Assignment 7: Network Configuration

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Exercise 1a: Step 7

```
virbr0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 192.168.122.1  netmask 255.255.255.0  broadcast 192.168.122.255
        ether 52:54:00:14:b2:49  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

[jesserussell@localhost ~]$
```

This is the result of the ifconfig command. My IP address is 192.168.122.1.

Exercise 1a: Step 10

```
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=158 ttl=128 time=8.83 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=159 ttl=128 time=9.04 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=160 ttl=128 time=8.70 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=161 ttl=128 time=8.63 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=162 ttl=128 time=8.76 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=163 ttl=128 time=8.64 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=164 ttl=128 time=8.45 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=165 ttl=128 time=9.03 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=166 ttl=128 time=9.40 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=167 ttl=128 time=9.08 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=168 ttl=128 time=8.45 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=169 ttl=128 time=8.75 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=170 ttl=128 time=8.81 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=171 ttl=128 time=8.93 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=172 ttl=128 time=9.71 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=173 ttl=128 time=9.02 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=174 ttl=128 time=8.52 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=175 ttl=128 time=9.41 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=176 ttl=128 time=8.78 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=177 ttl=128 time=8.68 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=178 ttl=128 time=9.36 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=179 ttl=128 time=8.78 ms
64 bytes from lga15s46-in-f4.1e100.net (172.217.4.36): icmp_seq=180 ttl=128 time=9.06 ms
```

The ping to www.google.com was successful. Here are the results.

Exercise 1.b: Step 3

The IP address for ivytech.edu is 208.40.244.233

Exercise 1.b: Step 4

```
[jesserussell@localhost ~]$ host amazon.com
amazon.com has address 176.32.103.205
amazon.com has address 205.251.242.103
amazon.com has address 176.32.98.166
amazon.com mail is handled by 5 amazon-smtp.amazon.com.
[jesserussell@localhost ~]$
```

Amazon.com has 3 IP addresses, found using host amazon.com

Exercise 1.b: Step 5

```
[jesserussell@localhost ~]$ dig amazon

; <<>> DiG 9.9.4-RedHat-9.9.4-72.el7 <<>> amazon
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 52617
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; MBZ: 0005 , udp: 1452
;; QUESTION SECTION:
;amazon.                                IN      A

;; AUTHORITY SECTION:
.                       5       IN      SOA     a.root-servers.net. nstld.verisign-grs.com. 2019102901 1800 900 604800 86400

;; Query time: 13 msec
;; SERVER: 192.168.162.2#53(192.168.162.2)
;; WHEN: Tue Oct 29 18:20:18 EDT 2019
;; MSG SIZE  rcvd: 110

[jesserussell@localhost ~]$
```

The dig command was used to get info on amazon in a question/answer format

Exercise 1.b: Step 6

```
[jesserussell@localhost ~]$ whois amazon.com
   Domain Name: AMAZON.COM
   Registry Domain ID: 281209_DOMAIN_COM-VRSN
   Registrar WHOIS Server: whois.markmonitor.com
   Registrar URL: http://www.markmonitor.com
   Updated Date: 2019-05-07T20:09:37Z
   Creation Date: 1994-11-01T05:00:00Z
   Registry Expiry Date: 2024-10-31T04:00:00Z
   Registrar: MarkMonitor Inc.
   Registrar IANA ID: 292
   Registrar Abuse Contact Email: abusecomplaints@markmonitor.com
   Registrar Abuse Contact Phone: +1.2083895740
   Domain Status: clientDeleteProhibited https://icann.org/epp#clientDeleteProhibited
   Domain Status: clientTransferProhibited https://icann.org/epp#clientTransferProhibited
   Domain Status: clientUpdateProhibited https://icann.org/epp#clientUpdateProhibited
   Domain Status: serverDeleteProhibited https://icann.org/epp#serverDeleteProhibited
   Domain Status: serverTransferProhibited https://icann.org/epp#serverTransferProhibited
   Domain Status: serverUpdateProhibited https://icann.org/epp#serverUpdateProhibited
   Name Server: NS1.P31.DYNECT.NET
   Name Server: NS2.P31.DYNECT.NET
   Name Server: NS3.P31.DYNECT.NET
   Name Server: NS4.P31.DYNECT.NET
   Name Server: PDNS1.ULTRADNS.NET
   Name Server: PDNS6.ULTRADNS.CO.UK
```

The result of the whois amazon.com command.

Domain record activated on: 11-01-1994

Domain expires: 10-31-2024

Exercise 1.b: Step 7

The DNS Server IP address is: 192.168.162.2

Exercise 1.b: Step 8

```
[jesserussell@localhost ~]$ route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
0.0.0.0         192.168.162.2   0.0.0.0         UG    100    0        0 ens33
192.168.122.0   0.0.0.0         255.255.255.0   U     0      0        0 virbr0
192.168.162.0   0.0.0.0         255.255.255.0   U     100    0        0 ens33
[jesserussell@localhost ~]$
```

Result of the route -n command. The IP address of my gateway is 192.168.162.2

Exercise 1.b: Step 10

```
[jesserussell@localhost ~]$ netstat -tunlp
(Not all processes could be identified, non-owned process info
 will not be shown, you would have to be root to see it all.)
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 0.0.0.0:111             0.0.0.0:*               LISTEN      -
tcp        0      0 0.0.0.0:6000            0.0.0.0:*               LISTEN      -
tcp        0      0 192.168.122.1:53        0.0.0.0:*               LISTEN      -
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      -
tcp        0      0 127.0.0.1:631           0.0.0.0:*               LISTEN      -
tcp        0      0 127.0.0.1:25            0.0.0.0:*               LISTEN      -
tcp6       0      0 :::111                  :::*                    LISTEN      -
tcp6       0      0 :::6000                 :::*                    LISTEN      -
tcp6       0      0 :::22                   :::*                    LISTEN      -
tcp6       0      0 ::1:631                 :::*                    LISTEN      -
tcp6       0      0 ::1:25                  :::*                    LISTEN      -
udp        0      0 192.168.122.1:53        0.0.0.0:*                           -
udp        0      0 0.0.0.0:67              0.0.0.0:*                           -
udp        0      0 0.0.0.0:68              0.0.0.0:*                           -
udp        0      0 0.0.0.0:111             0.0.0.0:*                           -
udp        0      0 0.0.0.0:49320           0.0.0.0:*                           -
udp        0      0 0.0.0.0:5353            0.0.0.0:*                           -
udp        0      0 0.0.0.0:779             0.0.0.0:*                           -
udp        0      0 127.0.0.1:323           0.0.0.0:*                           -
udp6       0      0 :::111                  :::*                                -
udp6       0      0 :::779                  :::*                                -
udp6       0      0 ::1:323                 :::*                                -
[jesserussell@localhost ~]$
```

Result of the netstat -tunlp command, showing info regarding listening TCP and UDP ports.

Exercise 1.b: Step 11

```
[jesserussell@localhost ~]$ traceroute amazon.com
traceroute to amazon.com (205.251.242.103), 30 hops max, 60 byte packets
 1  gateway (192.168.162.2)  0.132 ms  0.097 ms  0.133 ms
 2  * * *
 3  * * *
 4  * * *
 5  * * *
 6  * * *
 7  * * *
 8  * * *
 9  * * *
10  * * *
11  * * *
12  * * *
13  * * *
14  * * *
15  * * *
16  * * *
17  * * *
18  * * *
19  * * *
20  * * *
21  * * *
22  * * *
23  * * *
24  * * *
25  * * *
26  * * *
27  * * *
28  * * *
29  * * *
30  * * *
[jesserussell@localhost ~]$
```

I used traceroute amazon.com to find the hops it took to get to their servers.