

Technology Investigations Update

Brian Bockelman
December 17, 2014

Goals from Last Time

- **Stakeholder requests:** Presented REQUEST-66 and REQUEST-67 in early January OSG council meeting. (DONE?)
- **User Data Management:** Goal was to organize a meeting on the topic; this has quickly morphed into the StashCache project (covered later). DONE?
- **HTCondor-CE:** 10 sites in the info services (DONE!); half of CMS Tier-2s turn off GRAM (3 / 7); add another ATLAS Tier-2 CE (DONE?).

HTCondor-CE & Info Services

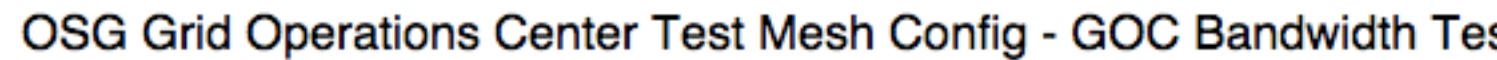
- Central collector has encountered a setback: when GOC restarts the central collector, not all CEs reconnect.
 - Acknowledged HTCondor bug. Understood and should be fixed for April release.
- SAMv3 can discover and submit to HTCondor-CE sites.
 - This is only working for CMS sites (the discovery process is simpler there). Working with the ATLAS team (led to an update of GIP in February).
 - About to finish a CMS update to remove the dependency on BDII.

OASIS Software & Service

- Last time:
 - BNL is running an instance of OASIS v2 locally for USATLAS Tier-3 sites.
 - External repos are now live! Initial users are IceCube, LSST, and Fermilab VOs.
- Progress:
 - We now distribute the EGL.eu repos requested by OSG VOs.
 - We now have an ITB infrastructure in place.
 - We attempted the OASIS2 upgrade for the GOC Stratum-1 on Feb 24. This was not successful; we identified (and solved) 3 bugs and will try again next production release (March 10).
- Working with LIGO to evaluate using CVMFS for their VO. Expect this to be started in the next week or so.
- Additional Fermilab VOs are hooking up external repos.
- Current focus is rolling out the OASIS2 + CVMFS 2.1 upgrade. Hard deadline is March 17.
 - Work on client configuration improvements is on hold until after OSG AHM.

Network Monitoring

- Contributions to network area are ongoing.
 - After performance tweaks, we're running at full scale. Better understanding of the load.
 - Still doing data validation. Throughput numbers look correct; discovered some dropped data in latency metrics.
- Interesting find: the latency data is possibly under-sampled. Dropping a random subset of latency data results in 2x change in results. We should ask the perfSonar community to think about how to manage this data.

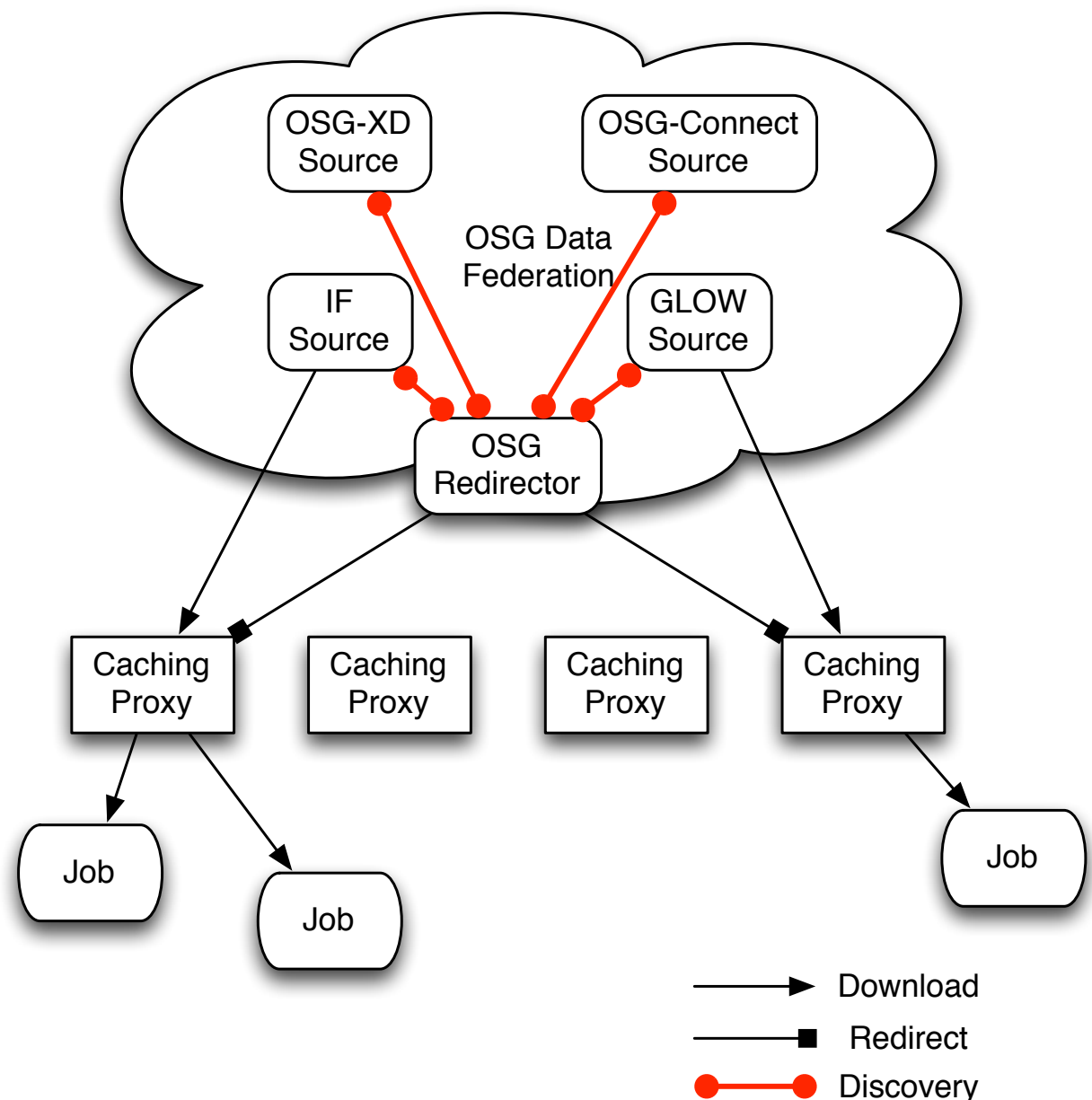


StashCache

- See https://twiki.opensciencegrid.org/bin/view/SoftwareTeam/SW023_XrootdAcrossOsg
- **Idea:** Provide a read-only data access infrastructure optimized for VOs running cache-friendly workflows on datasets 5GB-5TB.
- Implementation is based on Xrootd, but users will not see it. Three access methods:
 - “cp”-like interface. Copy remote files locally.
 - HTCondor file transfer. Basically, access the above interface from within the HTCondor submit file.
 - POSIX IO. Achievable through a LD_PRELOAD mechanism.
- Generalization of the existing StashCache done by OSG Campus Grids area.

StashCache - Component Architecture

- Long-term:
 - VOs operate the source / origin servers.
 - OSG Ops runs the redirector.
 - Caches are jointly run by OSG Ops and host sites.
- Short-/medium-term, less involvement from OSG Ops and more from Technology.
 - Envisioning a lengthy ITB period (>6 months).
 - During the ITB phase, we will not be opening to all VOs/teams; for now, limited to OSG Connect.
- Note that we envision 5-10 caches for all of OSG; no service is necessary at execution sites.
 - No software is necessary at sites; part of pilot.



Up-and-coming

- OSG Security has asked us to evaluate certificate-less glexec for improving traceability.
- This appears to be identical to a dropped work item from 2013. Should be straightforward to pick this back up, but there's still significant work.
- Started initial discussions with the LIGO team.
- Not obvious this affects the Technology team beyond initial “meet and greet”.

Goals for next time

- Double # of non-CMS HTCondor CE instances in the glideinWMS factory.
 - Turn off remaining GRAM instances for US T2s.
- rsv-perfsonar probe validated for throughput and latency metrics.
- OASIS2 fully deployed.
- All components of StashCache deployed and in use by OSG Connect.