



# Computer Networks

## Lab 2

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# Q1

# Q2 - $36.554 - 36.146 = 0.408$ seconds



Protocol	Length
ARP	
DNS	
DNS	
HTTP	
HTTP	
HTTP	
HTTP	
ICMP	
ICMP	
IGMPv2	
IGMPv2	

Time	Source	Destination	Protocol	Length	Info
36.146390638	...	...	HTTP	544	GET /wireshark-labs/I...
36.554936557	...	...	HTTP	504	HTTP/1.1 200 OK (tex...

# Q3

My address = 192.168.0.162

Their address = 128.119.245.12

Source	Destination	Protocol	Length	Info
192.168.0.162	128.119.245.12	HTTP	544	GET /wireshark-l...
128.119.245.12	192.168.0.162	HTTP	504	HTTP/1.1 200 OK

- 1) HTTP
- 2) DNS
- 3) IGMPv2

# Q4

<https://drive.google.com/file/d/1ryA8vYyjWhrbW-e1TgV1xct0ThJZjkTE/view?usp=sharing>

```
samaritan@pop-os:~$ netstat -st
```

```
IcmpMsg:
```

```
InType3: 41
```

```
OutType3: 308
```

```
Tcp:
```

```
348 active connection openings
```

```
0 passive connection openings
```

```
14 failed connection attempts
```

```
45 connection resets received
```

```
9 connections established
```

```
17691 segments received
```

```
16417 segments sent out
```

```
9 segments retransmitted
```

```
1 bad segments received
```

```
218 resets sent
```

```
samaritan@pop-os:~$ netstat -su
```

```
IcmpMsg:
```

```
InType3: 41
```

```
OutType3: 310
```

```
Udp:
```

```
102463 packets received
```

```
310 packets to unknown port received
```

```
747 packet receive errors
```

```
40771 packets sent
```

```
747 receive buffer errors
```

```
50 send buffer errors
```

```
IgnoredMulti: 344
```

# Q6

## netstat -l



```
samaritan@pop-os:~$ netstat -l
```

```
Active Internet connections (only servers)
```

Proto	Recv-Q	Send-Q	Local Address	Foreign Address	State
tcp	0	0	localhost:ipp	0.0.0.0:*	LISTEN
tcp	0	0	localhost:domain	0.0.0.0:*	LISTEN
tcp6	0	0	localhost:ipp	:::*	LISTEN
udp	0	0	localhost:domain	0.0.0.0:*	
udp	0	0	0.0.0.0:631	0.0.0.0:*	
udp	0	0	0.0.0.0:mdns	0.0.0.0:*	
udp	0	0	0.0.0.0:38212	0.0.0.0:*	
udp6	0	0	:::53598	:::*	
udp6	0	0	:::mdns	:::*	
raw6	0	0	:::ipv6-icmp	:::*	7

```
samaritan@pop-os:~$ dig www.gmail.com MX

; <<>> DiG 9.16.1-Ubuntu <<>> www.gmail.com MX
;; global options: +cmd
;; Got answer:
;; ->HEADER<- opcode: QUERY, status: NOERROR, id: 61172
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:;, udp: 65494
;; QUESTION SECTION:
;www.gmail.com.                IN      MX

;; ANSWER SECTION:
www.gmail.com.                 7100    IN      CNAME   mail.google.com.
mail.google.com.               7100    IN      CNAME   googlemail.l.google.com.

;; Query time: 140 msec
;; SERVER: 127.0.0.53#53(127.0.0.53)
;; WHEN: Sun Jan 30 19:29:01 IST 2022
;; MSG SIZE rcvd: 95
```

```
samaritan@pop-os:~$ netstat -i
```

```
Kernel Interface table
```

Iface	MTU	RX-OK	RX-ERR	RX-DRP	RX-OVR	TX-OK	TX-ERR	TX-DRP	TX-OVR	Flg
enp3s0	1500	0	0	0 0		0	0	0	0	BMU
lo	65536	3702	0	0 0		3702	0	0	0	LRU
wlo1	1500	165947	0	71 0		61481	0	0	0	BMRU

```
samaritan@pop-os:~$ traceroute 8.8.8.8
traceroute to 8.8.8.8 (8.8.8.8), 30 hops max, 60 byte packets
 1  _gateway (192.168.0.1)  4.248 ms  4.172 ms  4.137 ms
 2  * * *
 3  * 49.205.170.26.actcorp.in (49.205.170.26)  13.717 ms *
 4  broadband.actcorp.in (183.82.12.57)  7.030 ms  6.999 ms  6.968 ms
 5  broadband.actcorp.in (183.82.14.34)  21.068 ms  22.103 ms  22.071 ms
 6  * * *
 7  dns.google (8.8.8.8)  16.584 ms broadband.actcorp.in (183.82.14.34)  17.556 ms  18.613 ms
```

The three columns (ms) display the round trip time (RTT) for your packet to reach that point and return to your computer. This is listed in milliseconds. There are three columns because the traceroute sends three separate signal packets. This is to display consistency, or a lack thereof, in the route.



# Q10

ping -c 10 8.8.8.8



```
samaritan@pop-os:~$ ping -c 10 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=115 time=27.3 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=115 time=27.8 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=115 time=23.9 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=115 time=26.1 ms
64 bytes from 8.8.8.8: icmp_seq=5 ttl=115 time=26.5 ms
64 bytes from 8.8.8.8: icmp_seq=6 ttl=115 time=31.7 ms
64 bytes from 8.8.8.8: icmp_seq=7 ttl=115 time=84.7 ms
64 bytes from 8.8.8.8: icmp_seq=8 ttl=115 time=94.0 ms
64 bytes from 8.8.8.8: icmp_seq=9 ttl=115 time=115 ms
64 bytes from 8.8.8.8: icmp_seq=10 ttl=115 time=139 ms

--- 8.8.8.8 ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9013ms
rtt min/avg/max/mdev_ = 23.867/59.661/139.187/41.937 ms
```



# Q11

nslookup www.bits-pilani.ac.in



```
samaritan@pop-os:~$ nslookup www.bits-pilani.ac.in
```

```
Server:          127.0.0.53
```

```
Address:         127.0.0.53#53
```

```
Non-authoritative answer:
```

```
www.bits-pilani.ac.in canonical name = universe.bits-pilani.ac.in.
```

```
Name:   universe.bits-pilani.ac.in
```

```
Address: 14.139.243.20
```

```
Name:   universe.bits-pilani.ac.in
```

```
Address: 103.144.92.33
```