



Open Science Grid

OSG Storage Activities and Contributions to WLCG.

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Summary

- As a Project OSG has to date lagged the EGEE and WLCG in the support of Storage Services. This is not true about our Stakeholder organizations.
- VOs have typically supported their own storage service software installations, deployment and documentation scoped to only their own use.

OSG's goal is to change both of these in the next 12 months!

- To support Storage Services on the common shared production infrastructure an equal level of effectiveness as processing services.
- Contribute effectively to the WLCG - clearly working closely with the significant contributions from the US LHC collaborations.
- Include support of shared storage and opportunistic use of this shared storage.



OSG is part of the overall storage services support model

- We operate within the 3 tiered support model that Gene will give in his talk later:
 - Level 1 - Local site expertise. Install hardware, configure and maintain systems, first level of troubleshooting
 - Level 2 - More expertise; advise, assist and troubleshoot installations, configuration issues and transfer problems
 - Level 3 support - Developer expertise, identify and fix bugs
- OSG Consortium includes contributions from stakeholders including Tier-1 and Tier-2 groups.
- OSG Consortium provides forums for US community wide collaboration and communication.
- OSG Project interfaces to Level 1 support and tries to enable community communication.
- OSG Project provides effort limited Level 2 support.
- OSG Project interfaces and contributes to Level 3 support.



OSG statement on SRM V2.2

- OSG will Deploy and Support SRM V2.2 in OSG 1.0 for release in February 2008.
- This means SRM V2.2 dCache released as part of VDT in December 2007.
 - Before this packaging, installation documentation, interoperability and local system testing to be done.
- Integration/application testing in Jan/Feb 2008.
- OSG expects VOs to install non-OSG supported SE implementations as they need to.
 - Our model of operation anticipates VOs install whatever services they need on the sites they “own”. US LHC expected to install and support SRM V2.2 SEs on Tier-1 and Tier-2s before OSG support ready.



Status of Storage Services on OSG a Year Ago

- OSG project started 9/1/2006.
- Pre-existing operated infrastructure supported GridFTP for data movement and Environment Variables for data access and storage.
- WLCG VOs supported their own Storage Services at Tier-1 and Tier-2s
- LBNL DRM only storage service implementation in VDT. Only deployed at LBNL and BNL -- but not from VDT.



Status of Storage Services on OSG Today

- Virtual Data Toolkit includes 2 storage implementations: dCache and BestMan (replacement for DRM).
- 15 Storage Elements registered as OSG resources. (2 Tier-1s, ~10 Tier-2s, 1 non-physics (Arkansas)).
- 13 SEs using dCache; 2 SEs (for STAR) using DRM.
- Storage Services have equal importance to Processing Services in OSG 0.8.0 release expected in mid-September.
- 5 SEs on the Integration TestBed. Part of service, application, and interoperability-with-the-EGEE pre-release testing.



Organization of Storage Support in OSG

- Middleware support as part of VDT area provides packaging, distribution, testing and support.
 - E.g. installation and configuration scripts for dCache; documentation of OSG installs; support for US LHC Tier-2 and Tier-3 installation; SRM interoperability tester.
- Extensions area activities contribute development of needed enhancements/extensions to storage software for OSG infrastructure and stakeholder needs.
 - accounting module in dCache;
 - Just started: dCache 1.8/SRM V2.2 system test stand and associated scripts, SRM V2.2 file cleanup;



Other activity areas in OSG that contribute

- **Troubleshooting:** will help with end-to-end problems that include use of common storage, data movement and management services.
- **Operations:** Central monitoring of status of SEs.
- **Users Support Group:** help for user VOs to run applications.
- **Engagement:** helps new communities to adapt their applications to use OSG services.



Plans for OSG Storage work in next few months

- Prioritize work driven by stakeholder needs.
- Support SRM V1.1/dCache 1.7 in OSG 0.8.0 integration and production releases.
- Contribute to SRM V2.2/dCache 1.8 for inclusion in OSG 1.0.
- Ramp up communication and collaboration with GSSD as benefits the WLCG and US LHC collaborations.