

**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-73
Саакян К.А.
Прийняв Кухарєв С.О.**

Київ – 2020 р.

Контрольні запитання:

Dump 1:

Request:

Frame 335: 539 bytes on wire (4312 bits), 539 bytes captured (4312 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63), Dst: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d)

Internet Protocol Version 4, Src: 192.168.43.78, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 49279, Dst Port: 80, Seq: 1, Ack: 1, Len: 485

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 6.1; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 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: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7\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: 349]

[Next request in frame: 364]

Answer:

Frame 349: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d), Dst: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.43.78

Transmission Control Protocol, Src Port: 80, Dst Port: 49279, Seq: 1, Ack: 486, Len: 486

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Wed, 11 Mar 2020 08:54:05 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: Wed, 11 Mar 2020 05:59:01 GMT\r\n

ETag: "80-5a08deed6bfee"\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: 0.213101000 seconds]

[Request in frame: 335]

[Next request in frame: 364]

[Next response in frame: 382]

[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)

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?

англійська (американська), англійська, українська.

uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.73.

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

Комп'ютер 192.168.43.78

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?

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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, не бачу.

Dump 2:

Request:

Frame 544: 539 bytes on wire (4312 bits), 539 bytes captured (4312 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63), Dst: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d)

Internet Protocol Version 4, Src: 192.168.43.78, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 49332, Dst Port: 80, Seq: 1, Ack: 1, Len: 485

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 6.1; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 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: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7\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: 549]

[Next request in frame: 566]

Answer:

Frame 549: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d), Dst: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.43.78

Transmission Control Protocol, Src Port: 80, Dst Port: 49332, Seq: 1, Ack: 486, Len: 486

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Wed, 11 Mar 2020 09:00:03 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: Wed, 11 Mar 2020 05:59:01 GMT\r\n

ETag: "80-5a08deed6bfee"\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: 0.153944000 seconds]

[Request in frame: 544]

[Next request in frame: 566]

[Next response in frame: 567]

[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 720: 650 bytes on wire (5200 bits), 650 bytes captured (5200 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63), Dst: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d)

Internet Protocol Version 4, Src: 192.168.43.78, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 49337, Dst Port: 80, Seq: 1, Ack: 1, Len: 596

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

Upgrade-Insecure-Requests: 1\r\n

User-Agent: Mozilla/5.0 (Windows NT 6.1; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 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: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7\r\n

If-None-Match: "80-5a08deed6bfee"\r\n

If-Modified-Since: Wed, 11 Mar 2020 05:59:01 GMT\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: 723]

Answer 2:

Frame 723: 293 bytes on wire (2344 bits), 293 bytes captured (2344 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d), Dst: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.43.78

Transmission Control Protocol, Src Port: 80, Dst Port: 49337, Seq: 1, Ack: 597, Len: 239

Hypertext Transfer Protocol

HTTP/1.1 304 Not Modified\r\n

Date: Wed, 11 Mar 2020 09:00:52 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: "80-5a08deed6bfee"\r\n

\r\n

[HTTP response 1/2]

[Time since request: 0.214036000 seconds]

[Request in frame: 720]

[Next response in frame: 725]

[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?

Hi.

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?

If-Modified-Since: Wed, 11 Mar 2020 05:59:01 GMT

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

304 Not Modified

No

Dump 3:

Request:

Frame 27: 517 bytes on wire (4136 bits), 517 bytes captured (4136 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63), Dst: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d)

Internet Protocol Version 4, Src: 192.168.43.78, Dst: 193.109.246.67

Transmission Control Protocol, Src Port: 49214, Dst Port: 80, Seq: 1, Ack: 1, Len: 463

Hypertext Transfer Protocol

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

Host: tinkova.ucoz.ru\r\n

Connection: keep-alive\r\n

Upgrade-Insecure-Requests: 1\r\n

User-Agent: Mozilla/5.0 (Windows NT 6.1; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 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: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7\r\n

\r\n

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

[HTTP request 1/2]

[Response in frame: 488]

[Next request in frame: 499]

Answer:

Frame 488: 1296 bytes on wire (10368 bits), 1296 bytes captured (10368 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d), Dst: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63)

Internet Protocol Version 4, Src: 193.109.246.67, Dst: 192.168.43.78

Transmission Control Protocol, Src Port: 80, Dst Port: 49214, Seq: 409169, Ack: 464, Len: 1242

[294 Reassembled TCP Segments (410410 bytes): #39(368), #40(1400), #41(1400), #42(1400), #43(1400), #45(1400), #46(1400), #47(1400), #48(1400), #49(1400), #53(1400), #54(1400), #55(1400), #57(1400), #58(1400), #59(1400), #60(1400), #62(1400)]

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Server: nginx/1.8.0\r\n

Date: Wed, 11 Mar 2020 10:29:45 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: Tue, 31 Mar 2020 10:29:45 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: 1.101426000 seconds]

[Request in frame: 27]

[Next request in frame: 499]

[Next response in frame: 501]

[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?

2

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

294

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 162: 539 bytes on wire (4312 bits), 539 bytes captured (4312 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63), Dst: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d)

Internet Protocol Version 4, Src: 192.168.43.78, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 49801, Dst Port: 80, Seq: 1, Ack: 1, Len: 485

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

Upgrade-Insecure-Requests: 1\r\n

User-Agent: Mozilla/5.0 (Windows NT 6.1; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 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: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7\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: 219]

[Next request in frame: 263]

Answer 1:

Frame 219: 1127 bytes on wire (9016 bits), 1127 bytes captured (9016 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d), Dst: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.43.78

Transmission Control Protocol, Src Port: 80, Dst Port: 49801, Seq: 1, Ack: 486, Len: 1073

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Wed, 11 Mar 2020 09:14:05 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: Wed, 11 Mar 2020 05:59:01 GMT\r\n

ETag: "2ca-5a08deed646d6"\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: 0.169495000 seconds]

[Request in frame: 162]

[Next request in frame: 263]

[Next response in frame: 279]

[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 263: 471 bytes on wire (3768 bits), 471 bytes captured (3768 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63), Dst: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d)

Internet Protocol Version 4, Src: 192.168.43.78, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 49801, Dst Port: 80, Seq: 486, Ack: 1074, Len: 417

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 6.1; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 Safari/537.36\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: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7\r\n

\r\n

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

[HTTP request 2/3]

[Prev request in frame: 162]

[Response in frame: 279]

[Next request in frame: 439]

Answer 2:

Frame 279: 865 bytes on wire (6920 bits), 865 bytes captured (6920 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d), Dst: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.43.78

Transmission Control Protocol, Src Port: 80, Dst Port: 49801, Seq: 3874, Ack: 903, Len: 811

[3 Reassembled TCP Segments (3611 bytes): #275(1400), #276(1400), #279(811)]

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Wed, 11 Mar 2020 09:14:05 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: 0.173307000 seconds]

[Prev request in frame: 162]

[Prev response in frame: 219]

[Request in frame: 263]

[Next request in frame: 439]

[Next response in frame: 440]

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

File Data: 3267 bytes

Portable Network Graphics

Request 3:

Frame 280: 485 bytes on wire (3880 bits), 485 bytes captured (3880 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63), Dst: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d)

Internet Protocol Version 4, Src: 192.168.43.78, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 49806, Dst Port: 80, Seq: 1, Ack: 1, Len: 431

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 6.1; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 Safari/537.36\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: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7\r\n

\r\n

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

[HTTP request 1/1]

[Response in frame: 435]

Answer 3:

Frame 435: 572 bytes on wire (4576 bits), 572 bytes captured (4576 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d), Dst: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.43.78

Transmission Control Protocol, Src Port: 80, Dst Port: 49806, Seq: 100801, Ack: 432, Len: 518

[73 Reassembled TCP Segments (101318 bytes): #293(1400), #294(1400), #295(1400), #296(1400), #297(1400), #300(1400), #303(1400), #305(1400), #307(1400), #309(1400), #334(1400), #335(1400), #336(1400), #337(1400), #338(1400), #340(1400), #34]

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Wed, 11 Mar 2020 09:14:05 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: 0.741141000 seconds]

[Request in frame: 280]

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

File Data: 100968 bytes

JPEG File Interchange Format

Request 4:

Frame 439: 471 bytes on wire (3768 bits), 471 bytes captured (3768 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63), Dst: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d)

Internet Protocol Version 4, Src: 192.168.43.78, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 49801, Dst Port: 80, Seq: 903, Ack: 4685, Len: 417

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 6.1; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 Safari/537.36\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: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7\r\n

\r\n

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

[HTTP request 3/3]

[Prev request in frame: 263]

[Response in frame: 440]

Answer 4:

Frame 440: 538 bytes on wire (4304 bits), 538 bytes captured (4304 bits) on interface \Device\NPF_{1DFB6974-4663-4610-BF61-1F6230484D5D}, id 0

Ethernet II, Src: 0a:c5:e1:0a:86:9d (0a:c5:e1:0a:86:9d), Dst: LiteonTe_e6:2b:63 (58:00:e3:e6:2b:63)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.43.78

Transmission Control Protocol, Src Port: 80, Dst Port: 49801, Seq: 4685, Ack: 1320, Len: 484

Hypertext Transfer Protocol

HTTP/1.1 404 Not Found\r\n

Date: Wed, 11 Mar 2020 09:14:06 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: 0.160947000 seconds]

[Prev request in frame: 263]

[Prev response in frame: 279]

[Request in frame: 439]

[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?

4запитів.

128.119.245.12 (4 шт.)

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

Послідовно.

За часом надходження відповідей та адресами.