



Contribution ID: 35

Type: Poster

BESIII and SuperB: Distributed job management with Ganga

Tuesday, May 22, 2012 1:30 PM (4h 45m)

A job submission and management tool is one of the necessary components in any distributed computing system. Such a tool should provide a user-friendly interface for physics production group and ordinary analysis users to access heterogeneous computing resources, without requiring knowledge of the underlying grid middleware. Ganga, with its common framework and customizable plug-in structure, is such a tool.

This paper will describe how experiment-specific job-management tools for BESIII and SuperB were developed as Ganga plugins, and discuss our experiences of using Ganga.

The BESIII experiment studies electron-positron collisions in the tau-charm threshold region at BEPCII, located in Beijing. The SuperB experiment will take data at the new generation High Luminosity Flavor Factory, under construction in Rome. With its extremely high targeted luminosity (100 times more than previously achieved) it will provide a uniquely important source of data about the details of the New Physics uncovered at hadron colliders. To meet the challenge of rapidly increasing data volumes in the next few years, BESIII and SuperB are both now developing their own distributed computing environments.

For both BESIII and SuperB, the experiment-specific Ganga plugins are described and their integration with the wider distributed system shown. For BESIII, this includes integration with the software system (BOSS) and the Dirac based distributed environment. Interfacing with the BESIII metadata and file catalog for dataset discovery is one of the key parts and is also described. The SuperB experience includes the development of a plugin capable of managing users' analysis and Monte Carlo production jobs and integration of the Ganga job management features with two SuperB-specific information systems: the simulation production bookkeeping database and the data placement database. The experiences of these two different experiments in developing Ganga plugins to meet their own unique requirements are compared and contrasted, highlighting lessons learned.

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Session Classification: Poster Session

Track Classification: Distributed Processing and Analysis on Grids and Clouds (track 3)