



Contribution ID: 60

Type: **not specified**

CREAM Computing Element: status and new developments

Wednesday, 28 March 2012 11:30 (30 minutes)

Description of the Work

Several new functionalities have been implemented in the CREAM CE released with the first EMI major release (EMI-1, codename Kebnekaise).

The integration with the Argus service to manage authorization is one of these implementations.

The support and the integration with the gLite-CLUSTER, to support complex deployment scenarios, is another new achievement.

The improved support for resource allocation in a multicore environments, and the support of version 2.0 of the Glue specification for resource publication are other new functionalities introduced with the first EMI release.

Some other new functionalities are being developed.

The implementation of the EMI Execution Service (EMI-ES) specification (an agreement in the EMI consortium on interfaces and protocols to be used in order to enable computational job submission and management required across technologies) is one of the new functionalities being implemented.

New developments are also focusing in the High Availability (HA) area, to improve performance, scalability, availability and fault tolerance.

Conclusions

Several new functionalities have been added in the CREAM Computing Element service and some other features are being implemented.

While some of the new functionalities address specific issues that were raised by users or administrators of the NGIs, some other new developments are targeted to enable interoperability among different Grid implementations.

Impact

The above mentioned new developments address specific requirements or shortcomings raised by users and/or operation teams of the NGIs.

The use of a unique authorization system (Argus), besides simplifying the overall management, allows also to avoid inconsistent authorization decisions.

The integration of the CREAM-CE with the gLite-CLUSTER allows an easier configuration in particular of big sites having multiple CE head nodes and/or having heterogeneous resources.

Other new developments, such as glue 2 EMI-ES support, are targeted to standardization and interoperability. E.g. the adoption of the EMI-ES interface will allow users to access different computing execution implementations using the same client tools.

URL

<http://wiki.italiangrid.org/CREAM>

Overview (For the conference guide)

The CREAM (Computing Resource Execution And Management) Service, a service for job management operation at the Computing Element (CE) level, is one of the software product part of the EMI middleware distribution. It implements a Grid job management service which allows the submission, management and monitoring of computational jobs to local resource management systems. We present some new functionalities introduced in this service with the first EMI major release, and we discuss about some other new features being implemented.

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Session Classification: EMI: Job processing components