

Conclusions from SC4 workshop – Data Management

- **FTS**
 - Agreed that multi-hop transfers are not required:
 - All transfers between any T0/T1/T2 can be point-point
 - Need to decide which server to use: propose T1 for T0-T2 etc
 - Some development is needed to manage and dynamically generate all possible channels
 - Real requirement is transparency of where the service is
 - For example (fat) client that hides service details is OK - configures itself from information system.
 - FTS does need to support both srm v1 and v2 in parallel
 - [FTS Development priorities](#)
 - a. Server selection by client
 - b. Channel management
 - c. SRM 1/2 support
 - d. Pre/post transfer plug-ins – important for ATLAS
- **LFC/DPM/GFAL/lcg-utils**
 - Note: GFAL is the only SRM client library used by experiments
 - [Priorities:](#)
 - a. SRM V2.1 compatibility tests between Castor-2/dCache/DPM
 - b. Support for srm v2.1 in GFAL/lcg-utils
 - v1 & v2 MUST be supported in parallel
 - c. Perl/python interfaces for GFAL/lcg-utils/DPM
 - d. Draining of filesystems (Jean-Philippe finish interface; Graeme Stewart to provide tool)
 - e. srmCopy and srmcp in dpm
 - No longer a high priority for DPM; Requested by large dCache sites to better optimize use of resources, but is only necessary on the dCache side as long as FTS understands the configuration.
 - f. Global space reservation in DPM.
- **Castor-2**
 - The V1.1 Castor SRM endpoint is still needed, and will need to be provided in parallel with the V2.1 endpoint for some time.
 - Should have generically named endpoints – to avoid problems with specific names in SURLS in catalogs
 - Castor-2 does support pools where files do not migrate to tape and garbage collection policy can be configured.
 - Currently there is a distinction between local and WAN pools - but experiments want to make sure all data is visible everywhere.
 - This separation should go away over this year
 - For the moment files can be replicated between pools to make sure they are externally visible
 - Resources are currently segregated to ensure non-interference with T0-T1 transfers by local load.

- **SRM/FTS/GFAL/lcg-utils testing schedule**
 - Need to agree on concrete schedule for testing by experiments and other sites
 - Need to start reference testing of SRMs (Castor, DPM, dCache) with RAL/CERN testing suite
 - Can start end Feb/ after CHEP
 - Experiment testing needs several things to be done first: GFAL/lcg-utils and FTS (based on GFAL work)
 - 3 testing activities in parallel:
 - Testing with testing suite of different SRMs working together
 - FTS – but development still needed
 - GFAL/lcg-utils – once the libraries have been adapted to SRM V2.1
 - Responsibility for coordination of these activities is CERN/GD (David Smith overall coordination).
 - Only then - experiment testing can start
 - What is the schedule? Should come from SRM BOF discussion?

- **Need for Storage/SRM BOF and ongoing SRM group**
 - Must decide on membership, leadership and timescales of the SRM group – to focus on addressing the outstanding issues. The SRM group needs to be meeting regularly to follow up on interoperability testing etc. The FTS team must be involved in the discussions.
 - Other issues for the SRM group:
 - How to specify/advertise various storage types and qualities (disk, tape, high avail disk etc)?
 - Types should include user files – many small files, do not go to MSS, but should be either reliable storage and/or get backed up.
 - Do all this via the GLUE attributes?
 - How to know a file has reached tape?
 - Not clear how to provide disk and tape pools with a single SRM endpoint (because SRM does not support the concept!)
 - Cannot be based on roles
 - At the moment must be mapped to different users to go to different pools. Suggestion that it be based on the namespace.
 - Must be the same for all SRM implementations!!!! -
 - Must be agreed in SRM group!
 - FTS should be part of the SRM group
 - How to keep catalogues and file systems in synch - if a file is deleted - how to update cat or use information system to get another copy of file?
 - Fault management in storage systems/catalogues
 - No real conclusion, and nothing on SC4 timescale. RRS may address this?
 - SE manager needs tools to report problems to experiments

