

## **PROXY DYNAMIC DELEGATION IN GRID GATEWAY**

Nowadays one of the main obstacles the research comes up against is the difficulty in accessing the required computational resources. Grid is able to offer the user a wide set of resources, even if they are often too hard to exploit for non expert end user. Use simplification has today become a common practice in the access and utilization of Cloud, Grid, and Datacenter resources. With the launch of L-GRID gateway, we introduced a new way to deal with Grid portals. L-GRID is an extremely light portal developed in order to access the EGI Grid infrastructure via Web, allowing users to submit their jobs from whatever Web browser in a few minutes, without any knowledge about the underlying Grid infrastructure. The L-GRID system is able to provide the typical operations involved in a Grid environment: certificate conversion, job submission, job status monitoring, and output retrieval. It offers also a JDL editor. The system is user-friendly, secure, highly customizable, open source, and easy to install; the package setup requires few MB. It is implemented as client-server architecture, based on Globus gLite Grid middleware and Java Commodity Grid Kits (CoG) library. No users registration is required: the user is authenticated by her/his X.509 personal certificate, issued from a trusted Certification Authority. Through the implementation of a mechanism for dynamic delegation on the server side of the portal, we extend the concept of Grid to the connected clients too. The user client becomes itself part of the Grid infrastructure. The end user needs a valid X.509 personal certificate, and an access to the Internet. The X.509 personal certificate does not get out from the local machine, strictly compliant to security policies. An extra security improvement has been achieved implementing on site a dynamic delegation mechanism, according to the Grid Security Infrastructure. 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. In order to manage the proxy certificate delegation, the dynamic delegation service inside L-GRID portal avoids the need of sending username and password to the MyProxy server for delegating a proxy certificate. This entails an increased security level in proxy certificates management. The L-GRID gateway, developed at the Scuola Normale Superiore in collaboration with the University of Pisa (Italy) and the Italian National Institute for Nuclear Research INFN, 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, with no registration required at all. The portal has been chosen by the Theophys Virtual Organization as login and job submission facility for its users. By the use of distributed Web portals, viewed as a part of the computing facilities integrated in a Grid computing infrastructure, many user communities could be able to expand their computational power, in order to speed up the results of their research.

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