Annual activities in PandaGrid

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Abstract

PandaGrid, started as a project in 2005, and since then proved itself to be a successful tool in large scale data production for the Panda collaboration. The variety of use spans from individual jobs of more than 50 Panda-Grid users to massive physics simulation and reconstruction for the Panda Technical Design Report. The passing year stands for important changes in the structure of the PandaGrid.

Introduction

The single most defining event of 2012 was the withdrawal of the Glasgow University from the PandaGrid activities and movement of the Central Services to GSI and MonaLisa to Torino. The movement, although more challenging than anticipated, consolidated and brought experience to our GSI Grid group. In the course of last year 3 new sites joined PandaGrid: Mainz, SUT in Thailand and Talca in Chile. Currently we are in the process of integrating Northwestern University, USA, as a new site. Altogether the infrastructure comprises 15 sites from 12 institutes in 10 countries, see Fig. 1.
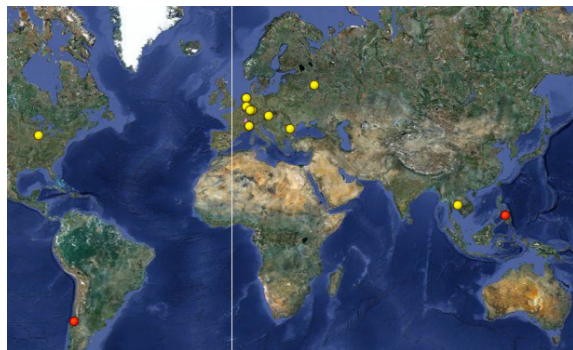

Figure 1: Map of PandaGrid sites.

Software and Middleware Tools

PandaGrid is based on AliEn [1], middleware developed and maintained by the ALICE Collaboration. The software for simulation and reconstruction, PandaRoot, bases on FairRoot [2], and is distributed on the Grid via built-in package management mechanism of AliEn. The system supervision and monitoring is provided by the MonaLisa webpage [3].
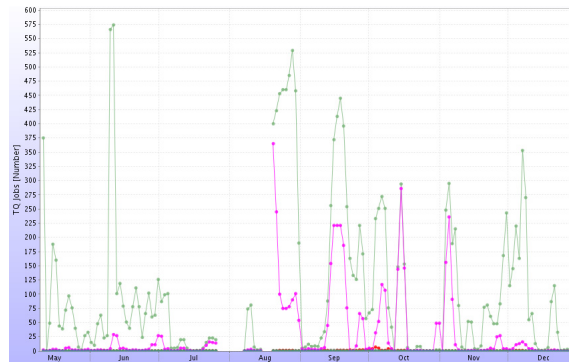

Figure 2: PandaGrid usage.

Testing and Development

As part of our obligation to the middleware development we are testing and debugging the newest releases of AliEn. This year's most important contributions included:

- fixing the database structure description,
- fixing the package manager,
- migrating the communication message protocol from SOAP to JSON,
- implementing new fuctionalities.

Numerous other issues have been reported to the AliEn developers. These changes helped keeping not only Panda-Grid stable, but also improved the original ALICE Grid performance.

Results

The PandaGrid running jobs in year 2012 are plotted in the Figure 2 as a function of time.

The close collaboration with the AliEn development group resulted in 2 PandaGrid Workshops in SUT, Thailand and Talca, Chile, where we focused on fixing and developing AliEn as well as setup the new PandaGrid sites. In the coming year we would like to focus on further consolidating the existing infrastructure and integrating new sites.

References

[1] AliEn: http://alien2.cern.ch

[2] FairRoot, M. Al-Turany *et al*, this report.

[3] MonaLisa: http://serpiero.to.infn.it