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4/18/2023

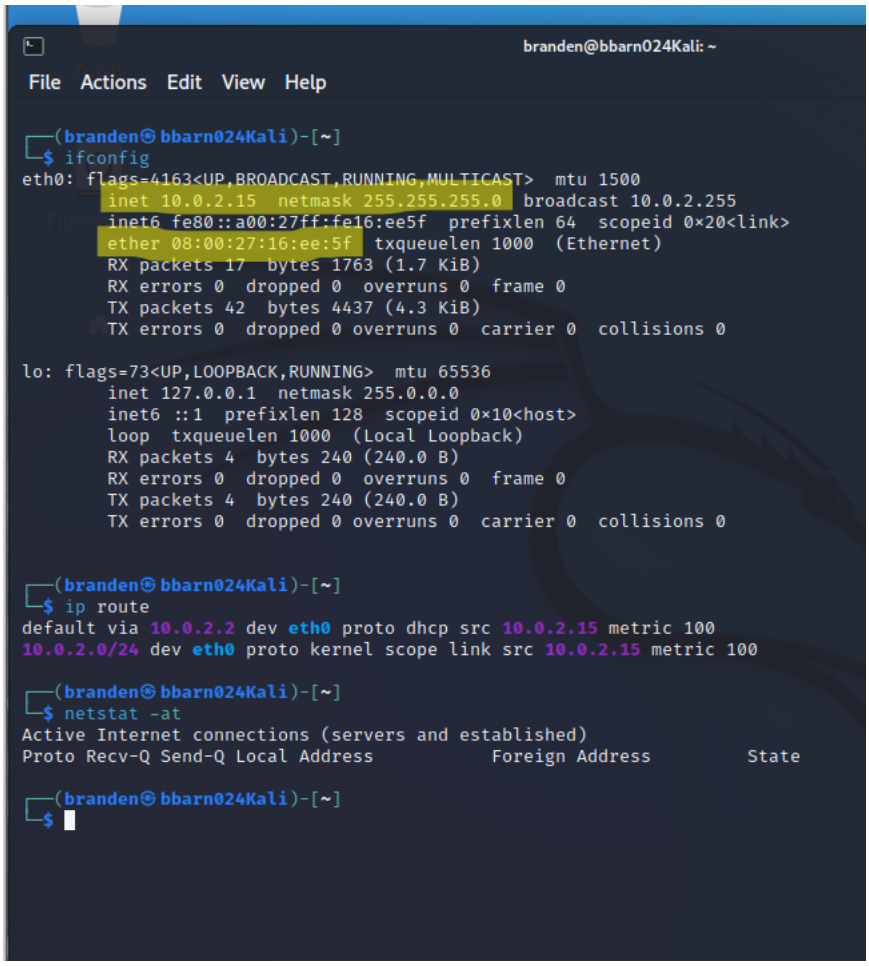
Basic Network Configuration: Lab 11

Task A: **Explore Network Configuration**

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.

```
┌──(branden㉿bbarn024Kali)-[~]
└─$ ping -c 10 ubuntu.com
PING ubuntu.com (185.125.190.20) 56(84) bytes of data.
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=1 ttl=54 time=89.1 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=2 ttl=54 time=99.0 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=3 ttl=54 time=90.6 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=4 ttl=54 time=91.3 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=5 ttl=54 time=90.6 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=6 ttl=54 time=89.8 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=7 ttl=54 time=89.2 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=8 ttl=54 time=92.5 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=9 ttl=54 time=90.6 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=10 ttl=54 time=93.8 ms

── ubuntu.com ping statistics ──
10 packets transmitted, 10 received, 0% packet loss, time 9068ms
rtt min/avg/max/mdev = 89.109/91.642/99.010/2.809 ms

┌──(branden㉿bbarn024Kali)-[~]
└─$
```

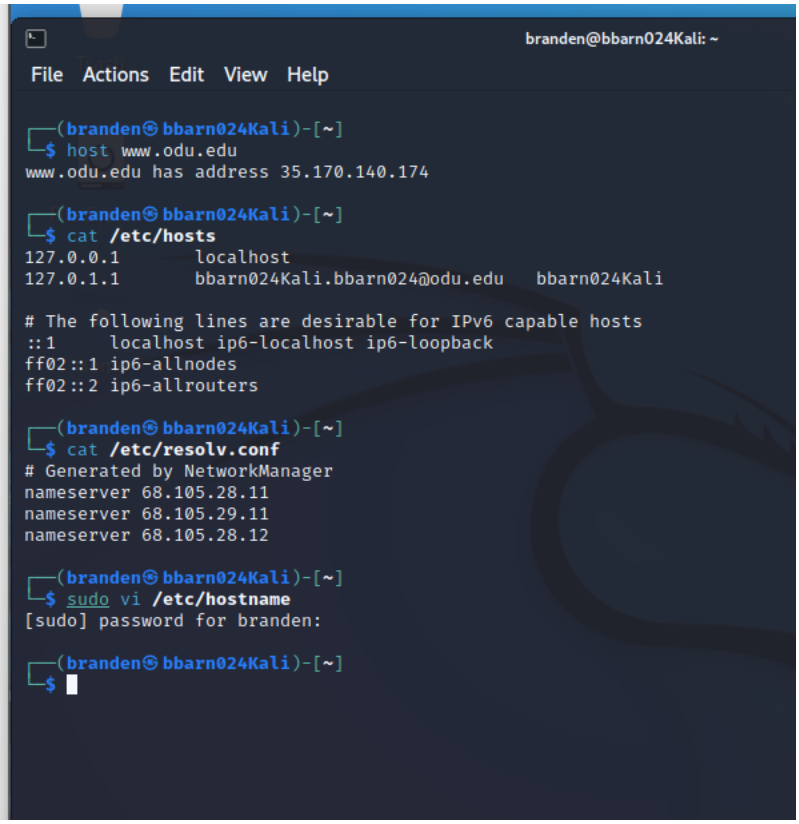
5. Use the host command to perform a DNS query on www.odu.edu

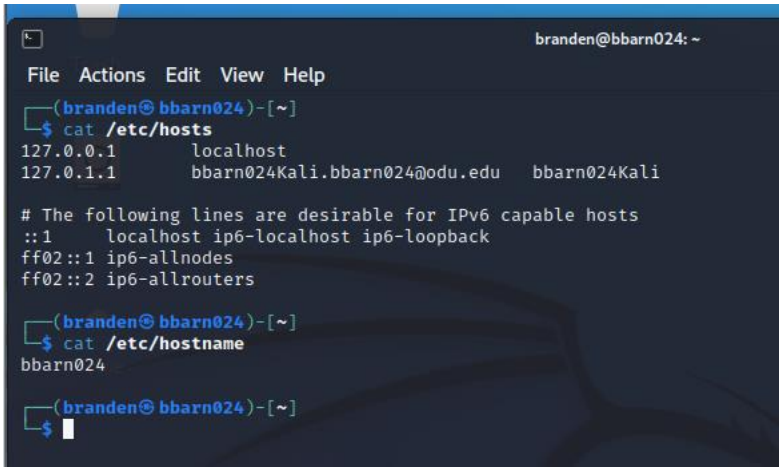
6. Use the cat command to display the contents of the file that contains the system's hostname.

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

```
branden@bbarn024Kali: ~
File  Actions  Edit  View  Help

┌──(branden㉿bbarn024Kali)-[~]
└─$ host www.odu.edu
www.odu.edu has address 35.170.140.174

┌──(branden㉿bbarn024Kali)-[~]
└─$ cat /etc/hosts
127.0.0.1       localhost
127.0.1.1       bbarn024Kali.bbarn024@odu.edu   bbarn024Kali

# The following lines are desirable for IPv6 capable hosts
::1     localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters

┌──(branden㉿bbarn024Kali)-[~]
└─$ cat /etc/resolv.conf
# Generated by NetworkManager
nameserver 68.105.28.11
nameserver 68.105.29.11
nameserver 68.105.28.12

┌──(branden㉿bbarn024Kali)-[~]
└─$
```

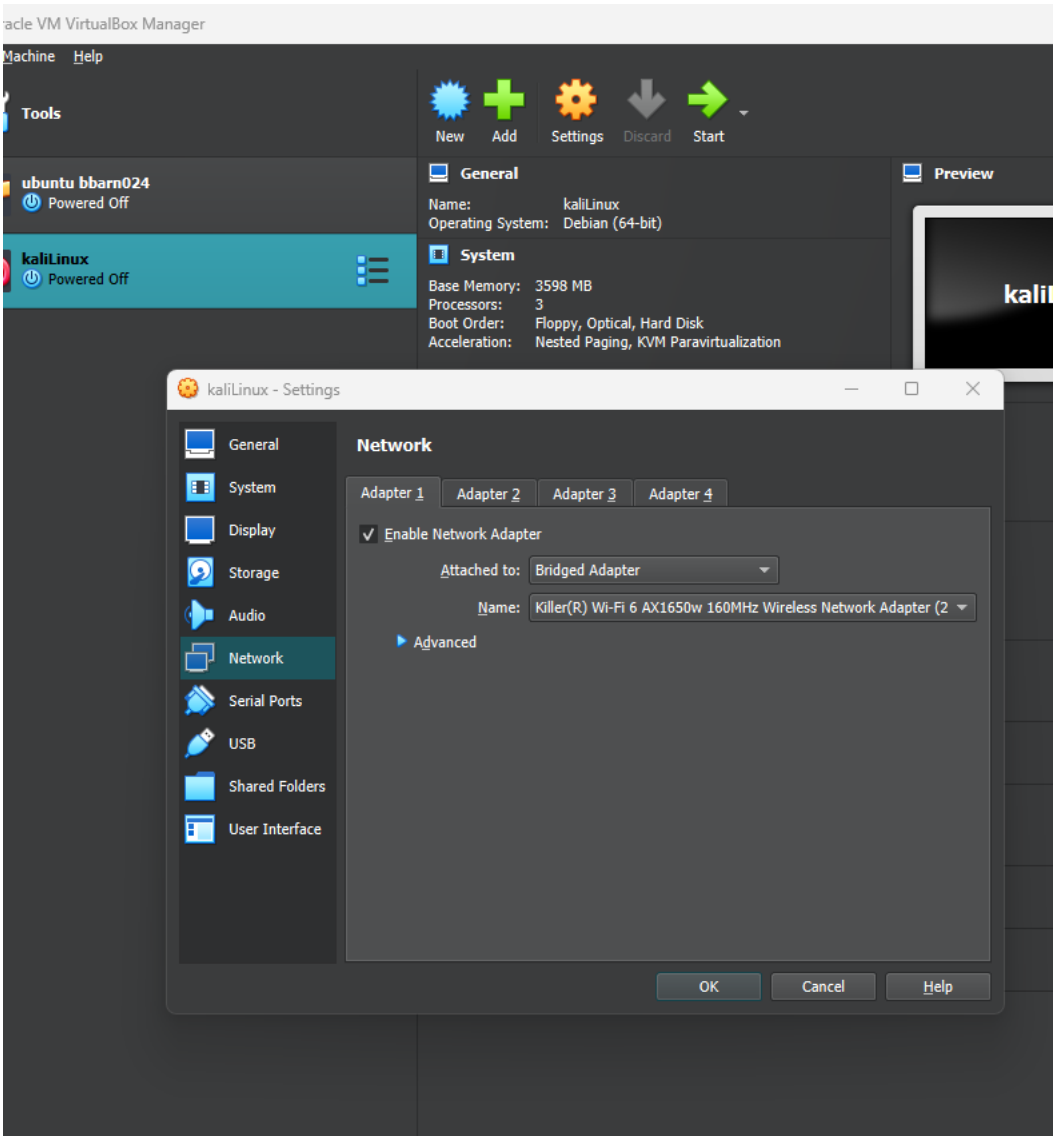
8. Edit the same file you display in the previous step, set the system's hostname to your MIDAS ID permanently. Reboot system and repeat step 6.



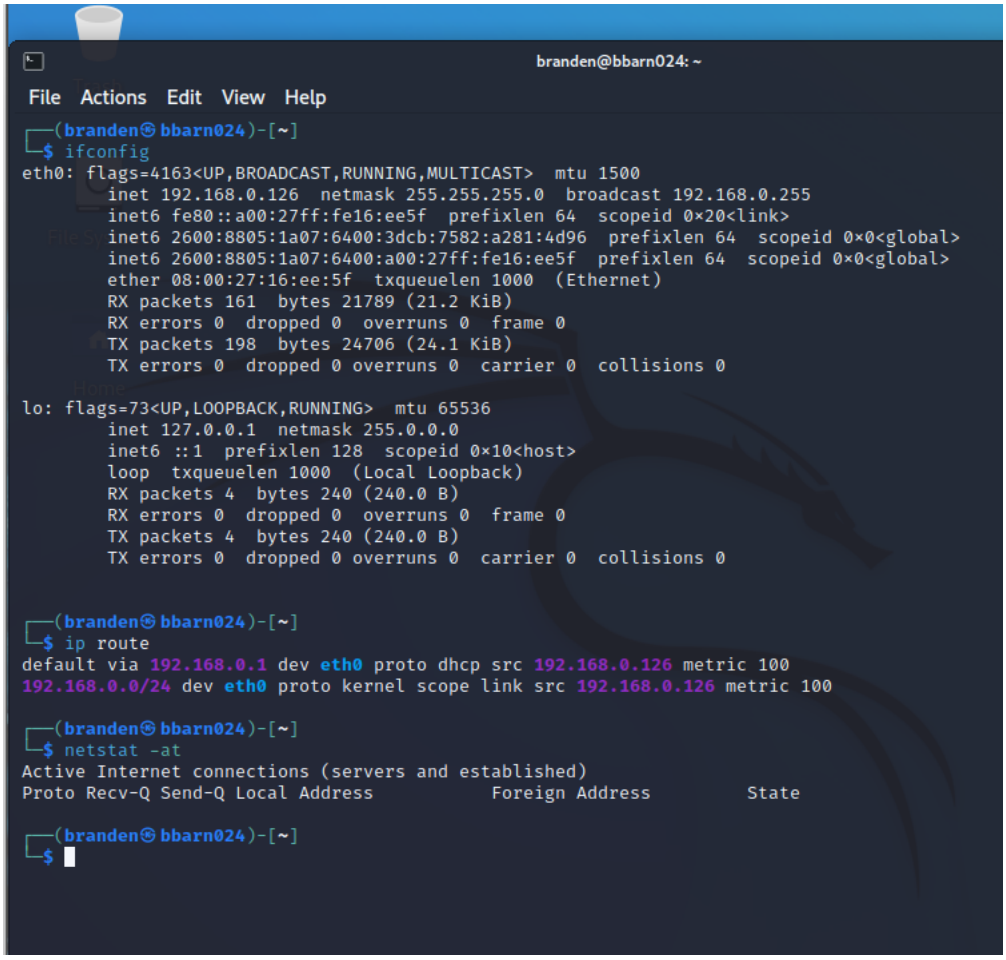


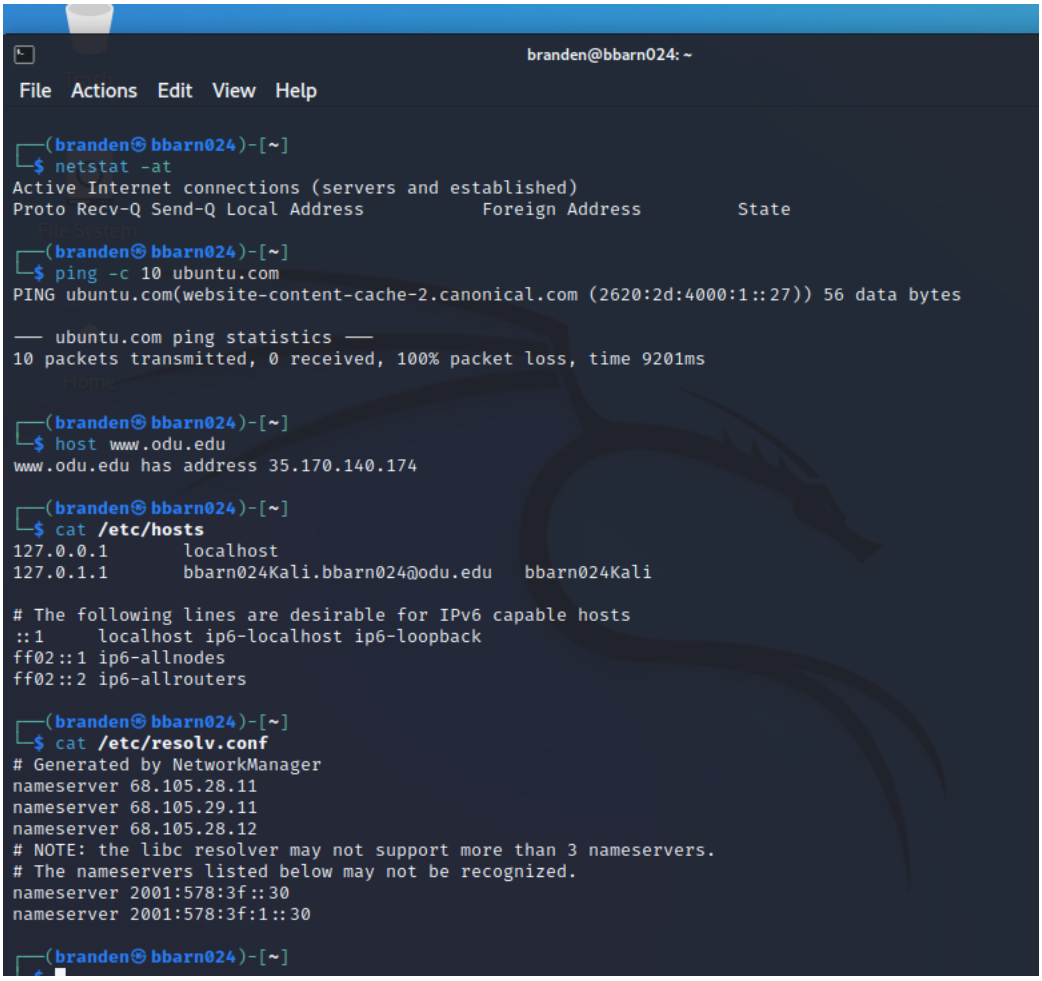
Task B: **A Different Network Setting**

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.


branden@bbarn024: ~
File Actions Edit View Help
(branden㉿bbarn024)-[~]
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 192.168.0.126 netmask 255.255.255.0 broadcast 192.168.0.255
inet6 fe80::a00:27ff:fe16:ee5f prefixlen 64 scopeid 0×20<link>
inet6 2600:8805:1a07:6400:3dcb:7582:a281:4d96 prefixlen 64 scopeid 0×0<global>
inet6 2600:8805:1a07:6400:a00:27ff:fe16:ee5f prefixlen 64 scopeid 0×0<global>
ether 08:00:27:16:ee:5f txqueuelen 1000 (Ethernet)
RX packets 161 bytes 21789 (21.2 KiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 198 bytes 24706 (24.1 KiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0×10<host>
loop txqueuelen 1000 (Local Loopback)
RX packets 4 bytes 240 (240.0 B)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 4 bytes 240 (240.0 B)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
(branden㉿bbarn024)-[~]
$ ip route
default via 192.168.0.1 dev eth0 proto dhcp src 192.168.0.126 metric 100
192.168.0.0/24 dev eth0 proto kernel scope link src 192.168.0.126 metric 100
(branden㉿bbarn024)-[~]
$ netstat -at
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address Foreign Address State
(branden㉿bbarn024)-[~]
$



3. Highlight the differences at the end of each step and discuss what do you find.

    1. IP is different, but Mac Address and Netmask remain the same

    2. Routing table has changed because of the IP address change

    3. There is still no TCP ports shown

    4. 10 packets were able to be transmitted but 0 were received from ubuntu.com

    5. Host remained the same for www.odu.edu

    6. Hosts remained the same

    7. The nameservers remained the same, but a warning did come up for libc resolver to may not support more than 3 nameservers. Two nameservers may not be recognized as well.