

OSG Planning Retreat 2018

Software & Release

Brian Lin & Tim Theisen
November 6, 2018

Staffing

| | | |
|---------------------|----------------|-------------|
| UW - Madison | Brian Lin | 1.00 |
| | Mat Selmecci | 1.00 |
| | Carl Edquist | 1.00 |
| | Tim Cartwright | 0.25 |
| | Tim Theisen | 0.50 |
| UCSD | Edgar Fajardo | 0.50 |
| | TOTAL | 4.25 |

Year 6+ Highlights

- **Topology (9d support, 113d everything else):** Complete rewrite of OIM/MyOSG.
 - **Ongoing:** data validation, data cleanup, documentation, and support.
- **Site admin docs:** The TWiki was retired in favor of GitHub pages (**12d**). 149 site admin docs migrated, 500+ retired (**31d**). Created new processes for site admin doc review.
- **Globus Support (44d):** Globus packages in EPEL are now built from the Grid Community Toolkit.
- **Hadoop 2.6 (25d):** Released with full grid plugin support on EL7 and without grid plugin support for EL6.
- **Service Migration (24d):** transitioned to cloud-hosted JIRA; retired the OSG CA, RSV, and OSG VOMS admin servers; wrote and updated documentation; ran office hours
- **VOMS Admin retirement (19d):** campaign for retiring VO VOMS Admin servers
- **Madison ITB (15d):** Developed processes for OSG/HTCondor pre-release testing and site maintenance
- **XRootD Overhaul (WIP, 21d):** rewriting XRootD documentation, adding nightly tests, bug fix/new releases for XRootD plugins
- **Sum of all projects = 325 FTE-days**

*Estimates in FTE-days, missing Suchandra's effort

Year 6+ Releases

- 20 OSG 3.4 Software Releases (15m)
 - 2 high priority releases
 - addressing Singularity security
 - 9 in conjunction with 3.3 release
- 16 OSG Data Releases
 - 11 in conjunction with 3.3
 - 4 more for 3.3 to support Fermilab
- Defects found in testing
 - 18 defects found during testing
- Madison ITB
 - Pre-release testing of OSG Software Stack
 - Beta Testing HTCondor on Madison ITB
- Flexible Release Policy
 - Typically Monthly
 - As often as weekly
 - More responsive to upstream releases
 - One high-priority release on Friday
 - Helps alleviate testing crunch with hard deadline
 - Typical IGTF CA certificate bundle release in 2 days
- Community Testing
 - Ad Hoc
 - Reporter asked to test
 - List of helpful testers

Planning Year 7

Routine Work

- Routine updates to software packages
- Bug fixes to software and packaging
- Coordination of integration and acceptance testing
- Schedule and announce software/data releases
- Routine documentation updates
- Support, especially former Operations Team tasks
- Routine updates to build and test infrastructure

Support Continuous Deployment

In addition to release via RPM, stakeholders would like a support model that allows them to push software updates to participating sites. The continuous deployment pipeline would look like the following:

Upstream Developers \rightleftharpoons OSG Software & Release \rightleftharpoons VOs \rightarrow VO sites

With an emphasis on container deployments. Milestones and deliverables:

- Container technology review with stakeholder input
- Meet with stakeholders to outline ownership and responsibilities for each section of the pipeline
- Develop a process by which containers are built, tested, and released
- Prototype the above process with a single OSG Software service, e.g. XRootD, StashCache/XCache
- With stakeholders, identify candidate OSG services that are suitable for the continuous deployment model
- Distribute the identified services using the process developed above

Testing in the SSL

Use the SSL to address a long-standing gap in our automated integration tests: testing OSG services across multiple machines.

- Use the Software & Release team's VM host (osghost) as an SSL testbed
- Produce a two "node" SSL profile containing an HTCondor-CE and a single worker node
- Submit a single test job from the HTCondor-CE and obtain success/failure results
- Automate "submission" of the profile followed by job submission within the profile

XRootD Overhaul

Document and test integration of current uses of XRootD in the OSG, specifically XCache, StashCache, and standalone XRootD

- **Today:** Released XRootD plugins, reviewed and updated StashCache documentation
- **Remaining work:**
 - Add integration tests for StashCache and XRootD plugins
 - Write an XRootD overview
 - Document standalone XRootD and its use with supported plugins
 - Publish common documentation for XCache/StashCache, especially when XRootD 4.9 is released

OSG Topology

- Auto-merge downtime requests for authorized users
- Data validation and cleanup
 - Eliminate 90% of contacts (have 3k contacts, only need ~300)
 - Hunt down stale resources, VOs, and projects
 - Ensure that all resources have admin and security contacts
- Develop a process to nag contacts to verify that contact and resource information is up-to-date
- Add the ability to identify CEs that have not contributed to the GRACC in > 1 year
- Document internal policy and processes for new resources, VOs, projects, and contacts
- Explore technology alternatives, especially for contact management (e.g., COManage)
- Continue end-user support

Release OSG 3.5

The difficulty of HTCondor 8.6.x to 8.8.0 upgrades, especially w.r.t. HTCondor-CE, may drive the first release of OSG 3.5. Potential changes in OSG 3.5.0 may include:

- Upgrade to HTCondor 8.8.0
- Add HDFS 3.x contingent on a successful evaluation coordinated with CMS
- Drop packages that are deprecated or identical to EPEL
- Drop GridFTP?

HTCondor-CE

Miscellaneous HTCondor-CE related projects and tasks:

- OSG/HTCondor BLAHP unification
- HTCondor-CE config audit and template
- Upstream Hosted-CE BLAHP fixes
- Coordinate central collector publishing with the WLCG Information Systems task force

Formalized Community Testing

- Automated testing infrastructure similar to Fedora/EPEL or Debian
 - Upon approval developer promotes packages to testing repository
 - People testing a up/down vote
 - Automatic promotion to release repository after a period of time with no down votes
 - May require release manager to approve
 - May limit release promotions to Monday-Thursday
- Rolling Release model
 - No need to build osg-version
 - No formal releases
 - Depend more on developer's release notes

Smaller Projects

- **Globus EOL:** document GCT build process; upstream OSG patches; obtain EPEL maintainer status
- **Onboarding site documentation:** improve the documentation for onboarding new sites; clearly outline CE, VO, and worker node client installation options
- **Madison ITB:** install squid + CVMFS; install singularity; install StashCache
- **Validate accounting and reporting:** develop a document that identifies solutions for common accounting and reporting issues
- **Overhaul CA bundle generation:** simplify packaging and build process; move from SVN to git
- **Revisit effort tracking:** split into 3 categories (new features, keeping the lights on, orphanage) with subcategories (documentation, support, development, testing, management)

Concerns

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- Each portion of the continuous deployment pipeline needs to have clear owners and responsibilities.
- SSL seems to be in the proof-of-concept stage and it's not clear when we'll have a prototype available to play with
- Topology maintenance and operation are permanent “non-software” effort sinks
- HTCondor 8.8.0 upgrade difficulties can force OSG 3.5.0, which can be disruptive to other project timelines