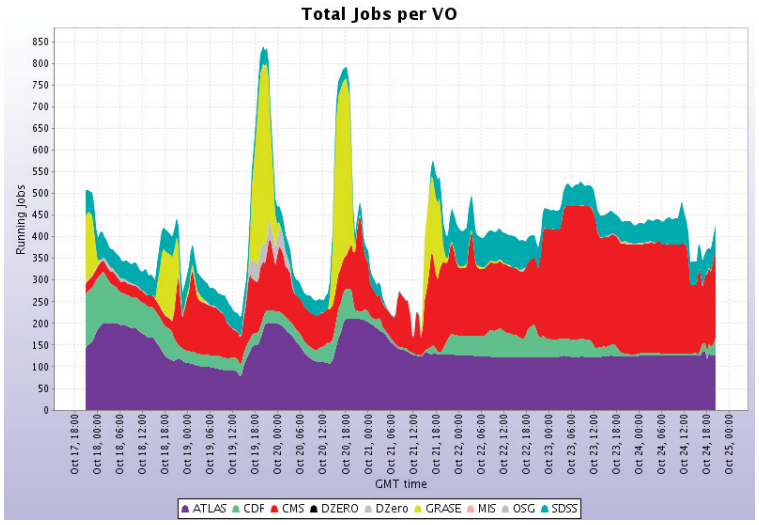
The Open Science Grid

Roadmap for the Future

The OSG opened for business in July 2005, and its organization and infrastructure are maturing rapidly. The next steps in the services to be deployed for the user community are now being defined. The OSG Consortium is focused on improving data management and access services, adding support for edge services, extending automatic discovery of available services and deployment of Web services, improving monitoring and efficiency, and working with new users and groups to add resources and applications.



A typical week of jobs and data transfers on the OSG. (Iosif Legrand, MonALISA)

How to Participate

The OSG follows a shared model, where organizations contribute to the construction and maintenance of a common infrastructure in exchange for the use of resources. Different users will follow different paths to participate in the OSG.

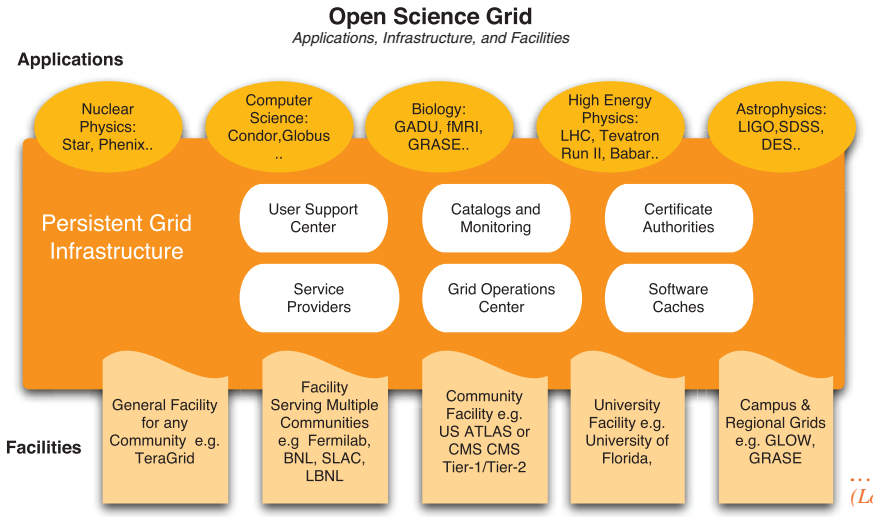
Using OSG resources. OSG users band together as research groups to use the grid. To use resources, users either join an existing virtual organization or create their own.

Forming a virtual organization (VO). VOs represent ongoing collaborations of resources and users, and must register, provide a VO membership service (VOMS) and a center for user and operation support.

Connecting resources to the OSG. The basic requirements for an OSG resource are intentionally kept minimal. Users need to install the OSG software stack or equivalent services.

Getting OSG software. OSG software packages are currently distributed as Pacman caches, and are available on the OSG Web site. All software is freely distributable, with individual package licenses available through the Virtual Data Toolkit's Web site.

Helping to build the OSG. The OSG Consortium welcomes new participants. The best way to get started is to collaborate with a current OSG participant, join the OSG mailing lists and read about OSG activities on the Web site.



Federating a grid with the OSG. OSG members envision a worldwide grid comprising a number of different grid federations, and are open to partnerships with other grids to develop richer methods and tools for federation.

(Lothar Bauerdick and Ruth Pordes)

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Open Science Grid Education and Outreach

The University of Texas at Brownsville has successfully led the education and outreach effort of the GriPhyN and iVDGL projects, collaborators in OSG, since 2000. A large part of this effort has been carried out by undergraduate and graduate students involved in grid deployment activities, including the installation and maintenance of the Virtual Data Toolkit in computer clusters. Since 2004, UTB, in collaboration with the GriPhyN and iVDGL projects, GRIDS Center, National Center for Supercomputing Applications and Louisiana State University, and with support from the NSF, has conducted the Grid Summer Workshops. These workshops, which have attracted students from universities in the U.S. and abroad, train undergraduate and graduate students in various aspects of grid computing to build up a future e-science work force.

Students at the 2005 Grid Summer Workshop. (Martha Casquette)

CHEPREO, the Center for High Energy Physics Research Education and Outreach, incorporates the Hestenes Modeling paradigm into its yearly workshop for physics high school teachers to better serve the K-12 learning community. CHEPREO is host to UltraLight, a successful educational outreach effort which integrates grid computing and advanced network technologies for research done at the Large Hadron Collider. This collaboration between the University of Florida, Florida State University, Caltech, and Florida International University integrates research, network infrastructure development, and education and outreach efforts at one of the largest minority schools in the U.S. In the areas of computer information science and advanced networking infrastructure, CHEPREO leverages the AMPATH, iVDGL and GriPhyN projects.

Using grid tools and techniques, the QuarkNet cosmic ray study is a model problem-based, student-driven and technology-dependent student investigation. High school students reach beyond classroom walls to explore data with other students and experts and share results, publishing original work to a worldwide audience. Students can discover and extend the research of other students, modeling the processes of modern, large-scale research projects.

QuarkNet cosmic ray shower study in Aspen, Colorado. (Fermilab)

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