



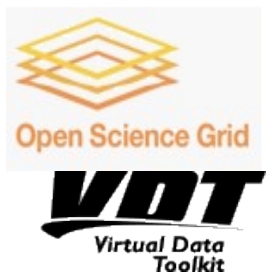
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# *dCache, an update*

Patrick  
for the dCache Team

support and funding by





# Content

## Work in progress (Main Streams)

### SRM 2.2

Development

Documentation

Migration techniques

WLCG roll out plan

### Chimera

### NFS 4.1



## *Status SRM 2.2 (development)*

- ♦ WLCG SRM 2.2 agreed functionality fully available except for features promised for end of 2007.
- ♦ Currently only code improvements are left to be worked on, based on feedback by NDGF and by Flavias tests.
- ♦ During the last weeks a lot of long standing issues could be resolved by increased phone conference meeting frequency and input from CDF, FZK (Doris) and NDGF.



## *Status SRM 2.2 (development)*

- ◆ Next week (Aug 13-17) : developers meeting at BNL.
  - ◆ We will mainly work on stability and performance
  - ◆ Massive stress testing.
  - ◆ Resilient Manager integration in 1.8
- ◆ Micheal offered the BNL SRM 2.2. evaluation system.
- ◆ We promised to leave it in a functional state after testing is done.



## *Status SRM 2.2 (migration technique)*

- ♦ Goal : just one day
- ♦ For small sites, with a low number of files, pools just need to be restarted with dCache 1.8. The transition is done transparently. Disadvantage : takes pretty long
- ♦ For large sites we provide a tool for preparing the pools in advance while the 1.7 system is still active. Discrepancy is automatically fixed after system restarts with dCache 1.8.
- ♦ We will have to exercise this. No experience yet.



## *Status SRM 2.2 (documentation)*

- ◆ The configuration for SRM 2.2 spaces in conjunction with all possible configuration options of dCache is not trivial.
- ◆ The current documentation only covers the basic use cases.
- ◆ We need external contribution for documentation and possibly 'tutorials'



# Status SRM 2.2 (WLCG Roll-Out Plan, oversimplified)

*Chep, WLCG meeting*

August

September

October

November

December

January

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*BNL, SARA, NDGF, FZK, IN2P3 configured for Atlas and LHCb (Space tokens)*

*Flavias Stress Tests  
High level tools test  
Experiment Tests*

*Second and last upgrade window  
Planned : USCMS & Remaining*

*(\* )Upgrade DESY*

*First Tier 1 upgrade window  
Planned : NDGF, FZK, ??*

*SRM 2.2 will become default for high level tools*

*(\* )certain restrictions apply*



# Chimera



- ◆ Main focus for DESY and FERMI has been SRM 2.2
- ◆ Nevertheless, large sites will require improved file system engine. Chimera will become a must for sites like BNL and FERM
  - ◆ Scalability and performance (see most recent CDF problems)
  - ◆ File sizes > 2G
  - ◆ More complex ACL's
  - ◆ Prerequisite for nfs 4.1
- ◆ dCache 1.8 RPM optionally already provides the chimera file system. Instructions at wiki (*trac.dcache.org*).
- ◆ 1.8 with chimera is independently evaluated by Greig (Edinburg) and very soon by BNL.





## Nfs 4.1

- ◆ Acceptance in HEP community is increasing for obvious reasons.
- ◆ An nfs 4.1 interface would make dCache a storage element candidate for other communities, which need random **real posix access** to underlying storage.
- ◆ dCache is very active in the nfs 4.1 group.
- ◆ NFS 4.1 in dCache requires Chimera.
- ◆ Nevertheless, the roadmap still is
  - ◆ SRM 2.2
  - ◆ Chimera
  - ◆ Nfs 4.1



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*Stop here ....*



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

Extended use cases



Missing 6 out of 40

Up to date information from Flavias 'test page'

<http://grid-deployment.web.cern.ch/grid-deployment/flavia/>



# Chimera



## Expected Improvements compared to PNFS

- Performance scales with back-end database implementation
  - Small to medium sites with mysql/postgres
  - Really huge sites with oracle cluster (planned for DESY)
- Enables protection against misuse
  - Different 'chimera users' (e.g. nfs, dCache, enstore) may get difference doors with different priorities if back-end db allows.
- Simplifies maintenance resp. monitoring tasks
  - By using SQL database
  - Easy to add customized web interfaces.
- Allows ACL plug-ins
  - ACL sub-project started beginning of 2007



# Chimera (cont.)



## Current status

- ➔ Functional and performance tests in progress
- ➔ Ready for testing by external sites : mid of march
- ➔ Setting up pnfs -> chimera (de-)migration scenarios
- ➔ Is tested by Greig @ EB and soon atBNL.



*Further reading*

*www.dCache.ORG*

