Technology Investigations Update

Brian Bockelman
Area Coordinator's Meeting - August 23

Highlights

- BlueWaters: First pilots!

- HTCondor-CE-BOSCO: more instances, production jobs, accounting records.

- GRÅCC: Starting to gain speed.

- SRM retirement: Starting to gain speed on CMS side. ATLAS picture is starting to clear up.

- glexec retirement: Forming a plan.

StashCache

- Sill in the long slog of getting sites on CVMFS 2.2.0.

  - Hoping to get CVMFS 2.3.0 into next OSG release: adds support for secure CVMFS.

- Significant repo news:

  - stash.osgstorage.org: Still on about 20% of OSG VO pool.

  - des.osgstorage.org: New repo for DES.

- Had at least one OSG-Connect user convert a production workflow to use stashcp. Working with Mats to have them use it more regularly (non-StashCache workflows are causing problems at UNL).

- UChicago summer student is currently converting stashcp code to python.

- Xrootd caching performance improvement is under heavy testing @ ND.

- Finished migration to production infrastructure (redirecter.osgstorage.org).

OASIS

- Looking at some modest improvements to OASIS service; want to make the following upgrades to the Stratum-1 @ UNL:

  - Add read-only **rsync service**. Helps prevent sites from doing this themselves.

  - Add **squashfs image service**. Would be a valuable service for HEP experiments @ DOE ASCR sites.

  - Add low-latency updates daemon. (Contribution from BNL). Currently stalled.

HTCondor-CE

- HTCondor-CE-BOSCO:

  - Working instances at Utah, IIT. Still spinning up: Stanford. Test CE: UNL.

  - Docs: https://twiki.grid.iu.edu/bin/view/Documentation/Release3/InstallHTCondorBosco

  - Shows up in Gratia / GRÅCC. IIT example: http://goo.gl/zDftmh

GRÅCC

- Always improving dashboard: https://gracc.opensciencegrid.org/

- Still doing some comparisons / bug squashing for summarization.

- Starting to contact downstream users of Gratia to update to GRÅCC; would like to get these converted in the next month or so.

- Put in a request for ugrad students at UNL which would help, particularly with improving Dashboards.

  - Have a ~50% shot at getting this: will know more next Thursday.

SRM retirement

- CMS already has first site to retire SRM (see last report from June). Working with additional sites - seems about 3 are actively tackling this.

- Providing technical support to Wei Yang @ SLAC to repeat this on the ATLAS side.

  - Once we get a SRM-free ATLAS site, we'll hit the year's goal.

glexec retirement

- Starting to investigate / plot the retirement of glexec.

    - Looking at using singularity as a replacement (http://singularity.lbl.gov).

        - Singularity is a container solution that targets HPC, but meets all the requirements for us.

    - Detangles the isolation pieces (payload cannot attack pilot or other payloads) from traceability.

        - When the VO can provide sufficient traceability, this can be the entire solution.

- **Long-term**: unlike glexec, singularity should be able to run without setuid in RHEL8. We could distribute via CVMFS and have a globally-usable config.

- **Short-term**: Did a proof-of-concept glexec wrapper at Nebraska. Will talk to HTCondor team about first-class integration of singularity when available.

Concerns

- Would like to see a few more big opportunistic sites upgrade to CVMFS 2.2.x. (Repeat from last time)

- Will need a wider range of folks (mostly software) working on adapting GRÅCC between now and end-September. I would guess GRÅCC is 2-3 weeks behind where I wanted it.