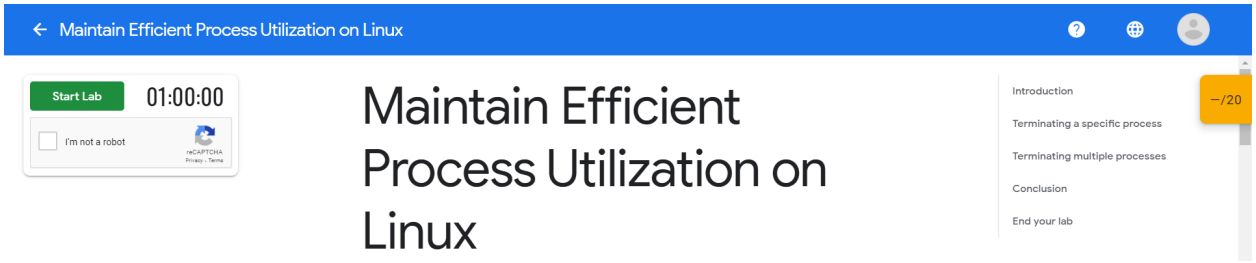
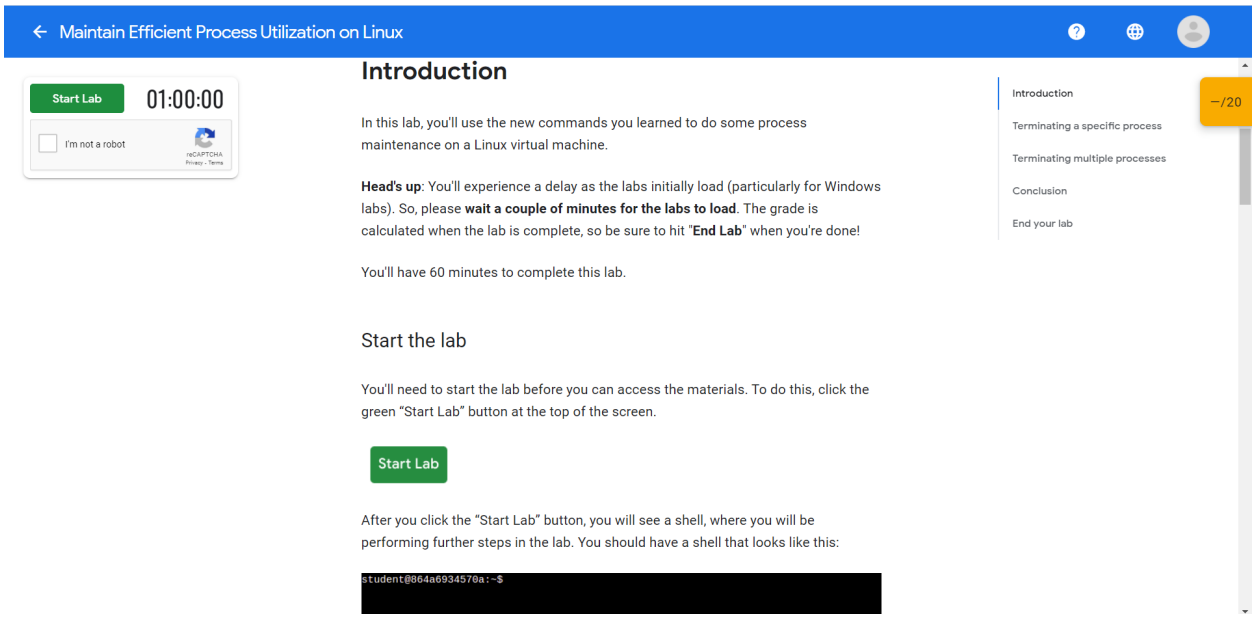
Coursera:
Operating systems and you: Becoming a Power user :
Week 5: Maintaining efficient process utilization on Linux :





Start Lab 01:00:00

I'm not a robot

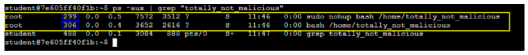
Terminating a specific process

The ps -aux command allows you to list all currently running processes on a Linux machine. However, the list of processes is often super long, which makes finding a specific process pretty tough. To filter the processes you're interested in, you can pipe the output of ps through grep.

There are two "malicious" processes currently running on your machine, called "totally_not_malicious". You can run ps and grep to find them, using this command:

```
ps -aux | grep "totally_not_malicious"
```

You should see output similar to this. The top two lines are the two processes, while the last line is the grep process you just used to search for them. Check out the four-digit numbers on the left of each of the rows; these are the process IDs.



To stop a process, you can use the kill command. You need to use sudo to have permission to stop them. You also need to specify the ID of the process, which will likely be different on your machine than what's shown above (the ID is outlined in light blue):

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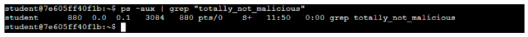
```
sudo kill [PROCESS ID]
```

After killing the processes, you can verify that they're no longer running by running the original command again:

```
ps -aux | grep "totally_not_malicious"
```



Click Check my progress to verify the objective.

Stop the malicious processes

Check my progress

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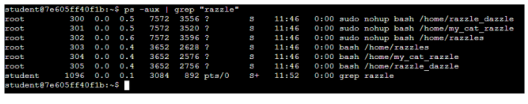
Terminating multiple processes

There are also multiple processes running on your computer containing the word "razzle". You can find them in the same way that you found the previous process using ps. Because grep doesn't look for full matches, it can be used to find any process that contains a specific substring:

```
ps -aux | grep "razzle"
```

The below shows all six processes that contain the word "razzle". (Again, you can ignore the last process because it's the process running grep.)



To kill each of the processes, you can use the same kill command as before, substituting in each process ID:

```
sudo kill [PROCESS ID]
```

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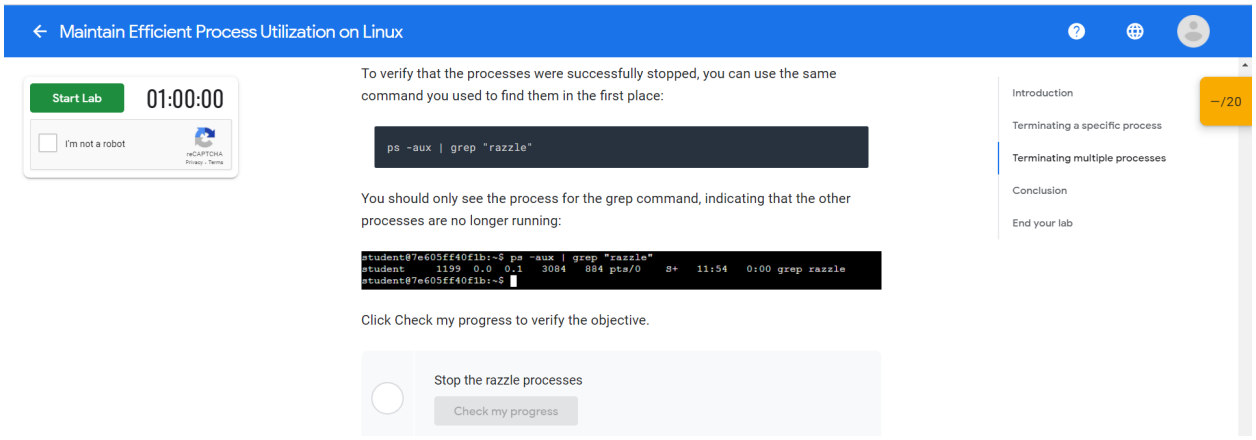
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To verify that the processes were successfully stopped, you can use the same command you used to find them in the first place:
ps -aux | grep "razzle"
You should only see the process for the grep command, indicating that the other processes are no longer running:
student@7e605ff40f1b:~$ ps -aux | grep "razzle"
student 1199 0.0 0.1 3084 884 pts/0 S+ 11:54 0:00 grep razzle
student@7e605ff40f1b:~$
Click Check my progress to verify the objective.
Stop the razzle processes
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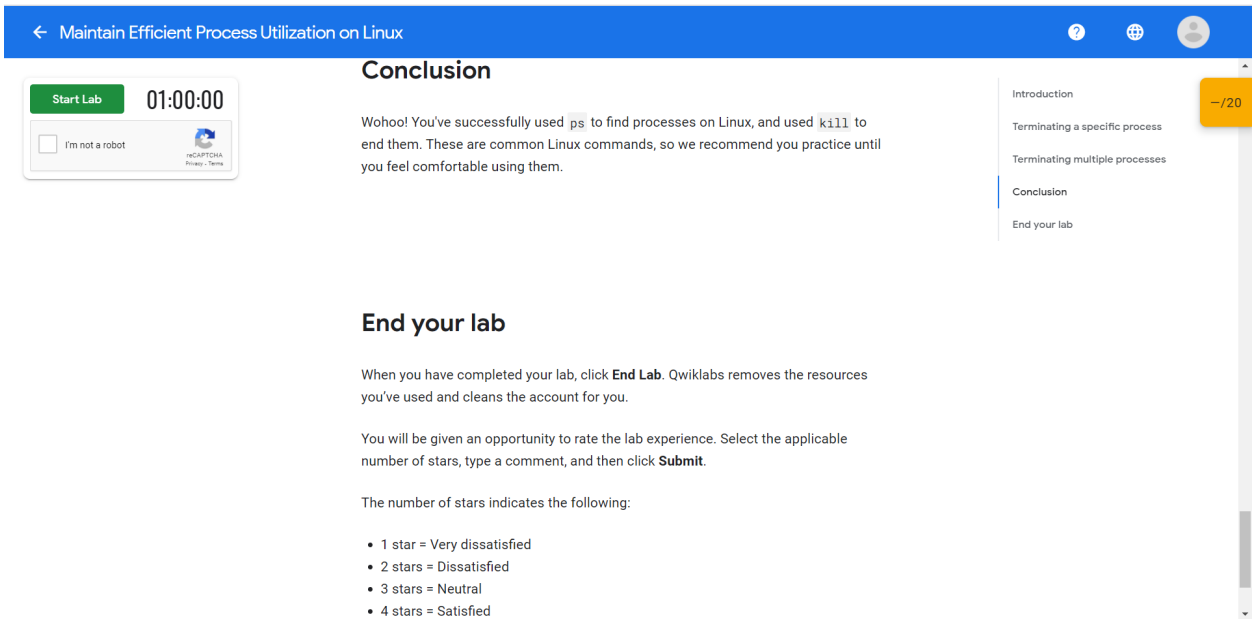
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Conclusion
Wohoo! You've successfully used ps to find processes on Linux, and used kill to end them. These are common Linux commands, so we recommend you practice until you feel comfortable using them.
End your lab
When you have completed your lab, click End Lab. Qwiklabs removes the resources you've used and cleans the account for you.
You will be given an opportunity to rate the lab experience. Select the applicable number of stars, type a comment, and then click Submit.
The number of stars indicates the following:
1 star = Very dissatisfied
2 stars = Dissatisfied
3 stars = Neutral
4 stars = Satisfied
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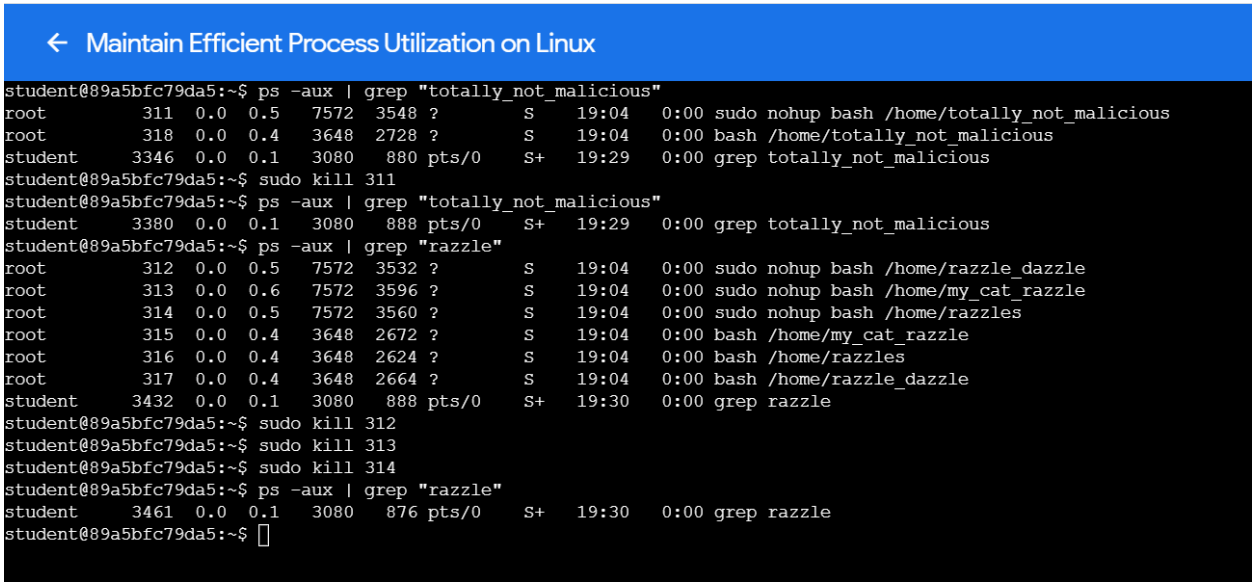
Maintain Efficient Process Utilization on Linux
student@89a5bfc79da5:~$ ps -aux | grep "totally_not_malicious"
root 311 0.0 0.5 7572 3548 ? S 19:04 0:00 sudo nohup bash /home/totally_not_malicious
root 318 0.0 0.4 3648 2728 ? S 19:04 0:00 bash /home/totally_not_malicious
student 3346 0.0 0.1 3080 880 pts/0 S+ 19:29 0:00 grep totally_not_malicious
student@89a5bfc79da5:~$ sudo kill 311
student@89a5bfc79da5:~$ ps -aux | grep "totally_not_malicious"
student 3380 0.0 0.1 3080 888 pts/0 S+ 19:29 0:00 grep totally_not_malicious
student@89a5bfc79da5:~$ ps -aux | grep "razzle"
root 312 0.0 0.5 7572 3532 ? S 19:04 0:00 sudo nohup bash /home/razzle_dazzle
root 313 0.0 0.6 7572 3596 ? S 19:04 0:00 sudo nohup bash /home/my_cat_razzle
root 314 0.0 0.5 7572 3560 ? S 19:04 0:00 sudo nohup bash /home/razzles
root 315 0.0 0.4 3648 2672 ? S 19:04 0:00 bash /home/my_cat_razzle
root 316 0.0 0.4 3648 2624 ? S 19:04 0:00 bash /home/razzles
root 317 0.0 0.4 3648 2664 ? S 19:04 0:00 bash /home/razzle_dazzle
student 3432 0.0 0.1 3080 888 pts/0 S+ 19:30 0:00 grep razzle
student@89a5bfc79da5:~$ sudo kill 312
student@89a5bfc79da5:~$ sudo kill 313
student@89a5bfc79da5:~$ sudo kill 314
student@89a5bfc79da5:~$ ps -aux | grep "razzle"
student 3461 0.0 0.1 3080 876 pts/0 S+ 19:30 0:00 grep razzle
student@89a5bfc79da5:~$