

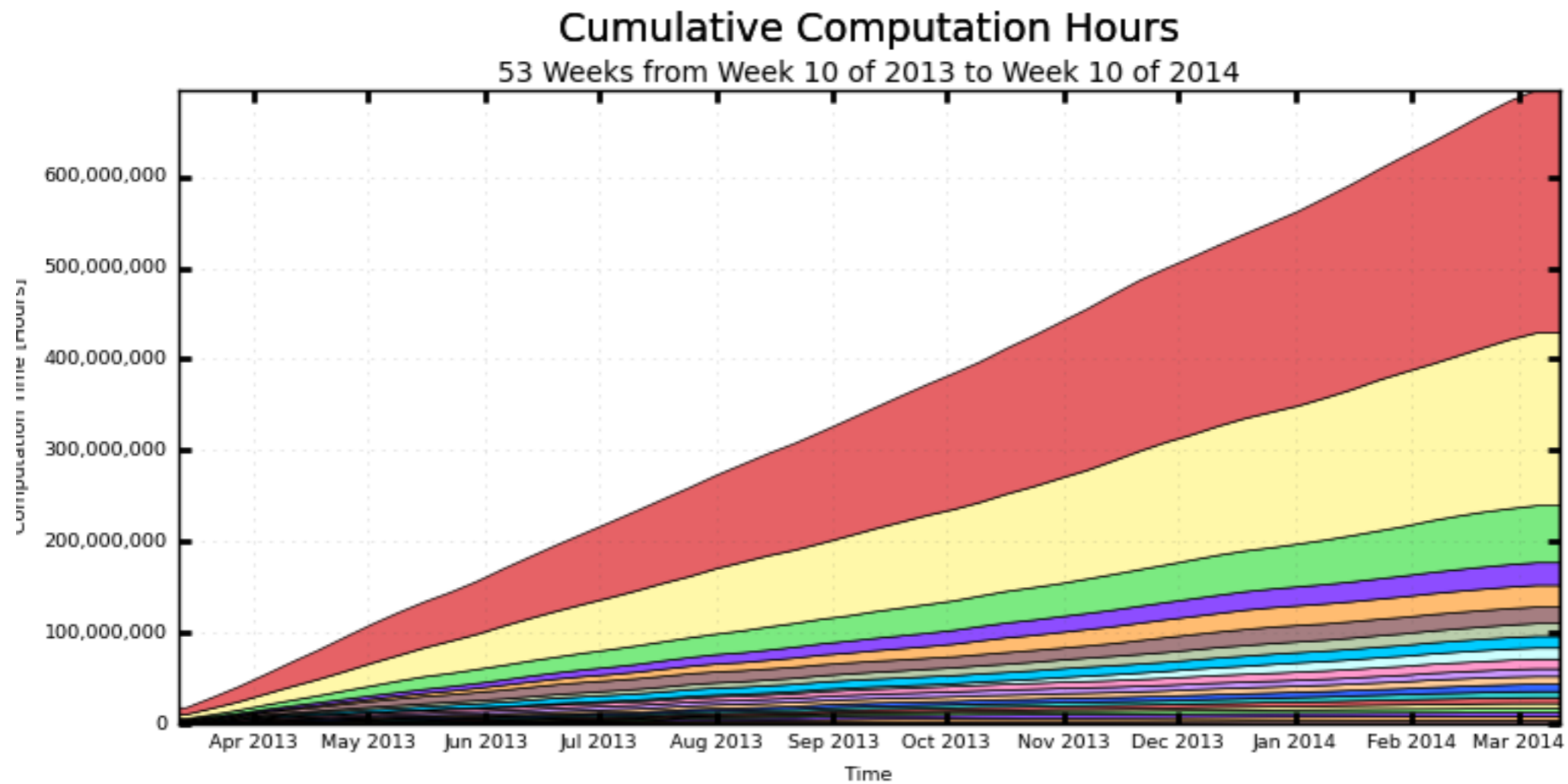
OSG Update

Brian Bockelman
GDB, 12 March 2014

OSG Organization

- No changes in the org chart since our last report. As a reminder, the areas which interact with WLCG (and the area coordinator):
 - Operations: Rob Quick
 - Security: Mine Altunay
 - Technology: Brian Bockelman.
 - Software sub-area: Tim Cartwright
 - Network Monitoring: Shawn McKee
 - Other areas include user support (Chander Seghal) and campus grids (Rob Gardner); historically, these rarely interact with this forum.
- Being that I'm most familiar with the technology area and Ops / Security / Network Monitoring are well represented in other WLCG groups, I'll focus on software and technology issues today.

Production Grid Usage



atlas (266,419,686)	cms (189,510,512)	osg (62,541,728)	dosar (24,999,274)	cdf (23,720,873)
dzero (18,010,390)	alice (14,010,360)	glow (12,889,121)	mu2e (12,360,672)	minerva (10,572,389)
mars (8,381,716)	engage (8,286,950)	Other (8,242,650)	minos (6,817,167)	nova (6,191,208)
lbne (5,273,885)	gridunesp (4,698,165)	hcc (4,322,004)	auger (4,233,021)	sbgrid (3,649,971)

Total: 695,131,752 Hours, Average Rate: 22.04 Hours/s

Production Grid Usage

- “OSG VO” is the label for users accessing the production grid through OSG User Support.
 - Among other things, this includes users from the NSF-funded XD / XSEDE infrastructure. Covers many fields of science.
- Opportunistic use through User Support and standalone VOs was over 80M CPU hours last year.
- We believe pilot-based systems account for >99% of OSG Production Grid usage.
- While opportunistic use is generally separate from USLHC support, having a broad use base allows LHC to benefit from economies of scale.

OSG Software

- The software distribution currently has two major release series (last release date was yesterday):
 - **OSG 3.2.6**: Compared to 3.1.x, major upgrades include HDFS 2.x, Globus 5.2.5, addition of HTCCondor-CE, and removal of several deprecated components.
 - **OSG 3.1.31**: Release series since 2011; this is the software series used during LHC Run I.
- We do not have a particular schedule set for new major release series; the intent is less than once per two years. We aim to only start a new release series when we have a major update that is impossible to package in the current series.
 - So, Globus update does not trigger a new major series but HDFS does.

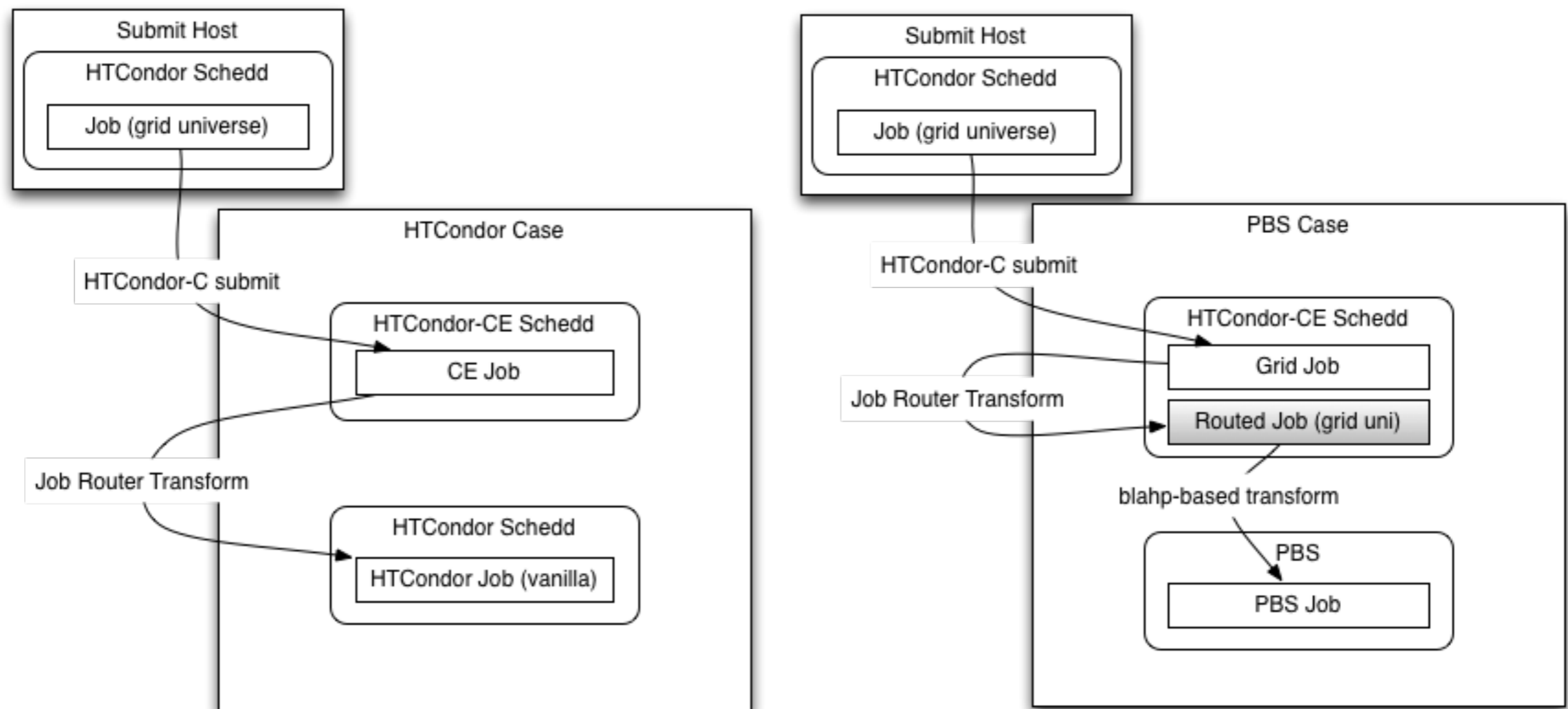
OSG Software Initiatives

- In the last 6 months, we've made significant investments in our testing infrastructure. We now have reliable nightly tests which cover all supported platforms and most major software products.
 - Goal is not a full software test suite (that's still responsibility of upstream), but integration tests - looking at the combination of OS + EPEL + grid dependencies.
 - For example, this allows us to detect issues stemming from OS updates before sites encounter them.
 - This is our platform for continuous testing of items like RFC proxies and SHA-2 support.
 - As possible, regressions we encounter get rolled into new tests.
- Software suite is called 'osg-test'; can be manually invoked by software developers or run automatically in our nightly VMs.

OSG Software Initiatives

- We're adding support for UDT (UDP-based Data Transport), an alternate transport layer for Globus GridFTP server.
 - In tests, significantly faster than TCP over high-latency connections with moderate loss (such as we usually see in trans-Atlantic R&D networking).
 - Working with FTS3 to ensure seamless support for UDT-enabled sites.
- Other projects are starting to reuse our Koji-based build infrastructure (one of the original selling points of doing this switch in 2011). Four projects total: USCMS, HCC, OSG, and HTCondor.

OSG Software Initiatives



- HTCondor-CE: a CE based solely on HTCondor components (which includes blahp, the component used by CREAM).
- In production at two sites; working on rollout plan.

Interop Issues

- Interoperability issues of note:
 - **SHA-2:** There have been no known issues preventing sites from using SHA-2 since November 2013.
 - SHA-2 support goes back further than that, but there were unrelated nasty bugs.
 - **VOMS clients:** We are on the VOMS 2.x series and have no current upgrade plans; a sufficient number of C/C++ programs link against the VOMS libraries there is no foreseeable retirement of VOMS 2. Upgrade to latest VOMS-Admin is under consideration.
 - **BDII / GLUE2:** No news here. OSG has no scheduled plans for GLUE2 support.

Interop Issues

- **CVMFS:** OSG has invested quite a bit of effort to enable CVMFS use for its VOs.
 - We host a CVMFS repo for OSG VOs. Working to update documentations encouraging sites to prefer CVMFS over NFS-based shared directories.
 - We distribute and support our grid UI through CVMFS (in addition to the more traditional RPMs).
 - OSG supports a stratum 1 server.
 - We strongly encourage all sites to run HTTP proxies; in an upcoming release, this will be a requirement.
 - Hopefully strong CVMFS support will enable opportunistic LHC use.
- **APEL:** Perhaps our oldest interoperability project; records are nightly transferred from Gratia (OSG's accounting service) to APEL. This system, contributed by USCMS S&C, has recently been transferred to

Conclusions

- The OSG Production Grid contains a vibrant landscape of users including participation in WLCG.
- The OSG Technology Area supports and improves the US's participation in WLCG with a number of software initiatives such as HTCondor-CE and improved testing.
- OSG and WLCG interact on a broad number of interoperability topics. Most appear to be in a good steady-state.
- Questions? Comments?