



Contribution ID: 256

Type: poster

On using a generic framework for integrating advanced batch systems to production-level grid infrastructures

Wednesday, September 5, 2007 8:00 AM (20 minutes)

Advanced capabilities available in nowadays batch systems are fundamental for operators of high-performance computing centers in order to provide a high-quality service to their local users. Existing middleware allow sites to expose grid-enabled interfaces of the basic functionalities offered by the site's computing service. However, they do not provide enough mechanisms for addressing the operational and scalability-related issues which are necessary for offering the same quality of service to the site's grid users.

This paper will present an overview of those issues and a proposed set of features required for the batch systems integration to a grid infrastructure. Then, we will describe a generic software framework that facilitates the implementation of those features. The framework is designed to interact with different grid execution services on one hand and with different batch systems on the other hand. Specialization is done via Java plug-ins, XSL plug-ins and XML configuration files.

To illustrate the benefits of the framework features, an example of its usage for interfacing our site's home-grown batch system (BQS) to the EGEE grid execution service (gLite CE) will also be presented. In particular, we will describe how the operational needs are addressed by the reusable components of the framework.

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Session Classification: Poster 2

Track Classification: Grid middleware and tools