



### Lab 23.1: Processes

1. Run **ps** with the options **-ef**. Then run it again with the options **aux**. Note the differences in the output.
2. Run **ps** so that only the process ID, priority, nice value, and the process command line are displayed.
3. Start a new **bash** session by typing **bash** at the command line. Start another **bash** session using the **nice** command but this time giving it a nice value of 10.
4. Run **ps** as in step 2 to note the differences in priority and nice values. Note the process ID of the two **bash** sessions.
5. Change the nice value of one of the **bash** sessions to 15 using **renice**. Once again, observe the change in priority and nice values.
6. Run **top** and watch the output as it changes. Hit **q** to stop the program.

## Solution 23.1

1. `$ ps -ef`  
`$ ps aux`

2. `$ ps -o pid,pri,ni,cmd`

PID	PRI	NI	CMD
2389	19	0	bash
22079	19	0	ps -o pid,pri,ni,cmd

(Note: There should be no spaces between parameters.)

3. `$ bash`  
`$ nice -n 10 bash`  
`$ ps -o pid,pri,ni,cmd`

PID	PRI	NI	CMD
2389	19	0	bash
22115	19	0	bash
22171	9	10	bash
22227	9	10	ps -o pid,pri,ni,cmd

4. `$ renice 15 -p 22227`  
`$ ps -o pid,pri,ni,cmd`

PID	PRI	NI	CMD
2389	19	0	bash
22115	19	0	bash
22171	4	15	bash
22246	4	15	ps -o pid,pri,ni,cmd

5. `$ top`