 0.078680 192.168.8.101 193.109.246.67 HTTP 443 GET /foto/edin\_inform.jpg HTTP/1.1

Frame 4: 443 bytes on wire (3544 bits), 443 bytes captured (3544 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb), Dst: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26)

Internet Protocol Version 4, Src: 192.168.8.101, Dst: 193.109.246.67

Transmission Control Protocol, Src Port: 43994, Dst Port: 80, Seq: 1, Ack: 1, Len: 377

Hypertext Transfer Protocol

GET /foto/edin\_inform.jpg HTTP/1.1\r\n

[Expert Info (Chat/Sequence): GET /foto/edin\_inform.jpg HTTP/1.1\r\n]

Request Method: GET

Request URI: /foto/edin\_inform.jpg

Request Version: HTTP/1.1

C:\Users\User\Documents\Wireshark\Lab2\lab2\_3.pcapng 406 total packets, 4 shown

Host: tinkova.ucoz.ru\r\n

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:73.0) Gecko/20100101 Firefox/73.0\r\n

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,\*/\*;q=0.8\r\n

Accept-Language: ru-RU,ru;q=0.8,en-US;q=0.5,en;q=0.3\r\n

Accept-Encoding: gzip, deflate\r\n

Connection: keep-alive\r\n

Upgrade-Insecure-Requests: 1\r\n

\r\n

[Full request URI: http://tinkova.ucoz.ru/foto/edin\_inform.jpg]

[HTTP request 1/2]

[Response in frame: 396]

[Next request in frame: 398]

**lab2\_image\_response**

No. Time Source Destination Protocol Length Info

396 0.824631 193.109.246.67 192.168.8.101 HTTP 648 HTTP/1.1 200 OK (JPEG JFIF image)

Frame 396: 648 bytes on wire (5184 bits), 648 bytes captured (5184 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26), Dst: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb)

Internet Protocol Version 4, Src: 193.109.246.67, Dst: 192.168.8.101

Transmission Control Protocol, Src Port: 80, Dst Port: 43994, Seq: 409829, Ack: 378, Len: 582

[297 Reassembled TCP Segments (410410 bytes): #6(368), #7(1388), #9(1388), #10(1388), #11(1388), #12(1388), #14(1388), #15(1388), #16(1388),

#17(1388), #19(1388), #20(1388), #22(1388), #23(1388), #24(1388), #26(1388), #27(1388), #28(1388), ]

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

Server: nginx/1.8.0\r\n

Date: Fri, 03 Apr 2020 12:42:04 GMT\r\n

Content-Type: image/jpeg\r\n

C:\Users\User\Documents\Wireshark\Lab2\lab2\_3.pcapng 406 total packets, 4 shown

Content-Length: 410042\r\n

Last-Modified: Wed, 12 Dec 2012 13:27:37 GMT\r\n

Connection: keep-alive\r\n

Keep-Alive: timeout=15\r\n

ETag: "50c88649-641ba"\r\n

Expires: Thu, 23 Apr 2020 12:42:04 GMT\r\n

Cache-Control: max-age=1728000\r\n

X-Frame-Options: SAMEORIGIN\r\n

Accept-Ranges: bytes\r\n

\r\n

[HTTP response 1/2]

[Time since request: 0.745951000 seconds]

[Request in frame: 4]

[Next request in frame: 398]

[Next response in frame: 401]

[Request URI: http://tinkova.ucoz.ru/favicon.ico]

File Data: 410042 bytes

JPEG File Interchange Format

12. Скільки повідомлень HTTP GET було відправлено вашим браузером?

22

13.Скільки пакетів TCP було необхідно для доставки одної відповіді HTTP-сервера?

**297**

14. Який код та опис статусу був у відповіді сервера?

**200 OK**

15. Чи зустрічаються у даних пакетів-продовжень протоколу TCP стрічки з кодом та

описом статусу відповіді, або ж якісь заголовки протоколу HTTP

**Так, таким чином починається перший пакет протоколу ТСР.**

**final.pdf**

No. Time Source Destination Protocol Length Info

61 6.950214 192.168.8.101 128.119.245.12 HTTP 465 GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1

Frame 61: 465 bytes on wire (3720 bits), 465 bytes captured (3720 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb), Dst: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26)

Internet Protocol Version 4, Src: 192.168.8.101, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 44025, Dst Port: 80, Seq: 1, Ack: 1, Len: 399

Hypertext Transfer Protocol

GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1\r\n

[Expert Info (Chat/Sequence): GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1\r\n]

Request Method: GET

Request URI: /wireshark-labs/HTTP-wireshark-file4.html

Request Version: HTTP/1.1

Host: gaia.cs.umass.edu\r\n

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:73.0) Gecko/20100101 Firefox/73.0\r\n

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,\*/\*;q=0.8\r\n

Accept-Language: ru-RU,ru;q=0.8,en-US;q=0.5,en;q=0.3\r\n

Accept-Encoding: gzip, deflate\r\n

Connection: keep-alive\r\n

Upgrade-Insecure-Requests: 1\r\n

\r\n

[Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file4.html]

[HTTP request 1/3]

[Response in frame: 63]

[Next request in frame: 64]

No. Time Source Destination Protocol Length Info

63 7.092268 128.119.245.12 192.168.8.101 HTTP 1139 HTTP/1.1 200 OK (text/html)

Frame 63: 1139 bytes on wire (9112 bits), 1139 bytes captured (9112 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26), Dst: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.8.101

Transmission Control Protocol, Src Port: 80, Dst Port: 44025, Seq: 1, Ack: 400, Len: 1073

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: Fri, 03 Apr 2020 13:06:43 GMT\r\n

Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 mod\_perl/2.0.11 Perl/v5.16.3\r\n

Last-Modified: Fri, 03 Apr 2020 05:59:03 GMT\r\n

ETag: "2ca-5a25c9d4ca2c6"\r\n

Accept-Ranges: bytes\r\n

Content-Length: 714\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 1/3]

[Time since request: 0.142054000 seconds]

[Request in frame: 61]

[Next request in frame: 64]

[Next response in frame: 69]

[Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file4.html] File Data: 714 bytes

Line-based text data: text/html (17 lines)

No. Time Source Destination Protocol Length Info

64 7.112832 192.168.8.101 128.119.245.12 HTTP 422 GET /pearson.png HTTP/1.1

Frame 64: 422 bytes on wire (3376 bits), 422 bytes captured (3376 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb), Dst: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26)

Internet Protocol Version 4, Src: 192.168.8.101, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 44025, Dst Port: 80, Seq: 400, Ack: 1074, Len: 356

Hypertext Transfer Protocol

GET /pearson.png HTTP/1.1\r\n

[Expert Info (Chat/Sequence): GET /pearson.png HTTP/1.1\r\n]

Request Method: GET

Request URI: /pearson.png

Request Version: HTTP/1.1

Host: gaia.cs.umass.edu\r\n

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:73.0) Gecko/20100101 Firefox/73.0\r\n Accept: image/webp,\*/\*\r\n

Accept-Language: ru-RU,ru;q=0.8,en-US;q=0.5,en;q=0.3\r\n

Accept-Encoding: gzip, deflate\r\n

Connection: keep-alive\r\n

Referer: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file4.html\r\n \r\n

[Full request URI: http://gaia.cs.umass.edu/pearson.png]

[HTTP request 2/3]

[Prev request in frame: 61]

[Response in frame: 69]

[Next request in frame: 71]

No. Time Source Destination Protocol Length Info

69 7.255829 128.119.245.12 192.168.8.101 HTTP 901 HTTP/1.1 200 OK (PNG)

Frame 69: 901 bytes on wire (7208 bits), 901 bytes captured (7208 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26), Dst: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.8.101

Transmission Control Protocol, Src Port: 80, Dst Port: 44025, Seq: 3850, Ack: 756, Len: 835

[3 Reassembled TCP Segments (3611 bytes): #67(1388), #68(1388), #69(835)]

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: Fri, 03 Apr 2020 13:06:43 GMT\r\n

Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 mod\_perl/2.0.11 Perl/v5.16.3\r\n

Last-Modified: Sat, 06 Aug 2016 10:08:14 GMT\r\n

ETag: "cc3-539645c7f1ee7"\r\n

Accept-Ranges: bytes\r\n

Content-Length: 3267\r\n

Keep-Alive: timeout=5, max=99\r\n

Connection: Keep-Alive\r\n

Content-Type: image/png\r\n

\r\n

[HTTP response 2/3]

[Time since request: 0.142997000 seconds]

[Prev request in frame: 61]

[Prev response in frame: 63]

[Request in frame: 64]

[Next request in frame: 71]

[Next response in frame: 78]

[Request URI: http://gaia.cs.umass.edu/pearson.png]

File Data: 3267 bytes

Portable Network Graphics

No. Time Source Destination Protocol Length Info

71 7.352414 192.168.8.101 128.119.245.12 HTTP 346 GET /favicon.ico HTTP/1.1

Frame 71: 346 bytes on wire (2768 bits), 346 bytes captured (2768 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb), Dst: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26)

Internet Protocol Version 4, Src: 192.168.8.101, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 44025, Dst Port: 80, Seq: 756, Ack: 4685, Len: 280

Hypertext Transfer Protocol

GET /favicon.ico HTTP/1.1\r\n

[Expert Info (Chat/Sequence): GET /favicon.ico HTTP/1.1\r\n]

Request Method: GET

Request URI: /favicon.ico

Request Version: HTTP/1.1

Host: gaia.cs.umass.edu\r\n

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:73.0) Gecko/20100101 Firefox/73.0\r\n

Accept: image/webp,\*/\*\r\n

Accept-Language: ru-RU,ru;q=0.8,en-US;q=0.5,en;q=0.3\r\n

Accept-Encoding: gzip, deflate\r\n

Connection: keep-alive\r\n

\r\n

[Full request URI: http://gaia.cs.umass.edu/favicon.ico]

[HTTP request 3/3]

[Prev request in frame: 64]

[Response in frame: 78]

No. Time Source Destination Protocol Length Info

77 7.496176 192.168.8.101 128.119.245.12 HTTP 436 GET /~kurose/cover\_5th\_ed.jpg HTTP/1.1

Frame 77: 436 bytes on wire (3488 bits), 436 bytes captured (3488 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0 Ethernet II, Src: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb), Dst: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26)

Internet Protocol Version 4, Src: 192.168.8.101, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 44028, Dst Port: 80, Seq: 1, Ack: 1, Len: 370

Hypertext Transfer Protocol

GET /~kurose/cover\_5th\_ed.jpg HTTP/1.1\r\n

[Expert Info (Chat/Sequence): GET /~kurose/cover\_5th\_ed.jpg HTTP/1.1\r\n]

Request Method: GET

Request URI: /~kurose/cover\_5th\_ed.jpg

Request Version: HTTP/1.1

Host: gaia.cs.umass.edu\r\n

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:73.0) Gecko/20100101 Firefox/73.0\r\n

Accept: image/webp,\*/\*\r\n

Accept-Language: ru-RU,ru;q=0.8,en-US;q=0.5,en;q=0.3\r\n

Accept-Encoding: gzip, deflate\r\n

Connection: keep-alive\r\n

Referer: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file4.html\r\n \r\n

[Full request URI: http://manic.cs.umass.edu/~kurose/cover\_5th\_ed.jpg]

[HTTP request 1/1]

[Response in frame: 173]

No. Time Source Destination Protocol Length Info

78 7.496639 128.119.245.12 192.168.8.101 HTTP 550 HTTP/1.1 404 Not Found (text/html)

Frame 78: 550 bytes on wire (4400 bits), 550 bytes captured (4400 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26), Dst: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.8.101

Transmission Control Protocol, Src Port: 80, Dst Port: 44025, Seq: 4685, Ack: 1036, Len: 484

Hypertext Transfer Protocol

HTTP/1.1 404 Not Found\r\n

[Expert Info (Chat/Sequence): HTTP/1.1 404 Not Found\r\n]

Response Version: HTTP/1.1

Status Code: 404

[Status Code Description: Not Found]

Response Phrase: Not Found

Date: Fri, 03 Apr 2020 13:06:44 GMT\r\n

Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 mod\_perl/2.0.11 Perl/v5.16.3\r\n

Content-Length: 209\r\n

Keep-Alive: timeout=5, max=98\r\n

Connection: Keep-Alive\r\n

Content-Type: text/html; charset=iso-8859-1\r\n

\r\n

[HTTP response 3/3]

[Time since request: 0.144225000 seconds]

[Prev request in frame: 64]

[Prev response in frame: 69]

[Request in frame: 71]

[Request URI: http://gaia.cs.umass.edu/favicon.ico]

File Data: 209 bytes

Line-based text data: text/html (7 lines)

No. Time Source Destination Protocol Length Info

173 8.067318 128.119.245.12 192.168.8.101 HTTP 1448 HTTP/1.1 200 OK (JPEG JFIF image)

Frame 173: 1448 bytes on wire (11584 bits), 1448 bytes captured (11584 bits) on interface \Device\NPF\_{5AE84093-EF24-46FA-B051-D503C3E8D1AB}, id 0

Ethernet II, Src: HuaweiTe\_cb:fe:26 (1c:15:1f:cb:fe:26), Dst: IntelCor\_c7:13:bb (e4:b3:18:c7:13:bb)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.8.101

Transmission Control Protocol, Src Port: 80, Dst Port: 44028, Seq: 99937, Ack: 371, Len: 1382

[73 Reassembled TCP Segments (101318 bytes): #81(1388), #82(1388), #83(1388), #84(1388), #86(1388), #87(1388), #88(1388), #90(1388),

#92(1388), #93(1388), #95(1388), #96(1388), #97(1388), #98(1388), #100(1388), #101(1388), #102(1388), #103(]

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: Fri, 03 Apr 2020 13:06:44 GMT\r\n

Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 mod\_perl/2.0.11 Perl/v5.16.3\r\n

Last-Modified: Tue, 15 Sep 2009 18:23:27 GMT\r\n

ETag: "18a68-473a1e0e6e5c0"\r\n

Accept-Ranges: bytes\r\n

Content-Length: 100968\r\n

Keep-Alive: timeout=5, max=100\r\n

Connection: Keep-Alive\r\n

Content-Type: image/jpeg\r\n

\r\n

[HTTP response 1/1]

[Time since request: 0.571142000 seconds]

[Request in frame: 77]

[Request URI: http://manic.cs.umass.edu/~kurose/cover\_5th\_ed.jpg]

File Data: 100968 bytes

JPEG File Interchange Format

16. Скільки запитів HTTP GET було відправлено вашим браузером? Якими були цільові

IP-адреси запитів?

**3 запити**

**128.119.245.12**

**128.119.245.12**

**128.119.245.12**

17. Чи можете ви встановити, чи були ресурси отримані паралельно чи послідовно?

Яким чином?

**Послідовно, за часом надходження відповідей та адресами.**

Висновки: виконуючи роботу, я ознайомився з деталями роботи з протоколом HTML.