

# Hasan Yahya (22L-7971) - BSE-6C

## Question-01:

1)

### HTTP DNS TCP SNNP

http-ethereal-trace-1 [Wireshark 1.12.1 (v1.12.1-0-g01b65bf from master-1.12)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filter: Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	192.168.1.102	192.168.1.104	SNMP	92	get-request 1.3.6.1.4.1.11.2.3.9.4.2.1.2.2.2.1.0
2	0.017162	192.168.1.104	192.168.1.102	SNMP	93	get-response 1.3.6.1.4.1.11.2.3.9.4.2.1.2.2.2.1.0
3	0.017086	192.168.1.102	192.168.1.104	SNMP	92	get-request 1.3.6.1.4.1.11.2.3.9.4.2.1.2.2.2.1.0
4	3.034572	192.168.1.104	192.168.1.102	SNMP	93	get-response 1.3.6.1.4.1.11.2.3.9.4.2.1.2.2.2.1.0
5	4.626878	192.168.1.102	63.240.76.19	DNS	77	Standard query 0x044d A gaia.cs.umass.edu
6	4.663785	63.240.76.19	192.168.1.102	DNS	293	Standard query response 0x044d A 128.119.245.12
7	4.675312	192.168.1.102	128.119.245.12	TCP	62	4127->80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1
8	4.694429	128.119.245.12	192.168.1.102	TCP	62	80->4127 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460 SACK_PERM=1
9	4.694458	192.168.1.102	128.119.245.12	TCP	54	4127->80 [ACK] Seq=1 Ack=1 Win=64240 Len=0
10	4.694850	192.168.1.102	128.119.245.12	HTTP	555	GET /ethereal-labs/lab2-1.html HTTP/1.1
11	4.717289	128.119.245.12	192.168.1.102	TCP	60	80->4127 [ACK] Seq=1 Ack=502 Win=6432 Len=0
12	4.718993	128.119.245.12	192.168.1.102	HTTP	439	HTTP/1.1 200 OK (text/html)
13	4.724332	192.168.1.102	128.119.245.12	HTTP	541	GET /favicon.ico HTTP/1.1
14	4.750366	128.119.245.12	192.168.1.102	HTTP	1395	HTTP/1.1 404 Not Found (text/html)
15	4.859777	192.168.1.102	128.119.245.12	TCP	54	4127->80 [ACK] Seq=989 Ack=1727 Win=64240 Len=0

Frame 12: 439 bytes on wire (3512 bits), 439 bytes captured (3512 bits)

2)

12 4.718993 128.119.245.12 192.168.1.102 HTTP 439 HTTP/1.1 200 OK (text/html)

Frame 12: 439 bytes on wire (3512 bits), 439 bytes captured (3512 bits)

Ethernet II, Src: LinksysG\_da:af:73 (00:06:25:da:af:73), Dst: DellComp\_4f:36:23 (00:08:74:4f:36:23)

Destination: DellComp\_4f:36:23 (00:08:74:4f:36:23)

Source: LinksysG\_da:af:73 (00:06:25:da:af:73)

Type: IP (0x0800)

Internet Protocol Version 4, Src: 128.119.245.12 (128.119.245.12), Dst: 192.168.1.102 (192.168.1.102)

Transmission Control Protocol, Src Port: 80 (80), Dst Port: 4127 (4127), Seq: 1, Ack: 502, Len: 385

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Tue, 23 Sep 2003 05:29:50 GMT\r\n

Server: Apache/2.0.40 (Red Hat Linux)\r\n

Last-Modified: Tue, 23 Sep 2003 05:29:00 GMT\r\n

ETag: "1bfed-49-79d5bf00"\r\n

Accept-Ranges: bytes\r\n

Content-Length: 73\r\n

Keep-Alive: timeout=10, max=100\r\n

Connection: Keep-Alive\r\n

Content-Type: text/html; charset=ISO-8859-1\r\n

\r\n

[HTTP response 1/2]

[Time since request: 0.024143000 seconds]

[\[Request in frame: 10\]](#)

[\[Next request in frame: 13\]](#)

[\[Next response in frame: 14\]](#)

Line-based text data: text/html

3)

No

## 404 Not Found

4)

1.1

5)

```
10 4.694850 192.168.1.102 128.119.245.12 HTTP 555 GET /ethereal-labs/lab2-1.html HTTP/1.1
[ Ethernet II, Src: DellComp_4f:36:23 (00:08:74:4f:36:23), Dst: Linksysg_da:af:73 (00:06:25:da:af:73) ]
[ Destination: Linksysg_da:af:73 (00:06:25:da:af:73) ]
[ Source: DellComp_4f:36:23 (00:08:74:4f:36:23) ]
[ Type: IP (0x0800) ]
[ Internet Protocol Version 4, Src: 192.168.1.102 (192.168.1.102), Dst: 128.119.245.12 (128.119.245.12) ]
[ Transmission Control Protocol, Src Port: 4127 (4127), Dst Port: 80 (80), Seq: 1, Ack: 1, Len: 501 ]
[ Hypertext Transfer Protocol ]
[ GET /ethereal-labs/lab2-1.html HTTP/1.1\r\n
Host: gaia.cs.umass.edu\r\n
User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.0.2) Gecko/20021120 Netscape/7.01\r\n
Accept: text/xml,application/xml,application/xhtml+xml,text/html;q=0.9,text/plain;q=0.8,video/x-mng,image/png,image/jpeg,image/gif;q=0.2,text/css,*/*;q=0.1\r\n
Accept-Language: en-us, en;q=0.50\r\n
Accept-Encoding: gzip, deflate, compress;q=0.9\r\n
Accept-Charset: ISO-8859-1, utf-8;q=0.66, *;q=0.66\r\n
Keep-Alive: 300\r\n
Connection: keep-alive\r\n
\r\n
[Full request URI: http://gaia.cs.umass.edu/ethereal-labs/lab2-1.html]
[HTTP request 1/2]
[Response in frame: 12]
[Next request in frame: 13]
```

6)

192.168.1.102(source) 128.119.245.12(destination)

7)

```
Decoding next frame (seq 1) expected 1000000000
[ Ethernet II, Src: DellComp_4f:36:23 (00:08:74:4f:36:23), Dst: Linksysg_da:af:73 (00:06:25:da:af:73) ]
[ Destination: Linksysg_da:af:73 (00:06:25:da:af:73) ]
[ Source: DellComp_4f:36:23 (00:08:74:4f:36:23) ]
[ Type: IP (0x0800) ]
[ Internet Protocol Version 4, Src: 192.168.1.102 (192.168.1.102), Dst: 128.119.245.12 (128.119.245.12) ]
[ Transmission Control Protocol, Src Port: 4127 (4127), Dst Port: 80 (80), Seq: 1, Ack: 1, Len: 501 ]
[ Hypertext Transfer Protocol ]
[ GET /ethereal-labs/lab2-1.html HTTP/1.1\r\n
Host: gaia.cs.umass.edu\r\n
User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.0.2) Gecko/20021120 Netscape/7.01\r\n
Accept: text/xml,application/xml,application/xhtml+xml,text/html;q=0.9,text/plain;q=0.8,video/x-mng,image/png,image/jpeg,image/gif;q=0.2,text/css,*/*;q=0.1\r\n
Accept-Language: en-us, en;q=0.50\r\n
Accept-Encoding: gzip, deflate, compress;q=0.9\r\n
Accept-Charset: ISO-8859-1, utf-8;q=0.66, *;q=0.66\r\n
Keep-Alive: 300\r\n
Connection: keep-alive\r\n
\r\n
[Full request URI: http://gaia.cs.umass.edu/ethereal-labs/lab2-1.html]
[HTTP request 1/2]
[Response in frame: 12]
[Next request in frame: 13]
```

8)

Source: 4127

Destination: 80

80 represents TCP

9)

200 OK

404 NOT FOUND

10)

```
[-] Hypertext Transfer Protocol
[-] HTTP/1.1 200 OK\r\n
  [+ [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
    Request Version: HTTP/1.1
    Status Code: 200
    Response Phrase: OK
    Date: Tue, 23 Sep 2003 05:29:50 GMT\r\n
    Server: Apache/2.0.40 (Red Hat Linux)\r\n
    Last-Modified: Tue, 23 Sep 2003 05:29:00 GMT\r\n
    ETag: "1bfed-49-79d5bf00"\r\n
    Accept-Ranges: bytes\r\n
    [+ Content-Length: 73\r\n
    Keep-Alive: timeout=10, max=100\r\n
    Connection: Keep-Alive\r\n
    Content-Type: text/html; charset=ISO-8859-1\r\n
    \r\n
    [HTTP response 1/2]
    [Time since request: 0.024143000 seconds]
    [Request in frame: 10]
    [Next request in frame: 13]
    [Next response in frame: 14]
[-] Line-based text data: text/html
  <html>\n
```

11)

439+1395

**Question-02:**

1)

No

2)

```
10.2.357902.128.119.245.12.192.168.1.102 HTTP/1.1 200 OK (text/html)

Response Phrase: OK
Date: Tue, 23 Sep 2003 05:35:50 GMT\r\n
Server: Apache/2.0.40 (Red Hat Linux)\r\n
Last-Modified: Tue, 23 Sep 2003 05:35:00 GMT\r\n
Etag: "1bfef-173-8f4ae900"\r\n
Accept-Ranges: bytes\r\n
Content-Length: 371\r\n
Keep-Alive: timeout=10, max=100\r\n
Connection: Keep-Alive\r\n
Content-Type: text/html; charset=ISO-8859-1\r\n
\r\n
[HTTP response 1/2]
[Time since request: 0.026634000 seconds]
[request in frame: 8]
[next request in frame: 14]
[next response in frame: 15]
Line-based text data: text/html
\r\n
<html>\r\n
\r\n
Congratulations again! Now you've downloaded the file lab2-2.html. <br>\n
This file's last modification date will not change. <p>\n
Thus if you download this multiple times on your browser, a complete copy <br>\n
will only be sent once by the server due to the inclusion of the IN-MODIFIED-SINCE<br>\n
field in your browser's HTTP GET request to the server.\n
\r\n
</html>\r\n
\r\n
0050 2c 20 32 33 20 53 65 70 20 32 30 30 33 20 30 35 , 23 Sep 2003 05
0060 3a 33 35 3a 35 30 20 47 4d 54 0d 0a 53 65 72 76 :35:50 GMT..serv
0070 65 72 3a 20 41 70 61 63 68 65 2f 32 2e 30 2e 34 er: Apache/2.0.4
0080 30 20 28 52 65 64 20 48 61 74 20 4c 69 6e 75 78 0 (Red Hat Linux)
0090 29 0d 0a 4c 61 73 74 2d 4d 6f 64 69 66 69 65 64 ).Last-Modified
00a0 3a 20 54 75 65 2c 20 32 33 20 53 65 70 20 32 30 : Tue, 23 Sep 20
00b0 30 33 20 30 35 3a 33 35 3a 30 30 20 47 4d 54 0d 03 05:35:00 GMT.
00c0 0a 45 54 61 67 3a 20 22 31 62 66 65 66 2d 31 37 .Etag: "1bfef-17
00d0 33 2d 38 66 34 61 65 39 30 30 22 0d 0a 41 63 63 3-8f4ae900"..Acc
00e0 65 70 74 2d 52 61 6e 67 65 73 3a 20 62 79 74 65 ept-Ranges: byte
00f0 73 0d 0a 43 6f 6e 74 65 6e 74 2d 4c 65 6e 67 74 s..Content-Lengt
0100 68 3a 20 33 37 31 0d 0a 4b 65 65 70 2d 41 6c 69 h: 371..Keep-Alt
0110 76 65 3a 20 74 69 6d 65 6f 75 74 3d 31 30 2c 20 ve: timeout=10,
0120 6d 61 78 3d 31 30 30 0d 0a 43 6f 6e 6e 65 63 74 max=100..Connect
0130 69 6f 6e 3a 20 4b 65 65 70 2d 41 6c 69 76 65 0d ion: Keep-Alive.
0140 0a 43 6f 6e 74 65 6e 74 2d 54 79 70 65 3a 20 74 .Content-Type: t
0150 65 78 74 2f 68 74 6d 6c 3b 20 63 68 61 72 73 65 ext/html; charse
0160 74 3d 49 53 4f 2d 38 38 35 39 2d 31 0d 0a 0d 0a t=ISO-8859-1....
0170 0a 3c 68 74 6d 6c 3e 0a 0a 43 6f 6e 67 72 61 74 <html>..Congrat
0180 65 6c 61 74 69 6f 6e 73 20 61 6f 61 69 6e 21 23 ulations again!
0190 20 4e 6f 77 20 79 6f 75 27 76 65 20 64 6f 77 6e Now you've down
01a0 6c 6f 61 64 65 64 20 74 68 65 20 66 69 6c 65 20 loaded the file
01b0 6c 61 62 32 2d 32 2e 68 74 6d 6c 2e 20 3c 62 72 lab2-2.html. <br>
01c0 3a 0a 3a 38 69 73 20 66 69 6c 65 2f 73 20 6c 61 e..This file's la
01d0 73 74 20 6d 6f 64 69 66 69 63 61 74 69 6f 6e 20 st modification
01e0 64 61 74 65 20 77 69 6c 6c 20 6e 6f 74 20 63 68 date will not ch
01f0 61 6e 67 65 2e 20 20 3c 70 3e 0a 54 68 75 73 20 ange. <p>..Thus
0200 20 69 66 20 79 6f 75 20 64 6f 77 6e 6c 6f 61 64 if you download
0210 20 74 68 69 73 20 6d 75 6c 74 69 70 6c 65 20 74 this multiple t
0220 69 6d 65 73 20 6f 6e 20 79 6f 75 72 20 62 72 6f times on your bro
0230 77 73 65 72 2c 20 61 20 63 6f 6d 70 6c 65 74 65 wser, a complete
0240 20 63 6f 70 79 20 3c 62 72 3e 0a 77 69 6c 6c 20 copy <br>..will
0250 6f 6e 6c 79 20 62 65 20 73 65 6e 74 20 6f 6e 63 e by the server
0260 65 20 62 79 20 74 68 65 20 73 65 72 76 65 73 20 e due to the inclu
0270 64 75 65 20 74 6f 20 74 68 65 20 69 6e 63 6c 75 sion of the IN-M
0280 73 69 6f 6e 20 6f 66 20 74 68 65 20 49 4e 2d 4d OODIFIED-SINCE<br>
0290 4f 44 49 46 49 45 44 2d 53 49 4e 43 45 3c 62 72 >..Field in your
02a0 3e 0a 66 69 65 6c 64 20 69 6e 20 79 6f 75 72 20 browser's HTTP G
02b0 62 72 6f 77 73 65 72 27 73 20 48 54 54 50 20 47 ET request to th
02c0 45 54 20 72 65 71 75 65 73 74 20 74 6f 20 74 68 e server ...</htm
02d0 65 20 73 65 72 76 65 72 2e 0a 0a 3c 2f 68 74 6d l>..
02e0 6c 3e 0a
```

3)

Yes ,tells when it was last modified, if modified after that date then send data otherwise tell that it is modified on

```

14.5517390 192.168.1.102 128.119.245.12 HTTP 668 GET /etherreal-labs/lab2-2.html HTTP/1.1
[Frame 14: 668 bytes on wire (5344 bits), 668 bytes captured (5344 bits) on interface eth0]
  Encapsulation type: Ethernet (1)
  Arrival Time: Sep 23, 2003 10:35:50.998382000 Pakistan Standard Time
  [Time shift for this packet: 0.000000000 seconds]
  Epoch Time: 1064295350.998382000 seconds
  [Time delta from previous captured frame: 2.483617000 seconds]
  [Time delta from previous displayed frame: 3.159488000 seconds]
  [Time since reference or first frame: 5.517390000 seconds]
  Frame Number: 14
  Frame Length: 668 bytes (5344 bits)
  Capture Length: 668 bytes (5344 bits)
  [Frame is marked: False]
  [Frame is ignored: False]
  [Protocols in frame: eth:ethertype:ip:tcp:http]
  [Number of per-protocol-data: 1]
  [Hypertext Transfer Protocol, key 0]
  [Coloring Rule Name: HTTP]
  [Coloring Rule String: http || tcp.port == 80 || http2]
[Ethernet II, Src: DellComp_4f:36:23 (00:08:74:4f:36:23), Dst: Linksys_00:06:25:da:af:73 (00:06:25:da:af:73)]
  Destination: Linksys_00:06:25:da:af:73 (00:06:25:da:af:73)
    Address: Linksys_00:06:25:da:af:73 (00:06:25:da:af:73)
    .... 0. .... = LG bit: Globally unique address (factory default)
    .... 0. .... = IG bit: Individual address (unicast)
  Source: DellComp_4f:36:23 (00:08:74:4f:36:23)
    Address: DellComp_4f:36:23 (00:08:74:4f:36:23)
    .... 0. .... = LG bit: Globally unique address (factory default)
    .... 0. .... = IG bit: Individual address (unicast)
  Type: IP (0x0800)
[Internet Protocol Version 4, Src: 192.168.1.102 (192.168.1.102), Dst: 128.119.245.12 (128.119.245.12)]
[Transmission Control Protocol, Src Port: 4247 (4247), Dst Port: 80 (80), Seq: 502, Ack: 686, Len: 614]
[Hypertext Transfer Protocol]
  GET /etherreal-labs/lab2-2.html HTTP/1.1\r\n
    [Expert Info (Chat/Sequence): GET /etherreal-labs/lab2-2.html HTTP/1.1\r\n]
    Request Method: GET
    Request URI: /etherreal-labs/lab2-2.html
    Request Version: HTTP/1.1
    Host: gaia.cs.umass.edu\r\n
    User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.0.2) Gecko/20021120 Netscape/7.01\r\n
    Accept: text/xml,application/xml,application/xhtml+xml,text/html;q=0.9,text/plain;q=0.8,video/x-mng,image/png,image/jpeg,image/gif;q=0.2,text/css,*/*;q=0.1\r\n
    Accept-Language: en-us,en;q=0.50\r\n
    Accept-Encoding: gzip, deflate, compress;q=0.9\r\n
    Accept-Charset: iso-8859-1, utf-8;q=0.66, *;q=0.66\r\n
    Keep-Alive: 300\r\n
    Connection: keep-alive\r\n
    If-Modified-Since: Tue, 23 Sep 2003 05:33:00 GMT\r\n
    If-None-Match: "bfef173-8f4ae900"\r\n
    Cache-Control: max-age=0\r\n
    \r\n
    [Full request URI: http://gaia.cs.umass.edu/etherreal-labs/lab2-2.html]
    [HTTP request 2/2]
    [Prev request in frame: 8]
    [Response in frame: 13]

```

4)

304 not modified

Question-03:

5)

1

6)

PACKET NO=8

7)

PACKET NO=14

8)

```
.....0. .... = LG bit: Globally unique address (factory default)
.....0 .... = IG bit: Individual address (unicast)
Type: IP (0x0800)
[ Internet Protocol Version 4, Src: 128.119.245.12 (128.119.245.12), Dst: 192.168.1.102 (192.168.1.102)
Transmission Control Protocol, Src Port: 80 (80), Dst Port: 4272 (4272), Seq: 4381, Ack: 502, Len: 436
[4 Reassembled TCP Segments (4816 bytes): #10(1460), #11(1460), #13(1460), #14(436)]
Hypertext Transfer Protocol
[ HTTP/1.1 200 OK\r\n
[ Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n\r\n
Request Version: HTTP/1.1
Status Code: 200
+-----+
0000 48 54 54 50 2f 31 2e 31 20 62 30 30 20 4f 4b 0d HTTP/1.1 200 OK
0010 0a 44 61 74 65 3a 20 54 75 65 3c 20 32 33 20 53 .Date: Tue, 23 S
0020 65 70 20 32 30 30 33 20 30 35 3a 33 37 3a 30 32 ep 2003 05:37:02
0030 20 47 4d 54 0d 0a 53 65 72 76 65 72 3a 20 41 70 get, server: ap
0040 61 63 68 65 2f 32 2e 30 2e 34 30 20 28 52 65 64 ache/2.0 ,40 (red
0050 20 48 61 74 20 4c 69 6e 73 78 29 0d 0a 4c 61 73 hat Lin ux).Las
0060 74 2d 4d 6f 64 69 6e 69 65 64 3a 20 54 75 65 2c t-Modiff1 ed: Tue,
0070 20 32 33 20 53 65 70 20 32 30 30 33 20 30 35 3a 23 Sep 2003 05:
0080 33 37 3a 30 31 20 47 4d 54 0d 0a 45 54 61 67 3a 37:03 get, ETag:
0090 20 22 31 62 66 66 32 2d 31 31 39 34 2d 39 36 38 "lbf2- 1194-968
00a0 31 33 39 34 30 22 0d 0a 41 63 63 65 70 74 2d 52 3940". Accept-R
00b0 61 6e 67 65 73 3a 20 62 79 74 65 73 0d 0a 43 6f anges: b ytes,co
00c0 6e 74 65 6e 74 2d 4c 65 6e 67 74 68 3a 20 34 35 ntent-L e ngth: 45
00d0 30 30 0d 0a 4b 65 65 70 2d 41 6c 69 76 65 3a 20 00..keep -Alive:
00e0 74 69 6d 65 6f 75 74 3d 31 30 3c 20 6d 61 78 3d timeout= 10, max=
00f0 31 30 30 0d 0a 43 6f 6e 6e 65 63 74 69 6f 6e 3a 100..Con necti on:
0100 20 4b 65 65 70 2d 41 6c 69 76 65 0d 0a 43 6f 6e keep-Al ive..con
0110 74 65 6e 74 2d 54 79 70 65 3a 20 74 65 78 74 2f tent-type e: text/
0120 68 74 6d 6c 3b 20 63 68 61 72 73 65 74 3d 49 53 html; ch arset=IS
0130 4f 2d 38 25 39 2d 31 0d 0a 0d 0a 3c 68 74 6d 0-8559-L ....<htm
0140 6c 3e 3c 68 65 61 64 3e 20 0a 3c 74 69 74 6c 65 1>-<head> ..<title
0150 3e 48 69 73 74 6f 72 69 63 61 6c 20 44 6f 63 75 >H istori cal Docu
0160 6d 65 6e 74 73 54 48 45 20 42 49 4c 20 4f 65 ements:TH E B ILL O
0170 46 20 52 49 47 48 54 53 3c 2f 74 69 74 6c 65 3e F RIGHT S </title>
0180 3c 2f 68 65 61 64 3e 0a 0a 0a 3c 62 6f 64 79 20 </head> ..<body
0190 62 67 63 6f 6c 6f 72 3d 22 23 66 66 66 66 66 66 bcolor= "ffffff
01a0 22 20 6c 69 6e 6b 3d 22 23 33 30 30 30 30 22 " link= "#330000"
01b0 20 76 6c 69 6e 6b 3d 22 23 36 36 36 36 33 22 vlink= "#666633"
01c0 3e 0a 3c 70 3e 3c 62 72 3e 0a 3c 2f 70 3e 0a 3c >.<p><br >.</p>.<
01d0 70 3e 3c 2f 70 3e 3c 63 65 6e 74 65 72 3e 3c 62 nse /nscr entae>ch
Frame (490 bytes) Reassembled TCP (4816 bytes)
```

Status Code = 200

9)

3

10)

1

1461

2921