



Open Science Grid

OSG's Software Stack

Alain Roy

OSG Software Coordinator

roy@cs.wisc.edu



OSG Software Stack

- We collect software into the *OSG Software Stack*
- Two parts to the stack:
 - Virtual Data Toolkit (VDT)
 - Set of grid software and dependent software
 - ***Grid-agnostic***, and ***used by multiple grids***
OSG, LCG, NGS, maybe PRAGMA?
 - OSG-specific configuration. Such as:
 - Script to apply OSG recommended configs
 - List of OSG VOMS servers for each VO in OSG



OSG doesn't develop software

- OSG aims to develop no software, but use software from leading technology groups.
 - We do develop some software, but we minimize it.
 - Software for packaging
 - Tools that just don't exist elsewhere
- Why?
 - Utilize the experts, who may not be in OSG
 - Gives us flexibility: we can change what we use
- We use several components from EGEE/gLite:
 - VOMS/VOMS-Admin
 - LFC
 - edg-mkgridmap
 - glexec
 - lcg_utils



How do we manage our software? Software Tools Group



- New this year, started based on lessons learned from previous years
- Responsible for the “big picture” of software
- Central hub for all software projects/plans
- Aims to ensure stakeholder’s needs are met at planning stage
- Single point of contact for software providers
- Inputs to group:
 - User/VO/Site requirements
 - Software providers timelines/plans
- Outputs:
 - Plans for software stack evolution
- The STG is new, and it will be the point of contact with EGEE and for the middleware deliverables to WLCG.

Process: Adding software to the OSG stack

1. Collect & publish requests from all users VOs, sites, management (ongoing process).
 - a) Collected by account managers, VO group, and site group
2. Plan when software will be included. Advertise plan across OSG.
 - a) Includes coordination with software providers
3. VDT team studies, builds, integrates, and tests software.
4. Validation testbed tests basic functionality.
5. Integration testbed test's VO requirements.
6. Deployment.

Steps 1-3 are watched over by the software tools group



Software interaction with EGEE

- We supply a subset of the VDT as RPMs:
 - Condor
 - Globus
 - MyProxy
 - GSI OpenSSH
 - GPT
- We take several components from EGEE:
 - VOMS/VOMS-Admin
 - LFC
 - edg-mkgridmap
 - glexec
 - lcg_utils
- Interoperability testbed
- Sharing of production jobs (beyond scope of this talk)

Plans: OSG 1.2 (VDT 2.0)

- Due by May/June
 - Sufficient time to allow sites to deploy before LHC restarts
 - Implies initial version in testing by end of March 2009
- Major focus: packaging
 - Our goal is to be able to provide smooth updates for LHC site, but this requires packaging changes that must be deployed soon. (Next slide)
- Other focus: Debian 5 support (for LIGO)
- Not a focus: upgrading software
 - Will have few, if any, software upgrades
- Should be easier to roll out incremental updates: software upgrades come later



Plans: VDT Packaging

- Uses Pacman as consistent packaging technology across multiple platforms.
- Improving Pacman packaging
 - Improving ability to deliver incremental upgrades
 - Ability to easily add new platform support
- Improving native packaging
 - Today we supply EGEE with RPMs
 - These RPMs are a small subset of VDT
 - We are gradually expanding and improving our native packages
 - Adding Debian packages
 - Better coverage
 - Improved system integration
 - Still at the beginning of this effort.



Other VDT Plans

- Deployment of Internet 2 tools for network analysis (PerfSonar, etc.)
- OSG Matchmaker: Simplifying how small VOs submit jobs
- Recently expanded set of Storage Resource Managers:
 - dCache
 - Bestman + Xrootd
- Support for Debian 5 (Lenny)
- Maintenance
 - Add/drop platforms
 - Upgrade software (security/bug fixes)
 - At least 50% of VDT activity

VDT Questions

- Globus 4.2
 - Beginning to get some requests to move to Globus 4.2
 - How does it affect interoperability?
- How do we best interoperate in upcoming years?
 - Balance improvements with production?

Questions?



Supported Platforms

- Linux (32 & 64 bit)
 - RHEL 3
 - RHEL 4
 - RHEL 5
 - Debian 4
 - ROCKS 3
 - SuSE Linux 9 (just 64-bit)
 - Scientific Linux 3
 - Scientific Linux 4
- Mac OS 10.4 (client only)
- AIX 5.3 (limited support)