



Centre de Calcul de l'Institut National de Physique Nucléaire et de Physique des Particules

# CC-IN2P3 Status for JUNO

Rachid Lemrani

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## CC-IN2P3 is providing 3 computing facilities in production

- **High Throughput Computing (HTC) farm**
  - Single and Multicore jobs (mostly 8 cores)
  - RAM : 3 GB/vcore
  - ~45 000 vcores
- **High Performance Computing (HPC) cluster**
  - MPI jobs
  - 512 physical cores.
  - 16 DELL C6320 servers and Infiniband
- **GPU cluster ( 40 + 24 GPUs)**
  - 40 GPUs: 10 Dell C4130 with 4 GPUs and 16 CPU cores per machine
    - 2 Xeon E5-2640v3 (8c @2.6 Ghz)
    - 128 GB RAM
    - 2 Nvidia Tesla K80 → 4 GPU Nvidia GK210 with 12 GB DDR5
  - 24 GPUs: 6 Dell C4140 with 4 GPUs and 20 CPU cores per machine
    - 2 Xeon Silver 4114 (10c @2.2 GHz)
    - 4 NVidia Tesla V100 PCIe → 4 GPU Nvidia with 32 GB HBM2

## JUNO

### ▶ HTC :

- pledge (grid + local) : **230 cores** average
- **Potential boost to ~1600 cores**
- Used : **4,1 MHS06.hours** up to september
  - 73% on the grid / 27% locally

### ▶ BATCH :

- **HTCondor** for grid jobs (migration to HTCondor done this year)
- **Univa Grid Engine** for local jobs

### ▶ OS : **CentOS7**

### ▶ Virtualization : **Singularity**

- also available : openstack cloud for services, tests, ...

## ▶ JUNO disk :

- SE Dcache: 41 TiB quota (37 TiB used)
- Local Storage (GPFS) : 15 TiB quota (10 TiB used)
- SE XRootD: shared (ongoing tests)
- Total CC: ~40 PiB

## ▶ JUNO tape :

- Tape: 50 TiB pledge (2,6 TiB used)
- Total CC: ~80 TiB used

## ▶ Software distribution

- CernVMFS

- ▶ **Contact email : [cc-astro@cc.in2p3.fr](mailto:cc-astro@cc.in2p3.fr)**
  - Rachid Lemrani, ...
  
- ▶ **Direct discussion of JUNO with CC-IN2P3 experts when needed :**
  - HTCondor, Storage, CernVMFS