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CSC317

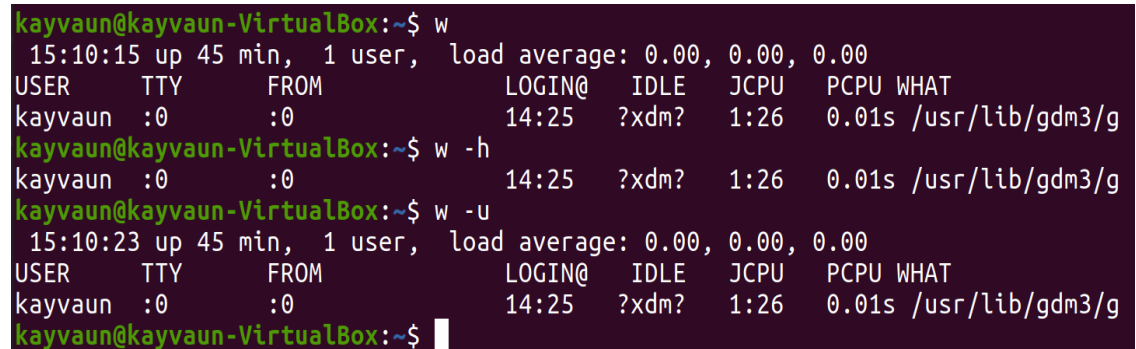
Due 6/7/2021

Assignment One

1. Done

2.

- a. When I run the Linux command: *telnet towel.blinkenlights.nl* I see Star Wars Episode IV playing in ASCII art.
- b. Command to determine kernel version: `uname -r`
Output: 5.8.0-55-generic
- c. Screenshot of my input and output to find current logged in user in 3 different ways:



```
kayvaun@kayvaun-VirtualBox:~$ w
 15:10:15 up 45 min,  1 user,  load average: 0.00, 0.00, 0.00
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU   WHAT
kayvaun   :0        :0              14:25    ?xdm?  1:26   0.01s  /usr/lib/gdm3/g

kayvaun@kayvaun-VirtualBox:~$ w -h
kayvaun   :0        :0              14:25    ?xdm?  1:26   0.01s  /usr/lib/gdm3/g

kayvaun@kayvaun-VirtualBox:~$ w -u
 15:10:23 up 45 min,  1 user,  load average: 0.00, 0.00, 0.00
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU   WHAT
kayvaun   :0        :0              14:25    ?xdm?  1:26   0.01s  /usr/lib/gdm3/g
kayvaun@kayvaun-VirtualBox:~$ █
```

- d. Command to show last 15 lines along with the output:
`cd /var/log`
`tail -n 15 kern.log`

```
kayvaun :0 :0 14:25 ?xdm? 1:26 0.01s /usr/lib/gdm3/g
kayvaun@kayvaun-VirtualBox:~$ cd /var/log
kayvaun@kayvaun-VirtualBox:/var/log$ tail -n 15 kern.log
Jun  7 14:25:16 kayvaun-VirtualBox kernel: [  9.270368] e1000: enp0s3 NIC Link is Up
1000 Mbps Full Duplex, Flow Control: RX
Jun  7 14:25:16 kayvaun-VirtualBox kernel: [  9.272126] IPv6: ADDRCONF(NETDEV_CHANGE)
: enp0s3: link becomes ready
Jun  7 14:25:26 kayvaun-VirtualBox kernel: [ 19.235365] 21:25:26.025001 main      VBox
Service 6.1.18 r142142 (verbosity: 0) linux.amd64 (Jan  7 2021 17:26:51) release log
Jun  7 14:25:26 kayvaun-VirtualBox kernel: [ 19.235365] 21:25:26.025005 main      Log
opened 2021-06-07T21:25:26.024993000Z
Jun  7 14:25:26 kayvaun-VirtualBox kernel: [ 19.235425] 21:25:26.025136 main      OS P
roduct: Linux
Jun  7 14:25:26 kayvaun-VirtualBox kernel: [ 19.235459] 21:25:26.025179 main      OS R
elease: 5.8.0-55-generic
Jun  7 14:25:26 kayvaun-VirtualBox kernel: [ 19.235492] 21:25:26.025212 main      OS V
ersion: #62~20.04.1-Ubuntu SMP Wed Jun  2 08:55:04 UTC 2021
Jun  7 14:25:26 kayvaun-VirtualBox kernel: [ 19.235537] 21:25:26.025245 main      Exec
utable: /opt/VBoxGuestAdditions-6.1.18/sbin/VBoxService
Jun  7 14:25:26 kayvaun-VirtualBox kernel: [ 19.235537] 21:25:26.025246 main      Proc
ess ID: 892
Jun  7 14:25:26 kayvaun-VirtualBox kernel: [ 19.235537] 21:25:26.025246 main      Pack
age type: LINUX_64BITS_GENERIC
Jun  7 14:25:26 kayvaun-VirtualBox kernel: [ 19.242040] 21:25:26.031705 main      6.1.
18 r142142 started. Verbose level = 0
Jun  7 14:25:26 kayvaun-VirtualBox kernel: [ 19.243388] 21:25:26.033070 main      vbgl
R3GuestCtrlDetectPeekGetCancelSupport: Supported (#1)
Jun  7 14:25:32 kayvaun-VirtualBox kernel: [ 25.467994] ISO 9660 Extensions: Microsof
t Joliet Level 3
Jun  7 14:25:32 kayvaun-VirtualBox kernel: [ 25.489283] ISO 9660 Extensions: RRIP_199
1A
Jun  7 14:25:32 kayvaun-VirtualBox kernel: [ 26.209396] rfkill: input handler disable
d
kayvaun@kayvaun-VirtualBox:/var/log$
```

- e. Command to show all login attempts for your username: "last"

```
kayvaun@kayvaun-VirtualBox:/$ last
kayvaun :0 :0 Mon Jun  7 14:25 still logged in
reboot system boot 5.8.0-55-generic Mon Jun  7 14:25 still running
kayvaun :0 :0 Mon Jun  7 14:21 - down (00:03)
reboot system boot 5.8.0-55-generic Mon Jun  7 14:20 - 14:25 (00:04)
```

- f. I would use `dmesg -H -e --level=err,warn`

```

Jun  7 14:25] unchecked MSR access error: WRMSR to 0x3a (tried to write 0x0000000000000001) at rIP: 0xffffffff97676314 (native_write_msr+0x4/0x30)
+0.000000] Call Trace:
+0.000004] ? init_tia32_feat_ctl+0x69/0xf0
+0.000002] init_intel+0xdd/0x400
+0.000001] identify_cpu+0x2f3/0x530
+0.000003] identify_boot_cpu+0x10/0x9a
+0.000001] check_bugs+0x2a/0x8a4
+0.000002] start_kernel+0x6b3/0x6ed
+0.000001] x86_64_start_reservations+0x24/0x26
+0.000001] x86_64_start_kernel+0x8b/0x8f
+0.000002] secondary_startup_64+0xb6/0xc0
+0.130913] acpi PNP0A03:00: fail to add MMCONFIG information, can't access extended PCI configuration space under this bridge.
+0.332268] platform eisa.0: EISA: Cannot allocate resource for mainboard
+0.000001] platform eisa.0: Cannot allocate resource for EISA slot 1
+0.000000] platform eisa.0: Cannot allocate resource for EISA slot 2
+0.000001] platform eisa.0: Cannot allocate resource for EISA slot 3
+0.000001] platform eisa.0: Cannot allocate resource for EISA slot 4
+0.000001] platform eisa.0: Cannot allocate resource for EISA slot 5
+0.000000] platform eisa.0: Cannot allocate resource for EISA slot 6
+0.000001] platform eisa.0: Cannot allocate resource for EISA slot 7
+0.000001] platform eisa.0: Cannot allocate resource for EISA slot 8
+1.665161] [drm:vmw_host_log [vmwgfx]] *ERROR* failed to send host log message.
+0.001271] [drm:vmw_host_log [vmwgfx]] *ERROR* failed to send host log message.
+0.732451] vboxguest: loading out-of-tree module taints kernel.
+0.043429] vgdrvHeartbeatInit: Setting up heartbeat to trigger every 2000 milliseconds
+0.049723] vboxguest: Successfully loaded version 6.1.18
+0.000036] vboxguest: misc device minor 58, IRQ 20, I/O port d040, MMIO at 00000000f0400000 (size 0x400000)
+16.032902] 21:25:26.025001 main    VBoxService 6.1.18 r142142 (verbosity: 0) linux.amd64 (Jan  7 2021 17:26:51) release log
21:25:26.025005 main    Log opened 2021-06-07T21:25:26.024993000Z
+0.000060] 21:25:26.025136 main    OS Product: Linux
+0.000034] 21:25:26.025179 main    OS Release: 5.8.0-55-generic
+0.000033] 21:25:26.025212 main    OS Version: #62~20.04.1-Ubuntu SMP Wed Jun 2 08:55:04 UTC 2021
+0.000045] 21:25:26.025245 main    Executable: /opt/VBoxGuestAdditions-6.1.18/sbin/VBoxService
21:25:26.025246 main    Process ID: 892
21:25:26.025246 main    Package type: LINUX_64BITS_GENERIC
+0.006503] 21:25:26.031705 main    6.1.18 r142142 started. Verbose level = 0
+0.001348] 21:25:26.033070 main    vbgldr3GuestCtrlDetectPeekGetCancelSupport: Supported (#1)

```

g. To show available disk space I use: `df -h`

```

kayvaun@kayvaun-VirtualBox:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            1.9G   0    1.9G   0% /dev
tmpfs           394M  1.4M  393M   1% /run
/dev/sda5        15G   7.2G   6.3G  54% /
tmpfs           2.0G   0    2.0G   0% /dev/shm
tmpfs           5.0M  4.0K   5.0M   1% /run/lock
tmpfs           2.0G   0    2.0G   0% /sys/fs/cgroup
/dev/loop0       56M   56M     0 100% /snap/core18/1988
/dev/loop1      219M  219M     0 100% /snap/gnome-3-34-1804/66
/dev/loop2       65M   65M     0 100% /snap/gtk-common-themes/1514
/dev/loop3       52M   52M     0 100% /snap/snap-store/518
/dev/loop4       32M   32M     0 100% /snap/snapd/11036
/dev/sda1        511M   4.0K   511M   1% /boot/efi
tmpfs           394M   68K   394M   1% /run/user/1000
/dev/sr1         59M   59M     0 100% /media/kayvaun/VBox_GAs_6.1.18
kayvaun@kayvaun-VirtualBox:~$

```

- h. In order to list the contents of the /var/log directory in alphanumeric order I would use:

cd /var/log

and then ls -v

```
kayvaun@kayvaun-VirtualBox:~$ cd /var/log
kayvaun@kayvaun-VirtualBox:/var/log$ ls -v
alternatives.log  dmesg          installer      ubuntu-advantage.log
apt              dmesg.0        journal        unattended-upgrades
auth.log          dpkg.log       kern.log       vboxadd-install.log
boot.log          faillog        lastlog        vboxadd-setup.log
bootstrap.log     fontconfig.log openvpn        wtmp
btmp             gdm3           private
cups             gpu-manager.log speech-dispatcher
dist-upgrade      hp            syslog
kayvaun@kayvaun-VirtualBox:/var/log$
```

- i. To list the files in /var/log in order of size I would use: `ls -laS`

```
kayvaun@kayvaun-VirtualBox:/var/log$ ls -laS
total 1972
-rw-r--r--  1 root      root      994853 Jun  7 14:23 dpkg.log
-rw-r-----  1 syslog    adm      489103 Jun  7 17:59 syslog
-rw-rw-r--  1 root      utmp      292292 Jun  7 14:24 lastlog
-rw-r-----  1 syslog    adm      130785 Jun  7 14:25 kern.log
-rw-r--r--  1 root      root      104003 Feb  9 10:47 bootstrap.log
-rw-r--r--  1 root      adm       50960 Jun  7 14:21 dmesg.0
-rw-r--r--  1 root      adm       47874 Jun  7 14:25 dmesg
-rw-r--r--  1 root      root      32032 Jun  7 14:24 faillog
-rw-r--r--  1 root      root      24751 Jun  7 14:22 alternatives.log
-rw-----  1 root      root      16756 Jun  7 14:25 boot.log
-rw-r--r--  1 root      root      10884 Jun  7 14:07 fontconfig.log
-rw-r-----  1 syslog    adm      10001 Jun  7 17:57 auth.log
drwxrwxr-x 13 root      syslog    4096 Jun  7 14:25 .
drwxr-xr-x 14 root      root      4096 Feb  9 10:56 ..
drwxr-xr-x  2 root      root      4096 Jun  7 14:22 apt
drwxr-xr-x  2 root      root      4096 Jun  7 14:21 cups
drwxr-xr-x  2 root      root      4096 Jan 19 13:47 dist-upgrade
drwx--x--x  2 root      gdm      4096 Nov 10  2020 gdm3
drwxr-xr-x  3 root      root      4096 Feb  9 10:49 hp
drwxrwxr-x  2 root      root      4096 Jun  7 14:08 installer
drwxr-sr-x+  3 root      systemd-journal 4096 Jun  7 14:20 journal
drwxr-xr-x  2 root      root      4096 Sep  5  2019 openvpn
drwx-----  2 root      root      4096 Feb  9 10:47 private
drwx-----  2 speech-dispatcher root      4096 Jan 19  2020 speech-dispatcher
drwxr-x--  2 root      adm       4096 Jun  7 14:21 unattended-upgrade
s
-rw-rw-r--  1 root      utmp      2688 Jun  7 14:25 wtmp
-rw-r--r--  1 root      root      1162 Jun  7 14:25 gpu-manager.log
-rw-r--r--  1 root      root       629 Jun  7 14:24 vboxadd-install.log
g
-rw-r--r--  1 root      root       157 Jun  7 14:24 vboxadd-setup.log
-rw-rw----  1 root      utmp        0 Feb  9 10:47 bttmp
-rw-----  1 root      root        0 Feb  9 10:47 ubuntu-advantage.log
kayvaun@kayvaun-VirtualBox:/var/log$
```

- j. Listing top 10 files who use the most disk space with: `du -a /var/log | sort -n -r | head -n 20`

```
kayvaun@kayvaun-VirtualBox:/var/log$ du -a /var/log | sort -n -r | head -n 20
du: cannot read directory '/var/log/gdm3': Permission denied
du: cannot read directory '/var/log/speech-dispatcher': Permission denied
du: cannot read directory '/var/log/private': Permission denied
35748 /var/log
32792 /var/log/journal
32788 /var/log/journal/7bdc51dc959d4c34833fc37140fe882f
8196 /var/log/journal/7bdc51dc959d4c34833fc37140fe882f/user-1000.journal
8196 /var/log/journal/7bdc51dc959d4c34833fc37140fe882f/user-1000@8ef52b4a23714f72b16
d4e97ae98fc8b-00000000000000418-0005c4339e5e67a4.journal
8196 /var/log/journal/7bdc51dc959d4c34833fc37140fe882f/system.journal
8196 /var/log/journal/7bdc51dc959d4c34833fc37140fe882f/system@7e6cf46881304f19b7d25f
bcc1efe6f4-0000000000000001-0005c4339d049f8b.journal
972 /var/log/dpkg.log
772 /var/log/installer
480 /var/log/syslog
364 /var/log/installer/initial-status.gz
280 /var/log/installer/syslog
216 /var/log/apt
128 /var/log/kern.log
108 /var/log/apt/history.log
104 /var/log/bootstrap.log
96 /var/log/installer/partman
60 /var/log/apt/eipp.log.xz
52 /var/log/dmesg.0
48 /var/log/dmesg
kayvaun@kayvaun-VirtualBox:/var/log$
```

- k. Command to show last 15 commands is: `history 15`

```
kayvaun@kayvaun-VirtualBox:/var/log$ history 15
25 cd Doc
26 cd Documents/
27 ls
28 cd ls
29 ls
30 ls -v
31 cd ..
32 ls
33 cd /var/log
34 cd /var/log
35 ls -v
36 ls -laS
37 clear
38 du -a /var/log | sort -n -r | head -n 20
39 history 15
kayvaun@kayvaun-VirtualBox:/var/log$
```

- I. More is a filter for paging through text one screenful at a time. More and less are essentially very similar however less is used with more features to limit the amount of data displayed. It's important to note that "less" provides more emulation plus extensive enhancements. Less gives more options on how to display data compared to more which simply displays one screenful at a time