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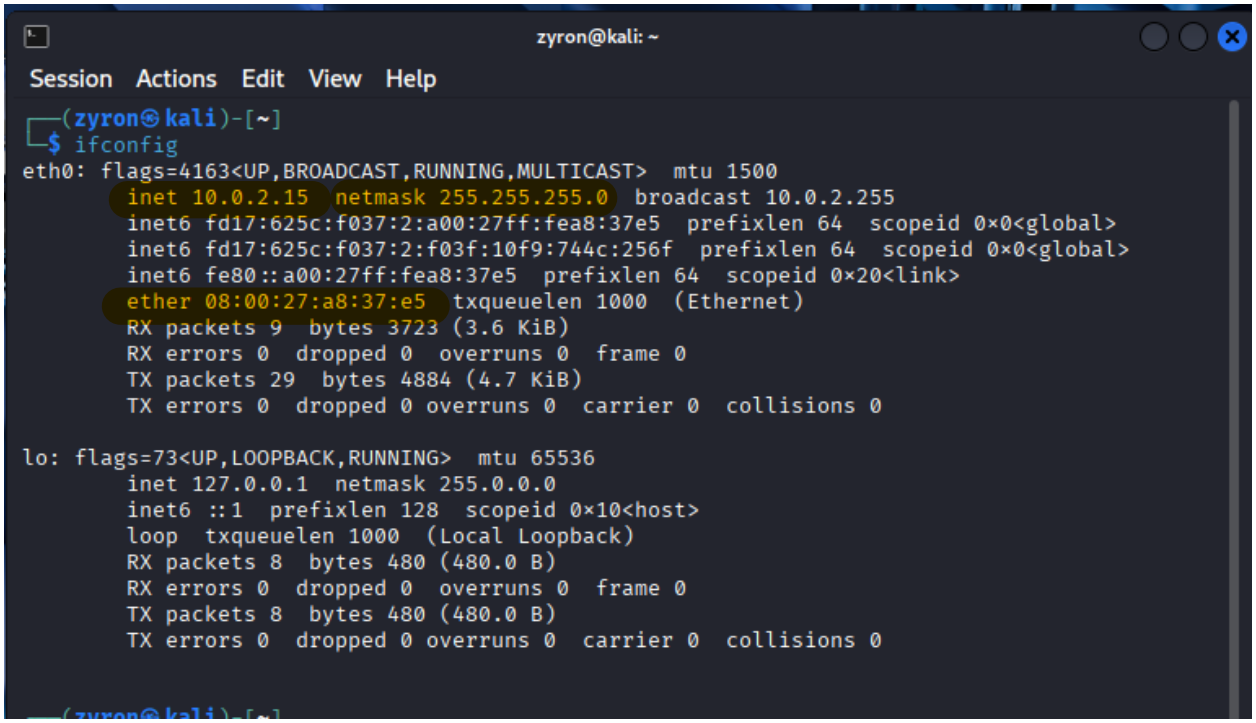
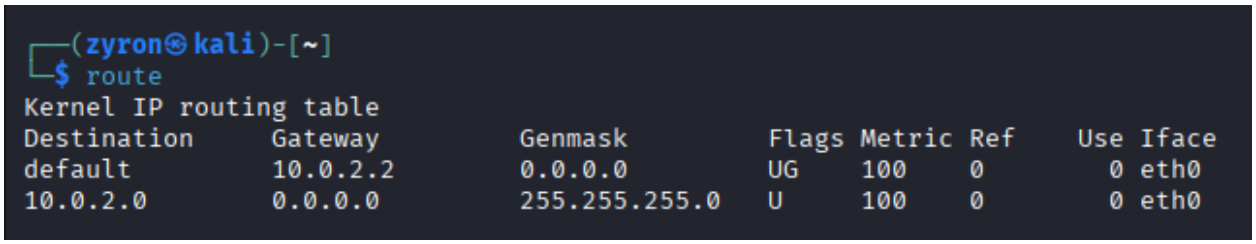
CYSE 270
Assignment 11

Task A – Explore Network Configurations (8 * 5 = 40 Points)

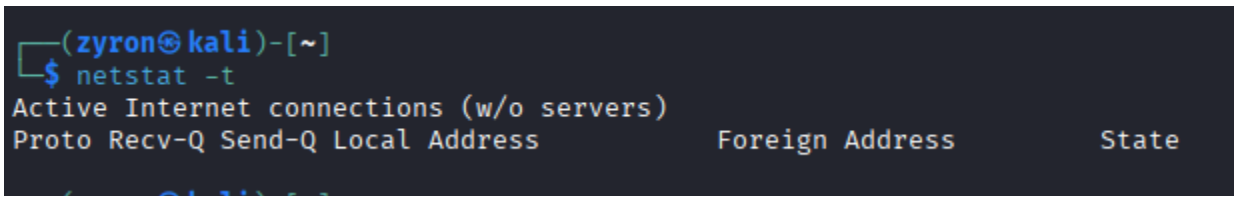
1. Use the correct ifconfig command to display the current network configuration. Highlight your IP address, MAC address, and the network mask.



2. Use the correct route command to display the current routing table.



3. Use the netstat command to list current TCP connections.



4. Use the ping command to determine if the ubuntu.com system is accessible via the network. (Use the correct option to send 10 ping requests only.)

```
┌──(zyron㉿kali)-[~]
└─$ ping -c 10 ubuntu.com
PING ubuntu.com (185.125.190.29) 56(84) bytes of data.
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=1 ttl=25
5 time=92.2 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=2 ttl=25
5 time=92.3 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=3 ttl=25
5 time=96.1 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=4 ttl=25
5 time=97.3 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=5 ttl=25
5 time=91.8 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=6 ttl=25
5 time=96.9 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=7 ttl=25
5 time=102 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=8 ttl=25
5 time=93.5 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=9 ttl=25
5 time=106 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=10 ttl=2
55 time=99.7 ms

── ubuntu.com ping statistics ──
10 packets transmitted, 10 received, 0% packet loss, time 13149ms
rtt min/avg/max/mdev = 91.828/96.765/105.744/4.406 ms
```

5. Use the host command to perform a DNS query on www.odu.edu

```
┌──(zyron㉿kali)-[~]
└─$ host www.odu.edu
;; communications error to 209.192.249.101#53: timed out
;; communications error to 209.192.249.101#53: timed out
www.odu.edu has address 35.170.140.174
;; communications error to 209.192.249.101#53: timed out
;; communications error to 209.192.249.101#53: timed out
;; communications error to 209.192.249.101#53: timed out
;; communications error to 209.192.249.101#53: timed out
;; communications error to 209.192.249.101#53: timed out
;; communications error to 209.192.249.101#53: timed out
```

6. Use the cat command to display the contents of the file that contains the system's hostname.

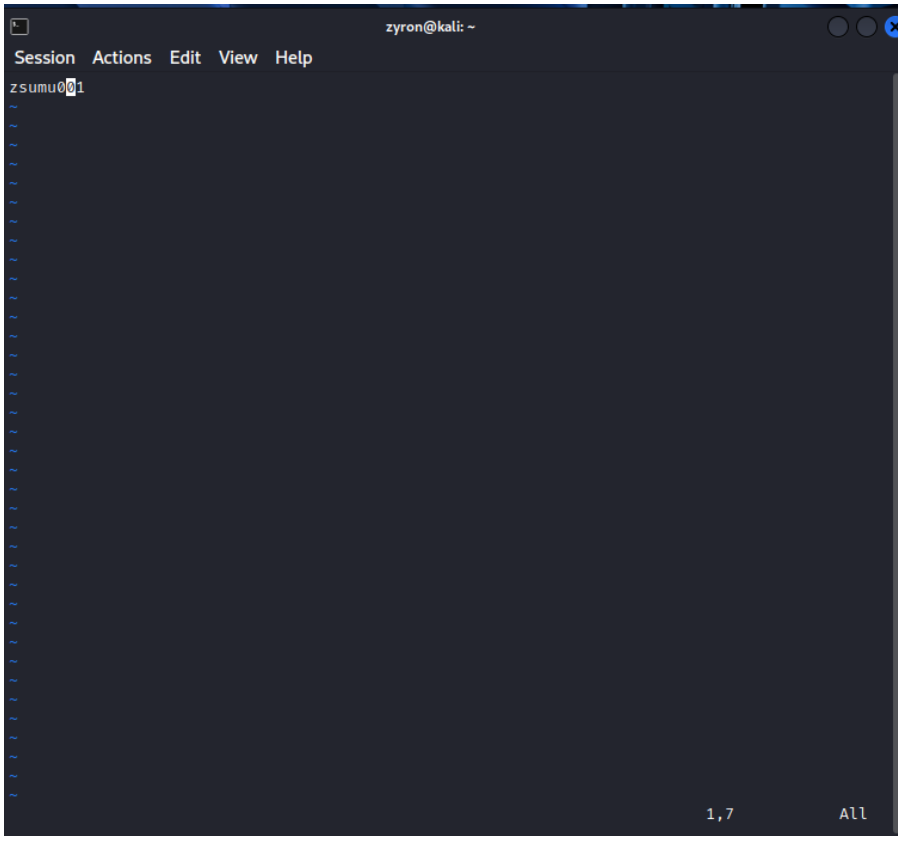
```
┌──(zyron㉿kali)-[~]
└─$ cat /etc/hostname
kali
```

7. Use the cat command to display the contents of the file that contains the DNS servers for this System.

```
┌──(zyron㉿kali)-[~]
└─$ cat /etc/resolv.conf
# Generated by NetworkManager
nameserver 209.192.249.101
nameserver 68.105.28.11
nameserver 68.105.29.11
# NOTE: the libc resolver may not support more than 3 nameservers.
# The nameservers listed below may not be recognized.
nameserver fd17:625c:f037:2::3
```

8. Edit the same file you display in the previous step, set the system's hostname to your MIDAS ID permanently. Reboot system and repeat step 6.

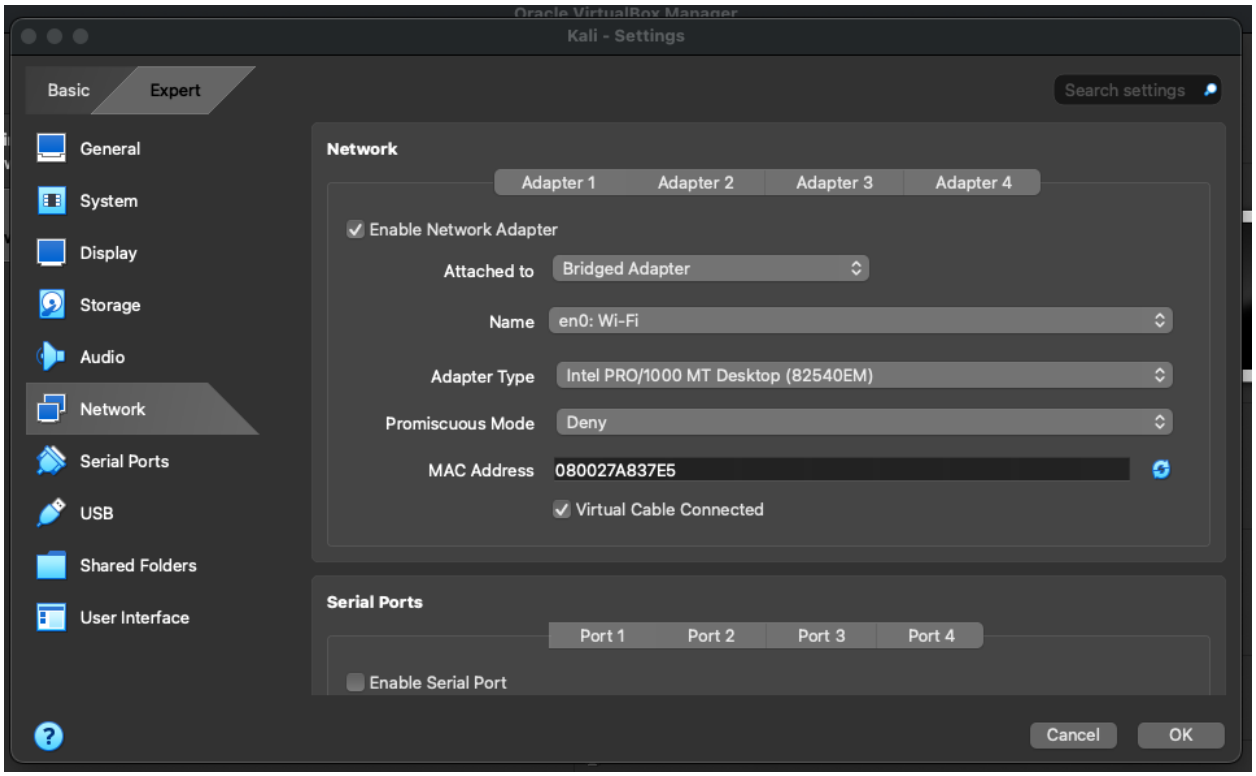
```
┌──(zyron㉿kali)-[~]
└─$ sudo vim /etc/hostname
```



```
┌──(zyron㉿zsumu001)-[~]
└─$ cat /etc/hostname
zsumu001
```

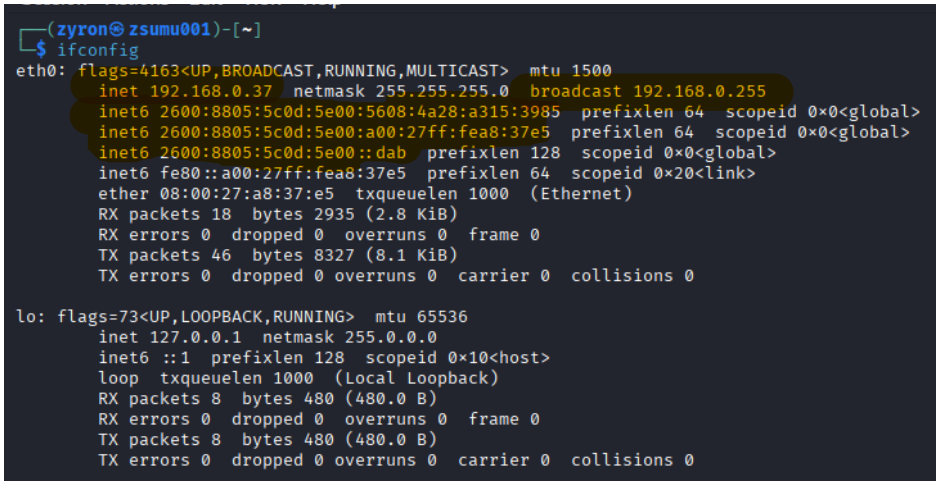
Task B – A Different Network Setting (3 * 20 = 60 Points)

1. Change the VM network connection from NAT to the bridge mode (you will lose your Internet connection if you are connected to the ODU campus Wi-Fi network, but it is okay).

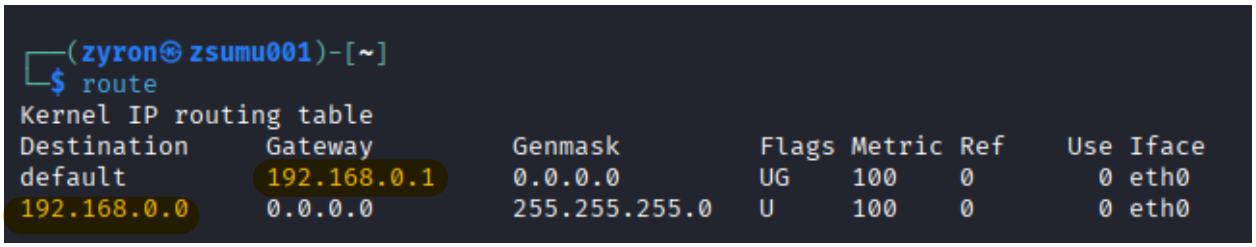


2. Reboot your system, then repeat Steps 1 – 7 in Task A.

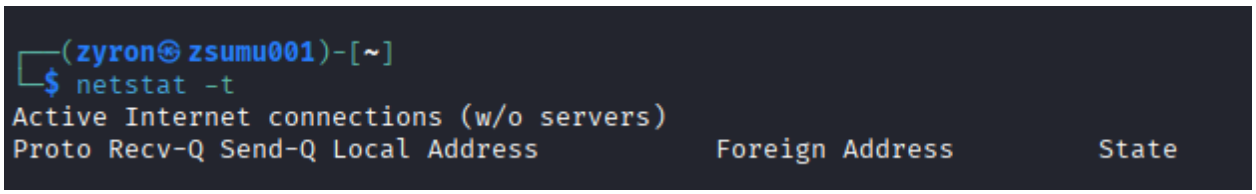
1. Use the correct ifconfig command to display the current network configuration. Highlight your IP address, MAC address, and the network mask.
The differences are with the IP addresses and broadcast address



2. Use the correct route command to display the current routing table.
The IP Address of the gateway has changed.

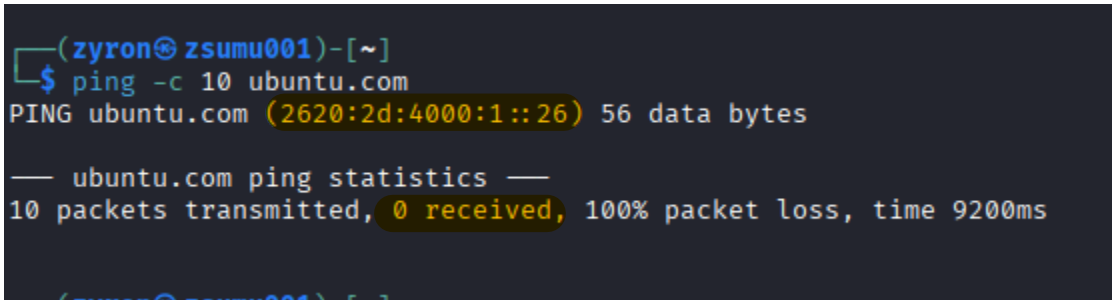


3. Use the netstat command to list current TCP connections.
Nothing has changed.



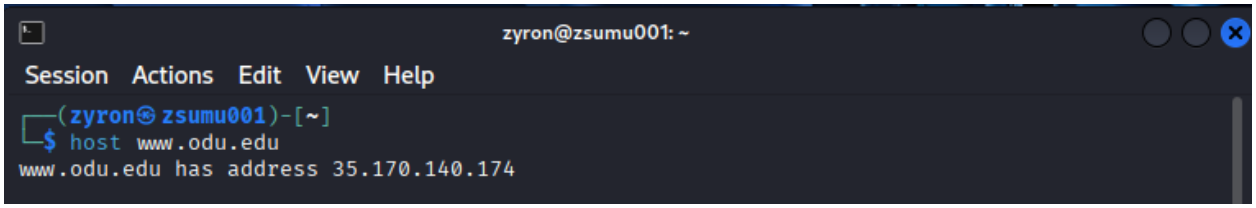
4. Use the ping command to determine if the ubuntu.com system is accessible via the network.

When utilizing the ping command the difference is originally I was pinging ubuntu.com using its ipv4 address. However, when I switched it to the bridged adapter it pinged the website with its ipv6 address and it was unsuccessful.



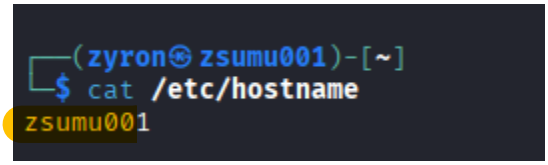
5. Use the host command to perform a DNS query on www.odu.edu

Both were successful on performing a DNS query however when I originally use the command i got communications error, but when switching to bridged adapter I did not.



6. Use the cat command to display the contents of the file that contains the system's hostname.

Hostname has changed to my MIDAS ID.



7. Use the cat command to display the contents of the file that contains the DNS servers for this System.

The difference between the two is that originally i had a nameserver with an IP address of 209.192.249.101 and then when I switched to the bridged adapter I got a nameserver in a IPV6 address of 2001:578:3f::30