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CYSE 270

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## Assignment 11 - Basic Network Configuration

### Task A.

```
(ereis@kali)-[~]
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255 link<
    inet6 fe80::a00:27ff:febc:b7f2 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:bc:b7:f2 txqueuelen 1000 (Ethernet)
    RX packets 5 bytes 1026 (1.0 KiB) frame 0
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 29 bytes 3502 (3.4 KiB) carrier 0 collisions 0
    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 <host>
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 4 bytes 240 (240.0 B) frame 0
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 4 bytes 240 (240.0 B) carrier 0 collisions 0
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

(ereis@kali)-[~]
$ route
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
default 10.0.2.2 0.0.0.0 UG 100 0 0 eth0
10.0.2.0 0.0.0.0 255.255.255.0 U 100 0 0 eth0

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

(ereis@kali)-[~]
$ sudo netstat -ta
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address Foreign Address State
```

Steps 1 - 3

Used the ifconfig command to display IP and Mac Address, as well as the netmask as highlighted above. Then proceeded to use the route command to show the current route table. Finally used the netstat command to display active TCP connections.

```
(ereis@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=49 time=81.7 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=2 ttl=49 time=79.6 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=3 ttl=49 time=80.4 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=4 ttl=49 time=79.5 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=5 ttl=49 time=83.0 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=6 ttl=49 time=81.7 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=7 ttl=49 time=111 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=8 ttl=49 time=88.3 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=9 ttl=49 time=79.8 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29): icmp_seq=10 ttl=49 time=80.2 ms

--- ubuntu.com ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9829ms
rtt min/avg/max/mdev = 79.470/84.557/111.452/9.302 ms

(ereis@kali)-[~]
$ host www.odu.edu
www.odu.edu has address 35.170.140.174

(ereis@kali)-[~]
$ cat /etc/hostname
kali

(ereis@kali)-[~]
$ cat /etc/resolv.conf
# Generated by NetworkManager
search wlan.odu.edu
nameserver 128.82.95.20
```

#### Steps 4 - 7

Used the “ping -c 10 ubuntu.com” to send 10 packets to ubuntu.com. I then used the host command on [www.odu.edu](http://www.odu.edu) to perform the DNS query. After that, I used the cat command to display the hostname, and then used the same command to display the resolv.conf information.

```

(ereis@kali)-[~]
$ vi /etc/hostname

(ereis@kali)-[~]ould be identified, non-owned process info
$ chmod +w /etc/hostnameould have to be root to see it all.)
chmod: changing permissions of '/etc/hostname': Operation not permitted
Proto Recv-Q Send-Q Local Address           Foreign Address         State
(ereis@kali)-[~]ould be identified, non-owned process info
$ sudo chmod +w /etc/hostnameould have to be root to see it all.)
[sudo] password for ereis: (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
(ereis@kali)-[~]ould be identified, non-owned process info
$ vi /etc/hostnameould have to be root to see it all.)
Active Internet connections (w/o servers)
(ereis@kali)-[~]ould be identified, non-owned process info
$ sudo vi /etc/hostnameould have to be root to see it all.)

```

Step 8 -

I edited the hostname file to change the ownership from kali to my MIDAS “ereis”. A problem arose where I had to use the sudo command as I could not execute the command otherwise.

```

(ereis@ereis)-[~]
$ cat /etc/hostname
ereis

(ereis@ereis)-[~]
$ 

```

Step 8 cont. -

This is the same cat command used in previous steps, but after a system reboot.

## Task B.

```
(ereis@ereis)-[~]
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.254.89.218 netmask 255.255.0.0 broadcast 10.254.255.255
    inet6 fe80::a00:27ff:febc:b7f2 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:bc:b7:f2 txqueuelen 1000 (Ethernet)
    RX packets 88 bytes 7886 (7.7 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 49 bytes 5718 (5.5 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 0x10<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

(ereis@ereis)-[~]
$ route
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
default 10.254.0.1 0.0.0.0 UG 100 0 0 eth0
10.254.0.0 0.0.0.0 255.255.0.0 U 100 0 0 eth0

(ereis@ereis)-[~]
$ netstat -ta
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address Foreign Address State

(ereis@ereis)-[~]
$ 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=50 time=79.0 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=2 ttl=50 time=80.0 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=3 ttl=50 time=81.7 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=4 ttl=50 time=79.6 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=5 ttl=50 time=78.9 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=6 ttl=50 time=78.7 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=7 ttl=50 time=80.4 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=8 ttl=50 time=80.0 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=9 ttl=50 time=79.8 ms
64 bytes from website-content-cache-1.ps5.canonical.com (185.125.190.20): icmp_seq=10 ttl=50 time=79.4 ms

— ubuntu.com ping statistics —
10 packets transmitted, 10 received, 0% packet loss, time 9011ms
rtt min/avg/max/mdev = 78.705/79.756/81.650/0.815 ms
```

Above are the repeated steps from Task A. 1 - 4. Highlighted are the changes that I noticed while looking at the two screenshots. Changes were made to the netmask, MAC Address and the IP Address. Another thing that had changes was the current route table, which showed changes to the destination and gateways.

```
(ereis@ereis)-[~]  
$ host www.odu.edu  
www.odu.edu has address 35.170.140.174  
  
(ereis@ereis)-[~]  
$ cat /etc/hostname  
ereis  
  
(ereis@ereis)-[~]  
$ cat /etc/resolv.conf  
# Generated by NetworkManager  
search wlan.odu.edu  
nameserver 128.82.95.20  
  
(ereis@ereis)-[~]  
$
```

Finally is the last few steps of Task A. The only noticeable change was made to the /etc/hostname file which had been made in the previous Task.