

dCache@PIC

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What's PIC?

- PIC is an LCG Tier-I supporting ATLAS, CMS and LHCb
- It also supports non-LHC VOs (Astroparticles, Biology, Medical Imaging...)
- Currently PIC handles:
 - 600 KSI2K (over 50 WNs DPDC)
 - 370 TB tape
 - 67 TB disk

PIC Tier-1 planned capacity

Year	2007	2008	2009	2010
CPU (KSI2K)	500	1700	2700	5400
Disk(TB)	220	900	1600	2900
Tape (TB)	250	1200	2400	4500

- These numbers are currently being revised, Spain did not sign the LCG MoU yet

dCache usage at PIC

- dCache 1.6 is used at PIC to handle disk storage
- Currently CASTOR is being used to handle tape storage
- Maintaining both systems is unbearable, it seems we have 2 options:
 - Drop CASTOR and place something under dCache to handle tape
 - Drop dCache and “evolve” to CASTOR2

dCache configuration

- dCache handles 65TB shared amongst 6 VOs (ATLAS, CMS, LHCb, DTEAM, OPS and DES)
- 20 Pool servers
 - Dell PowerVault SCSI and SAS (2 x 1.7TB partitions, RAID5, hot spare)
- More space to come in the following months
- Not using Resilient dCache

dCache configuration

- 5 Server machines (Dual Xeon 3.2GHz 4GB RAM 2 HD Hot swap in RAID 1 configuration)
 - Head node
 - PNFS node
 - Online replicated PNFS node (via Slony I)
 - Head node backup
 - SRM node

Managing dCache

- dCache has proved more stable than CASTOR (we survived CSA06)
- Only 0.5FTE to manage dCache until now
- Managing is still a bit too much manual
 - For instance, redistribute a group of pools amongsts the rest of the pools in a “pgroup”

Managing dCache

- Currently we install dCache “manually”
 - Need to move to something better, maybe Quattor?

Monitoring dCache

- Nagios + Ganglia combo to monitor dCache
 - Homemade python scripts
 - Get info via the ssh admin interface
 - Drops the ssh connection a lot
 - Raise alarms, send mails and put info into Ganglia

Monitoring dCache

- Our monitoring environment is not very powerful
 - How can we monitor dCache errors effectively? Logs are not really useful
 - How to look at dCache and to measure the performance?
- Several sites are using dCache in production.
 - We should find a way to share common tools, like those for monitoring