



Contribution ID: 34

Type: **Parallel Talk**

Distributed analysis in CMS using CRAB: the client-server architecture evolution and commissioning

Monday, 3 November 2008 16:10 (25 minutes)

CRAB (CMS Remote Analysis Builder) is the tool used by CMS to enable running physics analysis in a transparent manner over data distributed across many sites. It abstracts out the interaction with the underlying batch farms, grid infrastructure and CMS workload management tools, such that it is easily usable by non-experts.

CRAB can be used as a direct interface to the computing system or can delegate the user task to a server. Major efforts have been dedicated to the client-server system development, allowing the user to deal only with a simple and intuitive interface and to delegate all the work to a server.

The server takes care of handling the users jobs during the whole lifetime of the users task. In particular, it takes care of the data and resources discovery, process tracking and output handling. It also provides services such as automatic resubmission in case of failures, notification to the user of the task status, and automatic blacklisting of sites showing evident problems beyond what is provided by existing grid infrastructure.

The CRAB server architecture and its deployment will be presented, as well as the current status and future development. In addition the experience in using the system for initial detector commissioning activities and data analysis will be summarized.

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Session Classification: Computing Technology for Physics Research

Track Classification: 1. Computing Technology