

LPIC-1 101-500 – Lesson 6

103.6 Modify process execution priorities



Process Priorities

- The Linux system allows us to set the priority of processes.
- The priority values for a process range from **-20** to **19**. Priority **-20** is the highest possible priority and **19** the lowest possible (even though its higher numerically).
- The default priority for newly created processes is **0**.
- Priorities can be re-defined before or after the creation of a process.



Show Priorities

- `$ ps -efl | less #` the **NI** field will display the priority for each process (**-l**).
- `$ ps -lu user #` the **NI** field will display the priority of each processes by user **user**.
- `$ top #` the **NI** field will display the priority for each process.



Run processes with different priority with `nice`

- `$ nice top # = nice -10, nice -n 10`. run `top` with priority `10` (default for `nice`). `H top` will have lower priority than `0` and thus will be “nicer” (hence `nice`).
- `# nice --10 find / > all-files.txt & # = nice -n -10`. increase the priority of the `find` process at `-10` and send process to background. The first dash is for the option and the second for the negative sign in `-10`.

*Note: only the **root** user has the right to set negative priorities.*



Change the priority of running processes with `renice`

- `$ renice 6 1755 1786 # change the priority of processes 1755 and 1786 to 6.`

Note1: the first argument is mandatory and sets the priority number.

Note2: the priority in renice is an argument, not an option! So we don't need dash, unless we are setting a negative priority.

Note3: in case priority exceeds number 19 then it is set to the lowest priority which is 19.



Change the priority of running processes with `renice`

- `# renice -15 -u user` # increase the priority of all processes owned by `user`. Only the `root` user has the right to set negative priorities.

Note1: the dash (-) symbol is the negative sign not option dash.

Note2: when the absolute value of a negative priority is greater than -20, e.g., -35, the process will assume a priority of -20.

Change the priority of running processes with `renice`

Options:

- **-u** # set the user
- **-p** # set the **PID**. Mandatory only if followed by **-u**.
- **# renice 12 1548 -u user1 user2 -p 1289 #**
change priority to **12** for all the processes of **user2** and PIDs **1548** and **1289**.

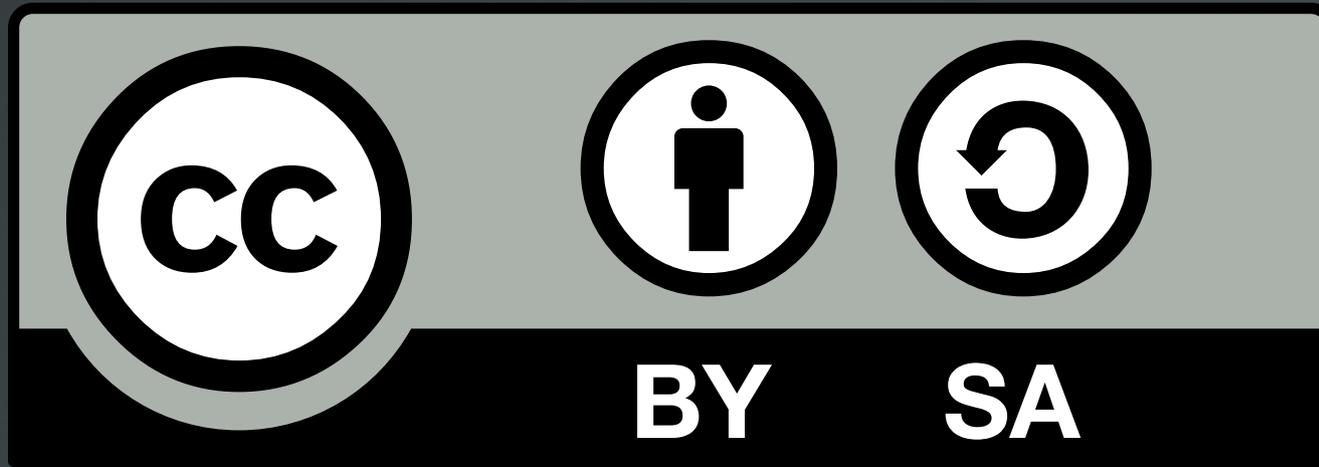


Change priorities from `top`

- `$ top` # find a PID that was run by you.
- `r` # Press "r" for renice.
- `<PID>` # set the PID of the chosen process.
- `<PRI>` # Set a priority (0 – 19 for normal users, -20 – (+)19 for root).



License



The work titled "LPIC-1 101-500 – Lesson 6" by Theodotos Andreou is distributed with the Creative Commons Attribution ShareAlike 4.0 International License.

