

OSG STORAGE/IRODS DEPLOYMENT



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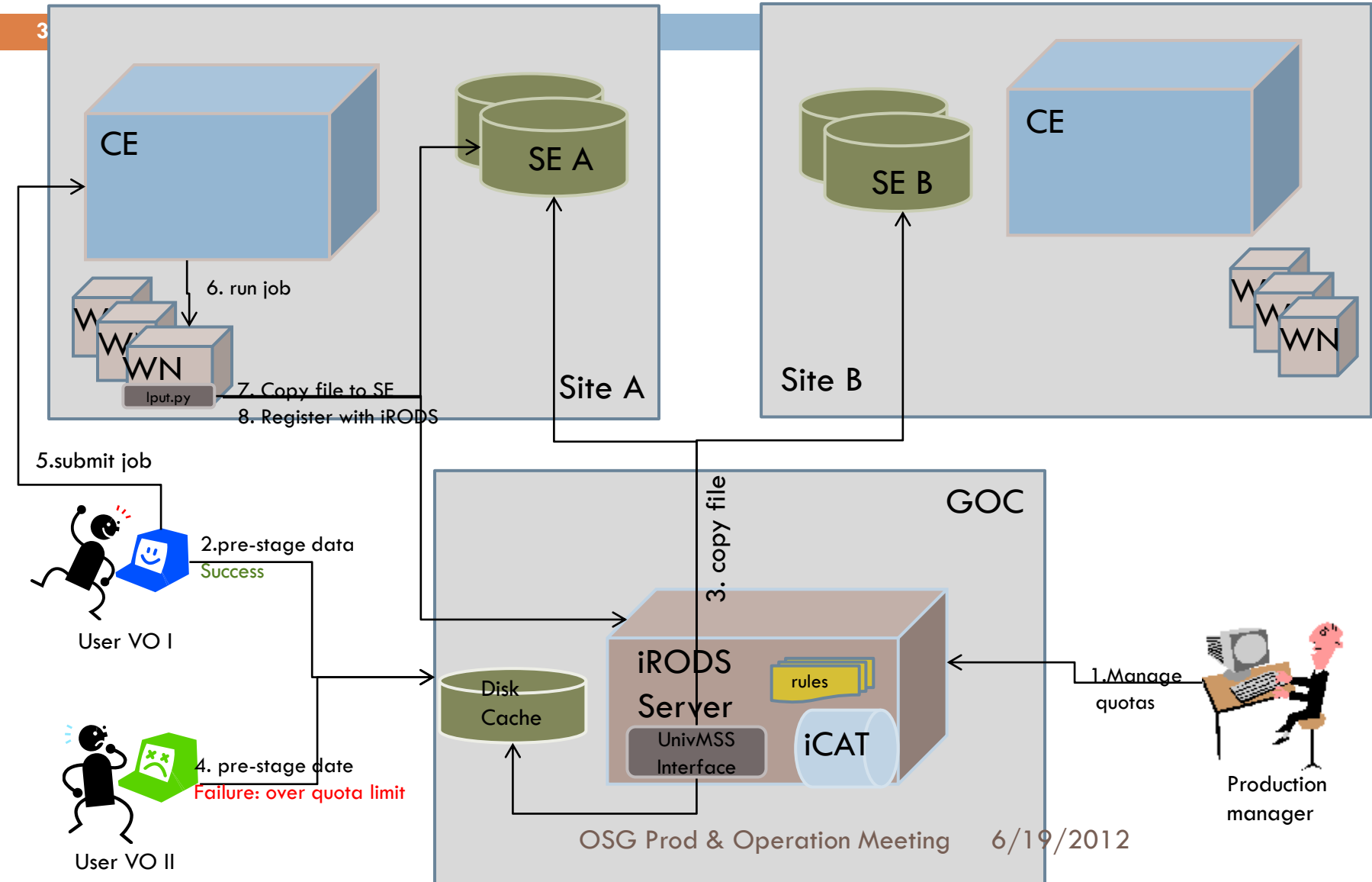


OSG ET Requirements

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- Allow the OSG Production manager to manage public storage allocation across all the participating sites.
- Impose minimal burden on the participating sites.
- Simplify SE selection for data storage.

High Level Architecture



Running iRODS Service

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- Install and configure iRODS server and ICAT database (currently is distributed as tarball, needs to be built with globus libs). The work on rpm packaging has been started at RENCi.
- Install osg-related software (custom rules, scripts etc). Eventually will be provided as rpms.
- Monitor service/hardware health. We can write rsv probes or use some other monitoring tools.
- May require to add additional iRODS server(s) if the service becomes really popular.
- May require to provide HA (especially for ICAT database – postgres)
- Should require very little day to day involvement after initial installation and configuration.

iRODS Administration

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- Could be done by an owner of iRODS server. This requires access to iRODS central node.
- Additional admin could be registered with appropriate x509 certificate.
- Doesn't need to be a member of any VO.
- Can manage users, groups, resources and quotas.
- Can delete user files.

iRODS Users, Groups, Resources and Quota Management (I)

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- Preparation steps to use the OSG Public Storage
 - A VO Admin contacts a Production Manager and ask for access to OSG Public Storage.
 - A Production Manger asks a VO Admin to register iRODS service certificate in VOMS.
 - A Production Manager decides how much space should be allocated for this VO at the sites that supports it
- Automatic/manual registration of VO users and SEs
 - A Production Manager may execute a script that will register all current VO members with iRODS or register subset of users manually
 - A Production Manager may executes a script that will register all SEs that supports this VO or register susbset of SEs manually
 - A Production Manager sets quota for each resource and this VO group. The information about total available public space on a specific site is provided by a Site Administrator. The space allocation could be changed at anytime.

iRODS Users, Groups, Resources and Quota Management (II)

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- The rule that handles enforcement of quota is enabled in iRODS core rules.
- The quota limit change triggers the execution of the rule:
 - ▣ Checks if quota is exceeded per group/resource
 - ▣ If so, deletes files until space utilization is under the limit
 - ▣ Sends email notifications to the owners of deleted files
- A Production Manager monitors the current space utilization.
- A Production Manager needs to be involved in iRODS operation ONLY:
 - ▣ New VO has requested access to iRODS
 - ▣ New resource with SE wants to provide public storage
 - ▣ Quotas should be modified
 - ▣ Addition and deletion of users are requested (this is only if we decide not to synchronize iRods with VOMS)

iRODS Deployment on the test node

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- iRODS server
 - ▣ Version 3.0 GSI enabled
 - ▣ Hardware:
 - Purchased/installed in Jan 09 – out of warranty
 - Intel® Xeon™ CPU 3.60GHz
 - RAM 4GB
 - 8 cores
 - 1TB disk
 - 64bit
 - ▣ KVM VM:
 - 2 QEMU Virtual CPUs (0.9.1)
 - 229 GB disk
 - 2GB memory
 - 32bit
 - ▣ iRODS clients 3.0 are installed on multiple nodes at Fermi, Nebraska, Renci

Future Work

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We have identified the following goals for phase II:

- First steps towards production deployment:
 - Meet with Operation and Production Managers to discuss
 - hardware requirement
 - deployment process
- Continue testing, upgrades and improvement of custom software:
 - modify OSG Frontend configuration in order to do more testing for condor transfer plugin (with iRODS).
 - upgrade iRODS to 3.1
 - write customized script for Production Manager to get complete information about resources in one command
 - package software and provide documentation
- Involve user community:
 - identify users that can benefit from access to public storage via iRODS.
 - help a selected user to adopt a new workflow.
- Involve Site Administrators:
 - present iRODS Service during production call?
 - negotiate storage allocation with sites.