

**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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lab2_request

No.	Time	Source	Destination	Protocol	Length	Info
49	20.474397	192.168.0.103	128.119.245.12	HTTP	587	GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1

Frame 49: 587 bytes on wire (4696 bits), 587 bytes captured (4696 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0
Ethernet II, Src: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9), Dst: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c)
Internet Protocol Version 4, Src: 192.168.0.103, Dst: 128.119.245.12
Transmission Control Protocol, Src Port: 32484, Dst Port: 80, Seq: 1, Ack: 1, Len: 521
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/81.0.4044.122 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;q=0.9,en-US;q=0.8,en;q=0.7,uk;q=0.6\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: 51]

lab2_response

No.	Time	Source	Destination	Protocol	Length	Info
51	20.610644	128.119.245.12	192.168.0.103	HTTP	552	HTTP/1.1 200 OK (text/html)

Frame 51: 552 bytes on wire (4416 bits), 552 bytes captured (4416 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0
Ethernet II, Src: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c), Dst: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.103
Transmission Control Protocol, Src Port: 80, Dst Port: 32484, Seq: 1, Ack: 522, 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, 26 Apr 2020 11:42:21 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: Sun, 26 Apr 2020 05:59:02 GMT\r\n
ETag: "80-5a42b4b937230"\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 1/1]
[Time since request: 0.136247000 seconds]
[Request in frame: 49]
[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)

Контрольні запитання:

1. Яку версію протоколу HTTP використовує ваш браузер (1.0 чи 1.1)?
1.1 (/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?
Російська, Американська англійська
(ru-RU,ru;q=0.9,en-US;q=0.8,en;q=0.7,uk;q=0.6\r\n)
3. Які IP-адреси вашого комп'ютера та цільового веб-сервера?
192.168.0.103, 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?
Sun, 26 Apr 2020 05:59:02 GMT\r\n
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
77	8.614125	192.168.0.103	128.119.245.12	HTTP	672	GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1

Frame 77: 672 bytes on wire (5376 bits), 672 bytes captured (5376 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0
Ethernet II, Src: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9), Dst: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c)
Internet Protocol Version 4, Src: 192.168.0.103, Dst: 128.119.245.12
Transmission Control Protocol, Src Port: 32998, Dst Port: 80, Seq: 496, Ack: 487, Len: 606
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/81.0.4044.122 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;q=0.9,en-US;q=0.8,en;q=0.7,uk;q=0.6\r\n
If-None-Match: "80-5a42b4b937230"\r\n
If-Modified-Since: Sun, 26 Apr 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 2/2]
[Prev request in frame: 58]

lab2_re-response

No.	Time	Source	Destination	Protocol	Length	Info
60	3.659964	128.119.245.12	192.168.0.103	HTTP	552	HTTP/1.1 200 OK (text/html)

Frame 60: 552 bytes on wire (4416 bits), 552 bytes captured (4416 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0
Ethernet II, Src: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c), Dst: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.103
Transmission Control Protocol, Src Port: 80, Dst Port: 32998, Seq: 1, Ack: 496, 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, 26 Apr 2020 12:58:08 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, 26 Apr 2020 05:59:02 GMT\r\n
ETag: "80-5a42b4b937230"\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: 0.141634000 seconds]

[Request in frame: 58]
[Next request in frame: 77]
[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)

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: Sun, 26 Apr 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.

lab2_image_request

No.	Time	Source	Destination	Protocol	Length	Info
68	2.748920	192.168.0.103	193.109.246.67	HTTP	539	GET /foto/edin_inform.jpg

Frame 68: 539 bytes on wire (4312 bits), 539 bytes captured (4312 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0
Ethernet II, Src: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9), Dst: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c)
Destination: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c)
Address: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c)
... ..0. = LG bit: Globally unique address (factory default)
... ..0. = IG bit: Individual address (unicast)
Source: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9)
Address: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9)
... ..0. = LG bit: Globally unique address (factory default)
... ..0. = IG bit: Individual address (unicast)
Type: IPv4 (0x0800)
Internet Protocol Version 4, Src: 192.168.0.103, Dst: 193.109.246.67
Transmission Control Protocol, Src Port: 32926, Dst Port: 80, Seq: 1, Ack: 1, Len: 473
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]
[GET /foto/edin_inform.jpg HTTP/1.1\r\n]
[Severity level: Chat]
[Group: Sequence]
Request Method: GET
Request URI: /foto/edin_inform.jpg
Request Version: HTTP/1.1
Host: tinkova.ucoz.ru\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/81.0.4044.122 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;q=0.9,en-US;q=0.8,en;q=0.7,uk;q=0.6\r\n

\r\n

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

[HTTP request 1/1]

lab2_image_response

No.	Time	Source	Destination	Protocol	Length	Info
501	3.886387	193.109.246.67	192.168.0.103	HTTP	324	HTTP/1.1 200 OK (JPEG JFIF image)

Frame 501: 324 bytes on wire (2592 bits), 324 bytes captured (2592 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0

Ethernet II, Src: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c), Dst: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9)

Destination: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9)

Address: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9)

.... 0. = LG bit: Globally unique address (factory default)

.... 0 = IG bit: Individual address (unicast)

Source: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c)

Address: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c)

.... 0. = LG bit: Globally unique address (factory default)

.... 0 = IG bit: Individual address (unicast)

Type: IPv4 (0x0800)

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

Transmission Control Protocol, Src Port: 80, Dst Port: 32926, Seq: 410153, Ack: 474, Len: 258

[285 Reassembled TCP Segments (410410 bytes): #72(368), #86(1448), #87(1448), #89(1448), #90(1448), #92(1448), #93(1448), #94(1448), #96(1448), #97(1448), #99(1448), #101(1448), #102(1448), #104(1448), #105(1448), #107(1448), #108(1448), #1]

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

Server: nginx/1.8.0\r\n

Date: Sun, 26 Apr 2020 12:49:10 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, 16 May 2020 12:49:10 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: 1.137467000 seconds]

[Request in frame: 68]
[Next request in frame: 503]
[Next response in frame: 505]
[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?

Одне

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

285

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 TCP.

final.pdf

No.	Time	Source	Destination	Protocol	Length	Info
33	2.979701	192.168.0.103	128.119.245.12	HTTP	561	GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1

Frame 33: 561 bytes on wire (4488 bits), 561 bytes captured (4488 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0
Ethernet II, Src: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9), Dst: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c)
Internet Protocol Version 4, Src: 192.168.0.103, Dst: 128.119.245.12
Transmission Control Protocol, Src Port: 33090, Dst Port: 80, Seq: 1, Ack: 1, Len: 495
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]
[GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1\r\n]
[Severity level: Chat]
[Group: Sequence]
Request Method: GET
Request URI: /wireshark-labs/HTTP-wireshark-file4.html
Request Version: HTTP/1.1
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/81.0.4044.122 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;q=0.9,en-US;q=0.8,en;q=0.7,uk;q=0.6\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: 36]
[Next request in frame: 38]

No.	Time	Source	Destination	Protocol	Length	Info
36	3.116897	128.119.245.12	192.168.0.103	HTTP	1139	HTTP/1.1 200 OK (text/html)

Frame 36: 1139 bytes on wire (9112 bits), 1139 bytes captured (9112 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0
Ethernet II, Src: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c), Dst: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.103
Transmission Control Protocol, Src Port: 80, Dst Port: 33090, Seq: 1, Ack: 496, Len: 1073
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, 26 Apr 2020 13:07:41 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, 26 Apr 2020 05:59:02 GMT\r\n
ETag: "2ca-5a42b4b935ac0"\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: 0.137196000 seconds]
[Request in frame: 33]
[Next request in frame: 38]
[Next response in frame: 44]
[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
38	3.163179	192.168.0.103	128.119.245.12	HTTP	493	GET /pearson.png HTTP/1.1

Frame 38: 493 bytes on wire (3944 bits), 493 bytes captured (3944 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0
Ethernet II, Src: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9), Dst: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c)
Internet Protocol Version 4, Src: 192.168.0.103, Dst: 128.119.245.12
Transmission Control Protocol, Src Port: 33090, Dst Port: 80, Seq: 496, Ack: 1074, Len: 427
Hypertext Transfer Protocol
GET /pearson.png HTTP/1.1\r\n
[Expert Info (Chat/Sequence): GET /pearson.png HTTP/1.1\r\n]
[GET /pearson.png HTTP/1.1\r\n]
[Severity level: Chat]
[Group: Sequence]
Request Method: GET
Request URI: /pearson.png
Request Version: HTTP/1.1
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/81.0.4044.122 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: ru-RU,ru;q=0.9,en-US;q=0.8,en;q=0.7,uk;q=0.6\r\n
\r\n
[Full request URI: http://gaia.cs.umass.edu/pearson.png]
[HTTP request 2/2]
[Prev request in frame: 33]
[Response in frame: 44]

No.	Time	Source	Destination	Protocol	Length	Info
44	3.301174	128.119.245.12	192.168.0.103	HTTP	781	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
53	3.390007	192.168.0.103	23.61.196.31	HTTP	279	GET /ru-RU/livetile/preinstall?region=UA&appid=C98EA5B0842DBB9405BBF071E1DA76512D21FE36&FORM=Threshold HTTP/1.1

Frame 53: 279 bytes on wire (2232 bits), 279 bytes captured (2232 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0

Ethernet II, Src: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9), Dst: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c)

Internet Protocol Version 4, Src: 192.168.0.103, Dst: 23.61.196.31

Transmission Control Protocol, Src Port: 33091, Dst Port: 80, Seq: 1, Ack: 1, Len: 213

Hypertext Transfer Protocol

GET /ru-
RU/livetile/preinstall?region=UA&appid=C98EA5B0842DBB9405BBF071E1DA76512D21FE36&FORM=T
hreshold HTTP/1.1\r\n

[Expert Info (Chat/Sequence): GET /ru-
RU/livetile/preinstall?region=UA&appid=C98EA5B0842DBB9405BBF071E1DA76512D21FE36&FORM=T
hreshold HTTP/1.1\r\n]

[GET /ru-
RU/livetile/preinstall?region=UA&appid=C98EA5B0842DBB9405BBF071E1DA76512D21FE36&FORM=T
hreshold HTTP/1.1\r\n]

[Severity level: Chat]

[Group: Sequence]

Request Method: GET

Request URI: /ru-
RU/livetile/preinstall?region=UA&appid=C98EA5B0842DBB9405BBF071E1DA76512D21FE36&FORM=T
hreshold

Request Version: HTTP/1.1

Connection: Keep-Alive\r\n

User-Agent: Microsoft-WNS/10.0\r\n

Host: tile-service.weather.microsoft.com\r\n

\r\n

[Full request URI: http://tile-service.weather.microsoft.com/ru-
RU/livetile/preinstall?region=UA&appid=C98EA5B0842DBB9405BBF071E1DA76512D21FE36&FORM=T
hreshold]

[HTTP request 1/1]

[Response in frame: 59]

No.	Time	Source	Destination	Protocol	Length	Info
66	3.756229	192.168.0.103	128.119.245.12	HTTP	507	GET /~kurose/cover_5th_ed.jpg HTTP/1.1

Frame 66: 507 bytes on wire (4056 bits), 507 bytes captured (4056 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0

Ethernet II, Src: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9), Dst: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c)

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

Transmission Control Protocol, Src Port: 33092, Dst Port: 80, Seq: 1, Ack: 1, Len: 441

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]

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

[Severity level: Chat]

[Group: Sequence]

Request Method: GET

Request URI: /~kurose/cover_5th_ed.jpg

Request Version: HTTP/1.1

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/81.0.4044.122 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: ru-RU,ru;q=0.9,en-US;q=0.8,en;q=0.7,uk;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: 165]

No.	Time	Source	Destination	Protocol	Length	Info
1583	16.000761	149.154.167.51	192.168.0.103	HTTP	300	HTTP/1.1 200 OK

Frame 1583: 300 bytes on wire (2400 bits), 300 bytes captured (2400 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0
Ethernet II, Src: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c), Dst: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9)
Internet Protocol Version 4, Src: 149.154.167.51, Dst: 192.168.0.103
Transmission Control Protocol, Src Port: 80, Dst Port: 32397, Seq: 1, Ack: 1, Len: 234
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
Connection: keep-alive\r\n
Content-type: application/octet-stream\r\n
Pragma: no-cache\r\n
Cache-control: no-store\r\n
Content-length: 88\r\n
\r\n
[HTTP response 1/1]
File Data: 88 bytes
Data (88 bytes)

No.	Time	Source	Destination	Protocol	Length	Info
165	4.196235	128.119.245.12	192.168.0.103	HTTP	1472	HTTP/1.1 200 OK (JPEG JFIF image)

Frame 165: 1472 bytes on wire (11776 bits), 1472 bytes captured (11776 bits) on interface \Device\NPF_{9A99579D-4A40-4BC5-9128-D5B28192E363}, id 0
Ethernet II, Src: Tp-LinkT_ee:09:6c (b0:48:7a:ee:09:6c), Dst: HonHaiPr_8f:81:a9 (90:32:4b:8f:81:a9)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.103
Transmission Control Protocol, Src Port: 80, Dst Port: 33092, Seq: 99913, Ack: 442, Len: 1406
[70 Reassembled TCP Segments (101318 bytes): #70(1448), #71(1448), #73(1448), #74(1448), #76(1448), #77(1448), #79(1448), #80(1448), #81(1448), #83(1448), #85(1448), #86(1448), #87(1448), #89(1448), #90(1448), #92(1448), #94(1448), #95(1448)]
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, 26 Apr 2020 13:07:42 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: 0.440006000 seconds]
[Request in frame: 66]
[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?

4 запити

128.119.245.12

128.119.245.12

23.61.196.31

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.