



## Open Science Grid

Document Name	<b>Blueprint Activity Input to Open Science Grid-0</b>
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OSG Activity	Blueprint

This document is being prepared through consensus of the participants in the Blueprint Activity, and subject to review by a Review-Circle. Since the document is being updated constantly, a URL for accessing the latest version will be available soon.

This document gives input from the OSG-Blueprint Activity to the OSG-0 Activity. It includes an initial discussion of proposed metrics with the participants present at the time.

1. The goal of OSG-0 is to add new functionality relative to Grid3 rather than to refine the services that are already there.
2. Catalog Services shall be available.
3. Data Services
  - 3.1 Managed Storage Services shall be available.
  - 3.2 Managed File Transfer Service
    - 3.2.1 Copy & Register
  - 3.3 Data Movement Scheduling
4. OSG-0 shall be a step towards the longer term production infrastructure and services as explored in the Blueprint. (ie preparing for OSG-N)
  - 4.1 Include a Discovery Service. But do not make it required for use by all VOs.
  - 4.2 Support a Default VO
  - 4.3 Define and include a minimal set of services from a Resource Provider.
  - 4.4 An initial/next step Policy Infrastructure.
    - 4.4.1 Policy extended to Storage
    - 4.4.2 Published and supported mechanisms to Express Policy
    - 4.4.2 Monitoring of Adherence to Policy.
  - 4.5 Initial Accounting mechanisms.
5. OSG-0 will be interoperable and federate with the LCG. These goals should be met by at least one VO but not necessarily for all:
  - 5.1 Support management of VOs across federations .
  - 5.2 OSG resources shall be accessible by either federation
  - 5.3 VO File Catalogs accessible across federations
6. Support for Heterogeneity
  - 6.1 Support multiple versions of VDT.
  - 6.2 Not all Sites providing access to all Resource Types.
7. Package Management Services  
(David Adams may have input ...)
8. Configuration Management Service
  - 8.1 Support for grid-wide notification of pending certificate expiration
  - 8.2 Runtime validation monitoring
9. Security Infrastructure
  - 9.1 All sites supporting access management without users having to register for individual local accounts. Acceptable to have individual local accounts IFF transparent to the user.
10. Metrics
  - 10.1 Compute Services
    - 10.1.1 Support  $\geq$  1000 simultaneously running jobs from a single head node.
    - 10.1.2 3000 CPUs.
    - 10.1.3 No support for a “pull” Compute Element.

## 10.2 Storage Services

10.2.1 Support for Storage Elements with SRM Interface.

10.2.2 Includes at least N Strategic SEs.

10.2.3 Includes at least M Tactical Ses

## 10.3 Applications

10.3.1 US LHC Production and Analysis

10.3.2 Selected other PPDG-OSG Applications.

10.3.3 others contributed

## 10.4 VO Services

10.4.1 All users in a VO trusted by a Resource Provider or Site have privilege to access it

10.4.2 Not all Sites trust any specific VO, including the default (remember the default VO includes all Users – I don't see how we will require all sites to trust all users)

10.4.3 Support for VO-specific service management.

## **Test, Integration and Production Infrastructure**

OSG-0 should plan to have a group of 6-8 sites supported by stakeholders ranging from single boxes to very small clusters on a variety of system architectures and agreed upon UNIX flavors. The program of work is fairly static, install and verify new releases of OSG middleware and service packages, and the sites will largely act autonomously.

There are a variety of successful test grids used by the individual virtual organizations and this expertise should be relied upon to bring up the required OSG test environment. The US-ATLAS Development Test Grid (DTG) and the US-CMS Development Grid Testbed (DGT) are widely distributed small-scale operations that can quickly validate installation, configuration, and basic functionality without compromising stable production systems. Both groups have participated in the VDT Testers program, which takes pre-release versions of the Virtual Data Toolkit and verifies the functionality of the low-level grid services, the installation procedure, and the configuration.

For the Integration Grid the Grid3-dev test bed is a good example of a functional validation test bed designed to verify Grid3 infrastructure releases before they are migrated to the full set of Grid3 sites. There are currently less formal arrangements to test individual grid components, but recent examples of integration grid-like testing are MDS and storage services including dCache.

We need some evolution in the Pacman and other current configuration management tools, and in monitors of configuration, such as the new MonALISA self monitoring page, and the RLS monitors being developed at ISI.