CC-IN2P3

Who we are :

CC-IN2P3 (100) ‹ IN2P3 (2.5k) ‹ CNRS (34k) ‹ Government

What we do :

offer IT services to academic users :

- Computing
  - HTC (18k cores managed by Oracle Grid Engine)
  - HPC (1k cores)
  - Grids (EGI, 2nd biggest Tier 1 for WLCG : 140 centers, 35 countries, 100k cores)
- Storage
  - Mass storage (HSM on HPSS : 500TB disk, 14PB Tape)
  - Semi-Permanent, high throughput storage (GPFS, 1PB)
  - Disk frontends (dCache, SRM, SRB, Irods, Xrootd... 10PB)

Cloud status at CC-IN2P3

Main goals :

- Build an academic community cloud, integrated to wider federations
- HTC use case is no option

Motivation & User needs :

- Users need more specific environments
- Users need flexibility (elasticity)
- Another way of achieving distributed computing (vs/with grids)
- Satisfying new use cases (servers on demand...)

Steps :

- Offer IAAS ressources through generic interfaces (EC2/OCCI)
- Integrate national/european/worldwide accademic federations

Cloud status at CC-IN2P3

Work in progress :

- State of the art of existing/upcoming technologies : evaluation of proprietary (IBM, DELL/Canonical, VMware, Oracle, Redhat) and OSS (OpenNebula, Openstack, Nimbus...) solutions
- Reuse experience
- Identify the hot spots : security concerns, storage, performance, networking...

And then :

- Open to new communities (other scientific fields, academic institutes, industry ?)
- Higher level tools for users (to PAAS/SAAS)
- Branch to the batch system
- Will the users follow the move and adopt those new technologies ?

Identified use cases

- EGI FCTF testbed (HEP, traditional grid users)
  provide IAAS ressources to former grid users, computing
- Webimatics (neurobiology)
  medical image data analysis
- Etriks (academic and pharmaceutical companies)
  data analysis
- Dirac
  Yet Another grid scheduler

Computing & cloud interfaces

Integrating multiple use cases
on the same infrastructure