**Lab 3 Tasks**

1. Display the following information

* How long the Course Server has been running since its last boot – **uptime command says 172 Days**
* The directory in which you are currently – **pwd says /home/n00961805**
* All of the users who are currently logged onto the Course Server –

**12:12:43 up 172 days, 2:32, 1 user, load average: 0.00, 0.00, 0.00**

**USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT**

**n0096180 pts/0 192.168.100.37 12:09 3.00s 0.03s 0.00s script lab3.log**

**n0138620 pts/0 192.168.100.42 12:05 0.00s 0.03s 0.00s script lab3.log**

* The exact name and version of the operating system installed on the Course Server – **Using cat /etc/os-release displays the information shows below:**

**NAME="Ubuntu"**

**VERSION="16.04.5 LTS (Xenial Xerus)"**

**ID=ubuntu**

**ID\_LIKE=debian**

**PRETTY\_NAME="Ubuntu 16.04.5 LTS"**

**VERSION\_ID="16.04"**

**HOME\_URL="http://www.ubuntu.com/"**

**SUPPORT\_URL="http://help.ubuntu.com/"**

**BUG\_REPORT\_URL="http://bugs.launchpad.net/ubuntu/"**

**VERSION\_CODENAME=xenial**

**UBUNTU\_CODENAME=xenial**

* All of the current processes running on the Course Server – **The command “ps ux” displays these processes (I could have used the top command as well):**

**n009618+ 23792 0.0 0.2 45276 4664 ? Ss 12:09 0:00 /lib/systemd/systemd --user**

**n009618+ 23793 0.0 0.0 143220 1988 ? S 12:09 0:00 (sd-pam)**

**n009618+ 23817 0.0 0.2 92832 4148 ? S 12:09 0:00 sshd: n00961805@pts/0**

**n009618+ 23818 0.0 0.0 12876 1892 ? Ss 12:09 0:00 /usr/lib/openssh/sftp-server**

**n009618+ 23819 0.0 0.2 22648 5292 pts/0 Ss 12:09 0:00 -bash**

**n009618+ 23833 0.0 0.1 22036 2516 pts/0 S+ 12:09 0:00 script lab3.log**

**n009618+ 23834 0.0 0.2 22544 5180 pts/1 Ss 12:09 0:00 bash -i**

**n009618+ 23860 0.0 0.1 37360 3276 pts/1 R+ 12:18 0:00 ps ux**

* Only the current processes running under **your username** on the Course Server – **The top command “top -U n00961805” displays the following:**

**top - 12:20:47 up 172 days, 2:40, 1 user, load average: 0.00, 0.00, 0.00**

**Tasks: 118 total, 1 running, 117 sleeping, 0 stopped, 0 zombie**

**%Cpu(s): 0.0 us, 0.0 sy, 0.0 ni,100.0 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st**

**KiB Mem : 2048312 total, 265092 free, 130836 used, 1652384 buff/cache**

**KiB Swap: 2097148 total, 2097112 free, 36 used. 1682272 avail Mem**

**PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND**

**23872 n009618+ 20 0 41812 3796 3136 R 0.3 0.2 0:00.01 top**

**23792 n009618+ 20 0 45276 4664 3960 S 0.0 0.2 0:00.00 systemd**

**23793 n009618+ 20 0 143220 1988 0 S 0.0 0.1 0:00.00 (sd-pam)**

**23817 n009618+ 20 0 92832 4148 3220 S 0.0 0.2 0:00.01 sshd**

**23818 n009618+ 20 0 12876 1892 1732 S 0.0 0.1 0:00.00 sftp-server**

**23819 n009618+ 20 0 22648 5292 3360 S 0.0 0.3 0:00.03 bash**

**23833 n009618+ 20 0 22036 2516 2340 S 0.0 0.1 0:00.00 script**

**23834 n009618+ 20 0 22544 5180 3332 S 0.0 0.3 0:00.02 bash**

1. Discover the following information about the Course Server’s network connection:

* Number of network devices – **“ifconfig -a” shows 2 devices**
* Name of each network device – **“ifconfig -a” shows the names ens160 and lo**
* **IP** address (xxx.xxx.xxx.xxx) assigned to each network device (if present)

**Ens160 = 192.168.100.71**

**Lo = 127.0.0.1**

* **IPv6** address (xxxx::xxxx:xx:xxxx:xxxx/64) assigned to each network device (if present)

**Ens160 = fe80::218:8bff:fe57:206c/64**

**Lo = ::1/128**

* **MAC** (hardware) address (xx:xx:xx:xx:x:xx) assigned to each network device

**Ens160 = 00:18:8b:57:20:6c**

**Lo = not assigned a MAC Address**

* **Broadcast** address (xxx.xxx.xxx.xxx) assigned to each network device (if present)

**Ens160 = 192.168.101.255**

**Lo = not assigned a Broadcast Address**

* **Subnet Mask** (xxx.xxx.xxx.xxx) assigned to each network device (if present)

**Ens160 = 255.255.254.0**

**Lo = 255.0.0.0**

1. In your home directory, perform the following steps

* Create a folder named **lab2**
* In the **lab2** folder - **mkdir lab2**
  + Create an empty file named **myPets** (do **NOT** use a text editor) – **touch myPets**
  + Store the text Dog: Morris in the **myPets**file (do **NOT** open the file) – **echo “Dog: Morris” >> myPets**
  + Display the contents of the **myPets**file (do **NOT** open the file) – **cat myPets**
  + Using the sed command, change **Dog** to Cat in the **myPets** file (do **NOT** open the file) - **sed 's/Dog/Cat/' myPets**
  + Display the contents of the **myPets**file (do **NOT** open the file) – **cat myPets**

1. For each **month** of the year, count how many files in the **/bin** directory have a timestamp for that month – Command used “ls -ltr \* | grep -c [Month Name]”

**January - 33**

**February - 10**

**March - 28**

**April - 10**

**May – 26**

**June - 15**

**July - 4**

**August - 16**

**September - 9**

**October - 15**

**November - 2**

**December – 3**

**Lab Questions**

1. Answer the following questions about the directory size:
   * What is the size (in **MB**) of the /etc directory? – **Command “du -s /etc” shows 5.9M /etc**
   * Which directory is **bigger**: /etc, /bin or /sbin)? - **/bin is bigger than /sbin by 3M**
2. What is the purpose of the watch command? – **It will run the command that you specify at regular intervals.**
3. Answer the following questions about memory:
   * What is the **total** amount of memory (RAM) installed in the Course Server? - **cat /proc/meminfo or free -m shows 2048312 kB ~ 2GB**
   * What is the amount of **used** memory? **127 kb**
   * What is the amount of **free** memory? **265108 kB**
   * What is the amount of **shared** memory? **20 kb**
   * What is the amount of **available** memory? **1682584 kB**
4. What does the symbol **>** do in the command **dir > myFile**? -**It redirects the output of the dir command to a file called myFile.**
5. What does the symbol **>>** do in the command **dir >> myFile**? **It appends the output of the dir command to a file called myFile.**
6. What does the symbol **|** do in the command **dir | find myFile**? **The dir command is run then the | symbol means that another command is going to follow. Then the find command is run based off what was returned by the first command.**