Technology Investigations Update

Brian Bockelman
Area Coordinator's Meeting - August 2

Highlights

- GRÅCC: Operations and networking data.

- Starting to look at some small, concrete improvements in monitoring.

- StashCache: discussing next steps with OSG User Support area.

- Untangling Globus Toolkit dependencies.

- Best paper award for PEARC17!

GRÅCC

- Biggest concern remains end-to-end Puppetization of service. Progress made since last report - but still slow.

    - Operational effort is around 0.10FTE, especially given the factory ops shortage @ UCSD.

- perfSonar data is now archived @ FNAL via GRACC.

    - In Year 6, will start working on getting this data into GRACC's ElasticSearch / Grafana setup.

- Some small activity soon for a one time "clean the crap" of suspect records.

- In Year 6, will look into centrally pulling accounting histories from each CE, then injecting them straight into RabbitMQ.

Monitoring Meeting

- Had a small in-person meeting about monitoring the day after the OSG Staff Retreat.

  - Basic question: what concrete things can we accomplish in Year 6, given time / staff constraints?

- Resulted in 7 work items. Relevant to Technology:

  - Move relevant **GlideInFactory logs into ElasticSearch**. (Edgar)

  - **XRootD and GridFTP publishing to GRACC**. (Currently unassigned, but appears feasible!)

OSG Storage Progress

- The osgstorage.org CVMFS repositories received their packaging improvements.

  - Monitoring made a few steps forward. Minor disruptions for ligo.osgstorage.org due to GUMS retirement at Nebraska.

- SciTokens (external project):

  - Brian: working to define OAuth2 token format.

  - Derek: new CVMFS plugin to handle SciToken verification and use.

    - Note: this project halves Derek's availability for OSG Technology items.

OSG Storage - Year 6

- In Year 6, aiming to work in two areas:

  - "Quality-of-life": Improve monitoring and reliability; focus on new users.

  - Write-enabled stashcp *for OSG Connect.*

    - Not looking for a generic solution, but something minimal & targeted only for OSG Connect.

    - Will attempt to pick solutions that could be used by others (i.e., GLOW) in the future.

Containers / GPUs

- Edgar & Derek are working with OSG User Support to bootstrap GPU usage for OSG VO.

  - Per discussions last week, GLOW may be a second use case.

- ML stacks (currently driving GPU usage) tend to make LHC applications appear lightweight and portable; results in a strong drive for use of containers.

- Technology investment here will likely be to try and understand the needs of a more heterogeneous infrastructure. Blueprint topic?

- At OSG Staff Retreat, discussed at length improving support for non-CVMFS distribution of containers.

Retirements

- HTCondor-CE 3.0.0 should have the traceability improvements needed to meet FNAL requirements.

  - This theoretically clears the **path for all sites to retire glexec**. Details and small items remain!

- **Nebraska pulled the plug on GUMS**! 🎉 🎉 🎉

  - Discovered a few issues with xrootd-lcmaps; will likely need to be fixed before other CMS sites migrate.

  - Nebraska was likely the most complicated GUMS outside FNAL.

- VOMS-Admin retirement was discussed at OSG Staff Retreat.

  - Reminder: LHC VOs are hosted by CERN and not affected. Due to updated EU Data Protection regulations, all sites that want to support LHC **must transition to lcmaps-voms-plugins by March 2018**.

  - Appears the only VOs that need to replace VOMS-Admin is FIFE, and FNAL will be writing a custom / in-house replacement.

  - Hence, OSG only needs to help glideinWMS users to sign pilot credentials directly.

    - Cannot shutdown old VOMS-Admin instances until a critical mass of sites have migrated. Once there, transition is quick!

Globus Tookit -> Closed Source

- Reminder: **OSG will support our stakeholder's usage of Globus.** Open-ended for as long as it is needed.

- Handshake-level agreement with WLCG & EGI to share the burden of software support. Still not clear what this means in practice. Will evolve over the next few months.

- In the meantime, talking to software providers (example: HTCondor) about their plans to retire Globus.

- Hope to leverage SciTokens outcomes and WLCG investment in the HTTPS ecosystem.

Concerns

- **Effort**! Particularly, GRÅCC and Globus Toolkit effort requirements look daunting.

  - Will simply have to be judicious in where we spend our time.

- **Blueprints**: Need to get these back on track. At least made a list of desired topics at the OSG Staff Retreat.