HCA Infrastructure

Your gateway to success in this course

Source material

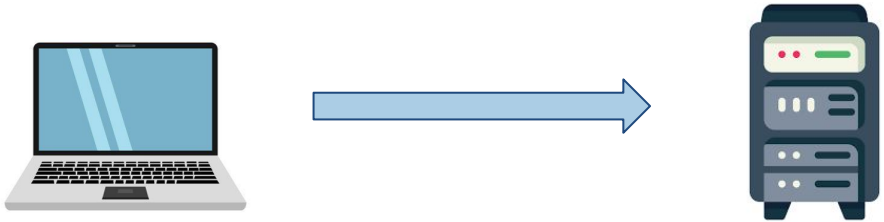
- How To Configure SSH Key-Based Authentication on a Linux Server
- SLURM cheatsheet

- NVIDIA Jetson TX1
- HiFive Unmatched
- Pioneer board
- BananaPi f3

Access to HCA *login* node

```
ssh <user>@ssh.hca.bsc.es
```

```
User:       mhpc25-[01-13]
Password:   Given to you by Filippo
Material:   /home/ictp-mhpc25
```



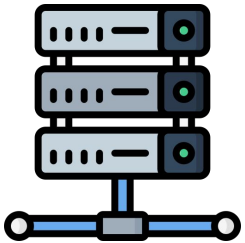
Access to HCA *compute* nodes

Compute nodes are managed by SLURM

Users can access compute nodes:

1. Interactive job (`salloc`)
2. Batch job (`sbatch`)

HCA
Login node



Compute nodes

Available partitions

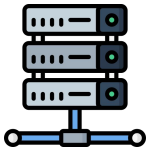
intel

arm

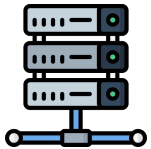
RISC-V

HCA
Login node

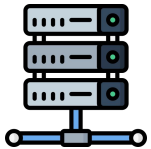
slurm
workload manager



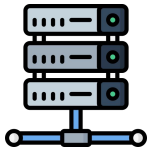
jetson-tx



arriesgado-jammy



pioneer



bananaf3

⚠️ **Keep an eye on the architecture of each node!** ⚠️

Example SLURM commands

List available partitions

```
$ sinfo
```

List active jobs

```
$ squeue
```

Cancel allocations

```
$ scancel <job_id>
```

```
$ scancel --me
```

Resource allocation

```
$ salloc -p arriesgado-jammy --reservation=mhpc -t 2:00:00 -N 1
$ ssh arriesgado-2
```

```
$ salloc -p jetson-tx --reservation=mhpc -t 2:00:00 -N 1
$ ssh jetsontx-2
```

Best practices

- Limited amount of hardware resources
  - Remember to free your allocation after use
  - Do not allocate more resources than needed
- `srun` command will NOT transfer you to the allocated node
  - You must do an `ssh` after allocating a node
- When performing measurements (not testing or debug)...
  - Prefer batch scripts over interactive sessions
  - Remember to repeat measurements multiple times to be statistically relevant