



Contribution ID: 299

Type: Poster

Testing and evaluating storage technology to build a distributed Tier1 for SuperB in Italy

Tuesday 22 May 2012 13:30 (4h 45m)

The SuperB asymmetric energy e+e- collider and detector to be built at the newly founded Nicola Cabibbo Lab will provide a uniquely sensitive probe of New Physics in the flavor sector of the Standard Model. Studying minute effects in the heavy quark and heavy lepton sectors requires a data sample of 75 ab⁻¹ and a luminosity target of 10³⁶ cm⁻² s⁻¹.

This luminosity translate in the requirement of storing more than 50 PByte of additional data each year, making SuperB an interesting challenge to the data management infrastructure, both at site level as at Wide Area Network level.

A new Tier1, distributed among 3 or 4 sites in the south of Italy, is planned as part of the SuperB computing infrastructure.

In this paper we evaluate the advantages and draw backs in terms of service availability and reliability for a set of possible design for this distributed Tier1 site.

Different data and CPU resources access strategies will be described for a typical HEP experiment use cases. We will report the activity of testing and evaluating several available technology that could be used in order to build a distributed sites for a

typical HEP experiment. In particular we will report about the test on the software like: Hadoop, EOS, Lustre, GPFS, and other similar product. We will also describe in details the algorithm used in order to guarantee the needed data resiliency.

All those software were tested both in a Local Area Network farm infrastructure as on a Wide Area Network test bed in which each site could exploit high performance network connection (ranging from 1 up to 10 Gbps). A particular attention will be paid to the level of security provided by each solution and on the implication on the job management and scheduling coming from each design and software used.

At the end of the work we will show also few real cases test in order to show how each of the analyzed schema can or cannot fulfill the experiment requirements.

Author: Dr PARDI, Silvio (INFN)

Co-authors: GIANOLI, Alberto (INFN Ferrara); PEREZ, Alejandro (INFN Pisa); DI SIMONE, Andrea (Universita degli Studi di Roma Tor Vergata (IT)); Dr FELLA, Armando (CNRS); Dr SANTERAMO, Bruno (INFN Bari); Dr DELPRETE, Domenico (INFN Napoli); Prof. LUPPI, Eleonora (Universita' di Ferrara and INFN Ferrara); Prof. BIANCHI, Fabrizio (Univerita' di Torino and INFN Torino); GIACOMINI, Francesco (INFN CNAF); Dr DONVITO, Giacinto (INFN-Bari); RUSSO, Guido (Universita' di Napoli and INFN (IT)); Dr TOMASSETTI, Luca (Univerita' di Ferrara and INFN Ferrara); CORVO, Marco (CNRS); Dr MANZALI, Matteo (INFN Ferrara); Dr RAMA, Matteo (INFN LNF); Prof. STROILI, Roberto (INFN Padova); Dr LONGO, Stefano (INFN Padova); Dr LUITZ, Steffen (SLAC); Dr CIASCHINI, Vincenzo (INFN CNAF)

Presenter: Dr PARDI, Silvio (INFN)

Session Classification: Poster Session

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