Technology Investigations Update

Brian Bockelman

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Highlights

- 58 services present in collector.opensciencegrid.org.
    - Very surprised to see almost 20 instances of HTCondor-CE 2.0.0: indicates some sites are aggressively
- NoVA uses StashCache for end-2015 production run.
    - End-2015 has now become winter 2016.
- CVMFS-over-StashCache has become development-complete; working on release (no new operational services).
- Plan and prototype of the OSG-CE-BOSCO.
    - Drop? Seems to not be much demand for this…

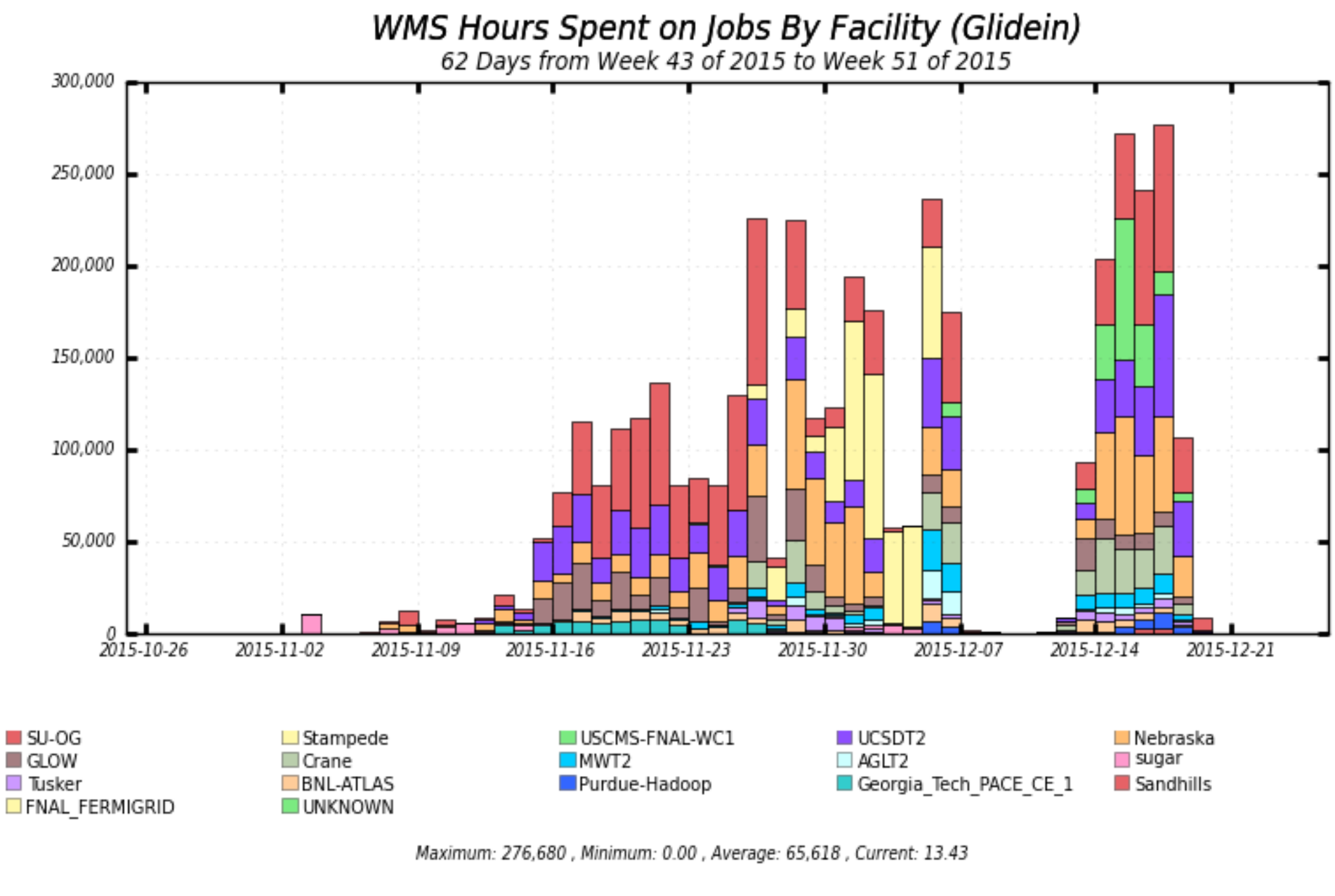
HTCondor-CE (and friends)

- HTCondor-CE @ CERN now fronts a HTCondor cluster of 9.2k cores.
    - CERN, HTCondor team, and HEPiX is organizing a HTCondor Workshop in February. One of the dedicated sessions will be about HTCondor-CE.
- Not much progress on AGIS compatibility for collector: software has been released, but haven't coordinated with GOC to upgrade ITB (combination of holidays + SWC).
- RobQ and TimC are now tracking detailed progress of rollout.
- New work on the horizon:
    - NERSC support (needs HTCondor work for root-squashed fs).
    - HTCondor-CE-BOSCO: most immediate work is on getting Gratia accounting working.

LIGO

- Continued positive progress on “the LIGO front”:
    - Agreement with the scientific collaboration to acknowledge OSG in papers where they use OSG (this sounds simple but actually hard in a big collaboration!).
    - LIGO used 4M CPU hours on the OSG and Stampede. About 10% of total was Stampede.
        - LIGO stores about 5TB of data at Nebraska; and read approximately 1PB during their run.
        - One of the LIGO OSG users is a former OSG Summer School student.
- Goals for end-January / early-February LIGO run are:
    - Switch from GridFTP to Xrootd (less overhead on Nebraska servers).
    - Run a single workflow across OSG and XSEDE: prior version of Pegasus required separate workflows on each infrastructure.
- LIGO collaboration resulted in bugfixes / small new features in GUMS, xrootd-hdfs, gridftp-hdfs, xrootd-lcmaps.

LIGO



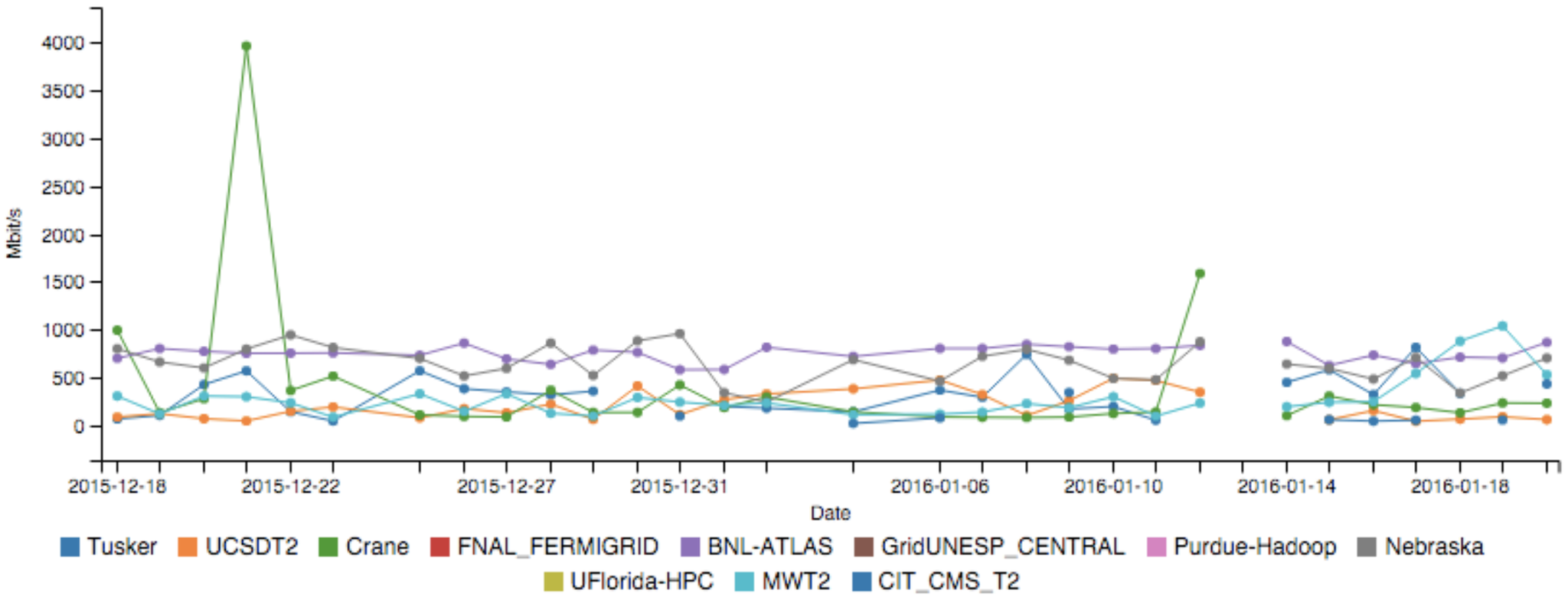
Total is approximately 4M hours; Stampede is around 400K.

Blueprint

- Three TODO items from Blueprints worth repeating here:
    - Transition VOMS-Admin from supported software product to a hosted service.
    - Work with HTCondor / GlideinWMS teams to have the pilot manage CRLs, not the site.
    - Work with GlideinWMS team to come up with a better concept for draining of multi-node pilots.
- Further, it seems we need to study / understand better LIGO's accomplishments in the identity management area. Particularly, they handle web-based interactions and group management far better than the OSG approach.

StashCache

- Basic system health is in much better shape than last report.
- Have a few CVMFS-over-StashCache repositories published, making the system much easier to use.
- StashTester continues nightly performance tests. Work for next reporting period is to visualize the cache monitoring data we currently collect at collector.opensciencegrid.org.



OASIS

- Various minor monitoring, maintenance, and operational items ongoing.
- Highlight of planned March release is a new “configuration repository” for banning repositories.
    - Supersedes our homegrown blanking functionality.
- For CVMFS 2.3.x series, upstream is interested in subsuming other OASIS functionality into the core.
    - It’s possible that in 12 months, OASIS is a special configuration of CVMFS instead of a wrapper. One Less Software Package to maintain.

CVMFS-over-StashCache

- CVMFS-over-StashCache aims to provide a CVMFS filesystem where the *metadata* is served from OASIS and the *data* is served from StashCache.
    - Logically, CVMFS catalog provides a pointer to StashCache endpoint instead of serving data via CVMFS caches and format.
- Goals:
    - POSIX read-only filesystem view of StashCache.
    - Utilize data scalability of StashCache and metadata scalability of CVMFS. VOs should be able to publish data federation unmodified.
    - No new OSG operational services.
    - Sites can run this “out of the box” with no required customizations for acceptable performance. Some customizations can be done for improved performance.

CVMFS-over-StashCache Status

- CVMFS code changes merged upstream.
    - In addition to CVMFS-over-StashCache, added GSI authorization
    - Testing RPM available in upstream's nightly builds.
- Updated cvmfs-config-osg package built.
- StashCache configuration changes done.
- Waiting for GOC to sign initial repos (CMS, NoVA, LIGO):
    - NoVA: Used to distribute flux files. Uses StashCache and OASIS external repo (Stratum-1 and key signing).
    - LIGO: Uses OASIS external repo (Stratum-1s and key signing); due to auth requirements, data is exported directly from Nebraska, not StashCache.
    - CMS: Uses OASIS key signing. Due to metadata and data auth requirements, metadata exported directly from Nebraska and data via AAA.
- Working with OSG-Connect team to create a Stash repo.
- Expectations: everything in osg-release repo by March; widespread availability on worker nodes by July.

HPC Items

- Stampede is officially integrated in the factory - including specification of the allocation ID.
    - Submitted PR to GlideinWMS for VO frontend changes.
- Met with Frank and Miron to develop strategy for XSEDE accounting of OSG resources for non-OSG VOs.
    - Writeup / summary forthcoming.

Yearly Goals Checkup

- Items to “improve Stratum-1 monitoring” (half done in CVMFS 2.2.0) and “automate CVMFS client configuration” (configuration repo) should be finished in the next 3 months.

- CVMFS-over-StashCache will be delivered in February to “osg-upcoming” repo; targeting March for “osg-release”. Expect a .

- I’m ready to call StashCache “production”; need to write SLA.

- After last time’s feedback, working on HTCondor-CE-BOSCO again.

- HTCondor-CE / AGIS support: first round delayed by about a month. Should be done mid-February.

- Participate in WLCG IS task force. Goal is to help remove the BDII dependency.