

Όνοματεπώνυμο: Άγγελος Μητροκώτσας	Ομάδα: 6
Όνομα PC/ΛΣ: DESKTOP-91G20CF/ Windows 10 Pro 20H2	Ημερομηνία: 15/ 1/2022
Διεύθυνση IP: 192.168.1.13	Διεύθυνση MAC: F8-63-3F-59-24-C8

Εργαστηριακή Άσκηση 11

Πλοήγηση στον παγκόσμιο ιστό

Απαντήστε στα ερωτήματα στον χώρο που σας δίνεται παρακάτω και στην πίσω σελίδα εάν δεν επαρκεί. Το φυλλάδιο αυτό θα παραδοθεί στον επιβλέποντα.

1

1.1 http

1.2 HTTP/1.1

1.3 HTTP/1.1

The screenshot shows the Wireshark interface with a packet capture of an HTTP GET request. The packet list on the left shows several HTTP 200 OK responses for PNG images. The selected packet (No. 691) is an HTTP GET request for /favicon.ico. The packet details pane shows the following structure:

- Frame 36: 545 bytes on wire (4360 bits), 545 bytes captured (4360 bits) on interface \Device\NPF_{11981F20-5231-4861-ABD2-DD8A4A767}
- Ethernet II, Src: IntelCor_59:24:c8 (f8:63:3f:59:24:c8), Dst: zte_cc:b7:aa (50:78:b3:cc:b7:aa)
- Internet Protocol Version 4, Src: 192.168.1.13, Dst: 147.102.40.15
- Transmission Control Protocol, Src Port: 52609, Dst Port: 80, Seq: 1, Ack: 1, Len: 491
- Hypertext Transfer Protocol
- TRANSUM RTE Data

The packet bytes pane shows the raw data in hexadecimal and ASCII. The ASCII part shows the beginning of the HTTP response: "Px.....c ?Y\$...E...@... a.....f...P...P...GE T /lab11".

1.4 GET

1.5 Ελληνικά και Αγγλικά

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Protocol	Length	Destination	Info
36	0.000000	192.168.1.13	HTTP	545	147.102.40.15	GET /lab11.html HTTP/1.1
45	0.028703	147.102.40.15	HTTP	399	192.168.1.13	HTTP/1.1 200 OK (text/html)
51	0.031321	192.168.1.13	HTTP	442	147.102.40.15	GET /main.css HTTP/1.1
52	0.000304	192.168.1.13	HTTP	511	147.102.40.15	GET /submit_assignment/main_page.png HTTP/1.1
59	0.022421	147.102.40.15	HTTP	512	192.168.1.13	HTTP/1.1 200 OK (text/css)
61	0.001950	192.168.1.13	HTTP	518	147.102.40.15	GET /submit_assignment/submit_condition.png HTTP/1.1
70	0.011638	192.168.1.13	HTTP	513	147.102.40.15	GET /submit_assignment/upload_file.png HTTP/1.1

> GET /lab11.html HTTP/1.1\r\n
Host: edu-dy.cn.ntua.gr\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/97.0.4692.71 Safari/537.36\r\n
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,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: el,en;q=0.9,fr;q=0.8\r\n
> Cookie: _ga=GA1.2.254230715.1635765051\r\n\r\n

01d0 41 63 63 65 70 74 2d 4c 61 6e 67 75 61 67 65 3a Accept-L language:
01e0 20 65 6c 2c 65 6e 3b 71 3d 30 2e 39 2c 66 72 3b e1,en;q=0.9,fr;
01f0 71 3d 30 2e 38 0d 0a 43 6f 6f 6b 69 65 3a 20 5f q=0.8... Cookie: _
0200 67 61 3d 47 41 31 2e 32 2e 32 35 34 32 33 30 37 ga=GA1.2 .2542307

HTTP Accept Language (http.accept_language), 39 byte(s) | Packets: 746 · Displayed: 16 (2.1%) · Dropped: 0 (0.0%) | Profile: Default

1.6 Κωδικός κατάστασης: 200, Επεξηγηματική λέξη OK

1.7 Μεταφέρει text και html. Μήκος : 2648 bytes

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Protocol	Length	Destination	Info
36	0.000000	192.168.1.13	HTTP	545	147.102.40.15	GET /lab11.html HTTP/1.1
45	0.028703	147.102.40.15	HTTP	399	192.168.1.13	HTTP/1.1 200 OK (text/html)
51	0.031321	192.168.1.13	HTTP	442	147.102.40.15	GET /main.css HTTP/1.1
52	0.000304	192.168.1.13	HTTP	511	147.102.40.15	GET /submit_assignment/main_page.png HTTP/1.1
59	0.022421	147.102.40.15	HTTP	512	192.168.1.13	HTTP/1.1 200 OK (text/css)
61	0.001950	192.168.1.13	HTTP	518	147.102.40.15	GET /submit_assignment/submit_condition.png HTTP/1.1
70	0.011638	192.168.1.13	HTTP	513	147.102.40.15	GET /submit_assignment/upload_file.png HTTP/1.1

> Ethernet II, Src: zte_cc:b7:aa (50:78:b3:cc:b7:aa), Dst: IntelCor_59:24:c8 (f8:63:3f:59:24:c8)
> Internet Protocol Version 4, Src: 147.102.40.15, Dst: 192.168.1.13
> Transmission Control Protocol, Src Port: 80, Dst Port: 52609, Seq: 2681, Ack: 492, Len: 345
> [6 Reassembled TCP Segments (3025 bytes): #39(536), #40(536), #41(536), #42(536), #44(536), #45(345)]
> Hypertext Transfer Protocol
> Line-based text data: text/html (56 lines)

0170 2f 68 74 6d 6c 0d 0a 0d 0a 3c 21 44 4f 43 54 59 /html... <!DOCTYPE
0180 50 45 20 68 74 6d 6c 3e 0a 3c 68 74 6d 6c 3e 0a PE html> .<html>.
0190 20 20 20 20 0a 20 20 20 20 3c 68 65 61 64 3e 0a . <head>.
01a0 20 20 20 20 20 20 20 20 3c 6d 65 74 61 20 63 68 <meta ch
01b0 61 72 73 65 74 3d 22 75 74 66 2d 38 22 2f 3e 0a arset="u tf-8"/>.
01c0 20 20 20 20 20 20 20 20 3c 6d 65 74 61 20 68 74 <meta ht
01d0 74 70 2d 65 71 75 69 76 3d 22 58 2d 55 41 2d 43 tp-equiv ="X-UA-C
01e0 6f 6d 70 61 74 69 62 6c 65 22 20 63 6f 6e 74 65 ompatibl e" conte

Frame (399 bytes) Reassembled TCP (3025 bytes)
Line-based text data (data-text-lines), 2,648 byte(s) | Packets: 746 · Displayed: 16 (2.1%) · Dropped: 0 (0.0%) | Profile: Default

1.8 Είναι lab11.html και εμφανίζεται σαν τίτλος στην καρτέλα του πλοηγού

1.9 tcp.flags.syn == 1 and ip.addr == 147.102.40.15

1.10 6 συνδέσεις :

Source Ports: 52609, 52610, 52611, 52612, 52613, 52614, Destination Port: 80

1.11 http.request and ip.addr == 147.102.40.15

1.12 8 πακέτα http

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http.request and ip.addr == 147.102.40.15

No.	Time	Source	Protocol	Length	Destination	Info
36	0.000000	192.168.1.13	HTTP	545	147.102.40.15	GET /lab11.html HTTP/1.1
51	0.060024	192.168.1.13	HTTP	442	147.102.40.15	GET /main.css HTTP/1.1
52	0.000304	192.168.1.13	HTTP	511	147.102.40.15	GET /submit_assignment/main_page.png HTTP/1.1
61	0.024371	192.168.1.13	HTTP	518	147.102.40.15	GET /submit_assignment/submit_condition.png HTTP/1.1
70	0.011638	192.168.1.13	HTTP	513	147.102.40.15	GET /submit_assignment/upload_file.png HTTP/1.1
73	0.000701	192.168.1.13	HTTP	514	147.102.40.15	GET /submit_assignment/upload_file2.png HTTP/1.1
76	0.001416	192.168.1.13	HTTP	511	147.102.40.15	GET /submit_assignment/re_submit.png HTTP/1.1
691	0.379899	192.168.1.13	HTTP	491	147.102.40.15	GET /favicon.ico HTTP/1.1

[Req Last Seg: 36]
[Rsp First Seg: 39]
[Rsp Last Seg: 45]
[APDU Rsp Time: 0.028703000 seconds]
[Service Time: 0.024595000 seconds]
[Req Spread: 0.000000000 seconds]
[Rsp Spread: 0.004108000 seconds]

0000 50 78 b3 cc b7 aa f8 63 3f 59 24 c8 08 00 45 00 Px.....c ?Y\$...E.
0010 02 13 1a a7 40 00 80 06 61 13 c0 a8 01 0d 93 66@... a.....f
0020 28 0f cd 81 00 50 85 e4 bc 09 a7 c6 a0 b7 50 18 (...P... ..P.
0030 02 00 2c dc 00 00 47 45 54 20 2f 6c 61 62 31 31 ..,...GE T /lab11
0040 2e 68 74 6d 6c 20 48 54 54 50 2f 31 2e 31 0d 0a .html HT TP/1.1..
0050 48 6f 73 74 3a 20 65 64 75 2d 64 79 2e 63 6e 2e Host: ed u-dy.cn.

RTE Service Time (transum.st) | Packets: 746 · Displayed: 8 (1.1%) · Dropped: 0 (0.0%) | Profile: Default

1.13 http.response and ip.addr == 147.102.40.15

1.14 Κατέβασε 5 εικόνες

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http.response and ip.addr == 147.102.40.15

No.	Time	Source	Protocol	Length	Destination	Info
59	0.054046	147.102.40.15	HTTP	512	192.168.1.13	HTTP/1.1 200 OK (text/css)
575	0.226080	147.102.40.15	HTTP	283	192.168.1.13	HTTP/1.1 200 OK (PNG)
593	0.007018	147.102.40.15	HTTP	136	192.168.1.13	HTTP/1.1 200 OK (PNG)
600	0.012002	147.102.40.15	HTTP	368	192.168.1.13	HTTP/1.1 200 OK (PNG)
651	0.010332	147.102.40.15	HTTP	522	192.168.1.13	HTTP/1.1 200 OK (PNG)
689	0.044717	147.102.40.15	HTTP	264	192.168.1.13	HTTP/1.1 200 OK (PNG)
694	0.120603	147.102.40.15	HTTP	319	192.168.1.13	HTTP/1.1 200 OK (image/x-icon)

> Frame 45: 399 bytes on wire (3192 bits), 399 bytes captured (3192 bits) on interface \Device\NPF_{11981F20-5231-4861-ABD2-DD8A4A7} ^
> Ethernet II, Src: zte_cc:b7:aa (50:78:b3:cc:b7:aa), Dst: IntelCor_59:24:c8 (f8:63:3f:59:24:c8)
> Internet Protocol Version 4, Src: 147.102.40.15, Dst: 192.168.1.13
> Transmission Control Protocol, Src Port: 80, Dst Port: 52609, Seq: 2681, Ack: 492, Len: 345
> [6 Reassembled TCP Segments (3025 bytes): #39(536), #40(536), #41(536), #42(536), #44(536), #45(345)]

0000 f8 63 3f 59 24 c8 50 78 b3 cc b7 aa 08 00 45 00 -C?Y\$PxE.
0010 01 81 f5 84 40 00 36 06 d0 c7 93 66 28 0f c0 a8@.6...f(...
0020 01 0d 00 50 cd 01 a7 c6 ab 2f 85 e4 bd f4 50 18 ...P... ./...P.
0030 04 06 b0 29 d0 80 20 22 65 64 69 74 20 73 75 6d ...) " edit sum
0040 62 69 73 73 69 6f 6e 22 20 cf 8c cf 80 cf 89 cf bission"
0050 82 20 cf 86 ce b1 ce af ce bd ce b5 cf 84 ce b1
0060 ce b9 20 cf 80 ce b1 cf 81 ce b1 ce ba ce ac cf
0070 84 cf 89 2c 20 ce ba ce b1 ce b8 cf 8e cf 82 20 ... , ...

Frame (399 bytes) | Reassembled TCP (3025 bytes)

wireshark_Wi-FiEHX7F1.pcapng | Packets: 746 · Displayed: 8 (1.1%) · Dropped: 0 (0.0%) | Profile: Default

1.15 Ναι, παρατηρώ ότι οι εικόνες κατεβαίνουν παράλληλα από διαφορετικές συνδέσεις το οποίο φαίνεται από τον αριθμό της θύρας της κάθε σύνδεσης

1.16 Όχι, δεν ζητήθηκε κάτι τέτοιο. Δεν υπάρχουν φωτογραφίες που να κατέβηκαν με την χρήση της ίδιας θύρας

1.17 favicon.ico

1.18 GET /favicon.ico HTTP/1.1

2.1 Όχι δεν υπάρχει

2.2 Ο 200

2.3

Wireshark packet capture showing an HTTP 200 OK response. The packet details pane shows the Hypertext Transfer Protocol section expanded, displaying the status line and various headers. The packet bytes pane shows the raw data of the response, including the status line and the beginning of the HTML body.

No.	Time	Source	Protocol	Length	Destination	Info
475	0.000000	192.168.1.11	HTTP	544	147.102.40.15	GET /get2.html HTTP/1.1
479	0.011609	147.102.40.15	HTTP	218	192.168.1.11	HTTP/1.1 200 OK (text/html)
481	0.134826	192.168.1.11	HTTP	490	147.102.40.15	GET /favicon.ico HTTP/1.1
484	0.013483	147.102.40.15	HTTP	319	192.168.1.11	HTTP/1.1 200 OK (image/x-icon)
488	1.250226	192.168.1.11	HTTP	127	147.102.40.15	GET /get2.html HTTP/1.1
490	0.022396	147.102.40.15	HTTP	325	192.168.1.11	HTTP/1.1 304 Not Modified

Internet Protocol Version 4, Src: 147.102.40.15, Dst: 192.168.1.11
Transmission Control Protocol, Src Port: 80, Dst Port: 53237, Seq: 1073, Ack: 491, Len: 164
[2 Reassembled TCP Segments (1236 bytes): #478(1072), #479(164)]
Hypertext Transfer Protocol
HTTP/1.1 200 OK\r\n
Date: Sat, 15 Jan 2022 21:56:28 GMT\r\n
Server: Apache/2.2.22 (FreeBSD) mod_ssl/2.2.22 OpenSSL/0.9.8zh-freebsd DAV/2\r\n
Last-Modified: Sat, 18 Dec 2021 16:01:58 GMT\r\n
ETag: "17525b-35c-5d36dc674e980"\r\n
Accept-Ranges: bytes\r\n

Frame (218 bytes) Reassembled TCP (1236 bytes)
HTTP Last Modified (http.last_modified), 46 byte(s) Packets: 494 · Displayed: 6 (1.2%) · Dropped: 0 (0.0%) Profile: Default

18/12/2021

Wireshark packet capture showing an HTTP 200 OK response. The packet details pane shows the Hypertext Transfer Protocol section expanded, displaying the status line and various headers. The packet bytes pane shows the raw data of the response, including the status line and the beginning of the HTML body.

No.	Time	Source	Protocol	Length	Destination	Info
475	0.000000	192.168.1.11	HTTP	544	147.102.40.15	GET /get2.html HTTP/1.1
479	0.011609	147.102.40.15	HTTP	218	192.168.1.11	HTTP/1.1 200 OK (text/html)
481	0.134826	192.168.1.11	HTTP	490	147.102.40.15	GET /favicon.ico HTTP/1.1
484	0.013483	147.102.40.15	HTTP	319	192.168.1.11	HTTP/1.1 200 OK (image/x-icon)
488	1.250226	192.168.1.11	HTTP	127	147.102.40.15	GET /get2.html HTTP/1.1
490	0.022396	147.102.40.15	HTTP	325	192.168.1.11	HTTP/1.1 304 Not Modified

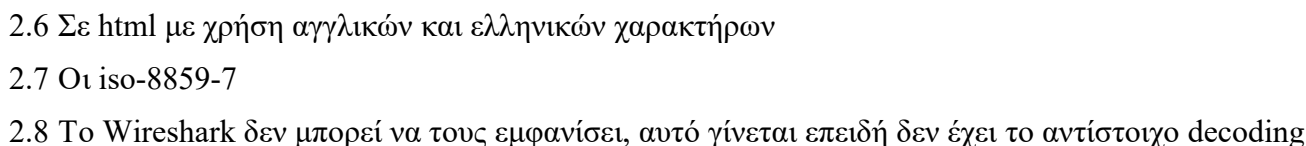
Ethernet II, Src: SernetSu_a7:bb:50 (d0:b6:6f:a7:bb:50), Dst: IntelCor_59:24:c8 (f8:63:3f:59:24:c8)
Internet Protocol Version 4, Src: 147.102.40.15, Dst: 192.168.1.11
Transmission Control Protocol, Src Port: 80, Dst Port: 53237, Seq: 4989, Ack: 927, Len: 265
[3 Reassembled TCP Segments (4017 bytes): #482(536), #483(3216), #484(265)]
Hypertext Transfer Protocol
HTTP/1.1 200 OK\r\n
Date: Sat, 15 Jan 2022 21:56:28 GMT\r\n
Server: Apache/2.2.22 (FreeBSD) mod_ssl/2.2.22 OpenSSL/0.9.8zh-freebsd DAV/2\r\n
Last-Modified: Wed, 12 Feb 2014 07:10:26 GMT\r\n
ETag: "175abd-e36-4f230445adc80"\r\n

Frame (319 bytes) Reassembled TCP (4017 bytes)
HTTP Last Modified (http.last_modified), 46 byte(s) Packets: 494 · Displayed: 6 (1.2%) · Dropped: 0 (0.0%) Profile: Default

Και 12/2/2014

2.4 860 bytes

2.5 Είναι αρχείο κειμένου text/html που περιέχει κώδικα html



2.10 18/12/2021

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Protocol	Length	Destination	Info
475	0.000000	192.168.1.11	HTTP	544	147.102.40.15	GET /get2.html HTTP/1.1
479	0.011609	147.102.40.15	HTTP	218	192.168.1.11	HTTP/1.1 200 OK (text/html)
481	0.134826	192.168.1.11	HTTP	490	147.102.40.15	GET /favicon.ico HTTP/1.1
484	0.013483	147.102.40.15	HTTP	319	192.168.1.11	HTTP/1.1 200 OK (image/x-icon)
488	1.250226	192.168.1.11	HTTP	127	147.102.40.15	GET /get2.html HTTP/1.1
490	0.022396	147.102.40.15	HTTP	325	192.168.1.11	HTTP/1.1 304 Not Modified

Accept-Encoding: gzip, deflate\r\n
 Accept-Language: el,en;q=0.9,fr;q=0.8\r\n
 > Cookie: _ga=GA1.2.254230715.1635765051\r\n
 If-None-Match: "17525b-35c-5d36dc674e980"\r\n
 If-Modified-Since: Sat, 18 Dec 2021 16:01:58 GMT\r\n
 \r\n
 [Full request URI: http://edu-dy.cn.ntua.gr/get2.html]
 [HTTP request 3/3]
 [Prev request in frame: 481]

0220 36 64 63 36 37 34 65 39 38 30 22 0d 0a 49 66 2d 6dc674e9 80"-If-
 0230 4d 6f 64 69 66 69 65 64 2d 53 69 6e 63 65 3a 20 Modified -Since:
 0240 53 61 74 2c 20 31 38 20 44 65 63 20 32 30 32 31 Sat, 18 Dec 2021
 0250 20 31 36 3a 30 31 3a 35 38 20 47 4d 54 0d 0a 0d 16:01:5 8 GMT...

Frame (127 bytes) Reassembled TCP (609 bytes)

Request line (http.request.line), 50 byte(s) Packets: 494 · Displayed: 6 (1.2%) · Dropped: 0 (0.0%) Profile: Default

2.11 Ο 304

2.12 Όχι, δεν επέστρεψε το περιεχόμενο καθώς υπήρχε ήδη τοπικά στον πλοηγό και δεν έχει μεσολαβήσει τροποποίηση του (cache data)

2.13 Υπήρξε ένα αίτημα GET /favicon.ico HTTP/1.1 προκειμένου να φορτωθεί το εικονίδιο της καρτέλας

3

3.1 4 εντολές GET

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Protocol	Length	Destination	Info
19	0.000000	192.168.1.11	HTTP	503	147.102.40.15	GET /get.html HTTP/1.1
21	0.015051	147.102.40.15	HTTP	495	192.168.1.11	HTTP/1.1 200 OK (text/html)
23	0.121360	192.168.1.11	HTTP	449	147.102.40.15	GET /favicon.ico HTTP/1.1
34	0.029620	147.102.40.15	HTTP	319	192.168.1.11	HTTP/1.1 200 OK (image/x-icon)
52	5.215715	192.168.1.11	HTTP	86	147.102.40.15	GET /get.html HTTP/1.1
57	0.010035	147.102.40.15	HTTP	326	192.168.1.11	HTTP/1.1 304 Not Modified
175	67.388799	192.168.1.11	HTTP	86	147.102.40.15	GET /get.html HTTP/1.1
178	0.019404	147.102.40.15	HTTP	495	192.168.1.11	HTTP/1.1 200 OK (text/html)

> Frame 19: 503 bytes on wire (4024 bits), 503 bytes captured (4024 bits) on interface \Device\NPF_{11981F20-5231-4861-ABD2-DD8A4A767
 > Ethernet II, Src: IntelCor_59:24:c8 (f8:63:3f:59:24:c8), Dst: SernetSu_a7:bb:50 (d0:b6:6f:a7:bb:50)
 > Internet Protocol Version 4, Src: 192.168.1.11, Dst: 147.102.40.15
 > Transmission Control Protocol, Src Port: 61756, Dst Port: 80, Seq: 1, Ack: 1, Len: 449
 > Hypertext Transfer Protocol
 > TRANSUM RTE Data

0000 d0 b6 6f a7 bb 50 f8 63 3f 59 24 c8 08 00 45 00 ...o..P.c ?Y\$...E.
 0010 01 e9 6c b1 40 00 80 06 0f 35 c0 a8 01 0b 93 66 ...l-@... .5.....f
 0020 28 0f f1 3c 00 50 3a 00 6e cf 34 1e 7a bd 50 18 (...<P:.. n 4-z.P.
 0030 02 00 10 0d 00 00 47 45 54 20 2f 67 65 74 2e 68GE T /get.h
 0040 74 6d 6c 20 48 54 54 50 2f 31 2e 31 0d 0a 48 6f tml HTTP /1.1..Ho

wireshark_Wi-FiLWT4F1.pcapng Packets: 251 · Displayed: 8 (3.2%) Profile: Default

3.2 Status Code: 200

3.3 16/1/2022

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Protocol	Length	Destination	Info
19	0.000000	192.168.1.11	HTTP	503	147.102.40.15	GET /get.html HTTP/1.1
21	0.015051	147.102.40.15	HTTP	495	192.168.1.11	HTTP/1.1 200 OK (text/html)
23	0.121360	192.168.1.11	HTTP	449	147.102.40.15	GET /favicon.ico HTTP/1.1
34	0.029620	147.102.40.15	HTTP	319	192.168.1.11	HTTP/1.1 200 OK (image/x-icon)
52	5.215715	192.168.1.11	HTTP	86	147.102.40.15	GET /get.html HTTP/1.1
57	0.010035	147.102.40.15	HTTP	326	192.168.1.11	HTTP/1.1 304 Not Modified
175	67.388799	192.168.1.11	HTTP	86	147.102.40.15	GET /get.html HTTP/1.1
178	0.019404	147.102.40.15	HTTP	495	192.168.1.11	HTTP/1.1 200 OK (text/html)

Date: Sun, 16 Jan 2022 14:24:35 GMT\r\n
 Server: Apache/2.2.22 (FreeBSD) mod_ssl/2.2.22 OpenSSL/0.9.8zh-freebsd DAV/2\r\n
 Last-Modified: Sun, 16 Jan 2022 14:24:00 GMT\r\n
 ETag: "17525c-259-5d5b3c98033df"\r\n
 Accept-Ranges: bytes\r\n
 > Content-Length: 601\r\n
 Cache-Control: max-age=84600, public\r\n

0000 f8 63 3f 59 24 c8 d0 b6 6f a7 bb 50 08 00 45 00 ·c?Y\$.· · · · ·P· · · · ·
 0010 01 e1 13 bd 40 00 3a 06 ae 31 93 66 28 0f c0 a8 · · · · ·@· · · · ·1·f(· · ·
 0020 01 0b 00 50 f1 3c 34 1e 7c d5 3a 00 70 90 50 18 · · · · ·P· <4· | · · · · ·p·P·
 0030 04 06 4d 1e 00 00 b1 2c 20 ce ba ce b1 cf 84 ce · ·M· · · · ·, · · · · ·

Frame (495 bytes) Reassembled TCP (977 bytes)

wireshark_Wi-FiLWT4F1.pcapng

Packets: 251 · Displayed: 8 (3.2%) · Dropped: 0 (0.0%) Profile: Default

3.4 601 bytes

3.5 Ναί

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Protocol	Length	Destination	Info
19	0.000000	192.168.1.11	HTTP	503	147.102.40.15	GET /get.html HTTP/1.1
21	0.015051	147.102.40.15	HTTP	495	192.168.1.11	HTTP/1.1 200 OK (text/html)
23	0.121360	192.168.1.11	HTTP	449	147.102.40.15	GET /favicon.ico HTTP/1.1
34	0.029620	147.102.40.15	HTTP	319	192.168.1.11	HTTP/1.1 200 OK (image/x-icon)
52	5.215715	192.168.1.11	HTTP	86	147.102.40.15	GET /get.html HTTP/1.1
57	0.010035	147.102.40.15	HTTP	326	192.168.1.11	HTTP/1.1 304 Not Modified
175	67.388799	192.168.1.11	HTTP	86	147.102.40.15	GET /get.html HTTP/1.1
178	0.019404	147.102.40.15	HTTP	495	192.168.1.11	HTTP/1.1 200 OK (text/html)

Accept-Language: el,en;q=0.9,fr;q=0.8\r\n
 If-None-Match: "17525c-259-5d5b3c98033df"\r\n
 If-Modified-Since: Sun, 16 Jan 2022 14:24:00 GMT\r\n
 \r\n
[\[Full request URI: http://edu-dy.cn.ntua.gr/get.html\]](http://edu-dy.cn.ntua.gr/get.html)
 [HTTP request 1/1]
[\[Response in frame: 57\]](#)

0200 66 22 0d 0a 49 66 2d 4d 6f 64 69 66 69 65 64 2d f"· · · · ·If-M odified-
 0210 53 69 6e 63 65 3a 20 53 75 6e 2c 20 31 36 20 4a Since: S un, 16 J
 0220 61 6e 20 32 30 32 32 20 31 34 3a 32 34 3a 30 30 an 2022 14:24:00
 0230 20 47 4d 54 0d 0a 0d 0a GMT· · · · ·

Frame (86 bytes) Reassembled TCP (568 bytes)

Request line (http.request.line), 50 byte(s)

Packets: 251 · Displayed: 8 (3.2%) · Dropped: 0 (0.0%) Profile: Default

3.6 Status Code: 304 (Not Modified)

3.7 Ναί

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Protocol	Length	Destination	Info
19	0.000000	192.168.1.11	HTTP	503	147.102.40.15	GET /get.html HTTP/1.1
21	0.015051	147.102.40.15	HTTP	495	192.168.1.11	HTTP/1.1 200 OK (text/html)
23	0.121360	192.168.1.11	HTTP	449	147.102.40.15	GET /favicon.ico HTTP/1.1
34	0.029620	147.102.40.15	HTTP	319	192.168.1.11	HTTP/1.1 200 OK (image/x-icon)
52	5.215715	192.168.1.11	HTTP	86	147.102.40.15	GET /get.html HTTP/1.1
57	0.010035	147.102.40.15	HTTP	326	192.168.1.11	HTTP/1.1 304 Not Modified
175	67.388799	192.168.1.11	HTTP	86	147.102.40.15	GET /get.html HTTP/1.1
178	0.019404	147.102.40.15	HTTP	495	192.168.1.11	HTTP/1.1 200 OK (text/html)

Accept-Encoding: gzip, deflate\r\n
 Accept-Language: el,en;q=0.9,fr;q=0.8\r\n
 If-None-Match: "17525c-259-5d5b3c98033df"\r\n
 If-Modified-Since: Sun, 16 Jan 2022 14:24:00 GMT\r\n
 \r\n
 [Full request URI: http://edu-dy.cn.ntua.gr/get.html]
 [HTTP request 1/1]

0200 66 22 0d 0a 49 66 2d 4d 6f 64 69 66 69 65 64 2d f"...If-M odified-
 0210 53 69 6e 63 65 3a 20 53 75 6e 2c 20 31 36 20 4a Since: S un, 16 J
 0220 61 6e 20 32 30 32 32 20 31 34 3a 32 34 3a 30 30 an 2022 14:24:00
 0230 20 47 4d 54 0d 0a 0d 0a GMT...

Frame (86 bytes) Reassembled TCP (568 bytes)

Request line (http.request.line), 50 byte(s) | Packets: 251 · Displayed: 8 (3.2%) · Dropped: 0 (0.0%) | Profile: Default

3.8 Status Code: 200

3.9 16/1/2022

3.10 601 bytes

3.11 Οι αλλαγές στη σελίδα είναι περιοδικές συμβαίνουν ανά 1 λεπτό. Έτσι αρκεί να περιμένουμε ένα λεπτό έτσι ώστε να έχει γίνει μία ακόμα αλλαγή προκειμένου να λάβουμε νέα σελίδα και όχι την τοπικά αποθηκευμένη (cached)

4

4.1 Έγιναν 2 TCP συνδέσεις (θύρες 62401 και 62402)

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

tcp

No.	Time	Source	Protocol	Length	Destination	Info
13	0.000000	192.168.1.11	TCP	66	147.102.40.15	62401 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=25
14	0.000579	192.168.1.11	TCP	66	147.102.40.15	62402 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=25
15	0.015047	147.102.40.15	TCP	66	192.168.1.11	80 → 62401 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=
16	0.000000	147.102.40.15	TCP	66	192.168.1.11	80 → 62402 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=
17	0.000154	192.168.1.11	TCP	54	147.102.40.15	62401 → 80 [ACK] Seq=1 Ack=1 Win=131072 Len=0
18	0.000158	192.168.1.11	TCP	54	147.102.40.15	62402 → 80 [ACK] Seq=1 Ack=1 Win=131072 Len=0
19	0.000393	192.168.1.11	HTTP	504	147.102.40.15	GET /long.html HTTP/1.1
20	0.026467	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=1 Ack=451 Win=65920 Len=536 [TCP
21	0.007600	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=1 Ack=451 Win=65920 Len=536 [TCP

> Frame 35: 277 bytes on wire (2216 bits), 277 bytes captured (2216 bits) on interface \Device\NPF_{11981F20-5231-4861-ABD2-DD8A4A7} >
 > Ethernet II, Src: SernetSu_a7:bb:50 (d0:b6:6f:a7:bb:50), Dst: IntelCor_59:24:c8 (f8:63:3f:59:24:c8)
 > Internet Protocol Version 4, Src: 147.102.40.15, Dst: 192.168.1.11
 > Transmission Control Protocol, Src Port: 80, Dst Port: 62402, Seq: 7505, Ack: 451, Len: 223
 > [15 Reassembled TCP Segments (7727 bytes): #20(536), #21(536), #22(536), #23(536), #24(536), #25(536), #26(536), #27(536), #28(536)
 > Hypertext Transfer Protocol
 > Line-based text data: text/html (196 lines)

0000 f8 63 3f 59 24 c8 d0 b6 6f a7 bb 50 08 00 45 00 ..c?Y\$. . . . P . . E .
 0010 01 07 72 88 40 00 3a 06 50 40 93 66 28 0f c0 a8 ..r.@.:. P@.f(. . .
 0020 01 0b 00 50 f3 c2 78 5e 06 83 fe fb f8 64 50 18 ..P..x^ dP .
 0030 04 06 63 5a 00 00 75 6e 64 2f 6f 75 74 62 6f 75 ..cZ..un d/outbou
 0040 6e 64 0a 20 20 20 20 20 20 49 6e 62 6f 75 6e 64 nd. Inbound

Frame (277 bytes) Reassembled TCP (7727 bytes)

Transmission Control Protocol: Protocol | Packets: 106 · Displayed: 60 (56.6%) · Dropped: 0 (0.0%) | Profile: Default

4.2 Source MSS(ο υπολογιστής μου): 1460

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

tcp

No.	Time	Source	Protocol	Length	Destination	Info
13	0.000000	192.168.1.11	TCP	66	147.102.40.15	62401 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=25
14	0.000579	192.168.1.11	TCP	66	147.102.40.15	62402 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=25
15	0.015047	147.102.40.15	TCP	66	192.168.1.11	80 → 62401 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS
16	0.000000	147.102.40.15	TCP	66	192.168.1.11	80 → 62402 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS
17	0.000154	192.168.1.11	TCP	54	147.102.40.15	62401 → 80 [ACK] Seq=1 Ack=1 Win=131072 Len=0
18	0.000158	192.168.1.11	TCP	54	147.102.40.15	62402 → 80 [ACK] Seq=1 Ack=1 Win=131072 Len=0
19	0.000393	192.168.1.11	HTTP	504	147.102.40.15	GET /long.html HTTP/1.1
20	0.026467	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=1 Ack=451 Win=65920 Len=536 [TCP
21	0.007690	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=537 Ack=451 Win=65920 Len=536 [T

[Checksum Status: Unverified]
Urgent Pointer: 0
Options: (12 bytes), Maximum segment size, No-Operation (NOP), Window scale, No-Operation (NOP), No-Operation (NOP), SACK perm:
 > TCP Option - Maximum segment size: 1460 bytes
 > TCP Option - No-Operation (NOP)
 > TCP Option - Window scale: 8 (multiply by 256)
 > TCP Option - No-Operation (NOP)

0000 d0 b6 6f a7 bb 50 f8 63 3f 59 24 c8 08 00 45 00 ..o..P.c ?Y\$.E.
 0010 00 34 6e 23 40 00 80 06 0f 78 c0 a8 01 0b 93 66 .4n#@... .x.....f
 0020 28 0f f3 c1 00 50 e5 db 12 13 00 00 00 00 80 02 (...P..
 0030 fa f0 0a f6 00 00 02 04 05 b4 01 03 03 08 01 01
 0040 04 02 ..

Transmission Control Protocol: Protocol | Packets: 106 · Displayed: 60 (56.6%) · Dropped: 0 (0.0%) | Profile: Default

Destination MSS (Server): 536

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

tcp

No.	Time	Source	Protocol	Length	Destination	Info
13	0.000000	192.168.1.11	TCP	66	147.102.40.15	62401 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=25
14	0.000579	192.168.1.11	TCP	66	147.102.40.15	62402 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=25
15	0.015047	147.102.40.15	TCP	66	192.168.1.11	80 → 62401 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS
16	0.000000	147.102.40.15	TCP	66	192.168.1.11	80 → 62402 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS
17	0.000154	192.168.1.11	TCP	54	147.102.40.15	62401 → 80 [ACK] Seq=1 Ack=1 Win=131072 Len=0
18	0.000158	192.168.1.11	TCP	54	147.102.40.15	62402 → 80 [ACK] Seq=1 Ack=1 Win=131072 Len=0
19	0.000393	192.168.1.11	HTTP	504	147.102.40.15	GET /long.html HTTP/1.1
20	0.026467	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=1 Ack=451 Win=65920 Len=536 [TCP
21	0.007690	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=537 Ack=451 Win=65920 Len=536 [T

[Checksum Status: Unverified]
Urgent Pointer: 0
Options: (12 bytes), Maximum segment size, No-Operation (NOP), Window scale, SACK permitted, End of Option List (EOL)
 > TCP Option - Maximum segment size: 536 bytes
 > TCP Option - No-Operation (NOP)
 > TCP Option - Window scale: 6 (multiply by 64)
 > TCP Option - SACK permitted

0000 f8 63 3f 59 24 c8 d0 b6 6f a7 bb 50 08 00 45 00 .c?Y\$. .o..P..E.
 0010 00 34 72 78 40 00 39 06 52 23 93 66 28 0f c0 a8 .4rx@.9. R#.f(...
 0020 01 0b 00 50 f3 c1 2a 12 c0 36 e5 db 12 14 80 12 ...P...*. .6.....
 0030 ff ff 20 2c 00 00 02 04 02 18 01 03 03 06 04 02 .. ,... ..
 0040 00 00 ..

TCP Options (tcp.options), 12 byte(s) | Packets: 106 · Displayed: 60 (56.6%) · Dropped: 0 (0.0%) | Profile: Default

4.3 1 τεμάχιο

4.4 200 OK

4.5 15 τεμάχια

4.6 7349 bytes (content length)

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Protocol	Length	Destination	Info
19	0.000000	192.168.1.11	HTTP	504	147.102.40.15	GET /long.html HTTP/1.1
35	0.051611	147.102.40.15	HTTP	277	192.168.1.11	HTTP/1.1 200 OK (text/html)
37	0.116213	192.168.1.11	HTTP	450	147.102.40.15	GET /favicon.ico HTTP/1.1
47	0.110639	147.102.40.15	HTTP	319	192.168.1.11	HTTP/1.1 200 OK (image/x-icon)

Etag: "17525e-1cb5-4bc5dc097d900"\r\n
 Accept-Ranges: bytes\r\n
 Content-Length: 7349\r\n
 Cache-Control: max-age=84600, public\r\n
 Keep-Alive: timeout=5, max=100\r\n
 Connection: Keep-Alive\r\n
 Content-Type: text/html\r\n

0000 f8 63 3f 59 24 c8 d0 b6 6f a7 bb 50 08 00 45 00 ·c?Y\$.··· o·P·E·
 0010 01 07 72 88 40 00 3a 06 50 40 93 66 28 0f c0 a8 ··r·@·:· P@·f(·
 0020 01 0b 00 50 f3 c2 78 5e 06 83 fe fb f8 64 50 18 ···P··x^ ·····dP·
 0030 04 06 63 5a 00 00 75 6e 64 2f 6f 75 74 62 6f 75 ··cZ·un d/outbou
 0040 6e 64 0a 20 20 20 20 20 20 49 6e 62 6f 75 6e 64 nd· Inbound

Frame (277 bytes) Reassembled TCP (7727 bytes)

Hypertext Transfer Protocol: Protocol

Packets: 106 · Displayed: 4 (3.8%) · Dropped: 0 (0.0%) Profile: Default

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

ip.src_host == 147.102.40.15

No.	Time	Source	Protocol	Length	Destination	Info
15	0.000000	147.102.40.15	TCP	66	192.168.1.11	80 → 62401 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS
16	0.000000	147.102.40.15	TCP	66	192.168.1.11	80 → 62402 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS
20	0.027172	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=1 Ack=451 Win=65920 Len=536 [TCP
21	0.002690	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=537 Ack=451 Win=65920 Len=536 [T
22	0.000000	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=1073 Ack=451 Win=65920 Len=536 [
23	0.000000	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=1609 Ack=451 Win=65920 Len=536 [
24	0.000000	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=2145 Ack=451 Win=65920 Len=536 [
25	0.000000	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=2681 Ack=451 Win=65920 Len=536 [
26	0.000000	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=3217 Ack=451 Win=65920 Len=536 [
27	0.000000	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=3753 Ack=451 Win=65920 Len=536 [
28	0.000000	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=4289 Ack=451 Win=65920 Len=536 [
29	0.000000	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=4825 Ack=451 Win=65920 Len=536 [
31	0.022154	147.102.40.15	TCP	590	192.168.1.11	80 → 62402 [ACK] Seq=5361 Ack=451 Win=65920 Len=536 [

> Frame 35: 277 bytes on wire (2216 bits), 277 bytes captured (2216 bits) on interface \Device\NPF_{11981F20-5231-4861-ABD2-DD8A4A767
 > Ethernet II, Src: SernetSu_a7:bb:50 (d8:b6:6f:a7:bb:50), Dst: IntelCor_59:24:c8 (f8:63:3f:59:24:c8)
 > Internet Protocol Version 4, Src: 147.102.40.15, Dst: 192.168.1.11
 > Transmission Control Protocol, Src Port: 80, Dst Port: 62402, Seq: 7505, Ack: 451, Len: 223
 > [15 Reassembled TCP Segments (7727 bytes): #20(536), #21(536), #22(536), #23(536), #24(536), #25(536), #26(536), #27(536), #28(536)
 > Hypertext Transfer Protocol
 > Line-based text data: text/html (196 lines)

Frame (277 bytes) Reassembled TCP (7727 bytes)

TCP Segments (tcp.segments), 7,727 byte(s)

Packets: 106 · Displayed: 28 (26.4%) Profile: Default

4.7 ip.src_host == 147.102.40.15

4.8 στο 1° (μετα από αυτό της χειραψιάς)

4.9 536 bytes

ip.src_host == 147.102.40.15

No.	Time	Source	Protocol	Length	Destination	Info
>			Internet Protocol Version 4		Src: 147.102.40.15, Dst: 192.168.1.11	
>			Transmission Control Protocol		Src Port: 80, Dst Port: 62402, Seq: 7505, Ack: 451, Len: 223	
>			[15 Reassembled TCP Segments (7727 bytes): #20(536), #21(536), #22(536), #23(536), #24(536), #25(536), #26(536), #27(536), #28(536), #29(536), #30(536), #31(536), #32(536), #33(536), #34(536), #35(536)]			
			[Frame: 20, payload: 0-535 (536 bytes)]			
			[Frame: 21, payload: 536-1071 (536 bytes)]			
			[Frame: 22, payload: 1072-1607 (536 bytes)]			
			[Frame: 23, payload: 1608-2143 (536 bytes)]			
			[Frame: 24, payload: 2144-2679 (536 bytes)]			
			[Frame: 25, payload: 2680-3215 (536 bytes)]			
			[Frame: 26, payload: 3216-3751 (536 bytes)]			
			[Frame: 27, payload: 3752-4287 (536 bytes)]			
			[Frame: 28, payload: 4288-4823 (536 bytes)]			
			[Frame: 29, payload: 4824-5359 (536 bytes)]			
			[Frame: 31, payload: 5360-5895 (536 bytes)]			
			[Frame: 32, payload: 5896-6431 (536 bytes)]			
			[Frame: 33, payload: 6432-6967 (536 bytes)]			
			[Frame: 34, payload: 6968-7503 (536 bytes)]			
			[Frame: 35, payload: 7504-7726 (223 bytes)]			
			[Segment count: 15]			
			[Reassembled TCP length: 7727]			
			[Reassembled TCP Data: 485454502f312e3120323030204f4b0d0a446174653a2053756e2c203136204a616e2032...]			

Frame (277 bytes) Reassembled TCP (7727 bytes)

TCP Segment (tcp.segment), 223 byte(s) | Packets: 106 · Displayed: 28 (26.4%) | Profile: Default

4.10 Έχουμε σταθερό MSS και αυτό σημαίνει ότι τα δεδομένα θα έρθουν σε σταθερού μεγέθους segments και επίσης το μέγεθος των επικεφαλίδων ETH, IP, TCP είναι σταθερό.

4.11 14 bytes (επικεφαλίδα Ethernet) + 20 bytes (επικεφαλίδα IP) + 20 bytes (Επικεφαλίδα TCP) + TCP Remaining Data: $7727 \bmod 524 (= 223 \text{ bytes}) = 277 \text{ bytes}$

5

5.1 4

http

No.	Time	Source	Protocol	Length	Destination	Info
358	0.000000	192.168.1.11	HTTP	505	147.102.40.15	GET /links.html HTTP/1.1
368	0.012888	147.102.40.15	HTTP	254	192.168.1.11	HTTP/1.1 200 OK (text/html)
382	0.040760	2a02:587:211c:8a0f:...	HTTP	456	2a02:26f0:6a:480::2...	GET /img/logo.gif HTTP/1.1
385	0.010792	2a02:587:211c:8a0f:...	HTTP	470	2001:648:2000:de::2...	GET /common_images/pyrforos.gif HTTP/1.1
387	0.008738	2001:648:2000:de::2...	HTTP	489	2a02:587:211c:8a0f:...	HTTP/1.1 200 OK (GIF89a)
424	0.059373	2a02:26f0:6a:480::2...	HTTP	789	2a02:587:211c:8a0f:...	HTTP/1.1 200 OK (GIF89a)
430	0.009610	192.168.1.11	HTTP	451	147.102.40.15	GET /favicon.ico HTTP/1.1
439	0.025826	147.102.40.15	HTTP	319	192.168.1.11	HTTP/1.1 200 OK (image/x-icon)

> Frame 358: 505 bytes on wire (4040 bits), 505 bytes captured (4040 bits) on interface \Device\NPF_{11981F20-5231-4861-ABD2-DD8A4A76}

> Ethernet II, Src: IntelCor_59:24:c8 (f8:63:3f:59:24:c8), Dst: SernetSu_a7:bb:50 (d0:b6:6f:a7:bb:50)

> Internet Protocol Version 4, Src: 192.168.1.11, Dst: 147.102.40.15

> Transmission Control Protocol, Src Port: 62793, Dst Port: 80, Seq: 1, Ack: 1, Len: 451

> Hypertext Transfer Protocol

> TRANSUM RTE Data

0000 d0 b6 6f a7 bb 50 f8 63 3f 59 24 c8 08 00 45 00 ..o..P.c ?Y\$...E.

0010 01 eb 6f 57 40 00 80 06 0c 8d c0 a8 01 0b 93 66 ..oW@...

0020 28 0f f5 49 00 50 6e e4 d7 9c 84 11 fa b2 50 18 (.I.Pn.P.

0030 02 00 2e f1 00 00 47 45 54 20 2f 6c 69 6e 6b 73GE T /links

0040 2e 68 74 6d 6c 20 48 54 54 50 2f 31 2e 31 0d 0a .html HT TP/1.1..

0050 48 6f 73 74 3a 20 65 64 75 2d 64 79 2e 63 6e 2e Host: ed u-dy.cn.

wireshark_Wi-Fi8PQ3F1.pcapng | Packets: 499 · Displayed: 8 (1.6%) | Profile: Default

5.2 3 συνδέσεις(θύρες 62793, 62772, 62795)

5.3 logo.gif, pyrforos.gif, favicon.ico

5.4 www.old.ntua.gr , www.mit.edu , edu-dy.cn.ntua.gr/favicon.ico

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Protocol	Length	Destination	Info
358	0.000000	192.168.1.11	HTTP	505	147.102.40.15	GET /links.html HTTP/1.1
368	0.012888	147.102.40.15	HTTP	254	192.168.1.11	HTTP/1.1 200 OK (text/html)
382	0.040760	2a02:587:211c:8a0f::...	HTTP	456	2a02:26f0:6a:480::2...	GET /img/logo.gif HTTP/1.1
385	0.010792	2a02:587:211c:8a0f::...	HTTP	470	2001:648:2000:de::2...	GET /common_images/pyrforos.gif HTTP/1.1
387	0.008738	2001:648:2000:de::2...	HTTP	489	2a02:587:211c:8a0f::...	HTTP/1.1 200 OK (GIF89a)
424	0.059373	2a02:26f0:6a:480::2...	HTTP	789	2a02:587:211c:8a0f::...	HTTP/1.1 200 OK (GIF89a)
430	0.009610	192.168.1.11	HTTP	451	147.102.40.15	GET /favicon.ico HTTP/1.1
439	0.025826	147.102.40.15	HTTP	319	192.168.1.11	HTTP/1.1 200 OK (image/x-icon)

[HTTP response 1/1]
[Time since request: 0.008738000 seconds]
[\[Request in frame: 385\]](#)
[Request URI: http://old.ntua.gr/common_images/pyrforos.gif]
File Data: 1560 bytes
CompuServe GIF, Version: GIF89a

```

0000  f8 63 3f 59 24 c8 d0 b6 6f a7 bb 50 86 dd 60 04  -c?Y$... o..P..
0010  13 c1 01 b3 06 3b 20 01 06 48 20 00 00 de 00 00  -....;..H....
0020  00 00 00 00 02 13 2a 02 05 87 21 1c 8a 0f d0 d7  -.....*..!.....
0030  19 a2 b7 8d 85 4b 00 50 f5 4b 5f f4 19 5a bd 11  -...K.P.K..Z..
0040  b8 9c 50 18 04 05 f6 3a 00 00 6b 5f 40 7a c0 0d  -..P...:..k_@z..

```

Frame (489 bytes) Reassembled TCP (1847 bytes)

Hypertext Transfer Protocol: Protocol

Packets: 499 · Displayed: 8 (1.6%) · Dropped: 0 (0.0%) Profile: Default

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Protocol	Length	Destination	Info
358	0.000000	192.168.1.11	HTTP	505	147.102.40.15	GET /links.html HTTP/1.1
368	0.012888	147.102.40.15	HTTP	254	192.168.1.11	HTTP/1.1 200 OK (text/html)
382	0.040760	2a02:587:211c:8a0f::...	HTTP	456	2a02:26f0:6a:480::2...	GET /img/logo.gif HTTP/1.1
385	0.010792	2a02:587:211c:8a0f::...	HTTP	470	2001:648:2000:de::2...	GET /common_images/pyrforos.gif HTTP/1.1
387	0.008738	2001:648:2000:de::2...	HTTP	489	2a02:587:211c:8a0f::...	HTTP/1.1 200 OK (GIF89a)
424	0.059373	2a02:26f0:6a:480::2...	HTTP	789	2a02:587:211c:8a0f::...	HTTP/1.1 200 OK (GIF89a)
430	0.009610	192.168.1.11	HTTP	451	147.102.40.15	GET /favicon.ico HTTP/1.1
439	0.025826	147.102.40.15	HTTP	319	192.168.1.11	HTTP/1.1 200 OK (image/x-icon)

[\[Prev request in frame: 358\]](#)
[\[Prev response in frame: 368\]](#)
[\[Request in frame: 430\]](#)
[Request URI: http://edu-dy.cn.ntua.gr/favicon.ico]
File Data: 3638 bytes
Media Type

```

0000  f8 63 3f 59 24 c8 d0 b6 6f a7 bb 50 08 00 45 00  -c?Y$... o..P..E..
0010  01 31 90 e6 40 00 3a 06 31 b8 93 66 28 0f c0 a8  -1..@.:.1..f(..
0020  01 0b 00 50 f5 49 84 12 0e 52 6e e4 da ec 50 18  -...P.I..Rn..P..
0030  04 06 a6 0b 00 00 01 01 38 04 04 04 01 01 01 01  -.....8.....
0040  01 01 1b 04 04 04 04 04 04 04 04 01 01 01 04  -.....

```

Frame (319 bytes) Reassembled TCP (4017 bytes)

Hypertext Transfer Protocol: Protocol

Packets: 499 · Displayed: 8 (1.6%) · Dropped: 0 (0.0%) Profile: Default

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Protocol	Length	Destination	Info
358	0.000000	192.168.1.11	HTTP	505	147.102.40.15	GET /links.html HTTP/1.1
368	0.012888	147.102.40.15	HTTP	254	192.168.1.11	HTTP/1.1 200 OK (text/html)
382	0.040760	2a02:587:211c:8a0f::...	HTTP	456	2a02:26f0:6a:480::2...	GET /img/logo.gif HTTP/1.1
385	0.010792	2a02:587:211c:8a0f::...	HTTP	470	2001:648:2000:de::2...	GET /common_images/pyrforos.gif HTTP/1.1
387	0.008738	2001:648:2000:de::2...	HTTP	489	2a02:587:211c:8a0f::...	HTTP/1.1 200 OK (GIF89a)
424	0.059373	2a02:26f0:6a:480::2...	HTTP	789	2a02:587:211c:8a0f::...	HTTP/1.1 200 OK (GIF89a)
430	0.009610	192.168.1.11	HTTP	451	147.102.40.15	GET /favicon.ico HTTP/1.1
439	0.025826	147.102.40.15	HTTP	319	192.168.1.11	HTTP/1.1 200 OK (image/x-icon)

Accept-Language: el,en;q=0.9,fr;q=0.8\r\n\r\n

[Full request URI: <http://www.mit.edu/img/logo.gif>]

[HTTP request 1/1]

[Response in frame: 424]

TRANSMISSION Data

```

0040  5f 4e 50 18 02 02 75 f9 00 00 47 45 54 20 2f 69  _NP...u. .GET /i
0050  6d 67 2f 6c 6f 67 6f 2e 67 69 66 20 48 54 54 50  mg/logo. gif HTTP
0060  2f 31 2e 31 0d 0a 48 6f 73 74 3a 20 77 77 77 2e  /1.1..Ho st: www.
0070  6d 69 74 2e 65 64 75 0d 0a 43 6f 6e 6e 65 63 74  mit.edu. .Connect
0080  69 6f 6e 3a 20 6b 65 65 70 2d 61 6c 69 76 65 0d  ion: kee p-alive.
0090  0a 55 73 65 72 2d 41 67 65 6e 74 3a 20 4d 6f 7a  .User-Ag ent: Moz

```

This packet will be responded in the packet with this number (http.response_in) | Packets: 499 · Displayed: 8 (1.6%) · Dropped: 0 (0.0%) | Profile: Default

5.5 Για το favicon.ico και την links.html είναι IPv4: 147.102.40.15

Για το pyrforos.gif είναι IPv6: 2001:648:2000:de::213

Για το logo.gif είναι IPv6: 2a02:26f0:6a:480::255e

Οι 2 τελευταίες είναι οι διευθύνσεις όπου βρίσκονται τα ενσωματωμένα αντικείμενα (embedded objects) που περιέχει η σελίδα (με διεύθυνση 147.102.40.15). Ο πλοηγός ιστούς κινείται από τη σελίδα links.html στις άλλες 2 όπου βρίσκονται τα embedded objects ώστε να τα εμφανίσει