



Enabling Grids for E-scienceE

JRA1 Data Management summary

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- **Current deployment status and plans**
- **FTS**
- **LFC**
- **lcg-utls / GFAL**
- **DPM**

- **Deployed at CERN T0 and most T1 sites**
- **Fairly stable 24/7 running**
 - A number of stability issues encountered and solved in software
 - A large amount of operational experience has been gained with FTS and the various storage systems
 - Over 6 PB of data successfully exported from CERN tier-0 since May 2006
 - Few hundreds of terabytes transferred for some T1 centers
 - FTS client is integrated with the experiment software
 - Though a number of irritations remain
- **Software and expert operational support**
- **Major effort spent on support for the distributed “fts” service**

- **SRM 2.2 is critical for WLCG**
 - Testing of FTS with SRM 2.2 is now underway with all WLCG SRM 2.2 test instances
- **Credential delegation**
 - Solves the long-standing “MyProxy password” security problem
- **Pilot version of this being deployed currently**
- **Other areas identified at the FTS workshop in October**
 - FTS deployment model: need a solution that fits better with CMS and Alice’s computing model: discuss this week
 - Monitoring and better integration with the WLCG operations tools is critical to the “overall service”
 - Prioritisation already discussed at FTS workshop, subject to TCG approval

- **Deployed at:**
 - Tier-0 for all 4 LHC experiments (around 10 million entries)
 - Most European and Asian T1 and T2 sites
 - Many non-LHC applications
- **Stable 24/7 running**
 - Significant operational experience gained
 - Monitoring tools added at CERN for LFC
- **Improvements requested and implemented**
 - e.g. bulk queries for GUID lookups [ATLAS]
- **No major changes foreseen**
- **Other small improvements pending**
 - e.g. SSL session re-use
- **Software and expert operational support**

- **No major changes in 2006**
- **Integration with SRM 2.2 ongoing**
 - Testing with all WLCG SRM 2.2 instances
- **Better support for LFNs in GFAL done**
- **Integration with encrypted storage for non-LHC VOs**
- **Information system caching**
- **Software and expert operational support**

- **Deployed at ~80 T2 sites managing up to 80TB per site**
 - A large amount of operational experience has been gained
 - Feedback in the DPM BOF on Tuesday at 16.00
- **SRM v2.2 implementation**
 - Implemented and under test by the 3 SRM testing suites: DPM passes all basic tests
 - srm-cp is being implemented
- **CASTOR-DPM common RFIO library**
 - Common RFIO code and DPM specifics completed (by Jiri Kosina). Castor specific parts done by Castor team.
 - Integration and testing still to be done
- **Xrootd plugins**
 - Requested by ALICE, interest also from CMS
 - Delivered to ALICE, currently under test

- **Request from sites**
 - More administrative tools
 - Better monitoring tools
 - Quota support
 - Mechanism to limit the number of I/O transfers or automatically replicate “hot” files
 - Organise a DPM hands-on session for site admins
- **Requests from sites and experiments**
 - Support for secondary VOMS roles
- **Integration with Biomedical storage systems (“DICOM”)**
- **Porting to other platforms**
 - SLC4, Solaris, Windows
- **Prioritisation needed for some of these from TCG**
- **Software and expert operational support**

- **Significant experience gained all over WLCG running the DM services**
- **Good stability of these services reported**
 - A number of issues have been found and fixed
- **SRM 2.2 implementation proceeding**
 - Currently under test (DPM, FTS and client tools)
- **Software and expert operational support is the top priority**
- **Many requested improvements**
 - To improve operations and monitoring of the services
 - Functional improvements
- **Workplans defined and in review by the TCG**