Unix-like Operating Systems
Processes and jobs.

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Contents

Discussion of homework

- How to print names of regular files from your home directory, that have size bigger then 2 megabytes, and how to verify the result by the command `stat`?

- How to print names of all files from your home directory, that were accessed 7 days ago, and how to verify the result by the command `stat`?

- How to print names of regular files from the directory `/tmp`, that you can read, and how to verify the result by the command `ls`?

Processes – reports

- Run the command `passwd` in one terminal and solve the following question in the second terminal.
- How many processes has been started by the current user? Verify your answer.

Processes – reports

- How many processes has been started by the user `root`?
- How many processes are running under the effective user identity of the user `root`?
- How to print the processes which have different real and effective user identity?

Timing statistics

- How to print timing statistics (real time, system time, user time,...) for the following processes?
  - Commands

    ```
    for (( i=0; i<100000; i++ )); do :; done
    ```

    ```
    du ~
    ```

    ```
    sleep 5
    ```

    ```
    ls; sleep 5;
    ```

- Try to explain the previous results.

- How to print information about top cpu processes?
- Login to server `fray1.fit.cvut.cz`.
- How to print report information about processes and users by command `prstat`?
- How to print process tree?

Signals

- How to print a list of available signals?
- Run the command `sleep 100 &`. How to send signal QUIT to this process?
- How to print a list of commands associated with each signal of the current shell?
- How to modify the behaviour of the current shell so that the shell will print "Hello", if it receives signal INT?

- How to reset the current shell to default behaviour for signal INT?
- How to run 100 times program `sleep 1000` in the background?
- How to kill all processes `sleep` started in the previous task?

- What is the difference between process ID (PID) and job ID (JID)?
- How to list all jobs in the current shell?
- How to run the command `sleep 1000` in foreground.
- How to move the previous command to the background without termination?
- How to terminate the previous command?

Homework

- How to print a name of the process which occupies the most physical memory?

- How to print a name of the process which has the most threads?

- Login to the server `fray1.fit.cvut.cz`.
  How to print a name of the process which spent the most time on CPU (cumulative time)?