CC - IN2P3 Site Report

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Overview

- **General information about CC-IN2P3**
- **Farms**
- **Storage**
- **Building**

CC- IN2P3 - Lyon

- French National computing center of IN2P3 / CNRS
  in association with IRFU (CEA)
- Users:
  - T1 for LHC experiments (65%) , and D0, Babar
  - ~ 60 experiments or groups HEP, Astroparticle, Biology, Humanities Sciences
    - ~ 3000 non-grid users
  - 1 FTE dedicated support for Atlas and Cms, 1 FTE Lhcb + Alice
    one for Astroparticles

Computing Teams :	Operation, Infrastructure, Development	59
Others :	Administration, Facility management	18
	~ 45% non permanent	77

- Neither experiment nor users on site

Grid projects

- **CC-In2p3 strongly involved in Grid projets**
  - **EGEE Operation**
    - **CIC portal Development**
    - **EGEE ROC Management**
  - **EGI (Europeen Grid Initiative) and NGI**
  - **Regional Grid over Rhones-Alpes**

Farms - 1/2

- **Home made batch system BQS in a process of migration to another BS**

- **Main cluster : anastasie ~ 8600 cores - 61 K-SHS06 (903 machines)**
  X 2 in 2010

  migration to SL5 in progress -> Q2Y2010

  SL4 : 4704 cores (33 K-HS06) 55%

  SL5: 3904 cores (28 K-HS06) 45 % -> 80% mid-november

  ~ 9 K running Jobs ~ 70 K jobs/day

  shared farm for direct submitted jobs and Grid submitted jobs

  - **Decommissioning DELL PowerEdge 1950**
  - **new machines : DELL Blade Poweredge M 610**
  -

Farms - 2/2

- o
- o **Parallel cluster pistoo (MPI, PVM) 544 cores 3 K-HS06**
  - o **Current migration to SL5 : ~ 1024 cores - 96 GB/machine**
  - o **No Infiniband but Ethenet 10Gb**
- o **LAF : Lyon Analysis Facility**
  - o **1 master node PROOF with 20 worker nodes PROOF (160 cores)**
    1 serveur Xrootd
  - o **Still in a test status**
  - o **mainly used/tested by Alice, exploration by cms**
- o**Services monitored by Nagios [Th 29 [33] Monitoring CC-IN2P3 services with Nagios]**

Storage 1/3

- **Automated cartridges Libraries**
  - **No more powderHorn STK 9310**
  - **3 SUN SL 8500 with 10,000 slots each (one more in 2010 => opt. Cap. = 40 PB)**
    - **36 x drives T10K-A and 32 x T10K-B**
    - **10 x LTO-4 (Tivoli Backup)**
    - **13 X 9840 (HPSS small files < 100 GB) models A and B**
    - **Media T10K-Sport being replacing 9840B**
    - **Monitored by StorSentry [We 28 [23] Monitoring tape drives and medias]**

- **HPSS : migrated to 6.2 - 12 disk movers (480TB DDN Disk Array) - 38 tape movers**

  Now using NIS for users authentication/authorization in replacement of DCE.

  (Tu 27 session [24] IN2P3 HPSS Migration (v5.1 to 6.2) report)

Storage 2/3

- dCache : from1.9.1 to 1.9.4 (september) then to 1.9.5 "golden release« - November
  PNFS replaced by Chimera (september : 72 hours)
  ~ 150 servers, ~ 2 PB 15 TB are «custorial »
  interfaced with HPSS
  TreqS [Tu 27 session [45] Optimizing tape data access]

- AFS 1.4.8 (~30 servers, ~40 TB)

- SRB Disk cache 243 TB 107 TB -- 2 PB in HPSS
  IRODS : 5 serveurs, 100 TB

Storage 3/3

- **SPS/GPFS 3.2.1** — **800 TB - 600 TB allocated - 400 TB used**
  1200 client nodes - 60 filesystems - 160 millions files.

- **Xrootd** — **~ 20 servers, 400 TB+100 interfaced with HPSS and Dcache**
  ~ 10 groups babar (Analisys) Analisys facilities (PROOF)

- **Oracle 10G : 6 clusters (55 TB -> 100 TB)**

- **Disks : decommissioning Thumpers for Thors**

Building

- Last enhancements (2009)
  - Electric Power → 1,5 Mw to 3 Mw
  - A third new 600 Kw chiller
  - A 880 KW diesel generator installed
  - trend to water chilled racks (Idataplex and Rittal racks)
  - Total monitoring of infrastructure and automatic actions in progress

- Next additional Computing room : very slow process for administrative reasons
  - Budget for a 800 sq. meters room (only computing room)
  - Try to get a green building (Energy recycling)
  - raising work will start April 2010, for a 10 months work

Thank you !

Any questions ?