OSG Token Transition Status

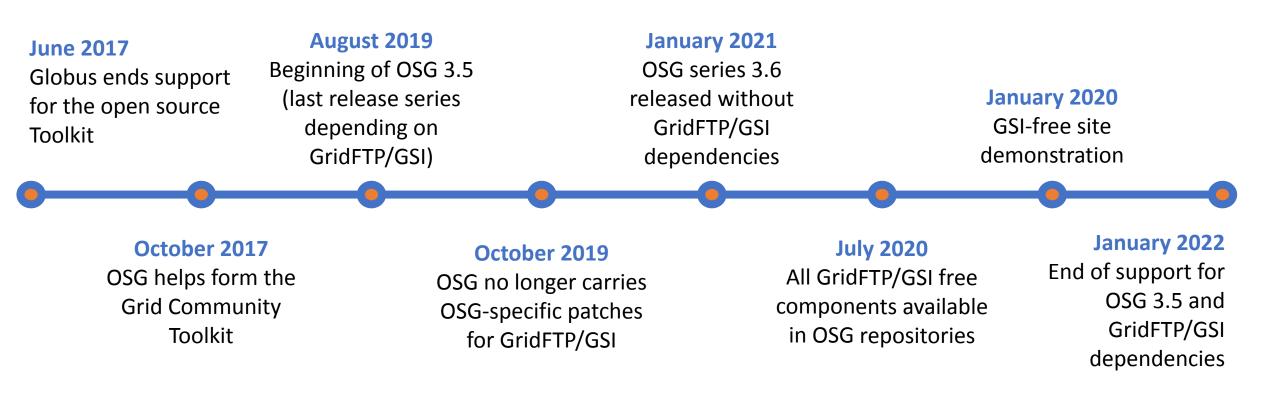Brian Lin, Brian Bockelman
Center for High Throughput Computing
University of Wisconsin–Madison, Morgridge Institute

Five Years in the Making

June 2017
Globus ends support for the open source Toolkit

October 2017
OSG helps form the Grid Community Toolkit

August 2019
Beginning of OSG 3.5 (last release series depending on GridFTP/GSI)

October 2019
OSG no longer carries OSG-specific patches for GridFTP/GSI

January 2021
OSG series 3.6 released without GridFTP/GSI dependencies

July 2020
All GridFTP/GSI free components available in OSG repositories

January 2020
GSI-free site demonstration

January 2022
End of support for OSG 3.5 and GridFTP/GSI dependencies

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Or Sixteen Years in the Making?

2006
OSG is formed with
Globus Toolkit at the core
of its Software Stack

May 2022
End of support for
OSG 3.5 and
GridFTP/GSI
dependencies

OSG Software Stack

- OSG 3.5 reached its end-of-life on May 1, 2022
- OSG 3.6 does not contain any Grid Community Toolkit dependencies
  - HTCondor-CE and HTCondor continue to support X.509 proxy delegation through OpenSSL libraries
  - XRootD continue to support GSI/VOMS authentication through its own implementations
- 41 → 21 supported RPM packages
- Documentation cleanup
  - Removed 12 documents for EOL'ed software
  - Net -3600 lines of documentation so far

OSG Central Services

- UCSD GlideinWMS factory updated to OSG 3.6, i.e. only submitting token-based pilots
- Some VOs still need to submit to non-OSG CEs using X.509 proxy based pilots or using the non-REST ARC interface
  - CERN GlideinWMS factory running HTCondor with GSI support from the upstream HTCondor.org team.
  - Affected GlideinWMS VO frontends moved over to the CERN factory
  - This 'buys us time' – have a few extra months to ensure all ARC-CEs cut over to REST APIs.
    - HTCondor is expected to release support for token-based pilot submission to ARC in the summer.
    - Expect the **end of support for GSI in HTCondor to occur during the technical stop** during winter 2022.
- 33 of 40 Hosted CEs updated to OSG 3.6

Compute Entrypoints

- 111 out of 127 OSG CEs have been updated to support token-based pilot job submissions
- Continuing to work with sites to update to OSG 3.6 or troubleshoot token-only CEs
- Quality of life improvements
  - Additional troubleshooting and usage documentation
  - Working with the HTCSS development team to improve error messages in the logs

Accounting

- Estimating a 6% decrease in core hours between April and May
- Accounting software at sites also underwent major changes in OSG 3.6
- Will take some work to distinguish between sites that aren't reporting due to tokens vs bad accounting software updates
- Luckily so far, missing data has been recoverable
- Next few months will involve tracking down these sites

Storage

- Assisting collaborations with moving from gsiftp:// to WebDAV/HTTP-TPC.
- LHC was immensely helpful in doing pathfinding activities.
  - Most sites we engage either already have an HTTP-TPC endpoint or are familiar with the concept.
- OSG supports HTTP-TPC via the XRootD software packages. One major change was the move from LCMAPS for identity mapping to native XRootD plugins.
  - Required contributions to XRootD to cover some of the functionality differences (e.g., ability to map VOMS extensions to a Unix user).
  - Hopefully the GDB community finds this work interesting as well.

Storage - Onward and Upward!

- Recall the OSG 3.5 EOL is not the "token transition".
  - The EOL *is* an important, mandatory milestone during the much longer token transition.
- The EOL frees up resources in OSG to redouble efforts on easing the use of tokens for storage.
  - Example: IRIS-HEP recently contributed improvements to XRootD to help debug token-based authentication.
  - Example: Similarly, IRIS-HEP is working to improve XRootD's compliance with the WLCG JWT Common Profile.

🎉 Mission Accomplished! 🎉

After a modest delay from the original February 2022 deadline proposed years ago, OSG has successfully retired the OSG 3.5 release series and no longer supports former Globus Toolkit software.

- We are 11 days into this new era; cleanup activities will likely be ongoing through the summer.
    - Largest impact appears to be accounting systems – watch those closely over the next month!
- After significant participation from the community through the years, the transition for the LHC experiments was pleasantly quiet.
- <u>However, if you see something, say something</u>. We are interested in hearing about unplanned fallout and interested in solving your issues!

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Questions?