

OLD DOMINION UNIVERSITY

CYSE 301 CYBERSECURITY TECHNIQUES AND
OPERATIONS

Assignment #1 Explore CCIA Virtual Environment & Basic
Linux Commands

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TASK A: Get Ready with VMs

1. Powering on the following VMs:

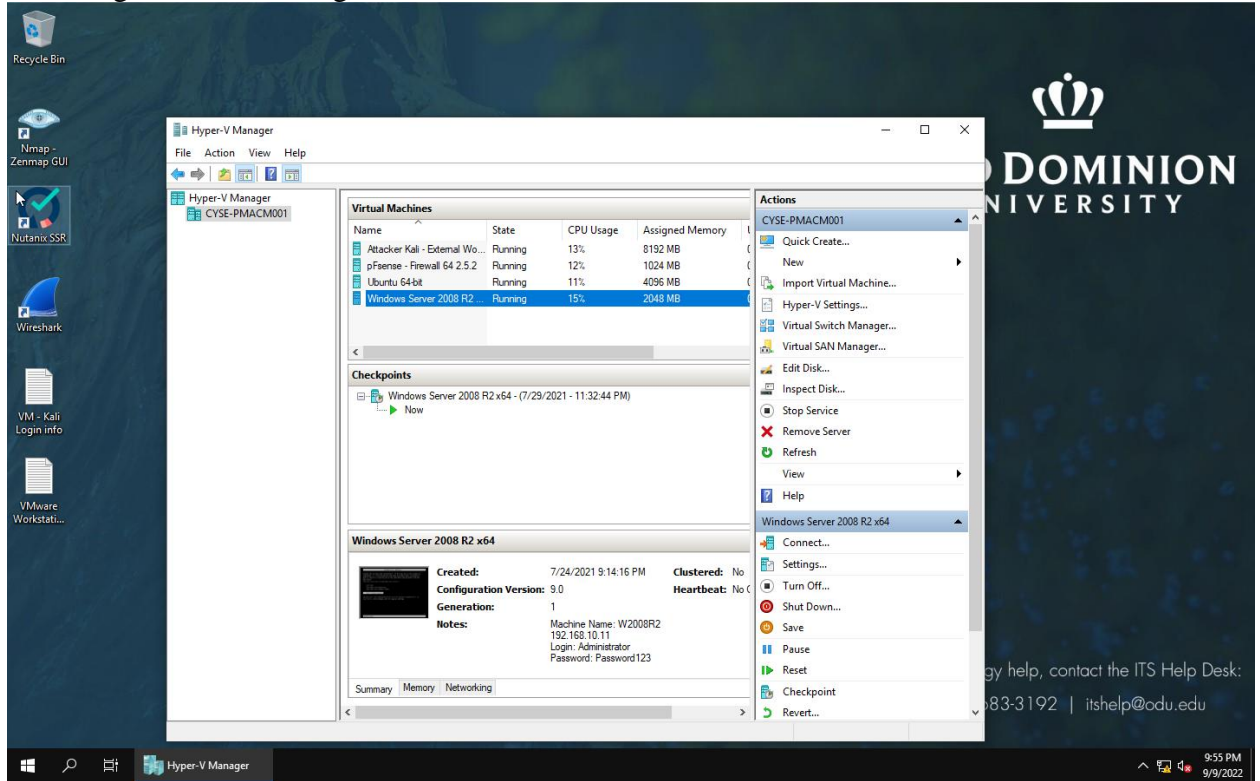
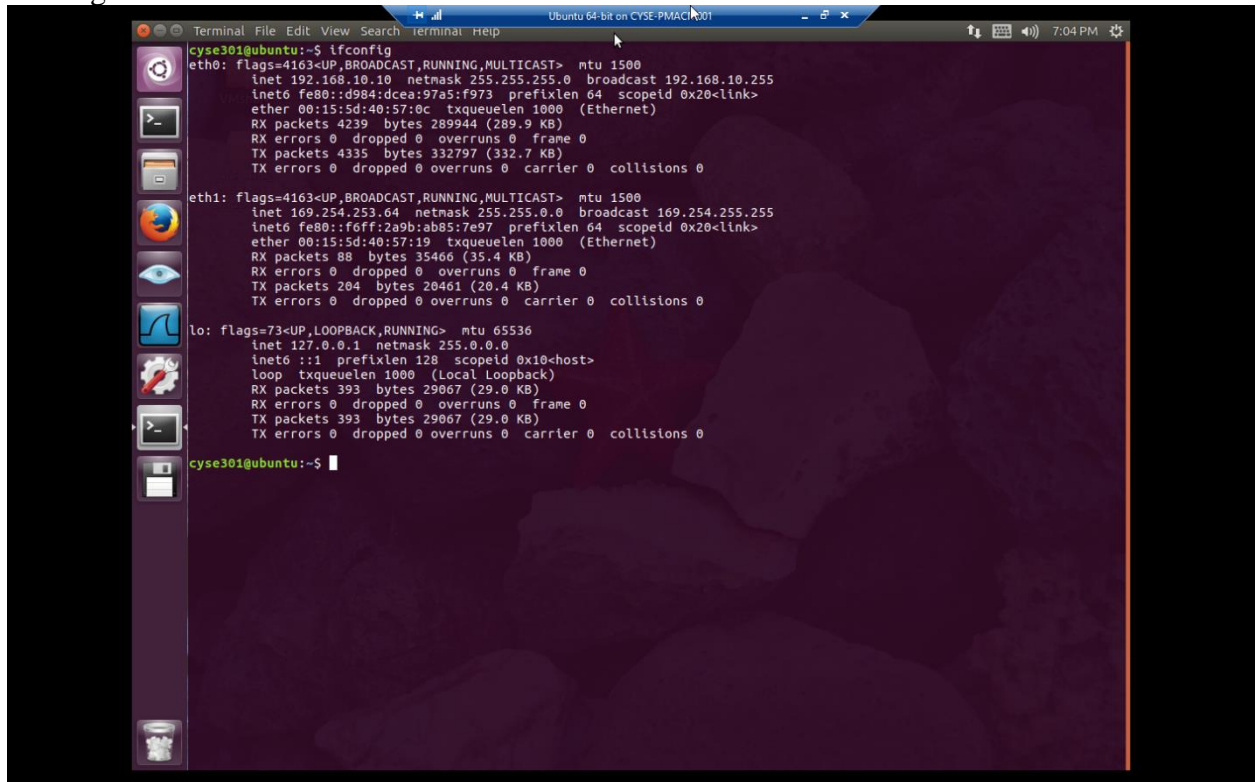


Figure 1: A screenshot showing that all required VMs are up and running.

Above is the Hyper-V manager where the virtual machines are housed. I simply pressed “power on” for each VM.

2. Finding the IP Addresses of each VM



```
cyse301@ubuntu:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.10.10 netmask 255.255.255.0 broadcast 192.168.10.255
    inet6 fe80::d984:dcea:97a5:f973 prefixlen 64 scopeid 0x20<link>
    ether 00:15:5d:40:57:0c txqueuelen 1000 (Ethernet)
    RX packets 4239 bytes 289944 (289.9 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 4335 bytes 332797 (332.7 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

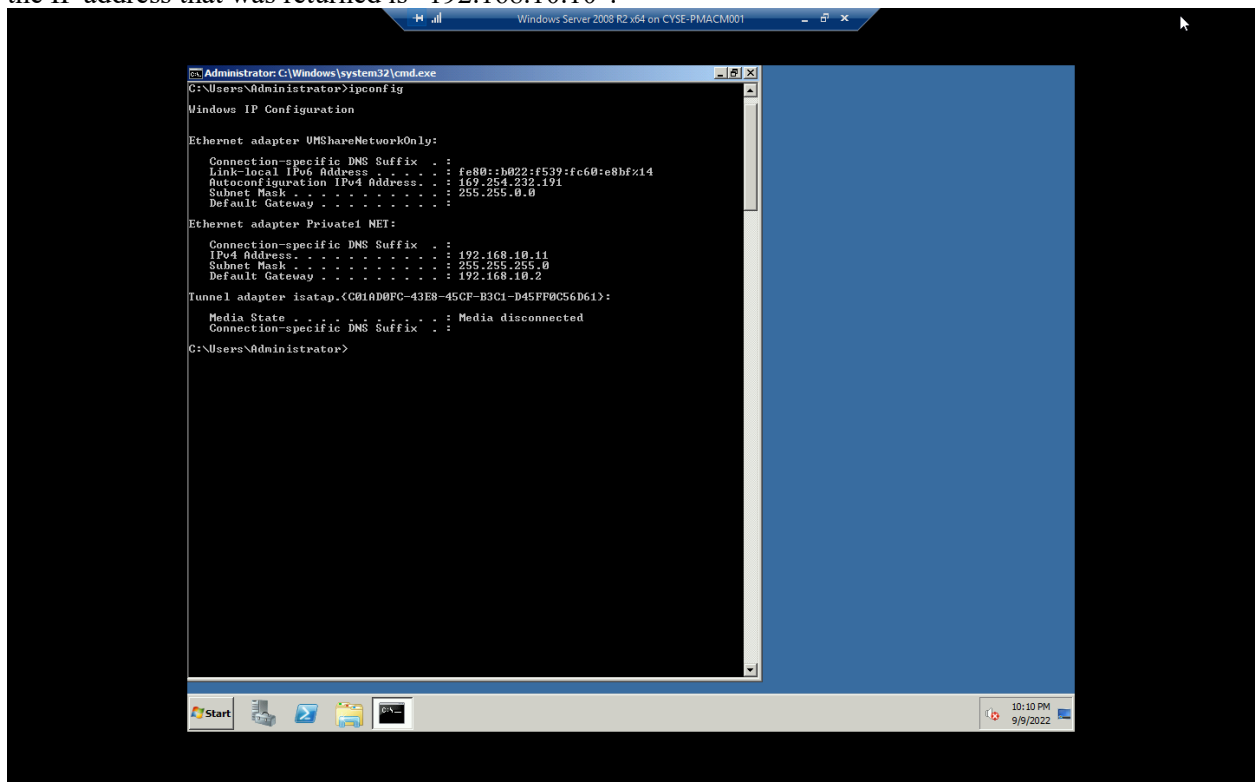
eth1: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 169.254.253.64 netmask 255.255.0.0 broadcast 169.254.255.255
    inet6 fe80::f6ff:2a9b:ab85:7e97 prefixlen 64 scopeid 0x20<link>
    ether 00:15:5d:40:57:19 txqueuelen 1000 (Ethernet)
    RX packets 88 bytes 35466 (35.4 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 204 bytes 20461 (20.4 KB)
    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 393 bytes 29067 (29.0 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 393 bytes 29067 (29.0 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

cyse301@ubuntu:~$
```

Figure 2.1a: Screenshot for part 2a of Task A.

Above is the network configuration in my Ubuntu Linux VM. I used the “ifconfig” command and the IP address that was returned is “192.168.10.10”.



```
C:\Users\Administrator>ipconfig

Windows IP Configuration

Ethernet adapter UMSHareNetworkOnly:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::b022:f539:fc60:e8bf%14
    Autoconfiguration IPv4 Address. . . : 169.254.232.191
    Subnet Mask . . . . . : 255.255.0.0
    Default Gateway . . . . . : 

Ethernet adapter Private1 NET:

    Connection-specific DNS Suffix  . : 
    IPv4 Address. . . . . : 192.168.10.11
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.10.2

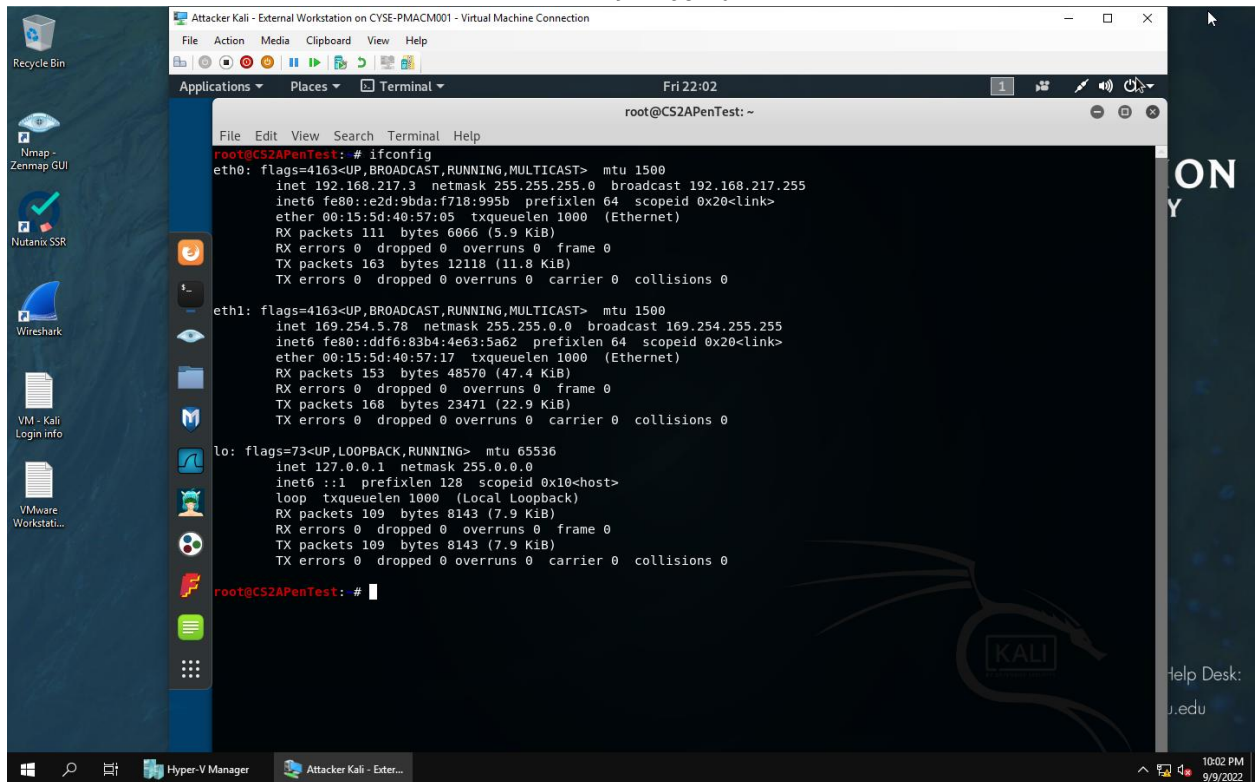
Tunnel adapter isatap.{C01AD0FC-43E8-45CF-B3C1-D45FF0C56D61}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : 

C:\Users\Administrator>
```

Figure 2.1b: Screenshot for part 2b for Task A.

Above is the network configuration in my Windows 2008 server VM. I used the “ipconfig” command and the IP address that was returned is “192.168.10.11”.



```
Attacker Kali - External Workstation on CYSE-PMACM001 - Virtual Machine Connection
Fri 22:02
root@CS2APenTest: ~
File Edit View Search Terminal Help
root@CS2APenTest: # ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.217.3 netmask 255.255.255.0 broadcast 192.168.217.255
    inet6 fe80::e2d:9bda:f718:995b prefixlen 64 scopeid 0x20<link>
    ether 00:15:5d:40:57:05 txqueuelen 1000 (Ethernet)
    RX packets 111 bytes 6066 (5.9 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 163 bytes 12118 (11.8 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

eth1: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 169.254.5.78 netmask 255.255.0.0 broadcast 169.254.255.255
    inet6 fe80::ddf6:83b4:4e63:5a62 prefixlen 64 scopeid 0x20<link>
    ether 00:15:5d:40:57:17 txqueuelen 1000 (Ethernet)
    RX packets 153 bytes 48570 (47.4 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 160 bytes 23471 (22.9 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 109 bytes 8143 (7.9 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 109 bytes 8143 (7.9 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@CS2APenTest: #
```

Figure 2.1c: Screenshot for part 2c of Task A.

Above is the network configuration in my Kali Linux VM. I used the “ifconfig” command and the IP address that was returned was “192.168.217.3”.

3. Verify the connection between the Ubuntu 64-bit VM and the Kali Linux VM

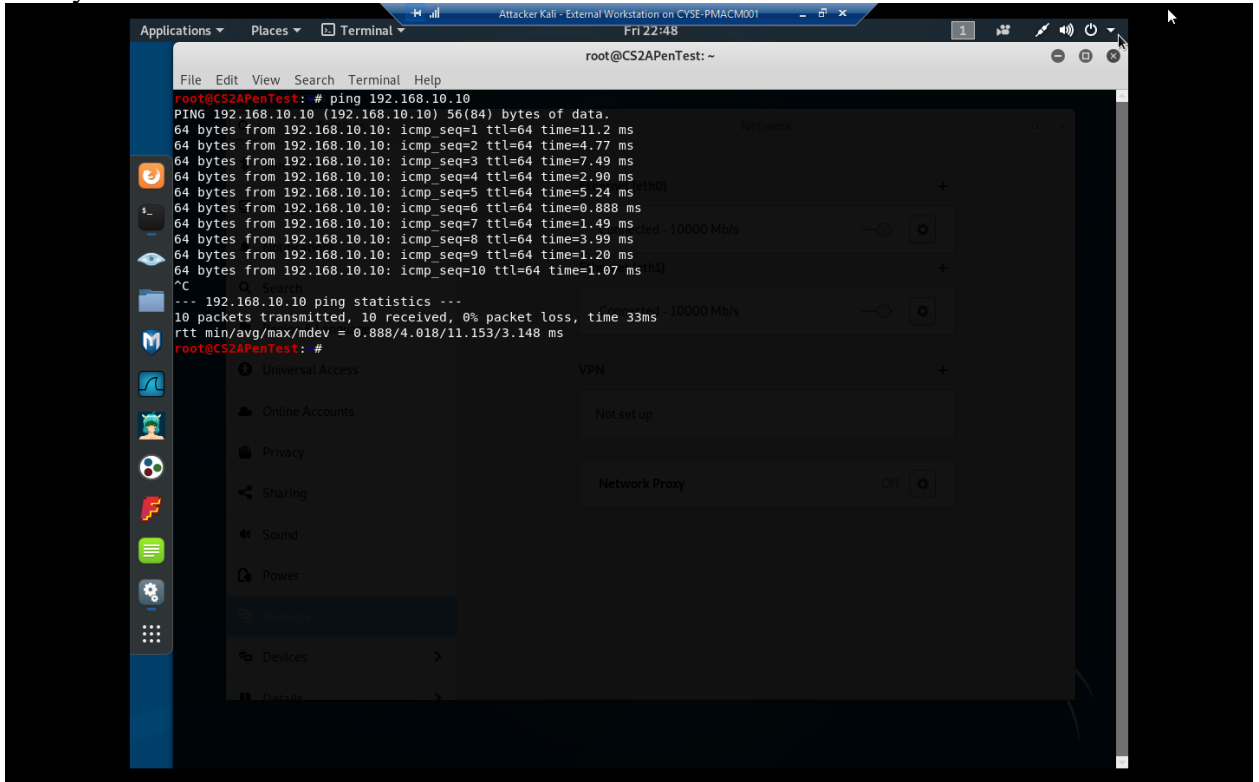


Figure 3: A screen shot showing the connection between the Kali Linux VM and the Ubuntu Linux VM. Above is the connection between two virtual machines: the Kali VM and the Ubuntu VM. I used the “ping” command to establish a connection between the two and have them communicate.

Task B: Practice with Linux Commands

Questions 1-6:

```
cyse301@ubuntu:~$ pwd
/home/cyse301
cyse301@ubuntu:~$ echo Peter
Peter
cyse301@ubuntu:~$ echo -e "Peter \nMacMillan"
Peter
MacMillan
cyse301@ubuntu:~$ cd
cyse301@ubuntu:~$ ll
total 148
drwxr-xr-x 20 cyse301 cyse301 4096 Sep  9 20:01 ./
drwxr-xr-x  3 root    root    4096 Aug 24 2017 ../
-rw-r----- 1 cyse301 cyse301 2641 Sep  9 19:06 .bash_history
-rw-r----- 1 cyse301 cyse301 220 Aug 24 2017 .bash_logout
-rw-r----- 1 cyse301 cyse301 3771 Aug 24 2017 .bashrc
drwx----- 17 cyse301 cyse301 4096 Sep 18 2017 .cache/
drwx-----  3 cyse301 cyse301 4096 Aug 24 2017 .compiz/
drwx----- 19 cyse301 cyse301 4096 Sep 15 2017 .config/
drwx-----  3 root    root    4096 Aug 24 2017 .dbus/
drwxr-xr-x  3 cyse301 cyse301 4096 Jul 29 2021 Desktop/
-rw-r----- 1 cyse301 cyse301 25 Aug 24 2017 .dmrc
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 Documents/
drwxr-xr-x  2 cyse301 cyse301 4096 Sep 18 2017 Downloads/
-rw-r----- 1 cyse301 cyse301 8980 Aug 24 2017 examples.desktop
-rw-r----- 1 cyse301 cyse301  0 Sep  9 19:59 forpncm001.txt
drwx-----  2 cyse301 cyse301 4096 Jul 28 2021 .gconf/
drwxrwxr-x  3 cyse301 cyse301 8586 Sep  9 19:12 ICEauthority
drwx-----  4 cyse301 cyse301 4096 Aug 24 2017 .local/
drwx-----  4 cyse301 cyse301 4096 Aug 24 2017 .mozilla/
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 Music/
drwxr-xr-x  2 cyse301 cyse301 4096 Jul 29 2021 .nano/
-rw-r----- 1 cyse301 cyse301 2439 Sep  9 20:01 passwd_pncm001
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 Pictures/
drwxr-xr-x  2 cyse301 cyse301 4096 Sep  9 20:00 pncm001/
-rw-r----- 1 cyse301 cyse301 675 Aug 24 2017 .profile
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 Public/
-rw-r----- 1 cyse301 cyse301 66 Jul 29 2021 .selected_editor
-rw-r----- 1 cyse301 cyse301 51 Jul 29 2021 .smbcredentials
-rw-r----- 1 cyse301 cyse301  0 Aug 24 2017 .sudo_as_admin_successful
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 Templates/
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 Videos/
lrwxrwxrwx  1 cyse301 cyse301 18 Jan 24 2019 VMshare -> /mnt/hgfs/VMshare/
-rw-r----- 1 cyse301 cyse301 51 Sep  9 19:12 .Xauthority
-rw-r----- 1 cyse301 cyse301 3383 Sep  9 19:12 .xsession-errors
-rw-r----- 1 cyse301 cyse301 3383 Sep  9 19:04 .xsession-errors.old
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 .zenmap/
cyse301@ubuntu:~$
```

Question 7:

```
cyse301@ubuntu:~$ cd
cyse301@ubuntu:~$ ll
total 148
drwxr-xr-x 20 cyse301 cyse301 4096 Sep  9 20:01 ./
drwxr-xr-x  3 root    root    4096 Aug 24 2017 ../
-rw-r----- 1 cyse301 cyse301 2641 Sep  9 19:06 .bash_history
-rw-r----- 1 cyse301 cyse301 220 Aug 24 2017 .bash_logout
-rw-r----- 1 cyse301 cyse301 3771 Aug 24 2017 .bashrc
drwx----- 17 cyse301 cyse301 4096 Sep 18 2017 .cache/
drwx-----  3 cyse301 cyse301 4096 Aug 24 2017 .compiz/
drwx----- 19 cyse301 cyse301 4096 Sep 15 2017 .config/
drwx-----  3 root    root    4096 Aug 24 2017 .dbus/
drwxr-xr-x  3 cyse301 cyse301 4096 Jul 29 2021 Desktop/
-rw-r----- 1 cyse301 cyse301 25 Aug 24 2017 .dmrc
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 Documents/
drwxr-xr-x  2 cyse301 cyse301 4096 Sep 18 2017 Downloads/
-rw-r----- 1 cyse301 cyse301 8980 Aug 24 2017 examples.desktop
-rw-r----- 1 cyse301 cyse301  0 Sep  9 19:59 forpncm001.txt
drwx-----  2 cyse301 cyse301 4096 Jul 28 2021 .gconf/
drwxrwxr-x  3 cyse301 cyse301 8586 Sep  9 19:12 ICEauthority
drwx-----  4 cyse301 cyse301 4096 Aug 24 2017 .local/
drwx-----  4 cyse301 cyse301 4096 Aug 24 2017 .mozilla/
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 Music/
drwxr-xr-x  2 cyse301 cyse301 4096 Jul 29 2021 .nano/
-rw-r----- 1 cyse301 cyse301 2439 Sep  9 20:01 passwd_pncm001
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 Pictures/
drwxr-xr-x  2 cyse301 cyse301 4096 Sep  9 20:00 pncm001/
-rw-r----- 1 cyse301 cyse301 675 Aug 24 2017 .profile
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 Public/
-rw-r----- 1 cyse301 cyse301 66 Jul 29 2021 .selected_editor
-rw-r----- 1 cyse301 cyse301 51 Jul 29 2021 .smbcredentials
-rw-r----- 1 cyse301 cyse301  0 Aug 24 2017 .sudo_as_admin_successful
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 Templates/
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 Videos/
lrwxrwxrwx  1 cyse301 cyse301 18 Jan 24 2019 VMshare -> /mnt/hgfs/VMshare/
-rw-r----- 1 cyse301 cyse301 51 Sep  9 19:12 .Xauthority
-rw-r----- 1 cyse301 cyse301 3383 Sep  9 19:12 .xsession-errors
-rw-r----- 1 cyse301 cyse301 3383 Sep  9 19:04 .xsession-errors.old
drwxr-xr-x  2 cyse301 cyse301 4096 Aug 24 2017 .zenmap/
cyse301@ubuntu:~$ head -n 6 passwd_pncm001
root:x:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
cyse301@ubuntu:~$ grep www passwd_pncm001
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
cyse301@ubuntu:~$
```