

Integration with PL-Grid infrastructure

Almost every e-Infrastructure usually creates own authentication, authorization and accounting infrastructure (called for short AAA) accompanied by set of policies. Those polices are usually governed by a separate unit called Operations Center. Therefore any new middleware stack wishing to be part of such e-Infrastructure must integrate into existing AAA ecosystem. The PL-Grid infrastructure offers two authentication mechanisms: password based and X.509 certificates. The former is usually used while logging into the PL-Grid portal, gLite UI machines and batch system submit hosts. The latter is required while contacting grid middleware services.

In PL-Grid every QCG-Computing instance was configured to accept RFC3820 compliant proxy certificates. Currently, the QCG-Computing services in PL-Grid are configured to use plain grid-mapfile. This means that, similar to the UNICORE and opposite to the gLite stacks, QCG uses static accounts. The grid-mapfile is generated automatically based on information available in local LDAP (Lightweight Directory Access Protocol) replica. So each PL-Grid user, who applied for QCG services and was accepted by local administrator, is automatically added to this grid-mapfile. Moreover, system administrator is able to provide own local list of denied/accepted users.

In PL-Grid project a completely new system, called BAT, used for collecting accounting information was developed. The system consists of one central service (called BAT broker), which gathers resource usage records produced by clients (called BAT agents) deployed in every organizational unit. There exist two classes of BAT agents: local and grid. The first utilize only information available in the batch system's (Torque and PBS Professional in PL-Grid) log files like the job's wall-clock time, local job id. The other, grid level, extends the latter information with high-level data like user's certificate distinguished name or grid job-id. In PL-Grid project a new BAT agent for QCG-Computing, alongside the gLite and UNICORE agents, has been developed. This agent periodically reads job data from QCG-Computing accounting database and sends it over secure channel to the BAT broker.

Moreover, the QCG-Computing service acts in PL-Grid as lightweight information service, providing, over Web Service interface, information about PL-Grid users, groups and grants in a particular organizational unit. The consumer of this information is the QCG-Broker service, which later exploits it for scheduling purpose. Also, as every production infrastructure has to be monitored constantly, a set of Nagios probes was provided for the QCG-Computing, QCG-Notification and QCG-Broker services. The last requirement of the Operations Center was to provide binary RPM (Red Hat Package Manager) packages compatible with the Scientific Linux operating system.

Integration with EGI infrastructure

This section refers to the "Integrating Resources into the EGI Production Infrastructure" document (EU MILESTONE: MS414):

"The basic operational interfaces that must be supported for resources to be integrated into EGI consist of a management interface, a monitoring interface, an accounting interface, a support interface and an additional graphical dashboard interface"

Here we provide extension to Table 1 (page 11) which summarizes current status of integration of QosCosGrid with the EGI Infrastructure.

	QosCosGrid
GOCDB	Completed (QCG.Computing, QCG.Notification, QCG.Broker service types registered)
Monitoring 1. Nagios probes written, 2. Probes integrated, 3. Definition of an OPERATIONAL set for integration into the operations dashboard	<ol style="list-style-type: none">1. Probes have been written.2. The requirement for the tests to be configured by Nagios Configuration Generator brought new requirement for this tool. The proposed solution was accepted (see ticket¹).3. To be done: Probes included in the SAM distribution.
Operational Dashboard	To be done (should work automatically after definition of an operational set of Nagios probes)
Accounting	In progress
3rd level support in GGUS (Access to expert teams via the Deployed Middleware Support Unit)	To be done - should be only configuration issue, as the QosCosGrid team is ready to provide technical support for developed services

¹ https://ggus.eu/ws/ticket_info.php?ticket=75645