

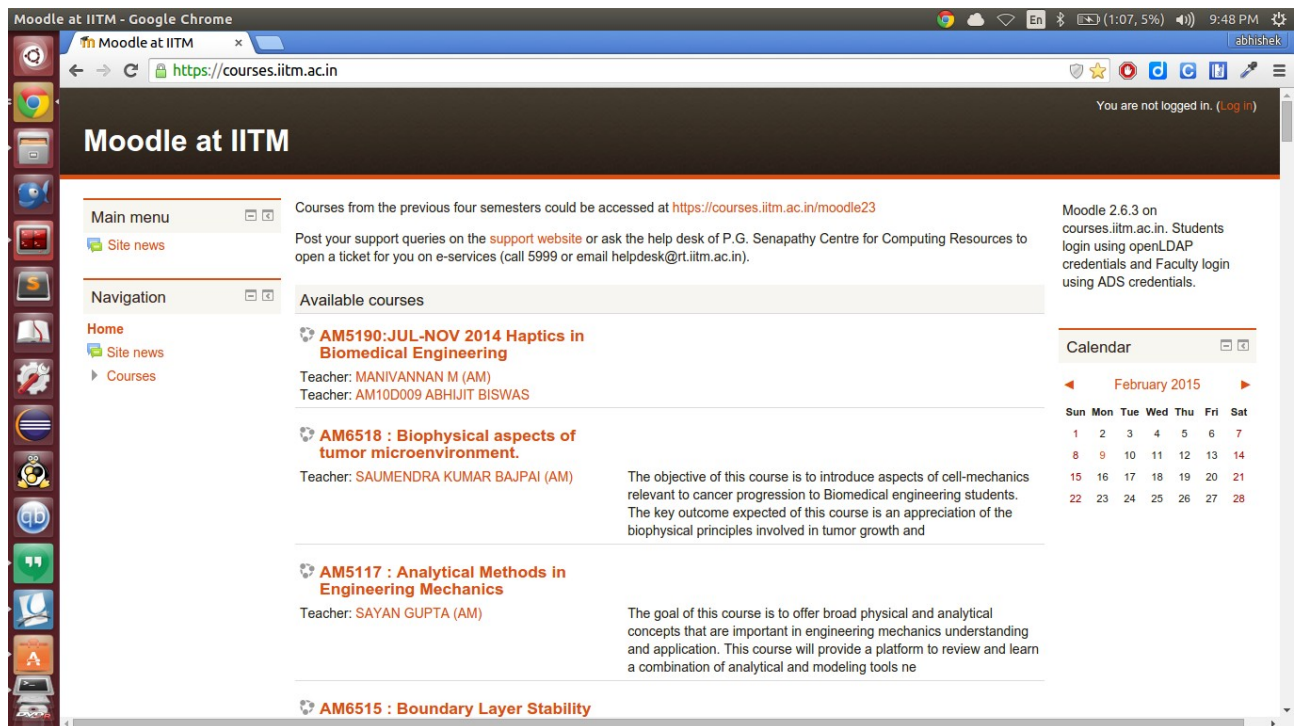
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Roll No: CS12B032
Networks Lab : 2

1.1 : Followed all the steps successfully. (this part of Assignment, I did with **Korra Jayanth**)

```
abhishek@abhishek-Inspiron-5520:~$ sudo ifconfig eth0 192.168.123.23 netmask 255.255.255.0
[sudo] password for abhishek:
abhishek@abhishek-Inspiron-5520:~$ route -n
Kernel IP routing table
Destination    Gateway         Genmask         Flags Metric Ref    Use Iface
192.168.123.0  0.0.0.0         255.255.255.0   U        0      0        0 eth0
abhishek@abhishek-Inspiron-5520:~$ sudo route add default gw 192.168.123.45 eth0
abhishek@abhishek-Inspiron-5520:~$ route -n
Kernel IP routing table
Destination    Gateway         Genmask         Flags Metric Ref    Use Iface
0.0.0.0        192.168.123.45  0.0.0.0         UG        0      0        0 eth0
192.168.123.0  0.0.0.0         255.255.255.0   U        0      0        0 eth0
abhishek@abhishek-Inspiron-5520:~$ ping 192.168.123.45
PING 192.168.123.45 (192.168.123.45) 56(84) bytes of data:
64 bytes from 192.168.123.45: icmp_seq=1 ttl=64 time=0.651 ms
64 bytes from 192.168.123.45: icmp_seq=2 ttl=64 time=0.492 ms
64 bytes from 192.168.123.45: icmp_seq=3 ttl=64 time=0.479 ms
64 bytes from 192.168.123.45: icmp_seq=4 ttl=64 time=0.461 ms
64 bytes from 192.168.123.45: icmp_seq=5 ttl=64 time=0.468 ms
64 bytes from 192.168.123.45: icmp_seq=6 ttl=64 time=0.463 ms
```

```
abhishek@abhishek-Inspiron-5520:~$ ping 192.168.28.2
PING 192.168.28.2 (192.168.28.2) 56(84) bytes of data:
64 bytes from 192.168.28.2: icmp_seq=1 ttl=64 time=0.378 ms
64 bytes from 192.168.28.2: icmp_seq=2 ttl=64 time=0.466 ms
64 bytes from 192.168.28.2: icmp_seq=3 ttl=64 time=0.462 ms
64 bytes from 192.168.28.2: icmp_seq=4 ttl=64 time=0.404 ms
64 bytes from 192.168.28.2: icmp_seq=5 ttl=64 time=0.466 ms
64 bytes from 192.168.28.2: icmp_seq=6 ttl=64 time=0.479 ms
64 bytes from 192.168.28.2: icmp_seq=7 ttl=64 time=0.382 ms
64 bytes from 192.168.28.2: icmp_seq=8 ttl=64 time=0.419 ms
64 bytes from 192.168.28.2: icmp_seq=9 ttl=64 time=0.417 ms
```

1.2 : Used the **192.168.123.45** as the gateway to connect to the destination ip 192.168.123.8 . Set the DNS server to the department DNS server 10.6.0.11 .

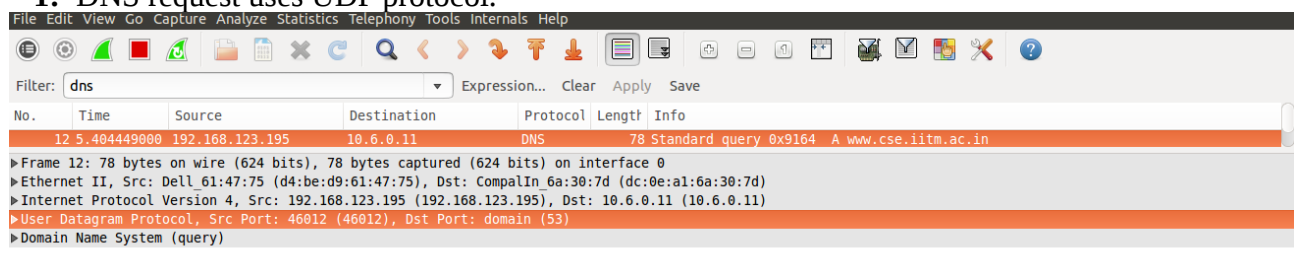


Accessed the department server

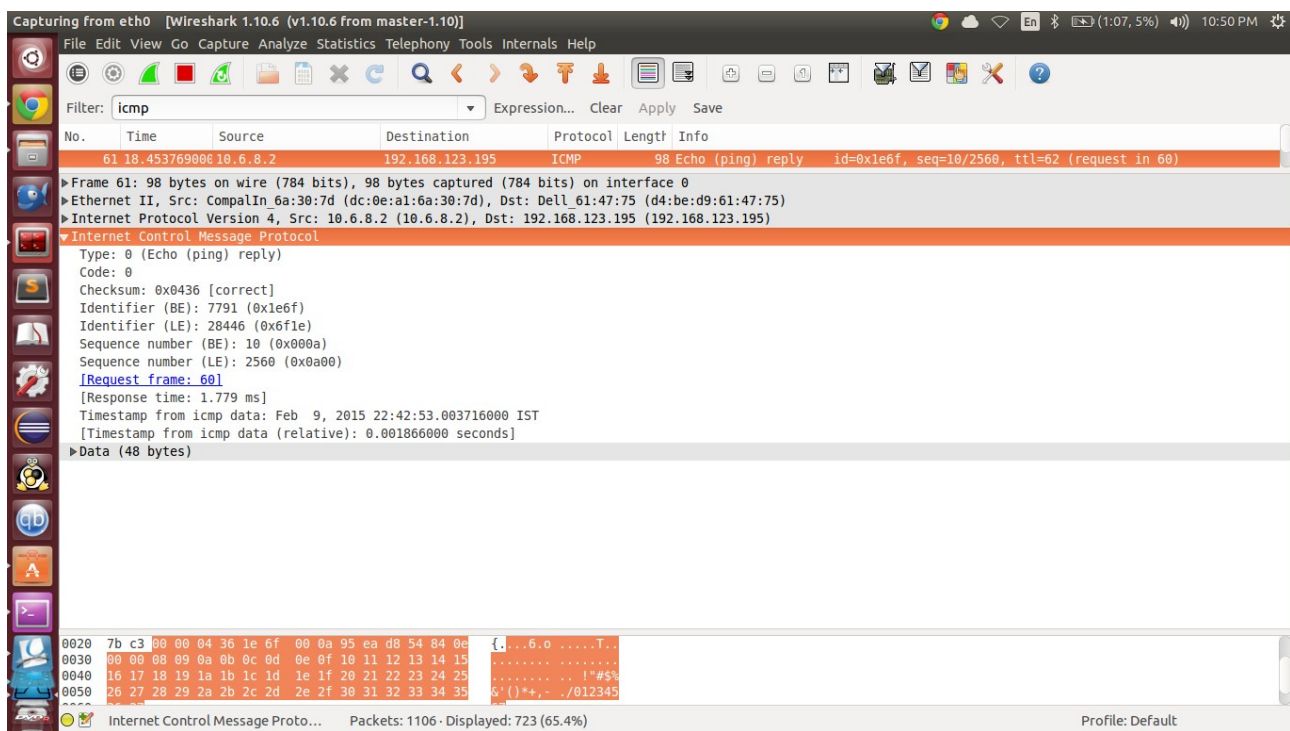
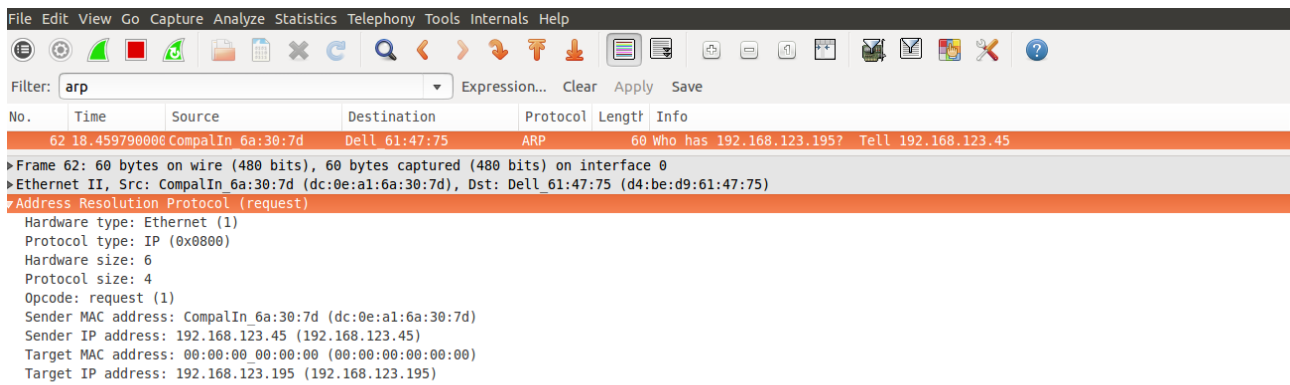
```
abhishek@abhishek-Inspiron-5520:~$ ping www.cse.iitm.ac.in
PING www.cse.iitm.ac.in (10.6.8.2) 56(84) bytes of data:
64 bytes from 10.6.8.2: icmp_seq=1 ttl=62 time=2.82 ms
64 bytes from 10.6.8.2: icmp_seq=2 ttl=62 time=186 ms
64 bytes from 10.6.8.2: icmp_seq=3 ttl=62 time=29.9 ms
64 bytes from 10.6.8.2: icmp_seq=4 ttl=62 time=184 ms
64 bytes from 10.6.8.2: icmp_seq=5 ttl=62 time=3.11 ms
64 bytes from 10.6.8.2: icmp_seq=6 ttl=62 time=12.9 ms
```

2.

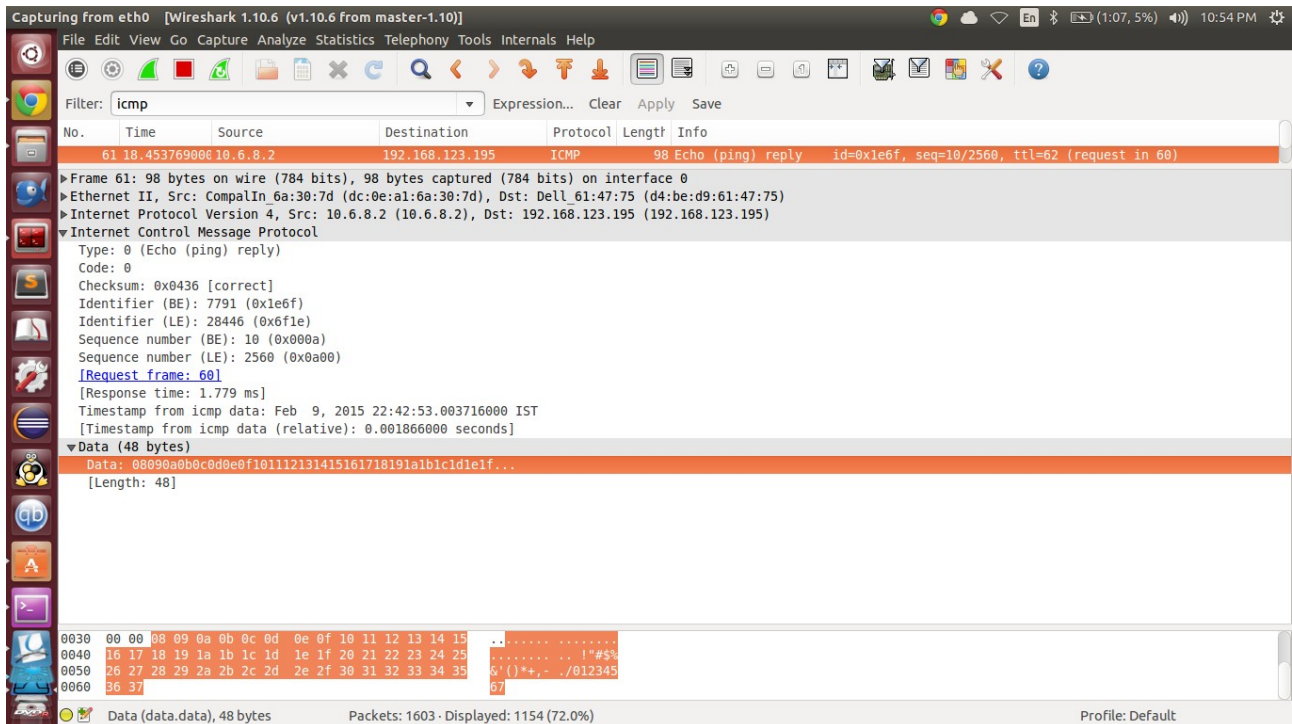
1: DNS request uses UDP protocol.



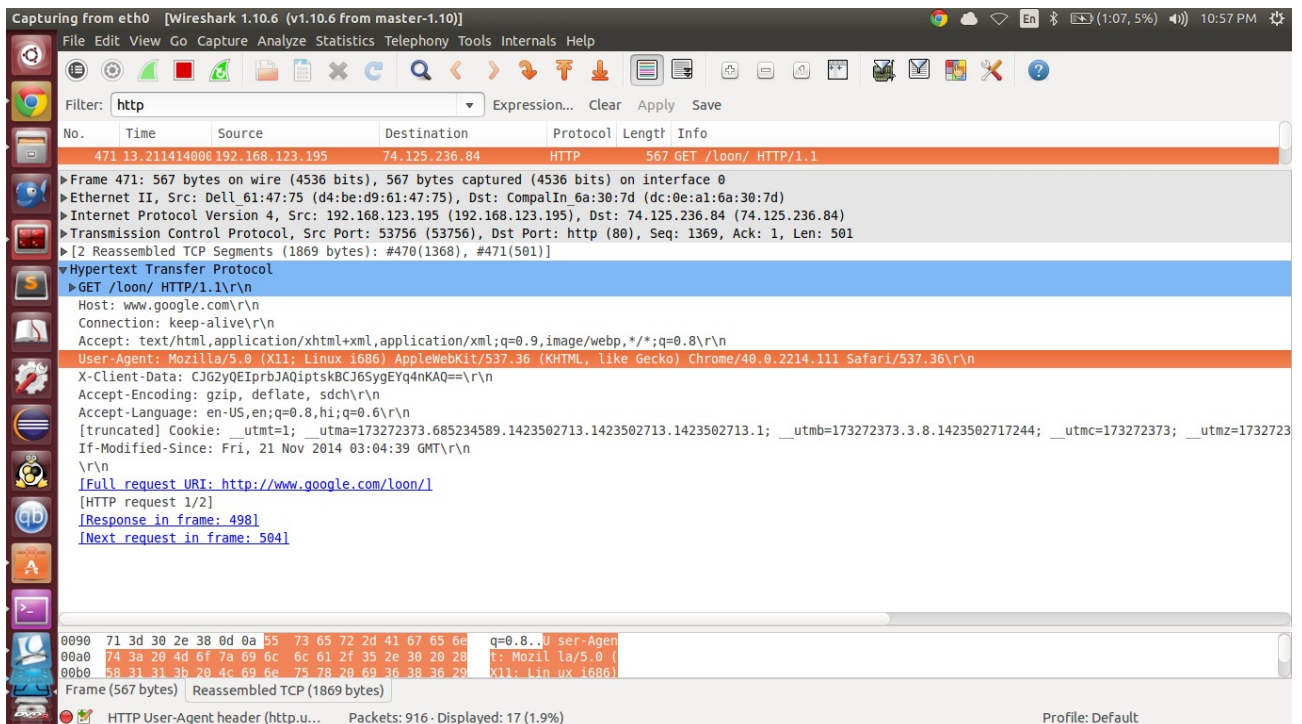
2: Destination and source MAC addresses for ARP requests.



** Data being sent is highlited in the image



4. User-agent field is highlighted:



2.5:

one used to filter the requests using tcp protocol and another icmp protocol while pinged to **www.google.com**

Capturing from wlan0 [Wireshark 1.10.6 (v1.10.6 from master-1.10)]

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Filter: icmp Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
12	10.999962000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=35/8960, ttl=64
15	11.999929000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=36/9216, ttl=64
17	12.999956000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=37/9472, ttl=64
18	14.000004000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=38/9728, ttl=64
20	14.999958000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=39/9984, ttl=64
21	16.000012000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=40/10240, ttl=64
22	16.999997000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=41/10496, ttl=64
26	18.000022000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=42/10752, ttl=64
32	18.999957000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=43/11008, ttl=64
34	20.000035000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=44/11264, ttl=64
36	20.999954000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=45/11520, ttl=64
39	22.000008000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=46/11776, ttl=64
40	22.999984000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=47/12032, ttl=64
46	24.000036000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=48/12288, ttl=64
49	24.999974000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=49/12544, ttl=64
50	25.999959000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=50/12800, ttl=64
53	27.000020000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=51/13056, ttl=64
55	27.999981000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=52/13312, ttl=64
57	29.000012000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=53/13568, ttl=64
60	29.999944000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=54/13824, ttl=64
62	30.999997000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=55/14080, ttl=64
64	31.999980000	192.168.29.6	74.125.236.82	ICMP	98	Echo (ping) request id=0xf10, seq=56/14336, ttl=64

Packet 12: 98 bytes on wire (784 bits), 98 bytes captured (784 bits) on interface 0

Ethernet II, Src: IntelCor_25:39:8d (84:a6:c8:25:39:8d), Dst: Netgear_35:e9:e8 (74:44:01:35:e9:e8)

Internet Protocol Version 4, Src: 192.168.29.6 (192.168.29.6), Dst: 74.125.236.82 (74.125.236.82)

Internet Control Message Protocol

0000 74 44 01 35 e9 e8 84 a6 c8 25 39 8d 08 00 45 00 tD.5... .%9...E.

0010 00 54 47 79 40 00 40 01 de b1 c0 a8 1d 06 4a 7d .Tgy@.@.J]

0020 ec 52 08 00 f8 65 0f 10 00 23 9c 01 d9 54 81 0d .R...e..#...T..

0030 0f 00 08 09 0a 0b 0c 0d 0e 0f 10 11 12 13 14 15

wlan0: -live capture in progress... Packets: 664 - Displayed: 91 (13.7%) Profile: Default

Capturing from wlan0 [Wireshark 1.10.6 (v1.10.6 from master-1.10)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filter: tcp Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
13	11.183922000	192.168.29.6	74.125.236.64	TCP	66	34145 > https [ACK] Seq=1 Ack=1 Win=400 Len=0 TSval=100576 TSecr=695718478
14	11.228802000	74.125.236.64	192.168.29.6	TCP	66	[TCP ACKed unseen segment] https > 34145 [ACK] Seq=1 Ack=2 Win=502 Len=0 TSval=695718478 TSecr=100576
24	17.967939000	192.168.29.6	74.125.236.203	TCP	66	58723 > https [ACK] Seq=1 Ack=1 Win=314 Len=0 TSval=102272 TSecr=695726125
25	17.979935000	74.125.236.203	192.168.29.6	TCP	66	[TCP ACKed unseen segment] https > 58723 [ACK] Seq=1 Ack=2 Win=350 Len=0 TSval=695726125 TSecr=102272
37	21.295926000	192.168.29.6	74.125.236.73	TCP	66	50196 > https [ACK] Seq=1 Ack=1 Win=357 Len=0 TSval=103104 TSecr=695744905
38	21.305826000	74.125.236.73	192.168.29.6	TCP	66	[TCP ACKed unseen segment] https > 50196 [ACK] Seq=1 Ack=2 Win=364 Len=0 TSval=695744905 TSecr=103104
51	26.031925000	192.168.29.6	74.125.236.95	TCP	66	42529 > https [ACK] Seq=1 Ack=1 Win=314 Len=0 TSval=104288 TSecr=695744580
52	26.035743000	74.125.236.95	192.168.29.6	TCP	66	[TCP ACKed unseen segment] https > 42529 [ACK] Seq=1 Ack=2 Win=350 Len=0 TSval=695744580 TSecr=104288

Packet 14: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) on interface 0

Ethernet II, Src: Netgear_35:e9:e8 (74:44:01:35:e9:e8), Dst: IntelCor_25:39:8d (84:a6:c8:25:39:8d)

Internet Protocol Version 4, Src: 74.125.236.64 (74.125.236.64), Dst: 192.168.29.6 (192.168.29.6)

Transmission Control Protocol, Src Port: https (443), Dst Port: 34145 (34145), Seq: 1, Ack: 2, Len: 0

0000 84 a6 c8 25 39 8d 74 44 01 35 e9 e8 08 00 45 00 ..%9.tD .5...E.

0010 00 34 1e 76 00 00 37 06 50 e2 4a 7d ec 40 c0 a8 .4.v..7. P.J].@..

0020 1d 06 01 bb 85 61 2c 68 99 ea 6e b3 f2 90 80 10a,h .n.....

0030 01 f6 2c e7 00 00 01 01 08 0a 29 78 82 6d 00 00)X.m...

wlan0: -live capture in progress... Packets: 57 - Displayed: 8 (14.0%) Profile: Default

2.2 . The Treasure Hunt:

1. IP address of X is : 10.6.15.92 and name is : **Bob** (person, first to say Hi)
2. IP address if Y is : 10.22.21.249 and name is : **Abhik**

First message of the conversation : **Hi Abhik!**

Last message of the conversation : **Hahahaha :D Third world problems :P**

2. The file was split into 12 (10+2) packets.