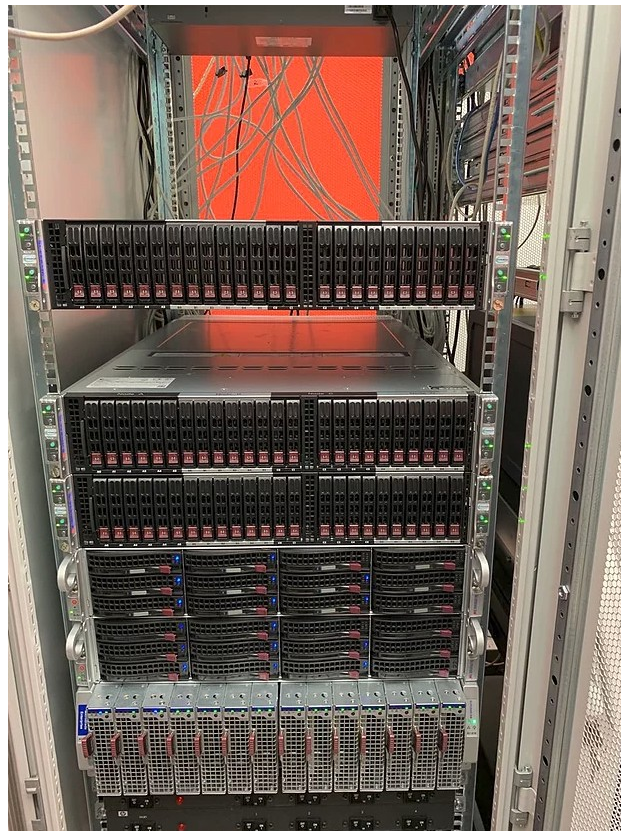


ZTF computer cluster



Ivor Lončarić

16. 07. 2021.

Development

- 1) 2016 UKF Lazić 335k HRK
- 2) 2017 UKF Lazić 70k HRK
- 3) 2017 HrZZ Franchini 100k HRK
- 4) 2019 CEMS Lončarić 170k HRK
- 5) 2019 Sinergija ZTF 400k HRK
- 6) 2020 PZS Lončarić 340k HRK
- 7) 2021 HrZZ Grisanti 300k HRK
- 8) 2021 Hrzz Lončarić 330k HRK

Significance

- The only capital equipment of ZTF
- Total over 2M HRK
- Enables competitive research in theoretical physics, especially in condensed matter
- Potential for commercial activities

Technical details

- 2 management/storage nodes, RAID 10 storage 40TB, RAID 5 storage 18 TB
- 28 nodes: 8 Intel Xeon cores + 64 GB RAM
- 8 nodes: 48 AMD Epyc cores + 256 GB RAM
- 4 nodes: 64 AMD Epyc + 512 GB RAM
- 4 nodes: 64 AMD Epyc + 256 GB RAM
- 1 GPU server for ML
- 10 G network between all nodes and storage
- New faster switch

Technical details

- All data on */share/storage*
- Centos 7
- Rocks Linux
- SGE scheduler
- Environment Module System
- Anaconda for Python
- Intel and GNU compilers

How to use

- Send me e-mail with request for opening the account
- Choose username and password
- Login via ssh username@malnar-front.ztf.irb.hr
(available only from internal network)
- cd to */share/storage/USER_STORAGE*
- Prepare submission script, software, inputs
- Run job, collect data and enjoy

Submission script example

```
#!/bin/bash  
#$ -cwd  
#$ -N my_job  
#$ -e my_job.errout  
#$ -o my_job.errout  
#$ -pe xeonD1541 8
```

```
echo -n "Running on: "  
hostname
```

```
module use /share/apps/modulefiles  
module load app
```

```
mpirun -n $NSLOTS app > log
```

Typical use

- `qsub script.sh`
- `qstat`
- `scp ...`

Support

- No support, but:
- Google
- Ask colleague with more experience
- Ask me, but understand that I manage the cluster in my free time

Future

- Soon big changes needed
- OS / kernel too old for new software
- Rocks not developed/supported anymore
- SGE also not developed
- No support for new hardware soon arriving

Future

- By the end of summer 2021:
- OpenHPC
- Centos 8 or alternative
- SLURM