

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
НАВЧАЛЬНО-НАУКОВИЙ КОМПЛЕКС
«ІНСТИТУТ ПРИКЛАДНОГО СИСТЕМНОГО АНАЛІЗУ»
НАЦІОНАЛЬНОГО ТЕХНІЧНОГО УНІВЕРСИТЕТУ УКРАЇНИ
«КИЇВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ»

КАФЕДРА МАТЕМАТИЧНИХ МЕТОДІВ СИСТЕМНОГО
АНАЛІЗУ

Лабораторна робота №2

З дисципліни «Комп'ютерні мережі»

Виконала: студентка 3-го курсу

гр. КА-77

П'ятецька А.А

Прийняв: *Кухарєв С.О*

Київ 2020р.

http						
No.	Time	Source	Destination	Protocol	Length	Info
201	39.577494	192.168.1.8	149.154.167.51	HTTP	320	POST /api HTTP/1.1 (application/x-www-form-urlencoded)
216	39.723983	149.154.167.51	192.168.1.8	HTTP	284	HTTP/1.1 200 OK
303	40.398134	192.168.1.8	128.119.245.12	HTTP	583	GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
322	40.542883	128.119.245.12	192.168.1.8	HTTP	540	HTTP/1.1 200 OK (text/html)

> Frame 303: 583 bytes on wire (4664 bits), 583 bytes captured (4664 bits) on interface \Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0						
> Ethernet II, Src: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c)						
> Internet Protocol Version 4, Src: 192.168.1.8, Dst: 128.119.245.12						
> Transmission Control Protocol, Src Port: 58773, Dst Port: 80, Seq: 1, Ack: 1, Len: 529						
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]						
[GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n]						
[Severity level: Chat]						
[Group: Sequence]						
Request Method: GET						
Request URI: /wireshark-labs/HTTP-wireshark-file1.html						
Request Version: HTTP/1.1						

0030	01 01 2d 16 00 00 47 45	54 20 2f 77 69 72 65 73	-----GE T /wires
0040	68 61 72 6b 2d 6c 61 62	73 2f 48 54 54 50 2d 77	hark-lab s/HTTP-w
0050	69 72 65 73 68 61 72 6b	2d 66 69 6c 65 31 2e 68	ireshark -file1.h
0060	74 6d 6c 20 48 54 54 50	2f 31 2e 31 0d 0a 48 6f	tml HTTP /1.1..Ho
0070	73 74 3a 20 67 61 69 61	2e 63 73 2e 75 6d 61 73	st: gaia .cs.umass
0080	73 2e 65 64 75 0d 0a 43	6f 6e 6e 65 63 74 69 6f	s.edu..C onnectio
0090	6e 3a 20 0b 65 65 70 2d	61 6c 69 76 65 0d 0a 43	n: keep- alive- C
00a0	61 63 68 65 2d 43 6f 6e	74 72 6f 6c 3a 20 6d 61	ache- Con trol: na
00b0	78 2d 61 67 65 3d 30 0d	0a 55 70 67 72 61 64 65	x-age=0 ..Upgrade
00c0	2d 49 6e 73 65 63 75 72	65 2d 52 65 71 75 65 73	-Insecur e- Reques
00d0	74 73 3a 20 31 0d 0a 55	73 65 72 2d 41 67 65 6e	ts: 1..U ser-Agen
00e0	74 3a 20 4d 6f 7a 69 6c	6c 61 2f 35 2e 30 20 28	t: Mozil la/5.0 (
00f0	57 69 6e 64 6f 77 73 20	4e 54 20 31 30 2e 30 3b	Windows NT 10.0;
0100	20 57 69 6e 36 34 36 20	78 36 34 29 20 41 70 70	Win64; x64) App

Запит:

303 40.398134 192.168.1.8 128.119.245.12 HTTP 583 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1

Frame 303: 583 bytes on wire (4664 bits), 583 bytes captured (4664 bits) on interface
 \Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c)

Internet Protocol Version 4, Src: 192.168.1.8, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 58773, Dst Port: 80, Seq: 1, Ack: 1, Len: 529

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]

[GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n]

[Severity level: Chat]

[Group: Sequence]

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; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\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 1/1]

[Response in frame: 322]

Відповідь:

322 40.542883 128.119.245.12 192.168.1.8 HTTP 540 HTTP/1.1 200 OK (text/html)

Frame 322: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits) on interface
\Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c), Dst: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.8

Transmission Control Protocol, Src Port: 80, Dst Port: 58773, Seq: 1, Ack: 530, Len: 486

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

[Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]

[HTTP/1.1 200 OK\r\n]

[Severity level: Chat]

[Group: Sequence]

Response Version: HTTP/1.1

Status Code: 200

[Status Code Description: OK]

Response Phrase: OK

Date: Sun, 22 Mar 2020 16:47:20 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: "80-5a16b37295267"\r\n

Accept-Ranges: bytes\r\n

Content-Length: 128\r\n

[Content length: 128]

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 1/1]

[Time since request: 0.144749000 seconds]

[Request in frame: 303]

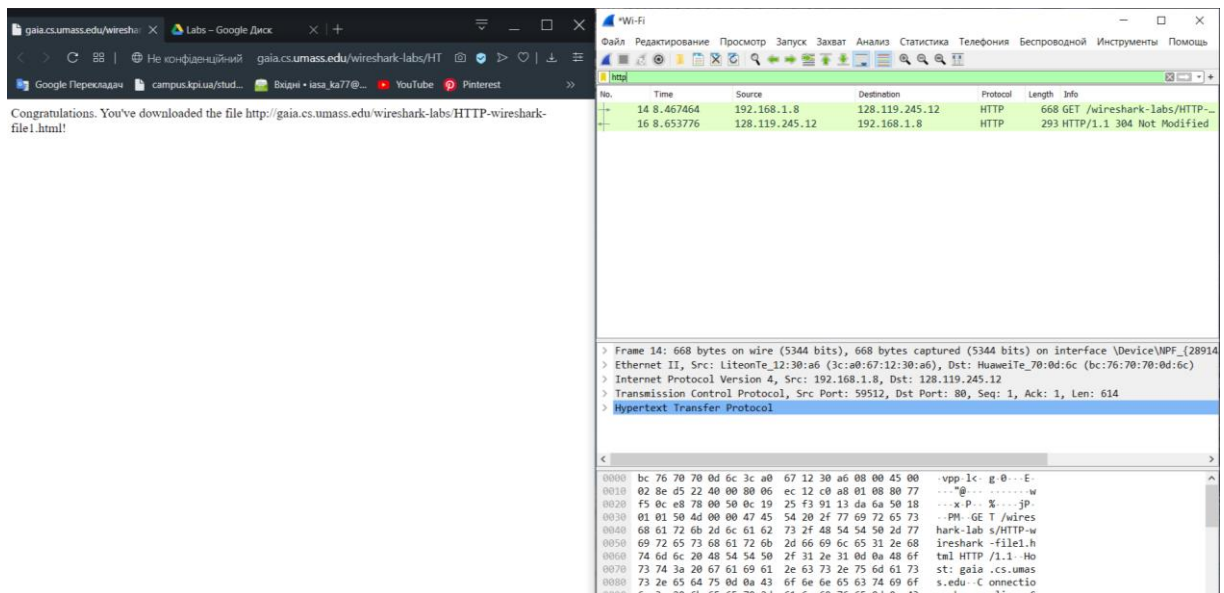
[Request URL: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]

File Data: 128 bytes

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

Відповіді на контрольні запитання:

1. Яку версію протоколу HTTP використовує ваш браузер (1.0 чи 1.1)?
GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n
Яку версію протоколу використовує сервер?
HTTP/1.1 200 OK\r\n
2. Які мови (якщо вказано) браузер може прийняти від сервера?
Accept-Language: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7
3. Які IP-адреси вашого комп'ютера та цільового веб-сервера?
Адреса комп'ютера 192.168.1.8
цільова адреса веб-сервера 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?
Last-Modified: Sun, 22 Mar 2020 05:59:02 GMT
6. Скільки байт контенту повертається сервером? 128 (Content-Length: 128\r\n)
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



Запит:

14 8.467464 192.168.1.8 128.119.245.12 HTTP 668 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1

Frame 14: 668 bytes on wire (5344 bits), 668 bytes captured (5344 bits) on interface \Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c)

Internet Protocol Version 4, Src: 192.168.1.8, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 59512, Dst Port: 80, Seq: 1, Ack: 1, Len: 614

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 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\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: "80-5a16b37295267"\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: 16]

Відповідь:

16 8.653776 128.119.245.12 192.168.1.8 HTTP 293 HTTP/1.1 304 Not Modified

Frame 16: 293 bytes on wire (2344 bits), 293 bytes captured (2344 bits) on interface
\\Device\\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c), Dst: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.8

Transmission Control Protocol, Src Port: 80, Dst Port: 59512, Seq: 1, Ack: 615, Len: 239

Hypertext Transfer Protocol

HTTP/1.1 304 Not Modified\r\n

Date: Sun, 22 Mar 2020 18:21:03 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

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: 0.186312000 seconds]

[Request in frame: 14]

[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?

Так

If-Modified-Since: Sun, 22 Mar 2020 05:59:02 GMT\r\n

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

304 Not Modified, ні

Текущий фильтр: http						
No.	Time	Source	Destination	Protocol	Length	Info
113	11.927635	192.168.1.8	66.6.101.171	HTTP	573	GET /dyn/str_strip/000000000/00000000/0000000/000000/70000/3000 HTTP/1.1
115	12.096303	66.6.101.171	192.168.1.8	HTTP	241	HTTP/1.1 301 Moved Permanently

> Frame 113: 573 bytes on wire (4584 bits), 573 bytes captured (4584 bits) on interface \Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0 > Ethernet II, Src: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c) > Internet Protocol Version 4, Src: 192.168.1.8, Dst: 66.6.101.171 > Transmission Control Protocol, Src Port: 59592, Dst Port: 80, Seq: 1, Ack: 1, Len: 519						
> Hypertext Transfer Protocol > GET /dyn/str_strip/000000000/00000000/0000000/000000/70000/3000 HTTP/1.1\r\n Host: www.dilbert.com\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/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\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://www.dilbert.com/dyn/str_strip/000000000/00000000/0000000/000000/70000/3000] [HTTP request 1/1] [Response in frame: 115]						

0000	bc 76 70 70 0d 6c 3c a0 67 12 30 a6 08 00 45 00	-vpp-lc- g-0-- E-
0010	02 2f d8 4d 40 00 80 06 b7 19 c0 a8 01 08 42 06	./M0... ..B-
0020	65 ab e8 c8 00 50 b4 dc f9 05 51 36 cd dd 50 18	e...P...Q6..P-
0030	fa f0 ea 24 00 00 47 45 54 20 2f 64 79 6e 2f 73	--\$-GE T /dyn/s
0040	74 72 5f 73 74 72 69 70 2f 30 30 30 30 30 30	tr_strip /0000000
0050	30 30 2f 30 30 30 30 30 30 30 2f 30 30 30 30	00/00000 000/0000
0060	30 30 30 2f 30 30 30 30 30 30 2f 30 30 30 30	000/0000 00/70000
0070	2f 33 30 30 30 20 48 54 54 50 2f 31 2e 31 0d 0a	/3000 HT TP/1.1-
0080	48 6f 73 74 3a 20 77 77 77 2e 64 69 6c 62 65 72	Host: ww w.dilber
0090	74 2e 63 6f 6d 0d 0a 43 6f 6e 6e 65 63 74 69 6f	t.com--C connectio
00a0	6e 3a 20 6b 65 65 70 2d 61 6c 69 76 65 0d 0a 55	n: keep- alive..U
00b0	70 67 72 61 64 65 2d 49 6e 73 65 63 75 72 65 2d	pgrade-I nsecure-
00c0	52 65 71 75 65 73 74 73 3a 20 31 0d 0a 55 73 65	Requests : 1..Use
00d0	72 2d 41 67 65 6e 74 3a 20 4d 6f 7a 69 6c 6c 61	r-Agent: Mozilla

113 11.927635 192.168.1.8 66.6.101.171 HTTP 573 GET /dyn/str_strip/000000000/00000000/0000000/000000/70000/3000 HTTP/1.1

Frame 113: 573 bytes on wire (4584 bits), 573 bytes captured (4584 bits) on interface \Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c)

Internet Protocol Version 4, Src: 192.168.1.8, Dst: 66.6.101.171

Transmission Control Protocol, Src Port: 59592, Dst Port: 80, Seq: 1, Ack: 1, Len: 519

Hypertext Transfer Protocol

```
GET /dyn/str_strip/000000000/00000000/0000000/000000/70000/3000 HTTP/1.1\r\n
Host: www.dilbert.com\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/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\r\n
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,appl
ication/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://www.dilbert.com/dyn/str_strip/000000000/00000000/0000000/000000/70000/3000]
[HTTP request 1/1]
[Response in frame: 115]
```

115 12.096303 66.6.101.171 192.168.1.8 HTTP 241 HTTP/1.1 301 Moved Permanently

Frame 115: 241 bytes on wire (1928 bits), 241 bytes captured (1928 bits) on interface
\\Device\\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c), Dst: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6)

Internet Protocol Version 4, Src: 66.6.101.171, Dst: 192.168.1.8

Transmission Control Protocol, Src Port: 80, Dst Port: 59592, Seq: 1, Ack: 520, Len: 187

Hypertext Transfer Protocol

HTTP/1.1 301 Moved Permanently\\r\\n

Content-Type: text/html\\r\\n

Content-length: 0\\r\\n

Connection: Close\\r\\n

Location: https://dilbert.com/dyn/str_strip/000000000/00000000/0000000/000000/70000/3000\\r\\n
\\r\\n

[HTTP response 1/1]

[Time since request: 0.168668000 seconds]

[Request in frame: 113]

[Request URI:

http://www.dilbert.com/dyn/str_strip/000000000/00000000/0000000/000000/70000/3000]

12. Скільки повідомлень HTTP GET було відправлено вашим браузером?

1

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

1

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

301 Moved Permanently

15. Чи зустрічаються у даних пакетів-продовжень протоколу TCP стрічки
з кодом та описом статусу відповіді, або ж якісь заголовки протоколу
HTTP?

Ні

No.	Time	Source	Destination	Protocol	Length	Info
150	34.379642	192.168.1.8	128.119.245.12	HTTP	557	GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1
152	34.525621	128.119.245.12	192.168.1.8	HTTP	1127	HTTP/1.1 200 OK (text/html)
155	35.247708	192.168.1.8	128.119.245.12	HTTP	489	GET /pearson.png HTTP/1.1
158	35.396482	128.119.245.12	192.168.1.8	HTTP	865	HTTP/1.1 200 OK (PNG)
164	35.774593	192.168.1.8	128.119.245.12	HTTP	503	GET /~kurose/cover_5th_ed.jpg HTTP/1.1
267	36.551782	128.119.245.12	192.168.1.8	HTTP	572	HTTP/1.1 200 OK (JPEG JFIF image)

>	Frame 150: 557 bytes on wire (4456 bits), 557 bytes captured (4456 bits) on interface \Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0
>	Ethernet II, Src: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c)
>	Internet Protocol Version 4, Src: 192.168.1.8, Dst: 128.119.245.12
>	Transmission Control Protocol, Src Port: 59682, Dst Port: 80, Seq: 1, Ack: 1, Len: 503
>	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 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\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 1/2]
	[Response in frame: 152]

0000	bc 76 70 70 0d 6c 3c a0 67 12 30 a6 08 00 45 0e	vpp-l<- g-0...E-
0010	02 1f d5 2a 40 00 80 06 ec 79 c0 a8 01 08 80 77	...*@... y.....w
0020	f5 0c e9 22 00 50 8b a7 eb b8 aa 76 1c 6d 50 18	...P... v.mP
0030	01 01 f7 cb 00 00 47 45 54 20 2f 77 69 72 65 73GE T /wires
0040	68 61 72 6b 2d 6c 61 62 73 2f 48 54 54 50 2d 77	hark-lab s/HTTP-w
0050	69 72 65 73 68 61 72 6b 2d 66 69 6c 65 34 2e 68	hreshark -file4.h
0060	74 6d 6c 20 48 54 54 50 2f 31 2e 31 0d 0a 48 6f	tml HTTP /1.1-Ho
0070	73 74 3a 20 67 61 69 61 2e 63 73 2e 75 6d 61 73	st: gaia .cs.umas
0080	73 2e 65 64 75 0d 0a 43 6f 6e 6e 65 63 74 69 6f	s.edu--C connectio
0090	6e 3a 20 6b 65 65 70 2d 61 6c 69 76 65 0d 0a 55	ne keep-alive-U
00a0	70 67 72 61 64 65 2d 49 6e 73 65 63 75 72 65 2d	ppgrade-I nsecure-
00b0	52 65 71 75 65 73 74 73 3a 20 31 0d 0a 55 73 65	Requests : 1-Use
00c0	72 2d 41 67 65 6e 74 3a 20 4d 6f 7a 69 6c 6c 61	r-Agent: Mozilla
00d0	2f 35 2e 30 20 28 57 69 6e 64 6f 77 73 20 4e 54	/5.0 (Wi ndows NT

15034.379642 192.168.1.8 128.119.245.12 HTTP 557 GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1

Frame 150: 557 bytes on wire (4456 bits), 557 bytes captured (4456 bits) on interface
\Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c)

Internet Protocol Version 4, Src: 192.168.1.8, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 59682, Dst Port: 80, Seq: 1, Ack: 1, Len: 503

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 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)
Chrome/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\r\n

Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,applicati
on/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 1/2]

[Response in frame: 152]

[Next request in frame: 155]

15234.525621 128.119.245.12 192.168.1.8 HTTP 1127 HTTP/1.1 200 OK (text/html)

Frame 152: 1127 bytes on wire (9016 bits), 1127 bytes captured (9016 bits) on interface
\\Device\\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c), Dst: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.8

Transmission Control Protocol, Src Port: 80, Dst Port: 59682, Seq: 1, Ack: 504, Len: 1073

Hypertext Transfer Protocol

HTTP/1.1 200 OK\\r\\n

Date: Sun, 22 Mar 2020 18:54:20 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 1/2]

[Time since request: 0.145979000 seconds]

[Request in frame: 150]

[Next request in frame: 155]

[Next response in frame: 158]

[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)

15535.247708 192.168.1.8 128.119.245.12 HTTP 489 GET /pearson.png HTTP/1.1

Frame 155: 489 bytes on wire (3912 bits), 489 bytes captured (3912 bits) on interface
\\Device\\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c)

Internet Protocol Version 4, Src: 192.168.1.8, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 59682, Dst Port: 80, Seq: 504, Ack: 1074, Len: 435

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/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\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 2/2]

[Prev request in frame: 150]

[Response in frame: 158]

15835.396482 128.119.245.12 192.168.1.8 HTTP 865 HTTP/1.1 200 OK (PNG)

Frame 158: 865 bytes on wire (6920 bits), 865 bytes captured (6920 bits) on interface
\Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c), Dst: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.8

Transmission Control Protocol, Src Port: 80, Dst Port: 59682, Seq: 3874, Ack: 939, Len: 811

[3 Reassembled TCP Segments (3611 bytes): #156(1400), #157(1400), #158(811)]

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Sun, 22 Mar 2020 18:54:21 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 2/2]

[Time since request: 0.148774000 seconds]

[Prev request in frame: 150]

[Prev response in frame: 152]

[Request in frame: 155]

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

File Data: 3267 bytes

Portable Network Graphics

**16435.774593 192.168.1.8 128.119.245.12 HTTP 503 GET /~kurose/cover_5th_ed.jpg
HTTP/1.1**

Frame 164: 503 bytes on wire (4024 bits), 503 bytes captured (4024 bits) on interface
\Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c)

Internet Protocol Version 4, Src: 192.168.1.8, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 59683, Dst Port: 80, Seq: 1, Ack: 1, Len: 449

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/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\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: 267]

**26736.551782 128.119.245.12 192.168.1.8 HTTP 572 HTTP/1.1 200 OK (JPEG JFIF
image)**

Frame 267: 572 bytes on wire (4576 bits), 572 bytes captured (4576 bits) on interface
\Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: HuaweiTe_70:0d:6c (bc:76:70:70:0d:6c), Dst: LiteonTe_12:30:a6 (3c:a0:67:12:30:a6)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.8

Transmission Control Protocol, Src Port: 80, Dst Port: 59683, Seq: 100801, Ack: 450, Len: 518

[73 Reassembled TCP Segments (101318 bytes): #166(1400), #167(1400), #168(1400), #170(1400), #171(1400), #173(1400), #174(1400), #176(1400), #178(1400), #179(1400), #181(1400), #182(1400), #183(1400), #184(1400), #185(1400), #187(1400), #18]

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Sun, 22 Mar 2020 18:54:22 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: 0.777189000 seconds]

[Request in frame: 164]

[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?

3

Якими були цільові IP-адреси запитів?

128.119.245.12

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

Так, послідовно, за часом

Висновки: Я ознайомилась з середовищем Wireshark, його інтерфейсом та оволоділа базовими методами перехоплення та аналізу пакетів,

використовуваними для дослідження мережевих протоколів а також зрозумів як саме передається різноманітний контент.