

New UNIL Computing and Storage Facility

Division Calcul et Soutien à la Recherche (DCSR)

Centre Informatique

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Launch of Wally cluster – this week

- ▶ accessible through wally-front1.unil.ch (since May 22nd 2019)
- ▶ using your UNIL login
- ▶ 96 nodes with 16 cores each, 64 Gb to 96 Gb of RAM per node
- ▶ SLURM queueing system ; similar to LSF (batch, array, interactive) with following queues
 - ▶ priority – 1h
 - ▶ normal – 24h
 - ▶ long – 10 days
- ▶ Vital-IT software stack available on Wally

Launch of Axiom cluster – mid-June

- ▶ accessible through `axiom-front1.unil.ch` (!! could change!!)
- ▶ using your UNIL login
- ▶ heterogeneous cluster with normal and fat nodes ; ca. 2,500 cores
- ▶ same SLURM queueing system as on Wally
- ▶ Vital-IT software stack available on Axiom

Launch of a sensitive data cluster – mid-June

- ▶ secured login and behind a strict firewall
- ▶ obligatory for any use of sensitive data !!
- ▶ limited access to external world (e.g. white list and gitlab instance)
- ▶ using either your UNIL or a CHUV login (still to be decided)
- ▶ heterogeneous cluster with normal and fat nodes ; ca. 800 cores
- ▶ same SLURM queueing system as on Wally

What happens to the Vital-IT servers I'm used to !!

On the long term

All Vital-IT servers will ultimately be moved to Axiom

- ▶ access to prd.vital-it.ch will be discontinued, **but**,
 - ▶ process will take some weeks/months
 - ▶ we will take the users into consideration ➡ limit disturbances

From now on : don't panic !

Data on the /scratch :

- ▶ use /scratch/temporary when working on prd.vital-it.ch : it will stay there until the last server is moved
- ▶ do not use anymore /scratch/cluster or /scratch/beegfs : it will be erased and move to Axiom starting on June 3rd
- ▶ do not leave data on /scratch/local : linux kernel erases it regularly

Compute servers

Step by step move planned

- ▶ servers linked to queue `dee-long` will move on June 3rd
- ▶ one of the fat node will be move early June (one of the `dbc-servxx`)
- ▶ other fat nodes slowly moved to Axiom then (precise time to come)
- ▶ normal nodes also slowly moved to Axiom

➡ use Wally for jobs requiring less memory from now on !

Where to put data currently on Vital-IT?

Safest place : /archive

Data on anywhere else than on /archive :

- ▶ start to move it on /archive if not done already
- ▶ do not leave data on /scratch, /data, etc... : it will be lost
- ▶ do not send this on the cloud!

If you have large data to move (several Tb) ➡ before moving, contact sysops@vital-it.ch

If you have sensitive data ➡ you will have to move it to the sensitive data cluster

Storage and compute separated

On compute nodes, people have access to

- ▶ `/users/username` space limited to a few Gb (likely 10Gb)
- ▶ shared scratch for their project (unlimited in time and size, but you pay)
 - ➡ `/scratch/wally/FAC/FBM/DBC/yourName/project1`
- ▶ local scratch for the specific node (limited depending on nodes)

UNIL data storage

Scientific data will be stored by projects owned by a PI

- ▶ PIs decide how to organise their projects
- ▶ PIs will assign people to each project he wants (from his group or not)
- ▶ PIs request compute and storage for projects :
 - ➡ <https://www.unil.ch/ci/home.html>

Accessing data : Data Transfert Node

Data storage accessible both from compute nodes and your own laptop

- ▶ on your laptop : either mount NAS volume or use DataExpedition
- ▶ on compute node : simple bash command to do before sending a job

```
cd /scratch/wally/FAC/FBM/DBC/yourName/Default
movedat username@dexlin.unil.ch:FAC/FBM/DBC/yourName/Default ./
movedat username@dexvitalit.unil.ch:archive/dee/myName ./
```

- ▶ send back the results when the job is finished

Several options

Data stored either

- ▶ on Isilon (aka NAS) as either NFS or CIFS/SMB
- ▶ as objects using system Scalify

How much will my PI pay for my use?

Pay per use system

Your PI will be billed for each project for the direct costs. It will be monthly billed by UNIL and includes

- ▶ compute hours
- ▶ scratch use
- ▶ data storage

Cost model in use : [compute and storage costs](#) (see terms and conditions on the DCSR website)

I'm lost... I need help!

Division Calcul et Soutien à la Recherche (DCSR)

- ▶ new division of CI to support research computing needs
- ▶ application specialists (code optimization and parallelisation, Big Data/Machine Learning, database design, software manager)
- ▶ sysadmins for the compute and storage infrastructure
- ▶ ticketing system through the CI HelpDesk

Courses and support

- ▶ courses for Vital-IT users (Jun 11 and 13, two more sessions planned) : presentation of DCSR, new data storage, moving from LSF to SLURM
- ▶ general courses for all users set up starting at the end of the summer