
## gLite: EGEE's Next Generation Grid Middleware

### The Idea

For any Grid computing effort, middleware is a crucial component. For EGEE, it was decided that a two-phase approach would be the best way forward. Originally, EGEE used middleware based on work from its predecessor, the European DataGrid (EDG) project, later developed into the LCG middleware stack, which was used on the EGEE infrastructure early in the project. In parallel, EGEE has developed and re-engineered most of this middleware stack into a new middleware solution, gLite, now being deployed on the pre-production service. The gLite stack combines low level core middleware with a range of higher level services.

Distributed under a business friendly open source license, gLite integrates components from the best of current middleware projects, such as Condor and the Globus Toolkit, as well as components developed for the LCG project. The product is a best-of-breed, low level middleware solution, compatible with schedulers such as PBS, Condor and LSF, built with interoperability in mind and providing foundation services that facilitate the building of Grid applications from all fields.

### The Development

Several academic and industrial research centres are collaborating in the development of the software, organised in a number of different activities: Data Management, Workload Management, Information and Monitoring, Accounting, Computing Element, Logging and Bookkeeping, Security and Network Monitoring and Provisioning.

Development and deployment are also supported by EGEE's extensive t-infrastructure (training infrastructure) programme. This provides support ranging from online documentation to live seminars and webcast tutorials. Training is also available on the dedicated GILDA dissemination testbed, featuring its own Certification Authority (CA), and allowing users and system administrators to test all aspects of deployment and use of gLite.

### The Product

The gLite Grid services follow a *Service Oriented Architecture*, meaning that it will be easy to connect the software to other Grid services, and also that it will facilitate compliance with upcoming Grid standards, for instance the Web Service Resource Framework (WSRF) from OASIS and the Open Grid Service Architecture (OGSA) from the Global Grid Forum. The gLite stack is envisaged as a modular system, allowing users to deploy different services according to their needs, rather than being

forced to use the whole system. This is intended to allow each user to tailor the system to their individual situation.

Building on experience from EDG and LCG middleware development, gLite adds new features in all areas of the software stack. In particular it features better security, better interfaces for data management and job submission, a re-factored information system, and many other improvements that make gLite easy to use as well as effective. Already deployed on the various testing and pre-production Grids of the project, the rollout of gLite over the pre-production service is in progress.

## Getting started with gLite

Anyone interested in gLite is encouraged to try it out using GILDA, EGEE's dedicated dissemination testbed. This can be easily accessed through the "Try the Grid" walkthrough (see link below). Here you can join our test Virtual Organisation, submit jobs and get a feeling for the system.

To get hold of the full version of gLite for deployment on your system, the gLite website (see link below) holds the software repository as well as all the necessary documentation, both online and for download.

## The EGEE project

Enabling Grids for E-SciencE (EGEE) is an EU funded project to build a 24/7 Grid Production Service for scientific research. Already serving many scientific disciplines, it aims to provide academic and industrial researchers with access to major computing resources, independent of their location. The EGEE project is led by CERN, the European Organization for Nuclear Research, and involves over 70 partner institutions across Europe, Asia and the United States.

## Links & Contacts

**EGEE Contacts**

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| Industry Forum contact | christian.Saguez@ecp.fr |
| Press Office contact | pressoffice@eu-egee.org |
| Project Office contacts | projectoffice@eu-egee.org |

**gLite Contacts**

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| gLite Discussion | glite-discuss@cern.ch |

**Websites**

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| EGEE homepage | http://www.eu-egee.org |
| gLite website | http://www.glite.org |
| Try the Grid | http://public.eu-egee.org/test/ |
| gLite license | http://public.eu-egee.org/license/license2.html |