

OSG PUBLIC STORAGE (PHASE II)

Project Timeline

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- Started in October 2011
- Phase I completed in June 2012
 - ▣ Presented at the OSG Tech. Area meeting
https://twiki.grid.iu.edu/twiki/pub/VirtualOrganizations/IRODSOSG/OSGStorage_iRODS_phasel_final_report.pdf
- Phase II is wrapping up:
 - ▣ Presentation for Operation and Production Managers
https://twiki.grid.iu.edu/twiki/pub/VirtualOrganizations/IRODSOSG/OSGStorage_iRODS_deployment.pdf
 - ▣ Various “beta” users (EIC, SAGA, Pheno)
- What’s next for Public Storage?

Public Storage Capabilities

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- Resource management
- User management
- Resource per VO quota management
- Three resource types:
 - ▣ srmGroup consists of the OSG SRM SEs. Used for input/output data by a grid job
 - ▣ gridFTPGroup consists of the OSG Classical SEs (Allow access to OSG_DATA via gridftp server). Used for common input data pre-staging.
 - ▣ gridFTPAPPGroup consists of the gridftp servers that allow access to OSG_APP area. Used for software installation (should be phased out as soon as OASIS becomes a production service).
- Data access via unified namespace
- The intricacy of resource access (server, port, specific path for each site) is hidden from a user
- User can pre-stage/remove data to/from resource group with a single command
- User can manage data on a worker node by either using condor transfer plugin mechanism or by specifying an appropriate command in a grid job
- iRODS client commands is installed on worker nodes via glide-in pilot.

Use Cases (I)

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- EIC tested pre-staging files to a site with OSG_DATA area and accessing these files from the worker nodes
- Pheno tested iRODS while running MPI jobs on the OSG:
 - ▣ Start jobs on any site that allows to use a “whole” node
 - ▣ Upload files to a SE from worker nodes
 - Check if a local SE is available and has enough quota or find other available SE
 - Upload file
 - Register file in iRODS
 - ▣ Download all the files to user’s laptop using irods client commands
 - ▣ Ran several jobs

Use Cases (II)

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□ SAGA

▣ SAGA-based BigJob applications:

- A reference genome dataset (2-100 GB) that needs to be shared among jobs. They want to use OSG_DATA area to pre-stage this dataset.
- Need to install application (short-read aligner called 'BFAST', specific version of python, etc) in OSG_APP area

▣ SAGA-Python group uses proprietary software to deal with storage management. They are trying to adopt iRODS for their needs.

▣ Several users are running tests for couple of weeks.

ISSUES/RISK

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- We are using iRODS in non-orthodox way. As a result we are losing a lot of iRODS functionality.
- iRODS developers are not interested in our use cases. Support is minimal.
- We have put iRODS “front” so our users are shielded from the complexity and unpredictability of SEs behavior. We still need to deal with all the SEs issues.

What's next?

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- Stop now:
 - Advantage:
 - 0.20 (?) FTE could be spent on something else
 - Drawbacks
 - We don't have any solution for managed public storage, resource discovery, unified namespace (catalog)
- Continue to Phase III
 - Work to be done:
 - Packaging
 - Improve fault tolerances
 - Implement “watchdog” service
 - Improve monitoring
 - Deploy as OSG Service
 - Negotiate with sites quotas and space partition
 - Advantages:
 - Manageable and easy to use public storage
 - Drawbacks:
 - Maintenance and support of yet another central service
 - Involvement with SE malfunctions and misconfigurations