

Taskset

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The command `taskset` is used to set or get a process's CPU affinity. CPU affinity is a feature that allows you to bind or unbind processes to a particular central processing unit, or a range of CPUs.

1 Installation

```
aptitude install util-linux
```

2 Usage

2.1 How To Get CPU Affinity Of A Process?

Use the **PID** with the `-p` option to get the affinity mask.

```
taskset -p 32677
pid 32677's current affinity mask: ff
```

The mask is a bit mask. For this example the process has the affinity to run on all CPUs hex `0xff` = binary `11111111` = decimal 8 cores. That the system has 8 cores can easily be confirmed with `numctl`

```
numactl --hardware
available: 1 nodes (0)
node 0 cpus: 0 1 2 3 4 5 6 7
node 0 size: 11975 MB
node 0 free: 3123 MB
node distances:
node    0
 0:    10
```

3 How To Change The CPU Affinity Of A Process?

```
taskset -p 32677
pid 32677's current affinity mask: ff
taskset -p 0x0f 32677
pid 32677's current affinity mask: ff
pid 32677's new affinity mask: f
taskset -p 32677
pid 32677's current affinity mask: f
```

4 How To Start A Process With CPU Affinity?

This task is quite common in HPC, when starting a new process manually or via a scheduler one should know and understand how to pin a process to certain CPUs.

```
taskset 0xf0 long-running-command
```

It is of course also possible to run a process on a **range** of CPUs with the `-cp` option, but that usually makes only sense if the task switching has no penalty involved. Usually it is better to pin a process to one core unless the task is a wrapper that pins its subprocesses by itself to dedicated cores.

5 History

Version	Date	Notes
0.1.1	2022-06-15	History, shell->bash
0.1.0	2020-05-01	Initial release

6 Disclaimer of Warranty

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