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The Open Science Grid - Its Status and Implementation Architecture

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The Open Science Grid (OSG) is receiving five years of funding across six program offices of the Department of

Energy Office of Science and the National Science Foundation. OSG is responsible for operating a secure production-quality distributed infrastructure, a reference software stack including the Virtual Data Toolkit (VDT),

extending the capabilities of the high throughput virtual facility, and supporting an expansion of the user base.

OSG also educates existing and potential users.

OSG Consortium members provide the computing and storage resources accessible from the distributed infrastructure and the user applications for its use. Over sixty DOE Lab and University facilities can now be accessed. Access to large storage resources is increasing. The infrastructure relies on ESNET and Internet2 production and advanced networks.

The OSG implementation architecture presents the Virtual Organization (VO) - aka science/research community -

as a capable middle tier between the diverse distributed resources and the end users. Implementation of this architecture focusses on: making each resource self-managed, secure, sharable, and accessible locally and remotely; providing secure common services, support and reference software to the communities to enable their

effective use of the OSG Facility; and providing end-to-end and facility-wide tools, operational security, and user support.

The OSG implementation architecture is cognizant of federated and intersecting infrastructures -spanning individually managed facilities, university department clusters, local area shared campus infrastructures, the large national grids, and community scoped distributed environments.

We report on the status of OSG, its implementation architecture today, and plans for the future.

Submitted on behalf of Collaboration (ex, BaBar, ATLAS)

Open Science Grid

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