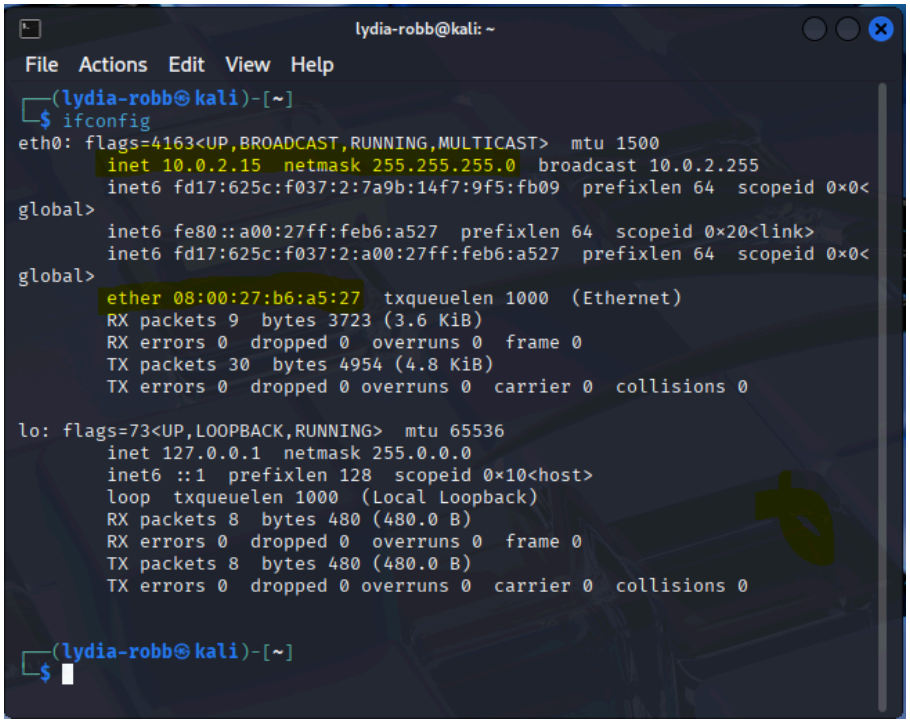
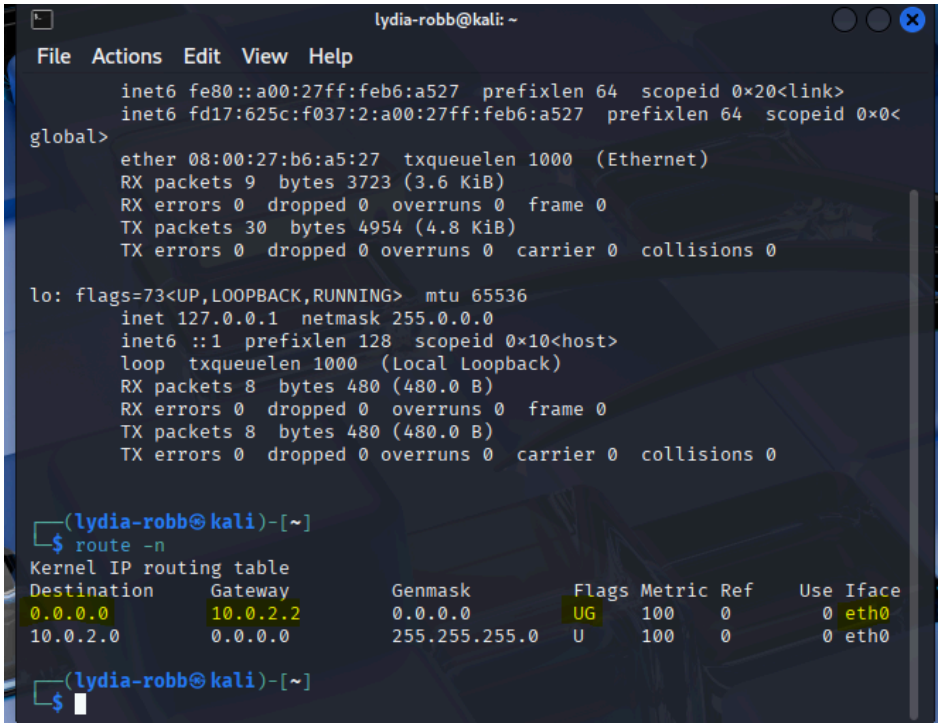
Basic Network Configurations- Lab 11

Task A

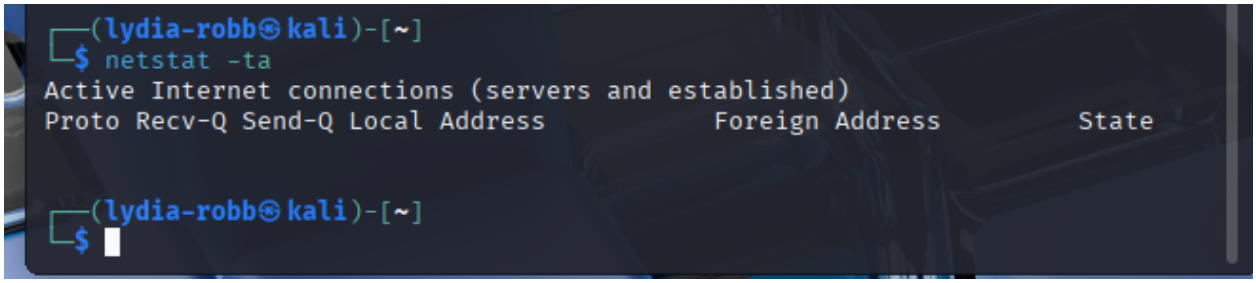
1.



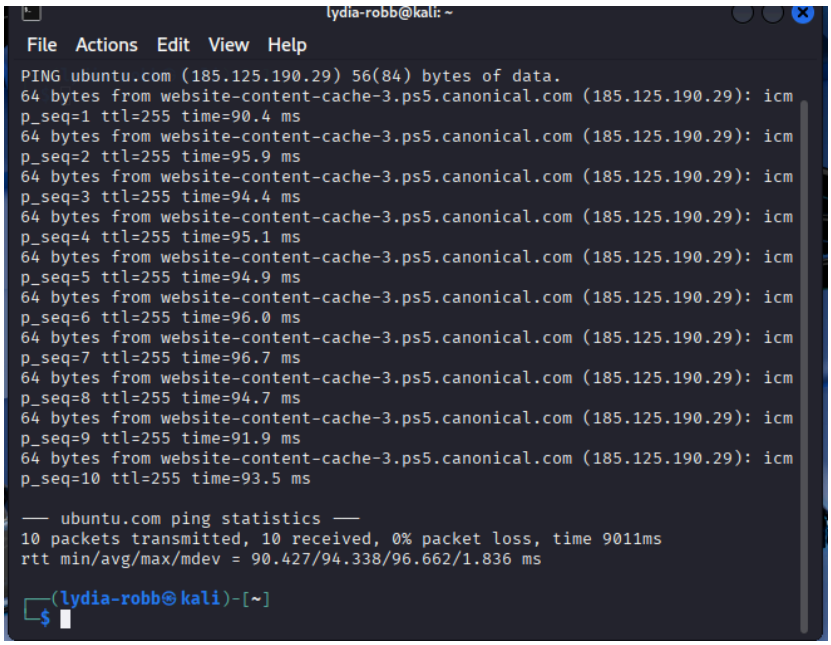
2.



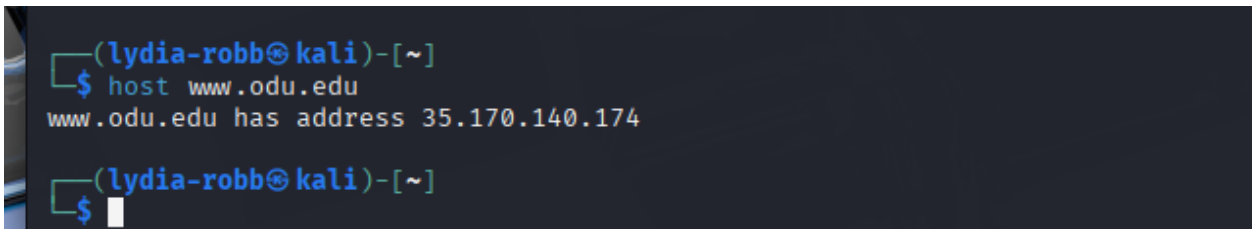
3.


(lydia-robb㉿kali)-[~]
$ netstat -ta
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address Foreign Address State
(lydia-robb㉿kali)-[~]
$

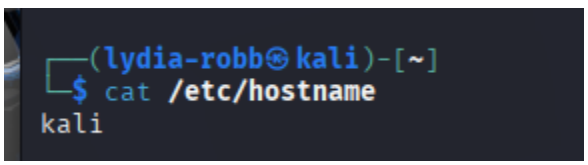
4.


lydia-robb@kali: ~
File Actions Edit View Help
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=255 time=90.4 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=2 ttl=255 time=95.9 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=3 ttl=255 time=94.4 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=4 ttl=255 time=95.1 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=5 ttl=255 time=94.9 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=6 ttl=255 time=96.0 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=7 ttl=255 time=96.7 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=8 ttl=255 time=94.7 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=9 ttl=255 time=91.9 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=10 ttl=255 time=93.5 ms
— ubuntu.com ping statistics —
10 packets transmitted, 10 received, 0% packet loss, time 9011ms
rtt min/avg/max/mdev = 90.427/94.338/96.662/1.836 ms
(lydia-robb㉿kali)-[~]
$

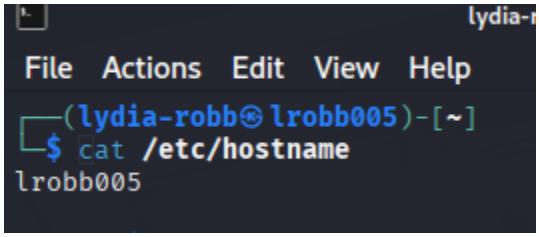
5.


(lydia-robb㉿kali)-[~]
$ host www.odu.edu
www.odu.edu has address 35.170.140.174
(lydia-robb㉿kali)-[~]
$

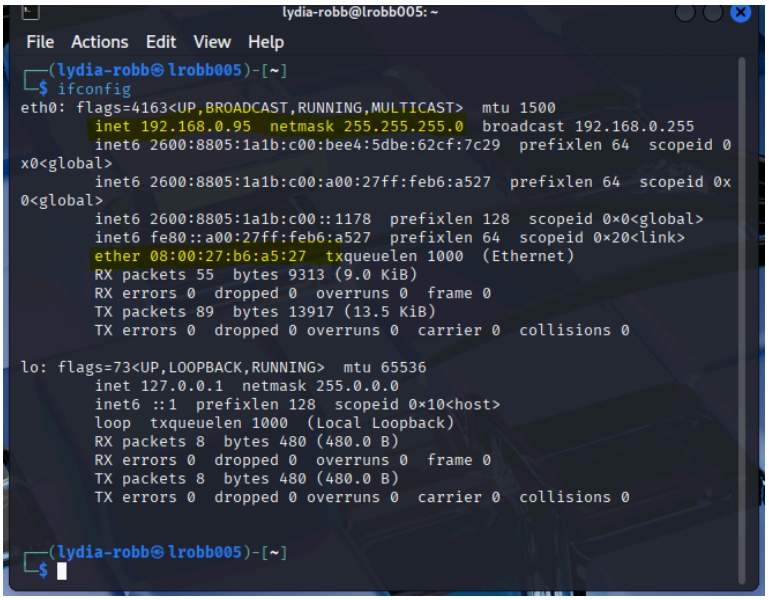
6.


(lydia-robb㉿kali)-[~]
$ cat /etc/hostname
kali

7. 

8. 

Task B

1. 

- In NAT, the VM sits behind a virtual router using a VirtualBox-only subnet
- In Bridged, the VM appears as a normal device on the same LAN as your host.

2.

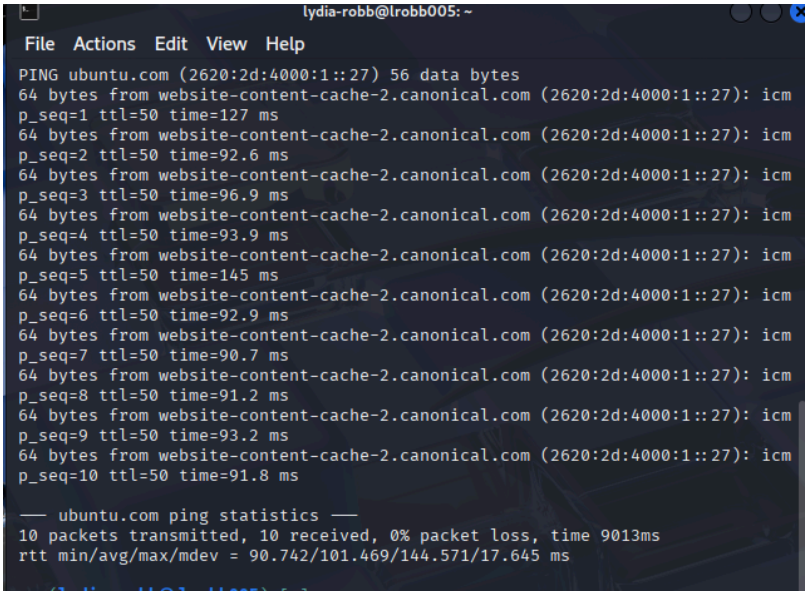
```
┌──(lydia-robb㉿lrobb005)-[~]
└─$ route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
0.0.0.0         192.168.0.1     0.0.0.0         UG    100    0        0 eth0
192.168.0.0     0.0.0.0         255.255.255.0   U     100    0        0 eth0
```

- NAT: traffic first hits the VirtualBox NAT gateway, which then NATs it to the outside.
- Bridged: the VM sends directly to the real network gateway, like any other machine.

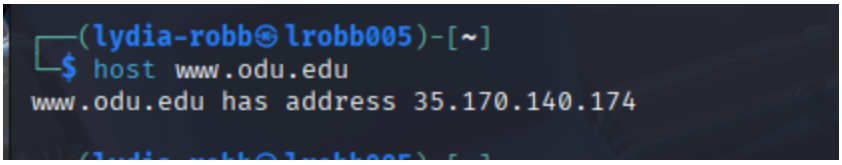
3.

```
┌──(lydia-robb㉿lrobb005)-[~]
└─$ netstat -ta
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
```

- In NAT, the remote side sees the host's IP (after translation).
- In Bridged, the remote side sees the VM's own IP.

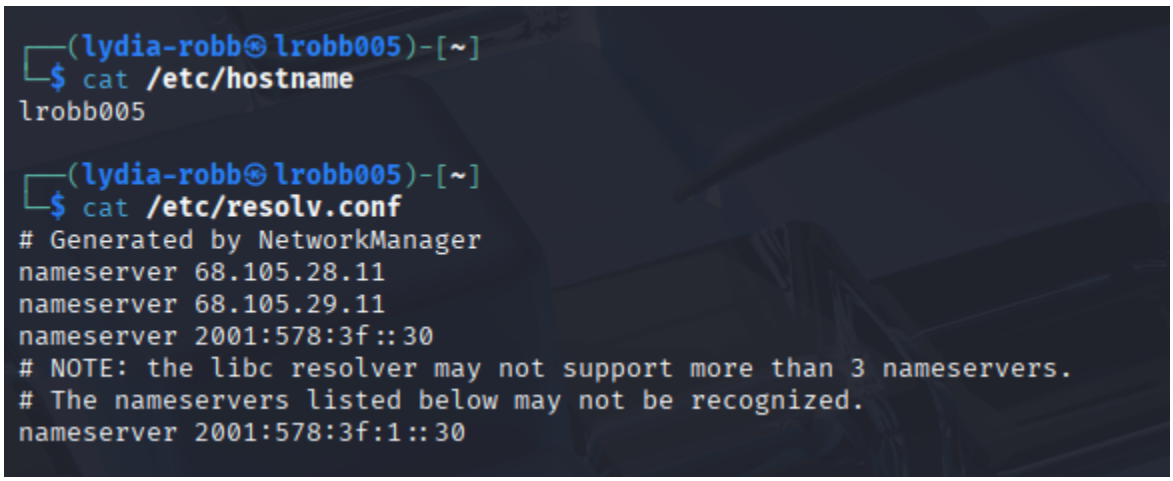
4. 

- NAT: VirtualBox uses the host's connection and works even on Wi-Fi.
- Bridged: VM depends on being treated as a separate device on the network; if the network blocks that, pings fail.

5. 

- Name resolution itself works the same way, but the DNS server used may differ.

6&7.



- Changing NAT vs. Bridged affects how the VM connects to the network, not the system identity (hostname).
- NAT: DNS is handled via VirtualBox/host.
- Bridged: VM directly uses the network's DNS, like your physical machine.