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nice and PORTAGE_NICENESS

Very simply put, the Linux kernel has a (process) scheduler that selects which process to run next in your system. One factor influencing the scheduler's decision about which process to assign CPU time to, is the priority of a process. Processes with a high priority will run before those with a lower priority, and processes with the same priority will take turns in running, one after the other and over again.

Better have a look at it for yourself: Run `top` from a terminal on your host and pay special attention to the PR and NI columns:

Sample `top` output

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
8005	root	20	0	85188	33m	57m	R	3.3	6.7	8:43.77	X
8148	tobias	20	10	25624	2376	24m	S	0.3	0.5	0:00.60	xscreensaver
1	root	20	0	2476	552	2304	S	0.0	0.1	0:00.31	init
2	root	39	19	0	0	0	S	0.0	0.0	0:00.00	ksoftirqd/0
3	root	15	-5	0	0	0	S	0.0	0.0	0:00.09	events/0

The PR column indicates the priority level of a process, the value in the NI column displays the so-called nice value of process, which allows you to adjust the priority of a running process. Possible values range from -20 (very high priority), via 0 (standard priority) to 20 (very low priority). In our little example the `xscreensaver` process has a higher nice value than X, which indicates that X has a higher priority than `xscreensaver`.

Now, how do we make this work to our advantage when using Portage?

If you keep using your computer while compiling packages you will notice that your box is much less responsive as usual. This is caused by having two "groups" of processes with the same nice priority: your usual running tasks on one side, and `emerge` (and its child processes) on the other. Now, if you could `renice` `emerge` and its children to a higher nice (i.e. lower priority!) value (default is 0), compiling would inevitably take somewhat longer, but you could use your workstation without noticing much difference to its usual performance. That's what the `PORTAGE_NICENESS` parameter in `/etc/make.conf` is for:

Code Listing 1: Put this in `/etc/make.conf`

```
PORTAGE_NICENESS="15"
```

You can generally "`renice`" individual processes from the commandline, (e.g. `renice 0 -p 8148` to prioritize `xscreensaver` in the above example), but this will not work with `emerge`, as Portage reads the `PORTAGE_NICENESS` setting from `/etc/make.conf` once and executes all child processes with the specified nice value.

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How to make X listen on port 6000

http://gentoo.linuxhowtos.org/TipsTricks/portage_niceness.pdf

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