

Access Grid via Web

Wednesday 3 November 2010 14:00 (30 minutes)

L-GRID is a light portal to access Grid infrastructure via Web browser, allowing users to submit their jobs in a few minutes, without any knowledge about the Grid infrastructure.

The portal is intended to be a helpful tool to access Grid resources shared all around the world via a simple Web interface, using whatever operating system and browser. It provides the control over the complete lifecycle of a Grid Job, from its submission and status monitoring, to the output retrieval.

The end user needs only her/his own X.509 personal certificate, issued from a Certification Authority.

The system, implemented as client-server architecture, is based on the gLite Grid middleware.

The client side application is based on a java applet, running both on Windows, Linux and Mac operating systems; it only needs a Web browser connected to the Internet. The server relies on a gLite User Interface with Web portal provided by an Apache/Tomcat server.

The main differences with respect to a native gLite User Interface are the extreme ease of use and the no-need of the user registration.

L-GRID provides the typical operations involved in a Grid environment: certificate conversion, job submission, job status monitoring, and output retrieval. It provides also a JDL editor. The system is user-friendly, secure (it uses SSL protocol, mechanism for dynamic delegation and identity creation in public key infrastructures), highly customizable, open source, and easy to install - the installation requires a few MB. The X.509 personal certificate does not get out from the local machine, strictly compliant to the Certification Authority policies, and the Grid commands are splitted into client and server, increasing the security level.

An extra security improvement has been achieved by the inclusion of the MyProxy server, responsible for the dynamic delegation in long term proxy certificates, on the server side portal. It allows to reduce the time spent for the job submission, granting at the same time a higher efficiency and a better security level in proxy delegation and management.

The first running prototype is hosted at the moment at the High Performance Computing Center of the Scuola Normale Superiore, Pisa, Italy.

The results obtained encourage future developments. Further steps are represented by the integration with a LDAP Kerberos AAI Authentication Authorization Infrastructure, and the customization for LHC and Theophys Virtual Organizations.

Summary

L-GRID is a light portal to access Grid infrastructure via Web browser.

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Session Classification: Grids and Clouds