

**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»**

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Контрольні запитання:

Dump 1:

Request:

Frame 44: 560 bytes on wire (4480 bits), 560 bytes captured (4480 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13), Dst: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe)

Internet Protocol Version 4, Src: 192.168.0.103, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 59235, Dst Port: 80, Seq: 1, Ack: 1, Len: 506

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

DNT: 1\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/80.0.3987.149 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: ru-RU,ru-UA;q=0.9,ru;q=0.8,en-US;q=0.7,en;q=0.6\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: 60]

[Next request in frame: 271]

Answer:

Frame 60: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe), Dst: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.103

Transmission Control Protocol, Src Port: 80, Dst Port: 59235, Seq: 1, Ack: 507, Len: 486

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Sun, 22 Mar 2020 09:32:39 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: Sun, 22 Mar 2020 05:59:02 GMT\r\n

ETag: "80-5a16b37295267"\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: 0.128152000 seconds]

[Request in frame: 44]

[Next request in frame: 271]

[Next response in frame: 304]

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

File Data: 128 bytes

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

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

Яку версію протоколу використовує сервер?

Браузер використовує HTTP 1.1

Сервер використовує HTTP 1.1

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

Російська (Росія), російська (Україна), російська, англійська (США),
англійська

Accept-Language: ru-RU,ru-UA;q=0.9,ru;q=0.8,en-US;q=0.7,en;q=0.6

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

Комп'ютер 192.168.0.103

Цільовий веб-сервер 128.119.245.12

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

200 OK

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

Sun, 22 Mar 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.

Ні

Dump 2:

Request 1:

Frame 44: 560 bytes on wire (4480 bits), 560 bytes captured (4480 bits) on
interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13), Dst: Tp-LinkT_50:ec:fe
(c4:71:54:50:ec:fe)

Internet Protocol Version 4, Src: 192.168.0.103, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 59828, Dst Port: 80, Seq: 1, Ack: 1, Len: 506

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

DNT: 1\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/80.0.3987.149 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: ru-RU,ru-UA;q=0.9,ru;q=0.8,en-US;q=0.7,en;q=0.6\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: 68]

[Next request in frame: 216]

Answer 1:

Frame 68: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe), Dst: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.103

Transmission Control Protocol, Src Port: 80, Dst Port: 59828, Seq: 1, Ack: 507, Len: 486

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Sun, 22 Mar 2020 09:40:19 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: Sun, 22 Mar 2020 05:59:02 GMT\r\n

ETag: "80-5a16b37295267"\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: 0.146585000 seconds]

[Request in frame: 44]

[Next request in frame: 216]

[Next response in frame: 278]

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

File Data: 128 bytes

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

Request 2:

Frame 1250: 671 bytes on wire (5368 bits), 671 bytes captured (5368 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13), Dst: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe)

Internet Protocol Version 4, Src: 192.168.0.103, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 59829, Dst Port: 80, Seq: 1, Ack: 1, Len: 617

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

Cache-Control: max-age=0\r\n

DNT: 1\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/80.0.3987.149 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: ru-RU,ru-UA;q=0.9,ru;q=0.8,en-US;q=0.7,en;q=0.6\r\n

If-None-Match: "80-5a16b37295267"\r\n

If-Modified-Since: Sun, 22 Mar 2020 05:59:02 GMT\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: 1258]

Answer 2:

Frame 1258: 293 bytes on wire (2344 bits), 293 bytes captured (2344 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0
Ethernet II, Src: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe), Dst: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.103

Transmission Control Protocol, Src Port: 80, Dst Port: 59829, Seq: 1, Ack: 618, Len: 239

Hypertext Transfer Protocol

HTTP/1.1 304 Not Modified\r\n

Date: Sun, 22 Mar 2020 09:40:35 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: "80-5a16b37295267"\r\n

\r\n

[HTTP response 1/1]

[Time since request: 0.165086000 seconds]

[Request in frame: 1250]

[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-MODIFIEDSINCE? Якщо так, яке значення йому відповідає?

Так

Sun, 22 Mar 2020 05:59:02 GMT

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

304 Not Modified

Hi

Dump 3:

Request:

Frame 3128: 538 bytes on wire (4304 bits), 538 bytes captured (4304 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13), Dst: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe)

Internet Protocol Version 4, Src: 192.168.0.103, Dst: 193.109.246.67

Transmission Control Protocol, Src Port: 61658, Dst Port: 80, Seq: 1, Ack: 1, Len: 484

Hypertext Transfer Protocol

GET /foto/edin_inform.jpg HTTP/1.1\r\n

Host: tinkova.ucoz.ru\r\n

Connection: keep-alive\r\n

DNT: 1\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/80.0.3987.149 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: ru-RU,ru-UA;q=0.9,ru;q=0.8,en-US;q=0.7,en;q=0.6\r\n

\r\n

[Full request URI: http://tinkova.ucoz.ru/foto/edin_inform.jpg]

[HTTP request 1/1]

[Response in frame: 3758]

Answer:

Frame 3758: 1296 bytes on wire (10368 bits), 1296 bytes captured (10368 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe), Dst: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13)

Internet Protocol Version 4, Src: 193.109.246.67, Dst: 192.168.0.103

Transmission Control Protocol, Src Port: 80, Dst Port: 61658, Seq: 409169, Ack: 485, Len: 1242

[282 Reassembled TCP Segments (410410 bytes): #3139(368), #3140(1460), #3141(1460), #3142(1460), #3144(1460), #3145(1460), #3146(1460), #3147(1460), #3148(1460), #3150(1460), #3158(1460), #3159(1460), #3161(1460), #3162(1460), #3163(1460),]

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Server: nginx/1.8.0\r\n

Date: Sun, 22 Mar 2020 10:03:35 GMT\r\n

Content-Type: image/jpeg\r\n

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: Sat, 11 Apr 2020 10:03:35 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 1/1]

[Time since request: 0.815410000 seconds]

[Request in frame: 3128]

[Request URI: http://tinkova.ucoz.ru/foto/edin_inform.jpg]

File Data: 410042 bytes

JPEG File Interchange Format

12. Скільки повідомлень HTTP GET було відправлено вашим браузером?

1

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

282

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

Dump 4:

Request 1:

Frame 68: 560 bytes on wire (4480 bits), 560 bytes captured (4480 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13), Dst: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe)

Internet Protocol Version 4, Src: 192.168.0.103, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 62014, Dst Port: 80, Seq: 1, Ack: 1, Len: 506

Hypertext Transfer Protocol

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

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

Connection: keep-alive\r\n

DNT: 1\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/80.0.3987.149 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: ru-RU,ru-UA;q=0.9,ru;q=0.8,en-US;q=0.7,en;q=0.6\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: 85]

[Next request in frame: 117]

Answer 1:

Frame 85: 1127 bytes on wire (9016 bits), 1127 bytes captured (9016 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe), Dst: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.103

Transmission Control Protocol, Src Port: 80, Dst Port: 62014, Seq: 1, Ack: 507, Len: 1073

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Sun, 22 Mar 2020 10:09:20 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: Sun, 22 Mar 2020 05:59:02 GMT\r\n

ETag: "2ca-5a16b3728d17e"\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: 0.126855000 seconds]

[Request in frame: 68]

[Next request in frame: 117]

[Next response in frame: 139]

[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)

Request 2:

Frame 117: 492 bytes on wire (3936 bits), 492 bytes captured (3936 bits) on
interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13), Dst: Tp-LinkT_50:ec:fe
(c4:71:54:50:ec:fe)

Internet Protocol Version 4, Src: 192.168.0.103, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 62014, Dst Port: 80, Seq: 507, Ack: 1074, Len: 438

Hypertext Transfer Protocol

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

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

Connection: keep-alive\r\n

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.149 Safari/537.36\r\n

DNT: 1\r\n

Accept: image/webp,image/apng,image/*,*/*;q=0.8\r\n

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

Accept-Encoding: gzip, deflate\r\n

Accept-Language: ru-RU,ru-UA;q=0.9,ru;q=0.8,en-US;q=0.7,en;q=0.6\r\n

\r\n

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

[HTTP request 2/3]

[Prev request in frame: 68]

[Response in frame: 139]

[Next request in frame: 728]

Answer 2:

Frame 139: 745 bytes on wire (5960 bits), 745 bytes captured (5960 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe), Dst: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.103

Transmission Control Protocol, Src Port: 80, Dst Port: 62014, Seq: 3994, Ack: 945, Len: 691

[3 Reassembled TCP Segments (3611 bytes): #137(1460), #138(1460), #139(691)]

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Sun, 22 Mar 2020 10:09:21 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: 0.124919000 seconds]

[Prev request in frame: 68]

[Prev response in frame: 85]

[Request in frame: 117]

[Next request in frame: 728]

[Next response in frame: 876]

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

File Data: 3267 bytes

Portable Network Graphics

Request 3:

Frame 173: 506 bytes on wire (4048 bits), 506 bytes captured (4048 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13), Dst: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe)

Internet Protocol Version 4, Src: 192.168.0.103, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 62022, Dst Port: 80, Seq: 1, Ack: 1, Len: 452

Hypertext Transfer Protocol

GET /~kurose/cover_5th_ed.jpg HTTP/1.1\r\n

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

Connection: keep-alive\r\n

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.149 Safari/537.36\r\n

DNT: 1\r\n

Accept: image/webp,image/apng,image/*,*/*;q=0.8\r\n

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

Accept-Encoding: gzip, deflate\r\n

Accept-Language: ru-RU,ru-UA;q=0.9,ru;q=0.8,en-US;q=0.7,en;q=0.6\r\n

\r\n

[Full request URI: http://manic.cs.umass.edu/~kurose/cover_5th_ed.jpg]

[HTTP request 1/1]

[Response in frame: 411]

Answer 3:

Frame 411: 632 bytes on wire (5056 bits), 632 bytes captured (5056 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe), Dst: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.103

Transmission Control Protocol, Src Port: 80, Dst Port: 62022, Seq: 100741, Ack: 453, Len: 578

[70 Reassembled TCP Segments (101318 bytes): #316(1460), #318(1460), #319(1460), #321(1460), #322(1460), #323(1460), #325(1460), #326(1460), #327(1460), #328(1460), #337(1460), #338(1460), #340(1460), #341(1460), #342(1460), #343(1460), #34]

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Sun, 22 Mar 2020 10:09:21 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: 0.551220000 seconds]

[Request in frame: 173]

[Request URI: http://manic.cs.umass.edu/~kurose/cover_5th_ed.jpg]

File Data: 100968 bytes

JPEG File Interchange Format

Request 4:

Frame 728: 492 bytes on wire (3936 bits), 492 bytes captured (3936 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13), Dst: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe)

Internet Protocol Version 4, Src: 192.168.0.103, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 62014, Dst Port: 80, Seq: 945, Ack: 4685, Len: 438

Hypertext Transfer Protocol

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

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

Connection: keep-alive\r\n

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.149 Safari/537.36\r\n

DNT: 1\r\n

Accept: image/webp,image/apng,image/*,*/*;q=0.8\r\n

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

Accept-Encoding: gzip, deflate\r\n

Accept-Language: ru-RU,ru-UA;q=0.9,ru;q=0.8,en-US;q=0.7,en;q=0.6\r\n

\r\n

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

[HTTP request 3/3]

[Prev request in frame: 117]

[Response in frame: 876]

Answer 4:

Frame 876: 538 bytes on wire (4304 bits), 538 bytes captured (4304 bits) on interface \Device\NPF_{CC431E3D-E278-4CA9-8757-FF32C2AC82FE}, id 0

Ethernet II, Src: Tp-LinkT_50:ec:fe (c4:71:54:50:ec:fe), Dst: RivetNet_6b:7b:13 (9c:b6:d0:6b:7b:13)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.103

Transmission Control Protocol, Src Port: 80, Dst Port: 62014, Seq: 4685, Ack: 1383, Len: 484

Hypertext Transfer Protocol

HTTP/1.1 404 Not Found\r\n

Date: Sun, 22 Mar 2020 10:09:23 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

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: 0.133655000 seconds]

[Prev request in frame: 117]

[Prev response in frame: 139]

[Request in frame: 728]

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

File Data: 209 bytes

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

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

4 запити

128.119.245.12 (усі)

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

Послідовно

За часом надходження відповідей

Висновок: я виконав завдання та проаналізував деталі роботи протоколу HTTP.