University of Dhaka

Department of Computer Science and Engineering

CSE-3111 : Computer Networking Lab

Lab Report 1 : Lab exercises on LAN configuration and Troubleshooting Tools

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1 Objectives and Goals achieved in Lab-1

In this lab we have learnt how to use common tools such monitor/change networks and their behaviours on a linux terminal. The commands we have learnt in this lab are as follows:

1. **ping**

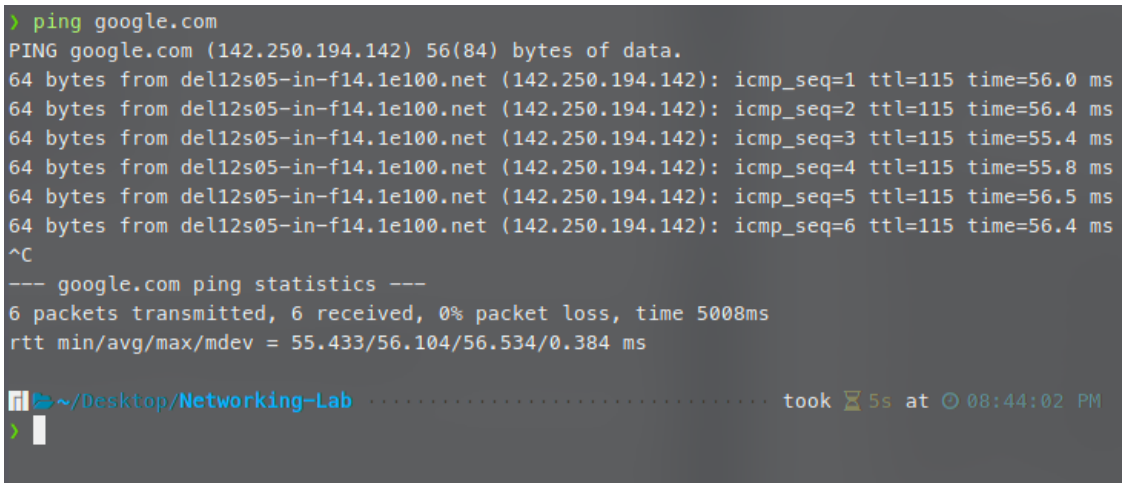

Figure 1: Pinging google.com

2. **ping -c** This controls the number of packets sent.

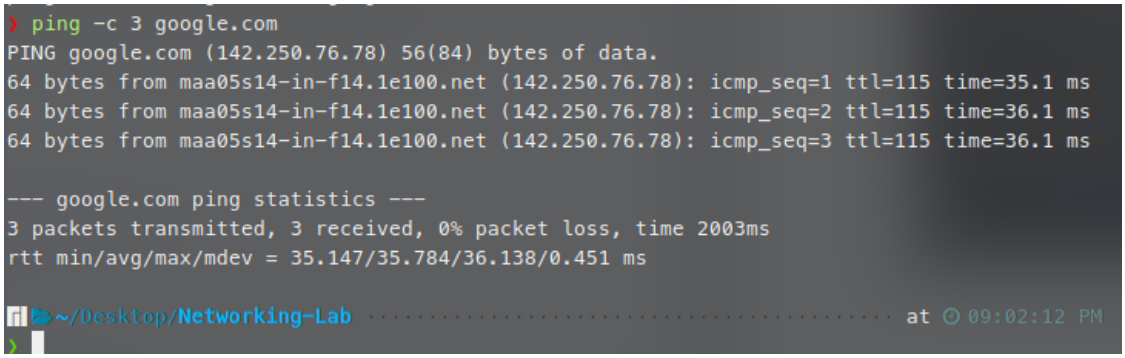

Figure 2: Pinging google.com with only 2 packets

3. **traceroute**

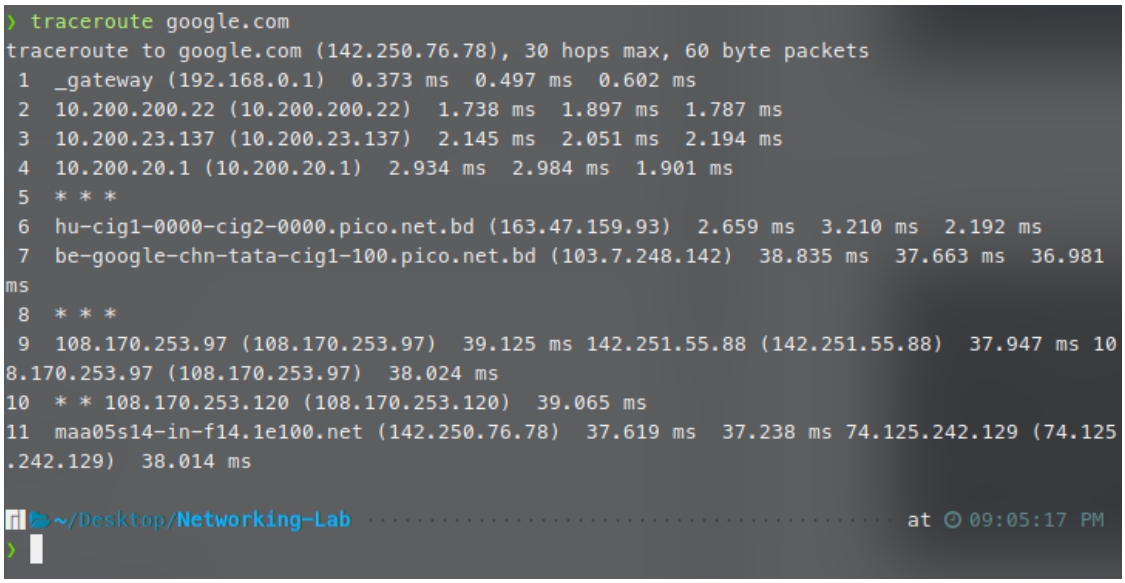

Figure 3: traceroute google.com

4. **traceroute -N** This command limits the number of probes sent.

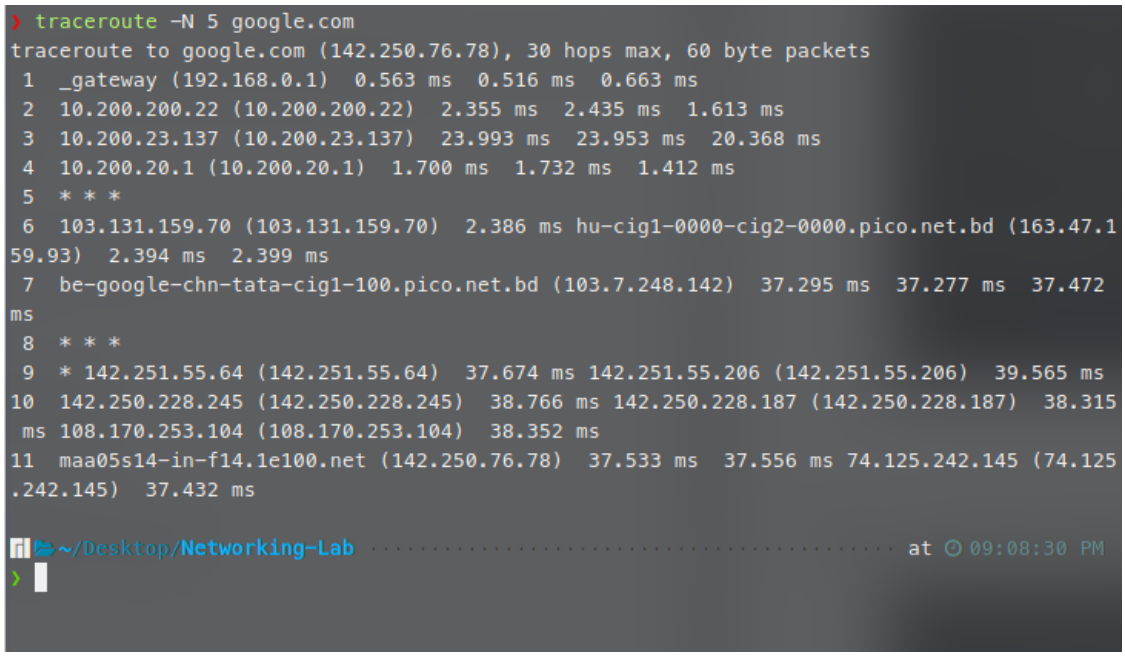

Figure 4: traceroute google.com with only 2 probes

5. **ifconfig** This command is deprecated on my linux distribution at home so I used **ip addr** instead.

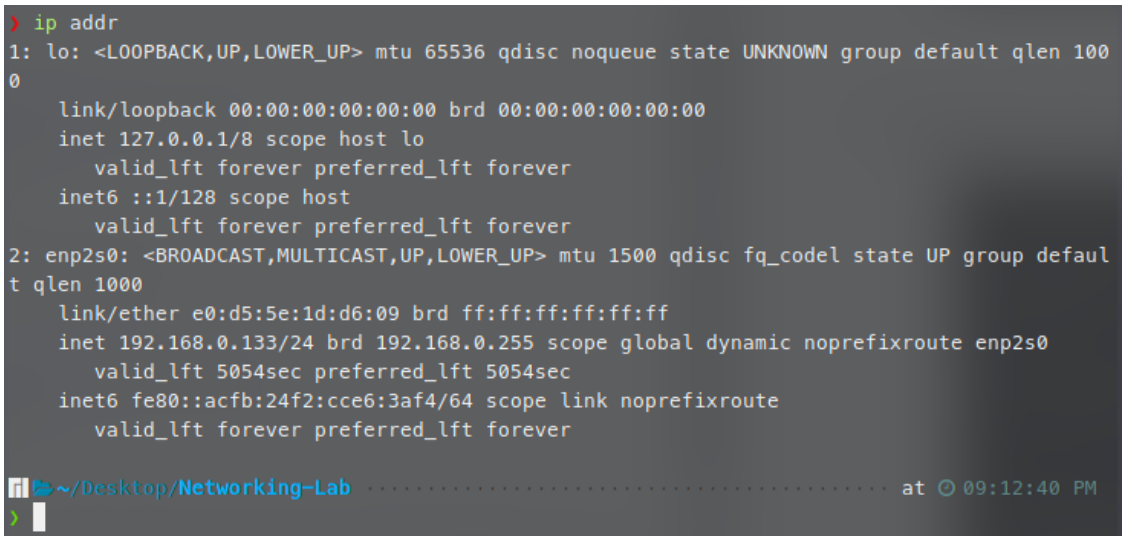

Figure 5: ip addr

6. **Enabling and Disabling the internet connection**

Figure 6: Enabling the connection

Figure 7: Disabling the connection

7. **arp** Given IP requests for MAC address, has other - options such as n and v for numbered and verbose versions.

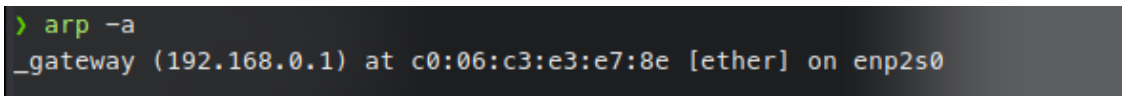

Figure 8: arp

8. **nslookup**

```
❯ nslookup google.com
Server:         192.168.0.1
Address:        192.168.0.1#53

Non-authoritative answer:
Name:   google.com
Address: 142.250.194.14
Name:   google.com
Address: 2404:6800:4007:815::200e
```

Figure 9: nslookup

9. **netstat**

```
❯ netstat -a | more
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 localhost:ipps          0.0.0.0:*               LISTEN
tcp        0      0 0.0.0.0:ssh             0.0.0.0:*               LISTEN
tcp        0      0 localhost:postgresql    0.0.0.0:*               LISTEN
tcp        0      0 manjaro-desktop:51424   edge-star-shv-01-:https ESTABLISHED
tcp        0      0 manjaro-desktop:43988   sa-in-f188.1e10:hpvroom ESTABLISHED
tcp        0      0 manjaro-desktop:44670   nerdvpn.de:https        ESTABLISHED
tcp        0      0 manjaro-desktop:55392   server-18-66-53-1:https ESTABLISHED
tcp        0      0 manjaro-desktop:34370   64.52.120.34.bc.g:https ESTABLISHED
tcp        0      0 manjaro-desktop:51498   server-18-155-68-:https ESTABLISHED
tcp        0      0 manjaro-desktop:43962   stackoverflow.com:https ESTABLISHED
tcp        0      0 manjaro-desktop:55410   server-18-66-53-1:https TIME_WAIT
tcp        0      0 manjaro-desktop:51412   edge-star-shv-01-:https ESTABLISHED
tcp        0      0 manjaro-desktop:52188   maa05s19-in-f14.1:https ESTABLISHED
tcp        0      0 manjaro-desktop:51434   edge-star-shv-01-:https ESTABLISHED
tcp        1      0 manjaro-desktop:39870   249.195.120.34.bc:https CLOSE_WAIT
tcp        0      0 manjaro-desktop:39972   104.22.1.242:https      ESTABLISHED
tcp        0      0 manjaro-desktop:35982   ec2-54-218-71-74.:https ESTABLISHED
tcp        0      0 manjaro-desktop:51612   150.138.117.34.bc:https ESTABLISHED
tcp        0      0 manjaro-desktop:40120   64.52.120.34.bc.g:https ESTABLISHED
tcp        0      0 manjaro-desktop:35600   229.26.211.130.bc:https TIME_WAIT
tcp        0      0 manjaro-desktop:42926   edge-msgr-latest-:https ESTABLISHED
tcp6       0      0 localhost:postgresql    [::]:*                  LISTEN
tcp6       0      0 [::]:xmsg               [::]:*                  LISTEN
tcp6       0      0 [::]:ssh                [::]:*                  LISTEN
tcp6       0      0 localhost:ipps          [::]:*                  LISTEN
```

Figure 10: netstat

References

[1] Netstat command in Linux. *GeeksforGeeks*, may 30 2017. [Online; accessed 2023-01-17].

[2] nslookup command in Linux with Examples. *GeeksforGeeks*, dec 20 2018. [Online; accessed 2023-01-17].

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