

1: Networking Tools

- a) IPv4 address from Balaji Wi-Fi connection: 192.168.0.100

```
Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . : 
Description . . . . . : Intel(R) Wireless-AC 9260 160MHz
Physical Address. . . . . : A8-6D-AA-18-42-C3
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . : Yes
Link-local IPv6 Address . . . . : fe80::536:342:f1bb:b57b%14(Preferred)
IPv4 Address. . . . . : 192.168.0.100(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : 20 August 2021 20:36:46
Lease Expires . . . . . : 22 August 2021 09:41:49
Default Gateway . . . . . : 192.168.0.1
DHCP Server . . . . . : 192.168.0.1
DHCPv6 IAID . . . . . : 162033066
DHCPv6 Client DUID. . . . . : 00-01-00-01-28-65-C1-68-02-2A-23-D2-2D-E2
DNS Servers . . . . . : 192.168.0.1
NetBIOS over Tcpip. . . . . : Enabled
```

IPv4 address from JIO hotspot connection: 192.168.43.157

```
Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . : 
Description . . . . . : Intel(R) Wireless-AC 9260 160MHz
Physical Address. . . . . : A8-6D-AA-18-42-C3
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . : Yes
IPv6 Address. . . . . : 2409:4050:2d81:af34:536:342:f1bb:b57b(Preferred)
Temporary IPv6 Address. . . . . : 2409:4050:2d81:af34:bc87:d67e:2614:ecaf(Preferred)
Link-local IPv6 Address . . . . : fe80::536:342:f1bb:b57b%14(Preferred)
IPv4 Address. . . . . : 192.168.43.157(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : 21 August 2021 14:59:08
Lease Expires . . . . . : 21 August 2021 15:59:08
Default Gateway . . . . . : fe80::72bb:e9ff:feab:a9b6%14
                          192.168.43.1
DHCP Server . . . . . : 192.168.43.1
DHCPv6 IAID . . . . . : 162033066
DHCPv6 Client DUID. . . . . : 00-01-00-01-28-65-C1-68-02-2A-23-D2-2D-E2
DNS Servers . . . . . : 192.168.43.1
NetBIOS over Tcpip. . . . . : Enabled
```

IPv4 address from AIRTEL hotspot connection (different mobile used):
192.168.43.157

```
Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . : 
Description . . . . . : Intel(R) Wireless-AC 9260 160MHz
Physical Address. . . . . : A8-6D-AA-18-42-C3
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . : Yes
IPv6 Address. . . . . : 2401:4900:b97:d4e:536:342:f1bb:b57b(Preferred)
Temporary IPv6 Address. . . . . : 2401:4900:b97:d4e:847e:a71b:d651:2a89(Preferred)
Link-local IPv6 Address . . . . : fe80::536:342:f1bb:b57b%14(Preferred)
IPv4 Address. . . . . : 192.168.43.157(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : 21 August 2021 14:58:26
Lease Expires . . . . . : 21 August 2021 15:58:26
Default Gateway . . . . . : fe80::3df8:3da4:f092:f6d%14
                          192.168.43.1
DHCP Server . . . . . : 192.168.43.1
DHCPv6 IAID . . . . . : 162033066
DHCPv6 Client DUID. . . . . : 00-01-00-01-28-65-C1-68-02-2A-23-D2-2D-E2
DNS Servers . . . . . : 192.168.43.1
NetBIOS over Tcpip. . . . . : Enabled
```

The IP address is given to our machine by the internet service provider(ISP) and hence it is subject to change with change in ISP.

b) IP address for www.google.com :

On various run of the command the IP address come one of the following every time
142.250.77.228 or 142.250.194.164

(Even after using open DNS the same thing happened)

```
C:\WINDOWS\system32>nslookup www.google.com
Server: UnKnown
Address: 192.168.0.1

Non-authoritative answer:
Name: www.google.com
Addresses: 2404:6800:4002:823::2004
          142.250.77.228

C:\WINDOWS\system32>nslookup www.google.com 208.67.222.222
Server: resolver1.opendns.com
Address: 208.67.222.222

Non-authoritative answer:
Name: www.google.com
Addresses: 2404:6800:4002:823::2004
          142.250.194.164

C:\WINDOWS\system32>nslookup www.google.com 8.8.8.8
Server: dns.google
Address: 8.8.8.8

Non-authoritative answer:
Name: www.google.com
Addresses: 2404:6800:4002:823::2004
          142.250.77.228
```

```
C:\WINDOWS\system32>nslookup www.google.com 208.67.222.222
Server: dns.umbrella.com
Address: 208.67.222.222

Non-authoritative answer:
Name: www.google.com
Addresses: 2404:6800:4002:823::2004
          142.250.77.228

C:\WINDOWS\system32>nslookup www.google.com
Server: UnKnown
Address: 192.168.0.1

Name: www.google.com
Addresses: 2404:6800:4002:823::2004
          142.250.194.164

C:\WINDOWS\system32>nslookup www.google.com 8.8.8.8
Server: dns.google
Address: 8.8.8.8

Non-authoritative answer:
Name: www.google.com
Addresses: 2404:6800:4002:823::2004
          142.250.194.164
```

IP address for www.facebook.com :

With or without changing the DNS, the IP address always came to be 157.240.198.35

```
C:\WINDOWS\system32>nslookup www.facebook.com 208.67.222.222
Server:  resolver1.opendns.com
Address:  208.67.222.222

Non-authoritative answer:
Name:     star-mini.c10r.facebook.com
Addresses: 2a03:2880:f144:82:face:b00c:0:25de
           157.240.198.35
Aliases:  www.facebook.com

C:\WINDOWS\system32>nslookup www.facebook.com
Server:  UnKnown
Address: 192.168.0.1

Name:     star-mini.c10r.facebook.com
Addresses: 2a03:2880:f144:82:face:b00c:0:25de
           157.240.198.35
Aliases:  www.facebook.com

C:\WINDOWS\system32>nslookup www.facebook.com 8.8.8.8
DNS request timed out.
    timeout was 2 seconds.
Server:  UnKnown
Address: 8.8.8.8

Non-authoritative answer:
Name:     star-mini.c10r.facebook.com
Addresses: 2a03:2880:f144:82:face:b00c:0:25de
           157.240.198.35
Aliases:  www.facebook.com
```

(
8.8.8.8 is Google DNS
208.67.222.222 is OpenDNS
)

c) Using ping command

Flags used:

- n count : sets number of packets to be sent (default 4)
- l size : sets size of packet (default 32)
- i TTL : sets Time to Live

For www.iitd.ac.in :

The max packet size that I was able to send was around 34000 bytes. Actually, it was not fixed, sometimes a packet of 35000 bytes gave output properly but some times it showed Request timed out.

The minimum ttl value required was 13.

```
C:\Users\Mohit>ping -n 1 -i 13 www.iitd.ac.in

Pinging www.iitd.ac.in [103.27.9.24] with 32 bytes of data:
Reply from 103.27.9.24: bytes=32 time=6ms TTL=51

Ping statistics for 103.27.9.24:
    Packets: Sent = 1, Received = 1, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 6ms, Average = 6ms

C:\Users\Mohit>ping -n 1 -i 12 www.iitd.ac.in

Pinging www.iitd.ac.in [103.27.9.24] with 32 bytes of data:
Reply from 103.27.9.24: TTL expired in transit.

Ping statistics for 103.27.9.24:
    Packets: Sent = 1, Received = 1, Lost = 0 (0% loss),
```

For www.google.com :

The max packet size that I was able to send was 1472 bytes.

The minimum ttl value required was 8.

```
C:\Users\Mohit>ping -n 1 -i 8 www.google.com

Pinging www.google.com [142.250.77.228] with 32 bytes of data:
Reply from 142.250.77.228: bytes=32 time=16ms TTL=119

Ping statistics for 142.250.77.228:
    Packets: Sent = 1, Received = 1, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 16ms, Maximum = 16ms, Average = 16ms

C:\Users\Mohit>ping -n 1 -i 7 www.google.com

Pinging www.google.com [142.250.77.228] with 32 bytes of data:
Reply from 142.251.54.75: TTL expired in transit.

Ping statistics for 142.250.77.228:
    Packets: Sent = 1, Received = 1, Lost = 0 (0% loss),
```

For www.facebook.com :

The max packet size that I was able to send was 1472 bytes.

The minimum ttl value required was 8.

```
C:\Users\Mohit>ping -n 1 -i 7 www.facebook.com

Pinging star-mini.c10r.facebook.com [157.240.198.35] with 32 bytes of data:
Reply from 157.240.38.131: TTL expired in transit.

Ping statistics for 157.240.198.35:
    Packets: Sent = 1, Received = 1, Lost = 0 (0% loss),

C:\Users\Mohit>ping -n 1 -i 8 www.facebook.com

Pinging star-mini.c10r.facebook.com [157.240.198.35] with 32 bytes of data:
Reply from 157.240.198.35: bytes=32 time=3ms TTL=57

Ping statistics for 157.240.198.35:
    Packets: Sent = 1, Received = 1, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 3ms, Average = 3ms
```

(The minimum ttl values mentioned above changes on using different service provider.

This TTL value is of the received packet and is not controlled by us, whenever the packet is passed through a router the TTL value is decreased by a minimum of 1)

****** For google and facebook domains, the max packet size was consistent to be 1472 bytes.

To automate the process of finding this max ping packet size, I binary searched the result using following code: (To run: python filename hostname)

```
import sys
import subprocess
def ping(host, num):
    param1 = '-n'
    param2 = '-l'
    command = ['ping', param1, '1', param2, str(num), host]
    return subprocess.call(command) == 0

def check(host, mid):
    flag = True
```

```

    for x in range(5):
        flag = flag and ping(host,mid)
    return flag

def bsearch(host, low, high):
    if(high-low <= 1):
        return low
    mid = (low + high)//2
    flag = check(host, mid)
    if not flag:
        return bsearch(host, low, mid)
    else:
        return bsearch(host, mid, high)

def maxSize(host):
    low = 0
    high = 65501
    return bsearch(host, low, high)

args = sys.argv
host = args[1]
# host = "www.iitd.ac.in"
print("Max packet size is: ", maxSize(host))

```

The maximum allowed packet size is not same for all domains as we can see that the maximum allowed packet size for google.com and facebook.com is much lower than that of iitd.ac.in. This is something that depends on the domains itself as how much data flow they want to allow.

d) With Balaji Wi-fi Connection:

```
C:\Users\Mohit>tracert www.iitd.ac.in

Tracing route to www.iitd.ac.in [103.27.9.24]
over a maximum of 30 hops:

  1    3 ms    1 ms    1 ms  192.168.0.1
  2    2 ms    2 ms    2 ms  172.23.40.1
  3    *        *        *    Request timed out.
  4    *        *        *    Request timed out.
  5    3 ms    3 ms    3 ms  121.240.111.85.static-delhi.vsnl.net.in [121.240.111.85]
  6    3 ms    3 ms    3 ms  172.31.169.85
  7    3 ms    3 ms    3 ms  14.140.210.22.static-Delhi-vsnl.net.in [14.140.210.22]
  8    *        *        *    Request timed out.
  9    *        *        *    Request timed out.
 10    *        *        *    Request timed out.
 11    5 ms    5 ms    8 ms  103.27.9.24
 12    5 ms    6 ms    8 ms  103.27.9.24
 13    5 ms    4 ms    4 ms  103.27.9.24

Trace complete.
```

With Jio hotspot Connection:

```
C:\Users\Mohit>tracert www.iitd.ac.in

Tracing route to www.iitd.ac.in [103.27.9.24]
over a maximum of 30 hops:

  1    4 ms    2 ms    3 ms  192.168.43.1
  2    *        *        *    Request timed out.
  3   71 ms   23 ms   28 ms  56.8.176.101
  4   76 ms   29 ms   37 ms  192.168.44.232
  5   80 ms   39 ms   26 ms  192.168.44.233
  6   46 ms   28 ms   37 ms  172.26.100.118
  7   95 ms   37 ms   30 ms  172.26.100.102
  8   60 ms   25 ms   36 ms  192.168.44.22
  9   35 ms   28 ms   44 ms  192.168.44.25
 10  400 ms   43 ms   25 ms  172.26.14.75
 11   97 ms   46 ms   62 ms  172.16.26.2
 12   95 ms   48 ms   58 ms  115.249.187.169
 13  502 ms   53 ms   48 ms  115.255.253.18
 14  401 ms   67 ms   66 ms  115.249.198.97
 15    *        *        *    Request timed out.
 16    *        *        *    Request timed out.
 17    *        *        *    Request timed out.
 18    *        *        *    Request timed out.
 19    *        *        *    Request timed out.
 20    *        *        *    Request timed out.
 21  153 ms   72 ms   76 ms  103.27.9.24
 22  168 ms   74 ms   69 ms  103.27.9.24
 23  216 ms   85 ms   67 ms  103.27.9.24

Trace complete.
```

The ttl for the hops can be increased (using “-h ttl_value” flag) to make some of the missing routers to reply.

Like when I set the ttl value to 64 the missing router at hop 3 and 4 reply (in first network: Balaji Wi-fi)

```

C:\Users\Mohit>tracert -h 64 www.iitd.ac.in

Tracing route to www.iitd.ac.in [103.27.9.24]
over a maximum of 64 hops:

  0  3 ms    1 ms    1 ms  192.168.0.1
  1  4 ms    2 ms    2 ms  172.23.40.1
  2  3 ms    *        *    103.159.42.9
  3  4 ms    *        6 ms  103.77.41.253
  4  5 ms    3 ms    8 ms  121.240.111.85.static-delhi.vsnl.net.in [121.240.111.85]
  5  4 ms    3 ms    4 ms  172.31.169.85
  6  5 ms    4 ms    4 ms  14.140.210.22.static-Delhi-vsnl.net.in [14.140.210.22]
  7  *        *        *    Request timed out.
  8  *        *        *    Request timed out.
  9  *        *        *    Request timed out.
 10  5 ms    5 ms    5 ms  103.27.9.24
 11  5 ms    5 ms    5 ms  103.27.9.24
 12  6 ms    6 ms    5 ms  103.27.9.24

Trace complete.

```

There are still some routers that do not reply to the request (even with ttl value set to 255). This can be because of some firewall blocking access to them, or may be the return path from the router may be different and there may be some problem in that path.

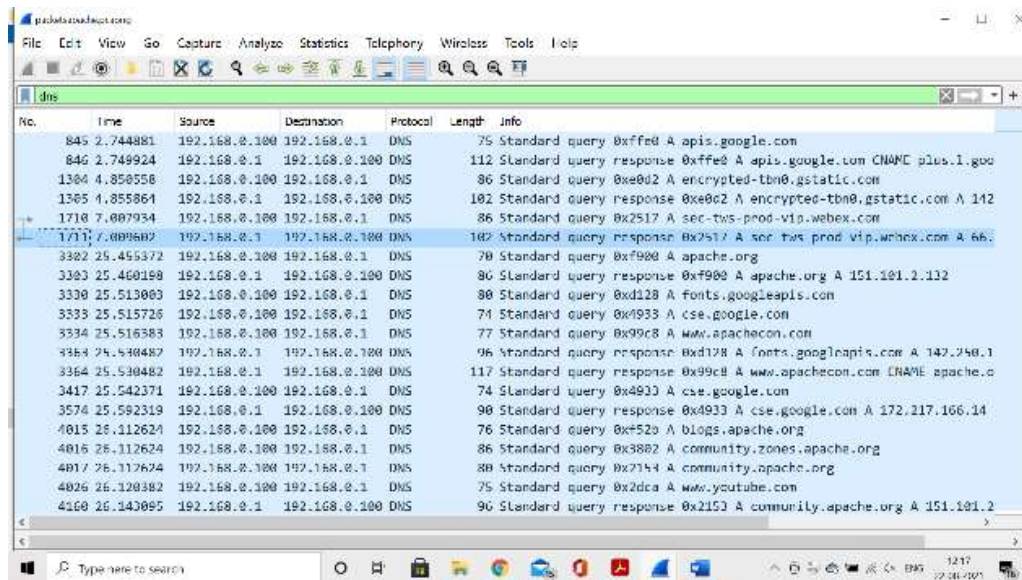
To force tracert to use IPv4 address, we can use the -4 flag in the command as
tracert -4 www.google.com

For www.iitd.ac.in all the IP address were already default to IPv4 and hence change was not needed

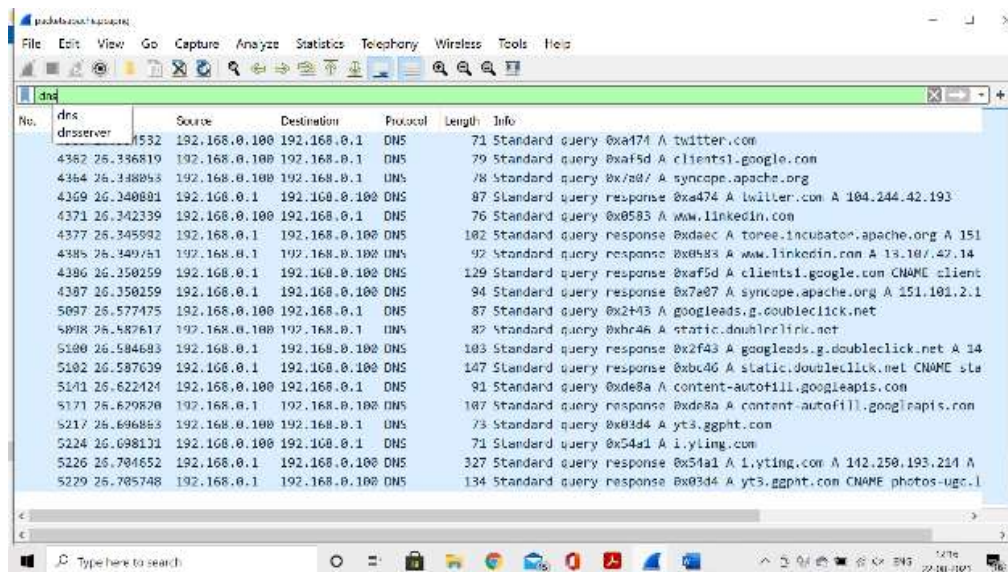
2: Packet analysis

Captured Packets for <http://apache.org> for part a, b, c.

- a) The first DNS protocol request was captured at 25.455372 seconds and the last was at 25.460198 seconds. So, the total time taken for DNS request-response was 0.004826 seconds.



No.	Time	Source	Destination	Protocol	Length	Info
845	2.744881	192.168.0.100	192.168.0.1	DNS	75	Standard query 0xffed A apis.google.com
846	2.749924	192.168.0.1	192.168.0.100	DNS	112	Standard query response 0xffed A apis.google.com CNAME plus1.goo
1304	4.850558	192.168.0.100	192.168.0.1	DNS	86	Standard query 0xe0d2 A encrypted-tbn0.gstatic.com
1305	4.855861	192.168.0.1	192.168.0.100	DNS	102	Standard query response 0xe0d2 A encrypted-tbn0.gstatic.com A 142
1718	7.007934	192.168.0.100	192.168.0.1	DNS	86	Standard query 0x2517 A sec-tws-prod-vip.webex.com
1719	7.009502	192.168.0.1	192.168.0.100	DNS	102	Standard query response 0x2517 A sec-tws-prod-vip.webex.com A 66
3302	25.455372	192.168.0.100	192.168.0.1	DNS	70	Standard query 0xf900 A apache.org
3303	25.460198	192.168.0.1	192.168.0.100	DNS	86	Standard query response 0xf900 A apache.org A 151.101.2.132
3330	25.513003	192.168.0.100	192.168.0.1	DNS	80	Standard query 0xd128 A fonts.googleapis.com
3333	25.515726	192.168.0.100	192.168.0.1	DNS	74	Standard query 0xf933 A cse.google.com
3334	25.516383	192.168.0.100	192.168.0.1	DNS	77	Standard query 0x99c8 A www.apachecon.com
3364	25.530482	192.168.0.1	192.168.0.100	DNS	96	Standard query response 0xd128 A fonts.googleapis.com A 142.246.1
3364	25.530482	192.168.0.1	192.168.0.100	DNS	117	Standard query response 0x99c8 A www.apachecon.com CNAME apache.o
3417	25.542371	192.168.0.100	192.168.0.1	DNS	74	Standard query 0x4933 A cse.google.com
3574	25.582319	192.168.0.1	192.168.0.100	DNS	90	Standard query response 0xd933 A cse.google.com A 172.217.166.14
4015	26.112624	192.168.0.100	192.168.0.1	DNS	76	Standard query 0xf520 A blogs.apache.org
4016	26.112624	192.168.0.100	192.168.0.1	DNS	86	Standard query 0x3802 A community.zones.apache.org
4017	26.117674	192.168.0.100	192.168.0.1	DNS	80	Standard query 0x7144 A community.apache.org
4026	26.120382	192.168.0.100	192.168.0.1	DNS	75	Standard query 0x2dca A www.youtube.com
4160	26.143095	192.168.0.1	192.168.0.100	DNS	96	Standard query response 0x2153 A community.apache.org A 151.101.2



No.	Time	Source	Destination	Protocol	Length	Info
4352	26.336819	192.168.0.100	192.168.0.1	DNS	71	Standard query 0xa474 A twitter.com
4364	26.348043	192.168.0.100	192.168.0.1	DNS	79	Standard query 0xaf5d A clients1.google.com
4369	26.348081	192.168.0.1	192.168.0.100	DNS	78	Standard query 0x7a07 A syncscope.apache.org
4371	26.342339	192.168.0.100	192.168.0.1	DNS	87	Standard query response 0xa474 A twitter.com A 104.244.42.193
4377	26.345992	192.168.0.1	192.168.0.100	DNS	76	Standard query 0x0593 A www.linkedin.com
4385	26.349751	192.168.0.1	192.168.0.100	DNS	102	Standard query response 0xdaec A torree.incubator.apache.org A 151
4396	26.350259	192.168.0.1	192.168.0.100	DNS	92	Standard query response 0x0593 A www.linkedin.com A 13.107.42.14
4397	26.350259	192.168.0.1	192.168.0.100	DNS	129	Standard query response 0xaf5d A clients1.google.com CNAME client
5097	26.577475	192.168.0.100	192.168.0.1	DNS	94	Standard query response 0x7a07 A syncscope.apache.org A 151.101.2.1
5098	26.587617	192.168.0.100	192.168.0.1	DNS	87	Standard query 0x2443 A googleads.g.doubleclick.net
5100	26.584683	192.168.0.1	192.168.0.100	DNS	87	Standard query 0x8c46 A static.doubleclick.net
5102	26.587039	192.168.0.1	192.168.0.100	DNS	103	Standard query response 0x2f43 A googleads.g.doubleclick.net A 14
5141	26.622121	192.168.0.100	192.168.0.1	DNS	147	Standard query response 0x8c46 A static.doubleclick.net CNAME sta
5171	26.629820	192.168.0.1	192.168.0.100	DNS	91	Standard query 0xde8a A content-autofill.googleapis.com
5217	26.696853	192.168.0.100	192.168.0.1	DNS	107	Standard query response 0xde8a A content-autofill.googleapis.com
5224	26.698131	192.168.0.100	192.168.0.1	DNS	73	Standard query 0x83d4 A yt3.ggpht.com
5226	26.704652	192.168.0.1	192.168.0.100	DNS	71	Standard query 0x54a1 A i.ytimg.com
5229	26.705748	192.168.0.1	192.168.0.100	DNS	327	Standard query response 0x54a1 A i.ytimg.com A 142.250.193.224 A
				DNS	134	Standard query response 0x03d4 A yt3.ggpht.com CNAME photos-upc.l

- b) A total of 51 queries were captured with http protocol.
The webpages consist of a lot of files and for each file browsers need to make an http request to get the data. CSS, JS, Images, Docs all these data are fragmented and are retrieved when the web page is to be rendered through http requests.
- c) The first DNS protocol request was captured at 25.455372 seconds.
The last http request was captured at 27.255424 seconds.
So, the total time taken to load the web page is 1.800052 seconds.

No.	Time	Source	Destination	Protocol	Length	Info
3754	25.758312	151.101.2.132	192.168.0.100	HTTP	329	HTTP/1.1 200 OK (PNG)
3764	25.759854	192.168.0.100	151.101.2.132	HTTP	451	GET /logos/res/incubator/default.png HTTP/1.1
3874	25.812923	192.168.0.100	151.101.2.132	HTTP	447	GET /logos/res/toree/default.png HTTP/1.1
3893	25.823886	192.168.0.100	151.101.2.132	HTTP	450	GET /logos/res/nlpcraft/default.png HTTP/1.1
4002	26.059929	151.101.2.132	192.168.0.100	HTTP	823	HTTP/1.1 200 OK (text/css)
4010	26.080977	192.168.0.100	172.217.166...	HTTP	406	GET /cse.js?cx=005703438322411770421:5egshgrgx2u HTTP/1.1
4012	26.097350	151.101.2.132	192.168.0.100	HTTP	896	HTTP/1.1 200 OK (application/javascript)
4014	26.112068	192.168.0.100	151.101.2.132	HTTP	447	GET /fonts/glyphicons-halflings-regular.woff2 HTTP/1.1
4041	26.125718	151.101.2.132	192.168.0.100	HTTP	1042	HTTP/1.1 200 OK (font/woff2)
4190	26.174647	172.217.166...	192.168.0.100	HTTP	440	HTTP/1.1 404 Not Found (text/html)
4245	26.255874	151.101.2.132	192.168.0.100	HTTP	311	HTTP/1.1 200 OK (JPEG 3FIF image)
4351	26.320473	192.168.0.100	172.217.166...	HTTP	390	GET /adsense/search/async-ads.js HTTP/1.1
4392	26.356553	192.168.0.100	172.217.167...	HTTP	441	GET /generate_204 HTTP/1.1
4396	26.365763	172.217.167...	192.168.0.100	HTTP	137	HTTP/1.1 204 No Content
4470	26.420669	172.217.166...	192.168.0.100	HTTP	1011	HTTP/1.1 200 OK (text/javascript)
5389	27.072567	192.168.0.100	151.101.2.132	HTTP	440	GET /favicons/favicon.ico HTTP/1.1
5392	27.076489	151.101.2.132	192.168.0.100	HTTP	751	HTTP/1.1 200 OK (PNG)
5395	27.079340	192.168.0.100	151.101.2.132	HTTP	446	GET /favicons/favicon-32x32.png HTTP/1.1
5397	27.255424	151.101.2.132	192.168.0.100	HTTP	1507	HTTP/1.1 200 OK (PNG)

Captured Packets for <http://www.cse.iitd.ac.in> for part d.

- d) Only two HTTP protocol packets were captured for the website. No other http traffic was found as out http search was redirected to https through the servers which is serving the required domain.

No.	Time	Source	Destination	Protocol	Length	Info
1418	3.968206	192.168.0.100	103.27.9.152	HTTP	669	GET / HTTP/1.1
1418	3.976295	103.27.9.152	192.168.0.100	HTTP	797	HTTP/1.1 301 Moved Permanently (text/html)

There are only two http request because all other required data is fetched through https requests and not http requests.

3: Implement Traceroute Using Ping

a) Output of program:

```
PS C:\Users\Mohit\Documents\sem5> python rtt.py www.iitd.ac.in
tracert using ping for www.iitd.ac.in

Hop      RTT      IP Address
1         1        192.168.0.1
2         2        172.23.40.1
3         0        *
4         0        *
5         3        121.240.111.85
6         0        172.31.169.85
7         4        14.140.210.22
8         0        *
9         0        *
10        0        *
11        6        103.27.9.24
12        4        103.27.9.24
13        5        103.27.9.24
PS C:\Users\Mohit\Documents\sem5> █
```

b) RTT vs Hop plot:

