CIS 90 Linux Lab Exercise

Lab 8: Process Control
Spring 2014

Lab 8: Process Control

In this lab you will use the **ps** command to monitor processes as you create them using UNIX commands.

Preparation

Everything you need to do this lab can be found in the Lesson 10 materials on the CIS 90 website: http://simms-teach.com/cis90calendar.php. Review carefully all Lesson 10 slides, even those that may not have been covered in class.

Check the forum at: http://oslab.cishawks.net/forum/ for any tips and updates related to this lab. The forum is also a good place to ask questions if you get stuck or help others.

If you would like some additional assistance come to the CIS Lab on campus where you can get help from instructors and student lab assistants: http://webhawks.org/~cislab/.

Procedure

Log on to Opus so that you have a command line shell at your service. Be sure you are in your home directory to start this lab.

1. Run the C shell program **csh**. Did your prompt change?

2. Now run the Bourne shell **sh**. Different prompt again?

3. Run the **ps** command to see that you have three shell processes running.

4. Run the **ps** command with the **−l** option (for long format). Look at the column headed by the symbol *SZ*. This is the size of the process in 1K blocks. Which of the three shells that you are running is the largest? Redirect that line of output to the file *bigshell*.

5. Now terminate the Bourne and C shells by typing the **exit** command twice.

6. Run the **ps** command with the **-ef** option. What is the parent (*PPID*) of your shell process? The Grandparent? The Great Grandparent? How far can you go?

7. What is the name of the program with the PID of 1? What is its parent?

8. Run the **app** command in the foreground.

9. Notice that you are stuck. Bring up another window on Opus and kill this process. Hint: use the command **ps -u $LOGNAME** to find the PID number.

10. Run the **app** command in the background by adding an **&** on the command line. (Hit the Enter key to get your prompt back)

11. Now try to log out by entering the **exit** command. What does the shell say?

12. Enter **exit** again, and then log back in. Use **ps** to check on the app process. Is it there? What happened?

13. This time enter the following command:
    find $HOME > files.out   2>/dev/null   &

Submittal

1. We will now use the **at** command to submit the work you have just done. Since the find process may not be finished running yet, we will set the command to be executed just before midnight. The **at** command gets its input from *stdin*, so you will have to type the following lines:

    at 11:59pm
    at> **cat files.out bigshell > lab08**
    at> **cp lab08 /home/rsimms/turnin/cis90/lab08.$LOGNAME**
    at> *<Ctrl-D>*

    Note: the Ctrl-D (hold down the Ctrl key and tap the D key) must be entered as the first character on the last line.

    > It highly recommended that you don't do the submittal as shown above on the day the lab is due. If you make a mistake you will miss the deadline and receive no credit for your lab. Instead set an earlier time on the **at** command so you can verify it worked as expected or just do the lab earlier in the week.

    If you get a warning message from the **at** command about using the Bourne shell to execute your job, that is ok.

    Tomorrow morning you should see the file, *lab08* in your home directory and the submitted copy in the instructor's *turnin* directory.

Be sure to verify that your submittal was completed before the deadline. No late work is accepted.

Grading Rubric (30 points total)

10 points for creating bigshell correctly
    -2 if not a single line
    -2 if not using long format
    -4 if indicates wrong shell
    -5 if does not indicate biggest shell
    -10 if ps output is missing entirely
10 points for creating files.out correctly
10 points for submitting correctly