

Computing Summary

XV SuperB Workshop - Dec. 17 2010

F. Bianchi

Univ. of Torino & INFN Torino

Computing Sessions in this Meeting

- R&D
 - Distributed storage
 - Build tools
 - Collaborative tools
- Production
 - Improvement & Validation
- FastSim
 - Status of the code & plans
 - Many improvement/fixes to the code
 - Planning to have a public FastSim release
- Joint IR-Computing-Background

Computing Goals for 2011

- Support detector TDR
 - Fast & FullSim productions upon user requests.
 - Include tested developments driven by user requests
 - Improvement to production tools
 - Add support to distributed analysis
 - Build tools: Prototype of FastSim with CMake
 - Collaborative tools:
 - Have an Alfresco prototype
 - Need to discuss requirements with users
- Start the design the SuperB computing model

Fastsim Production

- Baseline is not to include new code/new functionalities unless requested
 - This include the code fixes/improvement presented by D. Brown (see FastSim parallel session).
 - Data will look like Fall 2010 production.
 - Fixed bug on EMC cluster to good resolution. Will be included in next productions.
 - **Please contact us if this is not adequate for you !**
- Fill the request table asap !
<http://mailman.fe.infn.it/superbwiki/index.php/FastSimDoc/Prodservices>
- FastSim production at charm threshold. Do we want it ? If yes:
 - Changes to EvtGen
 - Add specific analysis module(s)

Fastsim: Production Validation

- Create an hard link between requests submitter and validation effort.
- Requester should fill the request table including minimum size of validation sample
- The requester is committed to validate the sample during the pre-production period and note the positive or negative result on request table.
 - If validation is not done, the production of the corresponding sample will be stopped.

FullSim plans

- Packaging of FullSim.
 - Work started but never completed.
 - Lack of core manpower.
- FullSim production is being integrated in production suite at CNAF and we will soon be able to do distributed production
- Define and implement a validation stage for FullSim.
- Recent FullSim production shows differences wrt previous one. (see IR-Computing-Background session presentations)
 - Changed the G4 version and Bruno geometry.
 - Work is needed to understand source of differences.
 - Different productions will be done. A. Perez has accepted to coordinate them.

Distributed computing

- FastSim production was done in a fully distributed environment.
 - 15 sites have been exploited.
 - We'll be soon be able to do the same for FullSim
- Can we do the same for analysis ?
 - No analysis on the GRID for the time being
 - Distribute data to some centers and submit analysis jobs where data are.
 - A tool to do data transfer is available (A. Fella).
 - Next: Data transfer by production jobs to multiple sites
- Keep full data sample at CNAF

Towards the SuperB Computing Model

- There are many questions we need to address.
- They translates into very interesting R&D projects.
- A first (incomplete) list of projects that need manpower in the next slides.

The (Incomplete) Project List: 1

- Efficient use of multi-core architectures.
 - Submitting a job per core is probably not an option.
 - Exploit multithreading.
 - Tools are under development by the community: let's wait and see for now.
 - At some point we'll need to evaluate and choose some.
- Distributed storage.
 - R&D effort in progress at Napoli and Bari (S. Pardi, G. Donvito).
 - Xrootd, hadoop, lcg layer
 - Tools for mass data transfer
 - A. Fella has developed a simple tool, need something more refined

The (Incomplete) Project List: 2

- Job management:
 - production side: Grid related interface (job, site control, site availability, service management, monitoring), production tools
 - user side: Grid interface for resources exploitation (job submission, output data management, input data access management)
 - A. Fella, L. Tomassetti are working on this.
 - Production tools for Fast & Full Simulation already available.
 - Tools for analysis job are missing.
- Metadata management:
 - Bookkeeping
 - Conditions, geometry DB
 - Something done for the production tools, but no one is attacking the general problem.

The (Incomplete) Project List: 3

- Event Store
- Framework
- Digitization code
- Reconstruction code

Conclusion

- A lot has been done:
 - Significant improvement to FastSim code.
 - Production requests have been fulfilled and we are ready to accept new ones.
 - Analysis of produced data is in progress.
 - Progress in development of build and collaborative tools.
- Still a lot to do:
 - New productions.
 - Consolidation of production tools.
 - Improvement to FullSim
 - Design of the SuperB computing model
 - R&D program
- More manpower is needed.
 - There are a lot of interesting projects waiting for you.
 - Get involved and start having fun !