

**LAB**

**LINUX SYSTEM ADMINISTRATION**

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VERSION 2

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**LAB:** LAB06-01

**OBJECTIVE**: The objective of this lab is to learn how to assess system performance and create/terminate processes.

**INSTRUCTIONS**: These labs will test your ability to actively research how to perform a required action on a Linux operating system. All questions asked (below) should be included in a lab report. This lab report should be written in Microsoft Word and include a numbered list corresponding to the task (below). This list must include a clear screenshot of the command and its output. Please follow the instructions for submitting this assignment on Blackboard.

* You should be logged in as ***labuser1*** with the password ‘P@$$w0rd’
* You must be in the /labs/CH06 folder to complete this lab.

**MEMORY MANAGEMENT**

1. Using the ***free*** command, check how much memory and virtual memory are available on the system.
   1. How much of this did you understand?
2. Using the ***free*** command and the switch that puts these values into a human-readable format, check how much memory and virtual memory are available on the system.
   1. Is it more readable now?
3. Using the ***free*** command and the switch that shows the low and high values, determine how much memory and virtual memory are available.
   1. What do you see?
   2. Is it more readable now?

**PROCESS MANAGEMENT**

1. \*Execute the script in this folder by typing ***./lab06-01.sh &*** at the command prompt. *This script spawns several* ***lynx*** *web browsers in the background.*

*Ensure you hit the enter key; any messages that appear can safely be ignored.*

1. Pipe the output of the ***ps*** command to the ***grep*** command listing only the ***lynx*** process.
   1. What did you observe?
2. Using the ***pstree*** command, list the ***lynx*** process.
   1. What did you observe?
3. Pipe the output of the ***ps*** command to the ***grep*** command listing only the ***lab06-01.sh*** script's process.
   1. What did you observe?
   2. Find the PID of ***lab06-01.sh*** script from the output of the previous command.
4. Using the ***kill*** command, the signal ***9*** switch (terminate immediately), and the PID from the previous command terminate the ***lab06-01.sh*** scripts process.
   1. Run the commands you used in steps 6 and 8 again.
   2. What did you observe?
5. Again, execute the script in this folder by typing ***./lab06-01.sh &*** at the command prompt. *This script spawns several* ***lynx*** *web browsers in the background.*
6. Using the ***kill*** and ***killall*** commands, follow the steps below:
   1. List all of the ***lynx*** processes.
   2. Terminate one of those processes using the ***kill <PID>*** command.
   3. Terminate another ***lynx*** process this time using the signal ***9*** switch.
   4. Relist the ***lynx*** processes.
   5. What did you notice when you relisted the running processes?
   6. Kill all of the remaining ***lynx*** processes using one command, and ensure you use the signal ***9*** switch. ***DO NOT*** *terminate* ***lab06-01.sh*** *process yet.*
   7. Which command and options did you use?
   8. Relist the ***lynx*** processes; are they all terminated?
   9. Now terminate ***lab06-01.sh*** process.

**PROCESS PRIORITY**

1. Again, execute the script in this folder by typing ***./lab06-01.sh &*** at the command prompt. *This script spawns several* ***lynx*** *web browsers in the background*
2. Using the ***top*** command, see if the ***lynx*** or ***lab06-01.sh*** process is one of the top processes.
   1. Filter the processes out, focusing on user ***labuser1***.
   2. What do you observe?
   3. Exit ***top***.
3. Pipe the output of the ***ps*** command using the *user process switch* to the ***grep*** command listing only the ***lab06-01.sh*** script's process.
4. Use the ***renice***[[1]](#footnote-1) command, to change the priority of ***lab06-01.sh*** PID to 5.
5. Pipe and scrutinize the output of the ***ps*** command using the *user process switch* to the ***grep*** command listing only the ***lab06-01.sh*** script's process.
   1. What changed?
6. Using the ***top*** command, see if the ***lynx*** or ***lab06-01.sh*** process is one of the top processes.
   1. Filter the processes out, focusing on user ***labuser1***.
   2. What do you observe this time?
   3. From ***top***, find and terminate using signal ***9*** the ***lab6-01.sh*** process.
   4. Find and type the PID of ***lab6-01.sh*** process.
   5. What did you observe?
   6. Exit ***top***.

**SCREEN**

1. Using the ***pstree*** command, list the processes for ***labuser1***.
   1. What do you observe?
2. Type the ***screen*** command, and start the screen virtual window manager.
   1. Type [ESC] to continue.
3. Using the ***pstree*** command, list the processes for ***labuser1***.
   1. What do you observe?
4. Start a new virtual screen session.
   1. Start the ***top*** program.
   2. While in the ***top*** program, move back to the previous screen.
5. Start a new virtual screen session.
   1. Start the ***lynx*** program and navigate to ccac.edu.
   2. While in the ***lynx*** program, move back to the previous screen.
6. List the virtual consoles.
   1. Choose the first one “1”.
   2. What screen are you on?
   3. Exit the ***top*** program, then type the ***exit*** command.
7. List the virtual consoles again.
   1. Choose the second one “2”.
   2. What screen are you on?
   3. Quit the ***lynx*** program, then type the ***exit*** command.
8. Exit the screen virtual screen session.
   1. Type the ***exit*** command.

1. You will have to use the ***sudo*** command for these steps. [↑](#footnote-ref-1)