

Status of SRM2.2 in *dCache*



Timur Perelmutov
for the dCache team
WLCG Workshop
CHEP07

Basic WLCG MoU functionality



Missing 0 out of 25

WLCG MoU functionality due end of 2007



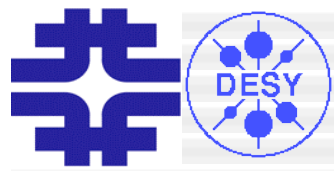
Missing 2 out of 4

Non MoU functionality



Missing 6 out of 12

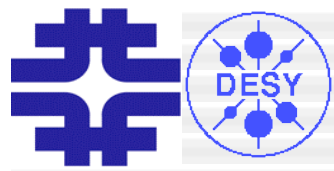
Project internal stress tests show greatly improved performance. Need independent confirmation



SRM 2.2 Status (2)



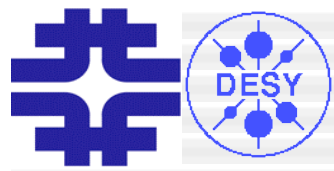
- 1.8.0_14 released on Aug 24, 07
 - ◆ Resolved most URGENT issues
 - SrmMkdir, SrmRmdir, SrmRm Error Codes
 - Resolved Space Reservation VO base Access control and Performance issues
 - Support for Infinite Space Reservations, admin commands for Space Reservations in LinkGroups
 - Stability under stress tests



SRM Versions support in dCache 1.8



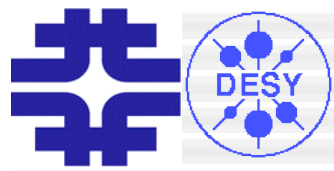
- **dCache 1.8.0** and higher will support **SRM 1.1** and **SRM 2.2** at the same time on the same TCP Port.
- Both SRM protocol versions will run in the same dCache instance, using just one file system instance. (pnfs)
- Both SRM versions will have access to the **same file name space**.
- Files written with 1.1 can be accessed via 2.2 and vice versa.



Plans



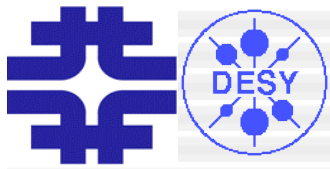
- Stability, WLCG Functionality
- SRM horizontal scaling
- Automatic File Removal after Space Expiration
- Permission Management
- Production quality srmcp client tool suite



Stability and Completion of WLCG Functionality



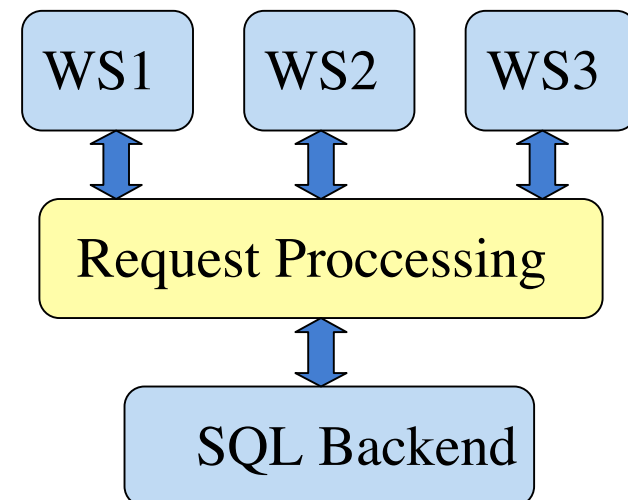
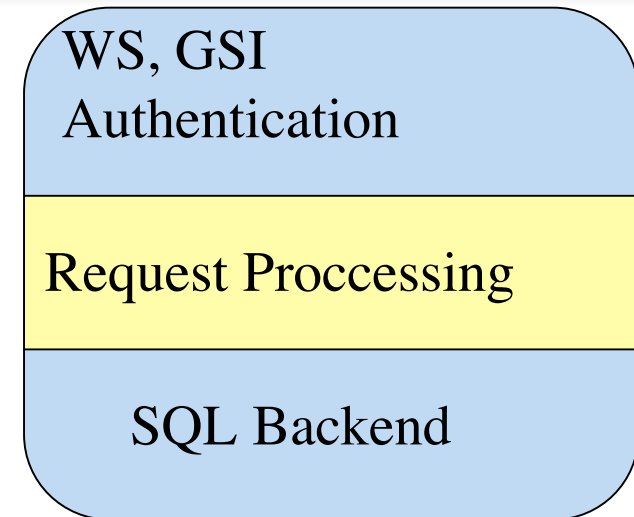
- SRM V2.2/dCache 1.8 development effort at FNAL increases Fall 2007
(see Gene Oleynik's talk)
- First goal – stability and production quality of service provided by dCache 1.8 with SRM 1.1 and SRM 2.2
- SRM Scalability concerns will be addressed
 - ◆ Comprehensive stress testing
 - ◆ BNL – Horizontal Scalability
 - ◆ NDGF – GSI SSL optimization
- Implementation of srmChangeSpaceForFiles – early 2008

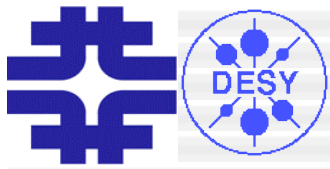


SRM Horizontal Scaling (BNL Contribution)



- SRM Interface dCache
 - ◆ WEB Service deployed in Tomcat/Axis
 - ◆ SQL database for Persistent State Storage
 - ◆ Monolith module
 - ◆ GSI Authentication – 90% CPU load
 - ◆ Does not scale to multi-nodes
- Work just began
 - ◆ Decouple Web Service interface from Business Logic
 - ◆ Allow multiple WS endpoints for a single system
 - ◆ This will enable usage of DNS Load Balancing

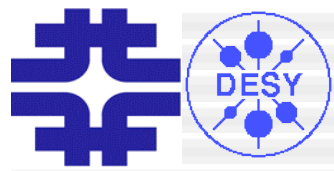




Automatic File Removal after Space Expiration (OSG Contribution)



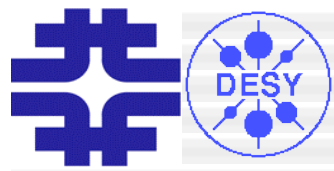
- Open Science Grid (OSG) storage is open to opportunistic use by multiple experiments and organizations
- Requires ability to Guarantee that upon the expiration of the lease on disk space, it will be automatically cleaned up
 - ◆ Files in the expired Space will be removed (garbage collected) via administrative tools (or automatically)
- OSG Contribution will help add support for volatile files with managed lifetimes
- SRM SpaceManager will be used for enabling this functionality



SRM Permission Management *dCache*



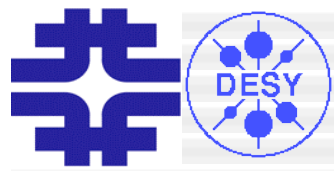
- ◆ need both VO Authorization System (gPlazma, done) and ACL capable Namespace Service (Chimera, Fall 07)
- ◆ Full support of SRM Permission Management will follow



SRMCP Client tool suite *dCache*



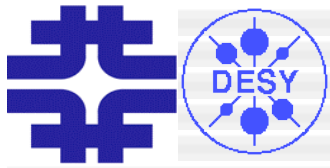
- SRMCP tool suite includes
 - ◆ Srm V1.1 clients – production quality
 - ◆ Srm V2.2 clients – requires some development, documentation
- dCache 1.7 rpm clients **will not** work with dCache 1.8 SRM V2.2 interface (will work with 1.8 SRM V1.1)
- dCache 1.8 rpm client will work with dCache 1.7 SRM V1.1 interface and dCache 1.8 SRM V1.1 and V2.2 interfaces



Conclusion



- dCache team made good progress towards delivering required functionality
- Achieving production quality of the dCache 1.8 and SRM 2.2 is a highest priority
- New members (BNL, NDGF, OSG, ...) strengthen collaboration, expected to contribute to the long success



References



- dCache www.dcache.org
- dCache SRM <http://srm.fnal.gov>
- SRM Working Group
<http://sdm.lbl.gov/srm-wg/>
- SRM V2.2 spec <http://sdm.lbl.gov/srm-wg/doc/SRM.v2.2.html>