



OSG 3.6 & Singularity Containers

Kevin Retzke et al.

FIFE

12 May 2022

OSG 3.6

- Background: OSG maintains repository of common grid software
- OSG 3.5 is end-of-life this month
- OSG 3.6 is a substantial overhaul, using tokens instead of proxies by default and relying more on EPEL for some packages
- Many sites have already migrated their worker nodes, **including FermiGrid**
 - Fewer packages in default worker node install
- **proxy-based client tools, such as globus, still available from EPEL, but may not be installed**

Testing OSG 3.6

- Select interactive nodes have been upgraded (e.g. dunegpvm15, fifeutilgpvm02).
 - Open RITM to SSI for your experiment to upgrade node and start testing.
 - No current ETA for upgrading all nodes. Weeks?
- Singularity container for grid jobs `fermilab/fnal-wn-s17:osg3.6`
 - To use for testing, add following to jobsub command:

```
-l '+SingularityImage=\"/cvmfs/singularity.opensciencegrid.org/fermilab/fnal-wn-s17:osg3.6\"'
```
 - Our goal is to make sure everything that currently runs in OSG 3.5 container/worker node will run in OSG 3.6 container

Singularity by Default?

- Singularity is currently opt-in, users have to specify `SingularityImage` with `-l` flag to Jobsub
- Initial testing suggests that users not using Singularity may encounter issues due to missing libraries in OSG 3.6 worker node installs
- The solution is to run in Singularity instead of relying on sites to install missing libraries
- Proposal: when ready, roll-out OSG 3.6 Singularity image and make it opt-out (by mechanism to be determined)
- **Why not?**

Impact on Services: IFDH

- We've been working to move IFDH to HTTPS default and remove dependency on globus, etc. in preparation for OSG 3.6 and tokens. It's been a bit rocky:
 - Increased error rates observed - sites may treat HTTPS traffic differently, NAT issues?
 - Initial transfer mechanism using curl didn't have integrity checking. Replaced with GFAL2
 - GFAL2 plugin library incompatibilities encountered, even in containers! (site(s) had plugin directory env var set)
 - Old GFAL (which is in OSG 3.5 stable) has bug listing directory contents
- For near future, keep using GSIFTP default, resume HTTPS work after OSG 3.6 is "everywhere"

Impact on Services: Other?

- What other services are impacted by OSG 3.6?