



# Production system

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on behalf of  
SuperB Distributed Computing Group

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Pisa  
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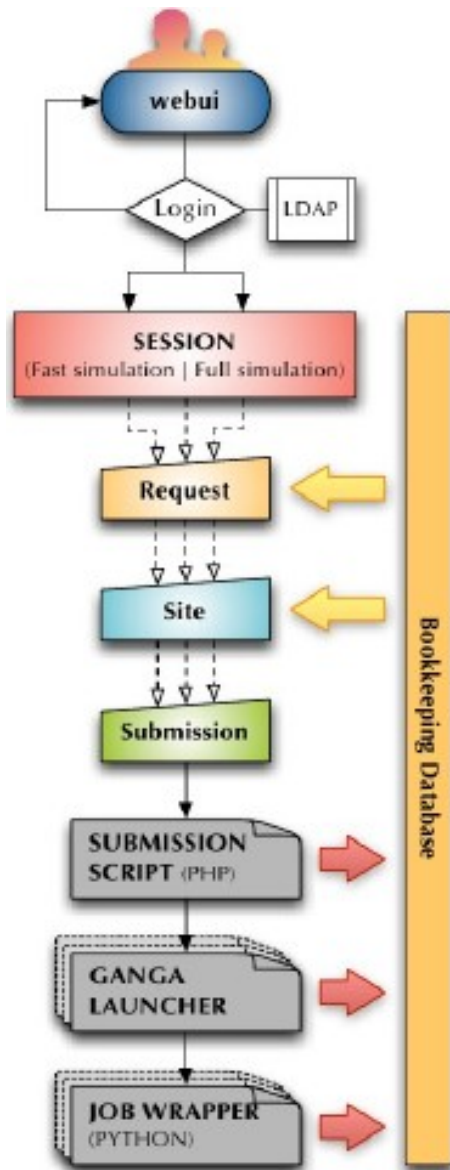
# Presentation Outline

- Introduction
- Production system
- FullSim porting to PostgreSQL
- Production system work
- Future works
- Conclusions

# Introduction

- New WebUI version  
[https://bbr-serv09.cr.cnaf.infn.it:8443/~webui\\_sb5](https://bbr-serv09.cr.cnaf.infn.it:8443/~webui_sb5)
  - access distributed resources for fastsim e fullsim
  - based on sbk5 PostgreSQL book-keeping database
- Old WebUI  
[https://bbr-serv09.cr.cnaf.infn.it:8443/webui\\_devel/](https://bbr-serv09.cr.cnaf.infn.it:8443/webui_devel/)
  - worked locally at CNAF
  - Based on sbk3 MySQL book-keeping database
- For the latest FullSim production (2012\_Fullsim\_summer) the required amount of data has been successfully produced
- The production run during the first week of August and the first week of September
- Credits: CDS, A. Fella, M. Manzali, A. Perez

# Production System



- Porting of production system code against the bookkeeping DB based on PostgreSQL (completed and tested)
- New dataset and jobs management (completed and tested)
- Submission monitor features (completed and tested)
- New monitor features related to Logging and Bookkeeping service interactions (completed and tested)
- FullSim summer production (2012\_Fullsim\_summer)
  - The first on distributed resources
  - The first using the new generation production system
    - Production goals have been accomplished
    - Outcome: set of improvements and bug fixes





# Production system work - Resources

- Production program suffered severe lack in planning operations
- The validation steps have been successfully performed on the following sites:
  - GRIF
  - UKI-SOUTHGRID-OX-HEP
  - UKI-LT2-QMUL
  - CYFRONET-LCG2
  - INFN-T1
  - RAL-LCG2
  - FNAL\_FERMIGRID
  - IN2P3-CC
- 60% of jobs failed during the stage-out phase due to output file size (~5 GB) exceeding grid size threshold. Almost all jobs run at INFN-T1
- It has to be stressed that distributed resources have been correctly exploited until stage-out phase

# Production system work - Sites

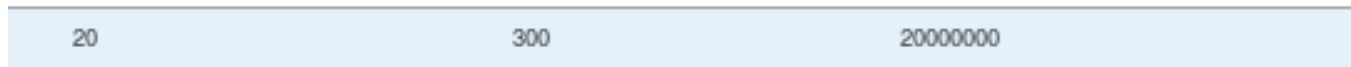
Jobs' status per site:



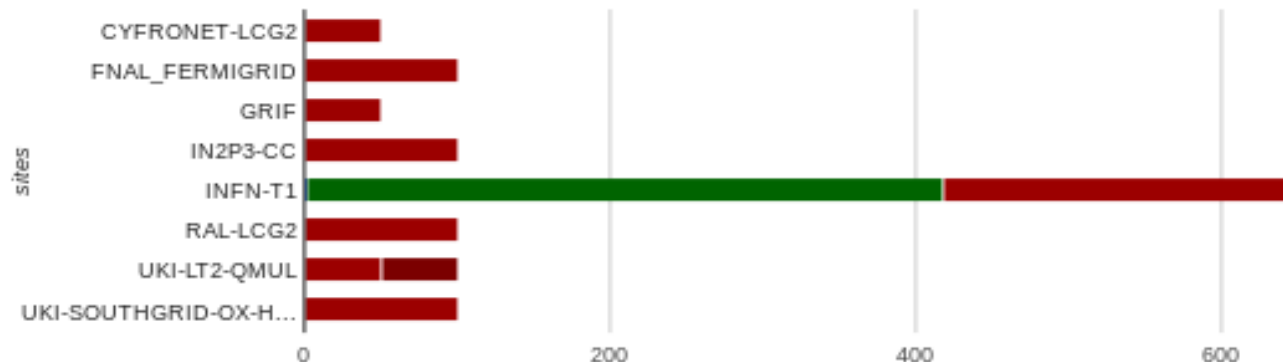
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Generator: RadBhaBha

Geometry: Geometry\_CABIBBO-V03



Jobs' status per site:



Name: dbb8c8bece9a6ecccd1ab083929adc6e

Generator: RadBhaBha

Geometry: Geometry\_CABIBBO-V03\_LYSO

# Production Outcome

- This is a list of outcomes (bugs and functionality updates) occurred during the production work
- system setup includes DB manipulation and sites pre-stage operations
- the list of enabled sites follow: INFN-T1, INFN-MILANO-ATLASC, INFN-TORINO, CYFRONET-LCG2, GRIF, IN2P3-LPSC, IN2P3-IRES, IN2P3-CC, INFN-FRASCATI, RAL-LCG2, UKI-LT2-QMUL, UKI-SOUTHGRID-OX-HEP, UKI-SOUTHGRID-RALPP, FNAL\_FERMIGRID
- just before production creation step, sbk5 table fullsim\_soft\_ref should be filled with the record related to the new prod\_series and test\_soft release lfn and location
- the use of shift-init interface needs table fullsim\_stat and fastsim\_stat to be coherent with the real job statuses. It was not and various sites resulted overloaded: a direct cleanup action on such a tables were necessary. An automatic cleanup operation can be implemented at production closing operation (set nprepared, nsubmitted and nrunning to 0)
- site pre-stage operations include the only transfer of FullSim test release. Sites should be installed with last superb-script package and 9.3 Geant4 release, CLHEP, pcre, root and xerces
- a submission action terminated with the hanging of submission pop-up window performing a glite submission operation: a bunch of 200 jobs resulted in 150 effectively submitted and 250 in prepared status
- modify action in production requests interface do not permit the physics parameter to be changed



# Production system works (1)

- Several tasks concerning the production systems are ongoing
- Definition of a new concatenated primary key in sbk5 <session>\_prod\_request tables in order include job related information (number of requested events and processed events) in dataset definition
- Definition of a new status (*bad*) for request
- A new mechanism which updates the grid status of a single job or all jobs of a submission has been implemented

# Production system works (2)

- Some modifications on the WebUI are required in order to work with the new sbk5 structure (Prod\_Request class, some method which performs asynchronous queries, ...)
- A testbed environment has been set to test the new production system
- An undergraduate student from Ferrara, Alberto Mesin, will join the team to work on some specific tasks during his thesis
- In Severus a new fail-over mechanism for the stage-in phase (*lcgCpToWn* method) has been implemented:
  - A new python class (*SbNet*) has been developed. Given a set of replicas of a lfn, *SbNet* performs a check of the average response time of each SE in order to sort replicas from the faster one to the slower one
  - If the requested file cannot be copied from the default SE, the fail-over mechanism tries to copy the file from the faster available SE
  - This method has to be tested

# Future Work

- Complete list of improvements and bug fixing (Dec '12)
  - The management of production modeling in terms of Prod\_series, Physics request, submission and job has been improved
  - button to retrieve a list of available LFNs or SURLs
- porting of the production system head node on new machines @ CNAF (Dec '12)
- HA clustering solution for book-keeping database (Feb '13)
- REST layer refactoring (Dec '12)
- Documentation writing

# Conclusions

- FullSim production (2012\_Full\_summer) successfully completed despite some major issues
- Porting of the FullSim production under PostgreSQL successfully completed and tested
- A lot of works have been planned on the production system but we have to cope with lack of manpower