

# Software Choices



GDB

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# Overview

- Summary of software to be used for SC4
  - Review of list of services
  - Experiments requirements
- Site Plans

# Summary of software to be used for SC4 (June 2006)



- A reference document has been published:  
[https://uimon.cern.ch/twiki/pub/LCG/Planning/SC4\\_Planning.html](https://uimon.cern.ch/twiki/pub/LCG/Planning/SC4_Planning.html)
- Such document has been considered during the daily meetings for the definition of the gLite 3.0 release.
- It is still quite accurate although package versions have changed due to the bug fixes introduced.
- A new updated version of the document will be available tomorrow with the correct package versions.
- Still some experiment requirements are left uncovered. However they are not critical.



# The gLite 3.0 services

- **VOMS** (VOMS API 1.6.16-3, VOMS admin 1.2.15-1, VOMS Oracle 2.0.6-0, VOMS server 1.6.16-5)
  - User metadata available
  - Mirroring available for high availability on-site only. Probably 2-3 VOMS servers deployed.
  - VOMS groups and roles implemented still by few services (LFC, DPM, WMS)
- **MyProxy** (VDT 1.2.0 no VOMS aware)
  - Automatic proxy renewal for services still not available.
  - VOMS aware proxy renewal service might be available before June (collaboration with Condor/VDT team)
  - Automatic proxy renewal with Kerberos token not available.
- **BDII** (v3.5.4-1, GLUE 1.2.2-1)
  - Work on-going to identify SE type via the GLUE schema. No need to change SE end-point. Durable/Permanent space available as attributes. Need to change the clients that use such info.
  - No caching of static information for services available



# The gLite 3.0 services

- **FTS** (agents v2.2.1-4, api v3.1.0-1/3, fts v3.2.0-8, url-copy v1.5.0-2)
  - Automatic retry available through VO agents. Default agent applies the same actions to all conditions.
  - No automatic error or status notification. Query is always possible. Automatic signalling of error conditions possible via VO plug-ins.
  - Priority and reshuffling of jobs possible
  - Plug-ins for catalogues and retries available
  - No central service for all transfer. Make channel configuration hidden to end-user.
  - No automatic proxy renewal.
  - SRM copy and v2 integration on going.
- **LFC** (v 1.5.4-1)
  - VOMS enabled.
  - Some replica attributes available (CMS custodial flag).
  - DLI interface available
  - POOL available plug-ins (POOL >= v.2.1.0)
  - Improved read performance (over LCG 2.6.0; new methods introduced). Load balancing. Bulk operations not available but support for application session and transactions.
  - Python interface fully operational



# The gLite 3.0 services

- **Lcg-utils (v.??)**
  - No bulk operations
  - No integrity check
  - SRM v2 integration on-going (only v1 available)
  - Python interface on-going
- **GFAL (v 1.7.7-1)**
  - Best replica selection based on location only.
  - No access to multiple instances of catalogues.
  - Integration with Rootd on-going (Rootd plug-ins; open/read/write and status operations - basic implementation runs but some developments needed on the GFAL side)
  - Python interface not available
- **DPM (v.1.5.4-1)**
  - SRM v2.1.1 available but not complete (no copy and no global space reservation)
  - No support for quota, checksum
  - No Python clients available



# The gLite 3.0 services

- **RB gLite 3.0** (v.1.5.5-1; client v1.5.9-1)
  - Interactive access to running jobs information (pick of output sandbox available; no ls or top)
  - Capability to handle 10\*\*6 jobs/day (improved performance through new Condor-G/C and DAG mechanism. ClassAds recompiled with optimization on).
  - Improved ranking and matchmaking mechanism
  - No redundant, fault tollerant service (It depends on redundancy/fault tollerance availability in Condor, Logging and Bookkeeping, cancel and match-making operations)
  - No possibility of passing job requirements to underlying batch system (memory reqs, etc. - ATLAS)
  - No caching of sandboxes
  - No Job latency proportional to expected duration
  - No support for priorities (user,group,role) at global level
  - No fair share across users in the same group
- **CE (gLite 3.0 and LCG 2.7.0)**
  - Two flavors of the CE will be available at the same time (most likely). Only push mode of operation.
  - No CE interface publicly available (CREAM not available).
  - CEMON not configured
  - Combined UI and WNs available. LCG 2.7.0 RB will only select LCG 2.7.0 CEs.



# The gLite 3.0 services

- **Glexec (v.0-5-2)**
  - Not available in gLite 3.0 for applications (available only for CE middleware services). Allows for identity change of jobs on the WNs (LHCb requirement).
- **G-PBox (v1.0.16)**
  - Not available in gLite 3.0.
- **R-GMA (v.5.0.n)**
  - **VOMS based authentication**
  - No fine-grained VO control of data access
  - **Monitoring of transfer traffic and L&B events**
  - **Availability of batch system events (through R-GMA applications)**
  - No monitoring of SE (I/O operations, number of open files, etc.)
- **GridICE (v1.5.0-0)**
  - **VO specific information for global operations and jobs available**
  - **On-going: sensor for passive monitoring of WMS; filtering of information based on a given BDII; integration of GOC DB downtimes; integration of the L&B job status.**
  - No monitoring of transfer traffic
  - No monitoring of SE specific information
  - No monitoring of batch system events
  - **On-going work to monitor L&B events**





# The gLite 3.0 services

- **DGAS (v1.1.n)**
  - Installed but not configured in gLite 3.0
  - Support for granular accounting (user,group,role)
  - Possibility of aggregation of info per VO
  - No SE accounting per datasets available
- **APEL (v1.0.0)**
  - Available in gLite 3.0
  - Support for granular accounting (EGEE region, user, DN)
  - No VOMS integration
  - Aggregation of information per VO (but not per VO tags)
- **VOBOX (v1.0.1-3)**
  - Available in gLite 3.0. Experiments have to negotiate deployment with sites



# Other experiment requirements

- Storage
  - Common and homogeneous functionality for SRM implementation
    - A working group is in place. Maarten Litmaath chairing SRM meetings.
  - Support for quota management
    - It is still a requirement
  - Checking for file integrity after file operations.
  - Availability of optimized SRM client tools with Python binding
    - On-going
  - Several SE classes
    - See proposal from Jeff Templon on using the Glue Schema
- Data management
  - Support for bulk operations
  - ACL propagation between catalogues and storage
- Workload Management System
  - Support for job prioritization
- Information System
  - Publishing of experiment info (still needed ?)



# Other experiment requirements

- Applications
  - Resolve conflicts between application and middleware software
    - A working group is in place. Andrea Sciaba' is leading the effort and is in contact with the application area.
- XRootD
  - Deployment at all sites
    - See decision of the Mumbai workshop
  - Support for Root I/O protocol
  - Interface to SRM
- Batch systems
  - Support for short jobs
  - Standards for CPU time limits
  - Support for queues with at least 2 priority levels
  - Support for batch systems that can handle priorities at the local queue level

# Outcome of the pre-CHEP Mumbai Workshop



- See final document:  
<http://agenda.cern.ch/askArchive.php?base=agenda&categ=a057703&id=a057703s1+14/document>
- Discussed mainly data management and storage issues
- Experiment Production plans
- Sites Plans

*See Jamie's presentation*



# Site Plans

- The site service proposal and plans available on the Wiki LCG Planning Page:  
<https://uimon.cern.ch/twiki/bin/view/LCG/Planning>  
\_\_\_\_\_ has been discussed and agreed
- During the SC4 weekly meeting a better definition of experiment plans for SC4 and schedule, together with service requirements at the sites is being discussed.
  - Few issues raised:
    - Dedicated or shared VO services ?
    - Network traffic allocation
    - Resources per VO
    - Monitoring per VO
    - ...etc.