Assingment 4 Angel Camacho Oct 5, 2020

1. Man Pages (15 points)

    - at

The command is used to run a job at a latter time, or at a specific time you want. You can create a script ant then executed it like normal but with the at command you can execute the script at a certain time. The command is usually executed or used if you want to run a certain thing one time at a certain day.

    - cron

The cron command is very simmilar to the at command the cifrence is that with the cron command it is mainly used if you are going to schdule multiple jobs through the day, week or year. The cron command from my understanding is stored at a certain location in the system. An important key thing to note is the diffrence between cron and cron tab. The cron command according to the man page is located at "/etc/rc.d/init.d" but something that the cron command can be used for is looking for the location of crontabs not only that but it can examine them.

    - crontab (confing file)

The crontab configuration file is where the actuall "meat" is at from a cron job, this is where we specify at what time, what day, and what to do is at. To put this into perspective It is essentailly a file that contains the instructions.

    - date

The date command is used to print time and or change the time information on the computer. The date command will first print out the date time and year. If the command can be executed as such to change/set the time and year: date -s " " . A cool and interesting thing about this command is the fact that one can dictace how the format should be.

    - journalctl

The journalctl command is used to view and manipulate system logs. When the command is executed: journalctl it will print a list of a lot of logs dated from oldest to newest. A nother cool flag one can use is the -u which will let you especify which "unit" you want to take a look at.

    - ps

The ps command is used to display the running processes in the current shell. It is very simmilar to top, and htop depending on what one is using. A cool flag is the -l flag which will let you list more information on a process. When the command is executed as such: ps -f it will display the UID PID PPID C STIME TTY TIME CMD.

    - sleep

The sleep command essentially is used to enter the sleep mode, while it has various functionalities its main purpose is to pause for a specified amount of time. The sleep command can be used to wait a certain amount of time, it can be usefull if you want a certain thing to be executed after an amount of

time personally I dont like it that much because if one sleeps they will not be allowed to enter command unless CRTL + C is done. But maybe it can be used if one is writting a cron job.

- systemctl

The systemctl command when executed it will print a list of Units with their description wheather they are active and running, and their location. systemctl can be esecuted with diffent "flags" stauts, start, restart, reload, show and specify what you want to do to the service.unitname. Honestly this command was pretty confusing im not.

- systemd

From my understanding systemd will activate a "signal", register a name and set up and API bus. I apologise but after trying to read a lot about the documentaiton of htis command I failled to understand what the core "value" of this command is.

- systemd.service

This command is very much like the systemd command the diffrence beaing one can specify the service. In which the command will be executed on.

- trap

The trap command is used to essentially capture an interupt signal and then clena it up. This command is mainly takeplace inside a scrip. To be more specific we can specify a script to do something specific after it has detected a certain signal. For example if it detects signal 0 (which is a sucess signal) then we can print out something out. An important factor to know it that it can not catch the sigstop command or the sigkill command. One can catch multiple signals with a space between the signals.

- uptime

The uptime command is used to see for how long has the system been up for. There is not much for me to write about..

- w

The w command is used to see who is logged on the machine and what they may be doing (sorry if I sould very similar to the man page the command is very "direct"). When the w command is executed it will print the uptime but not only that but it will give you the user which is log in.

2. Shadow Password (5 points)

   From my understanding passwords used to be stored at /etc/passwd directory as hashes and this file was redable to anyone due to the fact that it had to be used to authenticate users loging in. However because of obious security reasons the hashes beaing exposed to beaing possibly to be decripted it was swaped for the /etc/shadow, and not the only one who is able to see the /etc/passwd firectory was root. In short Shadow passwords are used to create a certain level of security by not exposing the hases from /etc/passwd.

3. Simple Shell Script (9 points)

   Done

```
#!/bin/bash
echo "Which directory do you wish to search? "
read udirectory
for i in $udirectory;do echo "The Number of inodes $i is $(find $i | wc -l |
ls -la )";done
```

Command log:

```
touch findHardLink.sh
cat findHardLink.sh
sh findHardLink.sh
```

4. Simple Shell Script (8 points)

   Done.

```
#!/bin/bash
echo $(date) >> /tmp/state.log; echo $(w) >> /tmp/state.log; echo $(ps) >>
/tmp/state.log
```

   Out put may look ugly but everything should be there.

   The cron job is in the vm

```
*/5 * * * * /home/angelc/CS480/hw4/state.sh
```

5. Simple Shell Script (8 points)

   Only Half.

```
#!/bin/bash
mv /tmp/state.log /home/angelc/CS480/hw4/statelog.$(date +%Y%M%d)
```

   The question does not specify where it should be placed but but if we want to change where its move we just change the second directory.

6. Install Gnome (3 points)

   Done.

7. Modify GUI (4 points)

   Done. systemctl set-default graphical.target

8. Bash Shell Script (13 points)

   Done.

```
#!/bin/bash

trap "echo Traped, Signal Detected! >> /root/trap.log" INT QUIT TERM HUP
USR1 USR2
trap "rm /var/run/trap.pid && exit 0;" TERM
echo $$ > /var/run/trap.pid
while true
do
echo $0 $$ $(date) >> /root/trap.log
sleep 10
done

exit 0
```

9. Create and Configure new Service (10 points)

   Done.

```
[Unit]
Description=This service makes sure that my trap(dot)Sh file restarts on
faliure
Description=My Miscellaneous Service
Requires=graphical.target

[Service]
Type=simple
User=root
WorkingDirectory=/root
ExecStart=/root/trap.sh
Restart=on-failure
```

10. Submit Files (5 points)

    Done.

11. Submit PDF (10 points)

    Done.

12. Feedback (5 points)

    I estimate I took about 24+ hours to complete the assingment. What was the most difficult for me was my determination the scripting all the commands make me feel like I am learning a lot but at least I feel like I was not prepared for the scripting section, I had to do so much research and I just wanted to give up at points. Scripting is something I need to work on, it is definetly usefull for linux administration.