

DPM at GRIF

Michel Jouvin

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GDB Storage Classes Meeting



- GRIF : distributed T2
 - 1 middleware site
 - 5 geographical sites in Paris Region (join effort by 5 labs)
 - Distributed technical team : 9 FTE
 - Currently 1 CE and 1 SE per site
 - Open to LCG and non LCG VOs
 - Strong increase of non LCG VOs resources
- Current status
 - CPU : ~1 MSI2K
 - Storage : ~150 TB
 - Network : 1 Gb/s inter-site, 1 Gb/s site-external
- Planned evolution in 2007
 - 10 Gb/s inter-site - 1 link 10 Gb/s for the whole GRIF

- 1 DPM SE per site
 - Between 20 and 75 TB per SE
 - Between 1 and 4 disk servers per DPM instance
 - SAN based or DAS storage
 - Currently on SL3, soon evaluation of SL4 64-bit
 - Plan to evaluate Solaris 10 for disk servers (Solaris zfs)
- 1 general purpose pool + some VO dedicated pools
 - Only permanent type
- Managed by Quattor
 - LAL : main maintainer of QWG templates (M. Jouvin/Cal)

- RFIO client library incompatible with DPM
 - Hot issues for Atlas and CMS
 - Workaround available but risk of conflict with standard part of the middleware
 - Not acceptable for large fabrics with automated deployment
 - New unified library late
 - More or less available but not tested
- Lack of tools for resynchronizing disk servers and database
 - Needed in case of problems with disk servers
 - LAL experienced a problem after a device name change following addition of new SAN based LUNs
 - In particular, need ability to list files missing on disk (but present in db) and file present on disk but not registered in db
 - Required to give feedback to VOs in case of problems

- # ... Main Issues
- Lack of flexibility for specifying VO access to pools
 - Currently : open to all VOs or only one
 - Need pools open to a limited list of VO
 - Example : ILC has 2 VOs (ilc and calice) sharing the same resource
 - Need ability to give an exclusion list
 - Example : general purpose pool open to all VOs except atlas
 - Problem with users belonging to several VOs
 - Seems to be a bug in srm daemon

- # Future Requests
- Improved draining tools
 - Ability to drain a VO from a pool
 - Move VO files from one pool to another
 - VO quotas per pool
 - Should allow to define a default quota in a pool to simplify management of shared pools
 - Should allow overbooking (sum of quotas > 100%)
 - Long term project : unified SE with distributed disk servers
 - Require 10 Gb/s between GRIF sites
 - Require ability to replicate DPM head node (MySQL)
 - Selective inter-site replication of heavily used files
 - Usability of volatile storage for scratch areas
 - Not a DPM issue, rather a use case problem and how to advertise them to VOs