

Lab 01- Computer Networks Basics

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1 Question 1

'hostname' shows a human-readable name for the machine that the command is run on.

'hostnamectl' shows a list of different fields for the target machine and is generally more verbose.

```
matthew@matthew--E16:~/GradSchool/adv_networks/lab1$ hostname
matthew--E16
matthew@matthew--E16:~/GradSchool/adv_networks/lab1$ hostnamectl
Static hostname: matthew--E16
Icon name: computer-laptop
Chassis: laptop
Machine ID: a43ef969c2024f14916c7b0381227596
Boot ID: 861b2458e5d2440b8925015aca171d31
Operating System: Ubuntu 24.04.1 LTS
Kernel: Linux 6.8.0-49-generic
Architecture: x86_64
Hardware Vendor: Lenovo
Hardware Model: ThinkPad E16 Gen 1
Firmware Version: R2AET56W(1.31)
Firmware Date: Thu 2024-02-29
Firmware Age: 10month 2w 5d
```

Figure 1: Screenshot showing the output of 'hostname' and 'hostnamectl'.

2 Question 2

Firefox is associated with 6 ports on my VM.

```
vboxuser@AdvNetworks:~$ netstat -A inet -p | grep 3923
(Not all processes could be identified, non-owned process info
will not be shown, you would have to be root to see it all.)
tcp        0      0 0.0.0.0:3923->0.0.0.0:3923  ESTABLISHED 3923/firefox
tcp        0      0 0.0.0.0:3923->0.0.0.0:3923  ESTABLISHED 3923/firefox
tcp        0      0 0.0.0.0:3923->0.0.0.0:3923  ESTABLISHED 3923/firefox
tcp        0      0 0.0.0.0:3923->0.0.0.0:3923  ESTABLISHED 3923/firefox
tcp        0      0 0.0.0.0:3923->0.0.0.0:3923  ESTABLISHED 3923/firefox
tcp        0      0 0.0.0.0:3923->0.0.0.0:3923  ESTABLISHED 3923/firefox
vboxuser@AdvNetworks:~$ hostname
AdvNetworks
vboxuser@AdvNetworks:~$
```

Figure 2: Ports associated with Firefox connected to <https://www.uwindsor.ca>.

3 Question 3

This command displays information about my network interfaces. I can see on my machine that I have a loopback interface called 'lo' and a standard interface. I can see its MAC address as well as some IP information

```
vboxuser@AdvNetworks:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1::1::1 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 00:00:27:00:1f:1a brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 85153sec preferred_lft 85153sec
    inet6 fd00::a0b1:3005:900c:35fc/64 scope global temporary dynamic
        valid_lft 86168sec preferred_lft 14168sec
    inet6 fd00::a0b1:27ff:fe81:1f1a/64 scope global dynamic mngtppdr
        valid_lft 86168sec preferred_lft 14168sec
    inet6 fe80::a0b1:27ff:fe81:1f1a/64 scope link
        valid_lft forever preferred_lft forever
vboxuser@AdvNetworks:~$
```

Figure 3: Output of 'ipaddr' call.

4 Question 4

See Below:

```
vboxuser@AdvNetworks:~$ sudo tcpdump -i any -c 25 host www.uwindsor.ca -w comp8670_lab01.pcap
tcpdump: data link type LINUX_SLL2
tcpdump: listening on any, link-type LINUX_SLL2 (Linux cooked v2), snapshot length 262144 bytes
25 packets captured
222 packets received by filter
0 packets dropped by kernel
vboxuser@AdvNetworks:~$
```

Figure 4: Packet Capture

5 Question 5

Yes I did it.