

# 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**



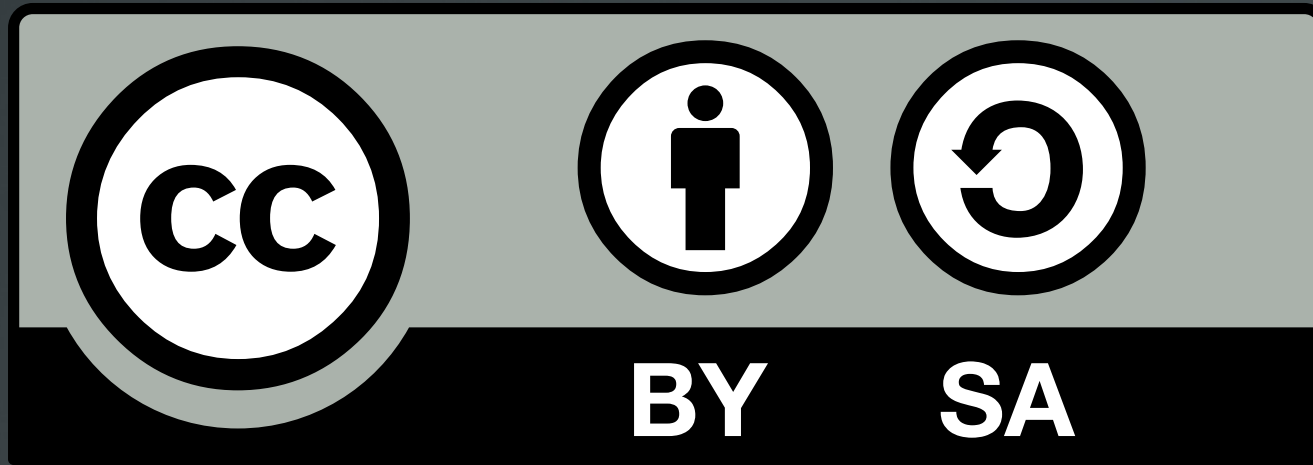
# Change priorities from `top`

- `$ 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)





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