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ATLAS Distributed Computing in Spain and Portugal: from data challenges to real data

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The ATLAS PIC cloud is composed of the Iberian sites: PIC (Tier-1), IFAE, IFIC, UAM, LIP-Lisbon, LIP-Coimbra and NCG-INGRID-PT (Tier-2s) and is finalising preparations for the LHC data taking. To achieve readiness for data taking, all sites has been involved in the ATLAS Distributed Computing activities since early 2006: simulated event production, reprocessing, data and user analysis challenges and cosmic data taking. The evolution of the computing and operations activities from data challenges to the real data is described in this talk giving experiment and site experiences.

Detailed analysis

After the deployment of the required services for the experiment, the Iberian sites now face the challenges associated with real data taking, and that is to provide a reliable service for data analysis for the world-wide scientific ATLAS community and particularity to the Iberian ATLAS scientists. The WLCG grid has been used so far by WLCG institute specialists and few scientists, but now it must be a daily common "tool" for every single LHC scientist with the first real data of the LHC appearing at the sites. The ATLAS institutes committed to ATLAS in the Iberian cloud have been preparing sites for the data taking since 2006, and achieving good results in all the wide activities that WLCG and ATLAS have been conducting. In this talk we will an overview of the ATLAS activities in Spain and Portugal since 2006, following the evolution of the different tools/frameworks that have been adopted by the experiment and the sites while awaiting the LHC start-up.

Conclusions and Future Work

It has been a long road to have the first LHC data being analyzed at the sites. By the time of the 2010 Users Forum, sites should be flooded with new users willing to run their jobs. The real challenge is coming soon, when all of this people will be really grid-aware. The work until now has been exhaustive with the Iberian sites participated in all distributed computing activities, and we are now ready to face the data processing challenges associated with real LHC data taking.

Impact

ATLAS distributed computing activities are reliant on the EGEE structure, the critical services abeing the catalogues (LFC), the transfers engine (FTS) and the Storage and Computing Elements that are crucial for the scientific community. Also ATLAS has important services running at every ATLAS cloud, such as the pilot factories and Frontier/squid servers which were recently deployed. All of these mechanisms have to be in place and in high availability to ensure the correct flow of data, and the execution of MonteCarlo/data processing jobs and user analysis jobs. In this talk we present the status and operations model of the ATLAS PIC cloud, following the evolution of ATLAS distributed computing and the improvement of the quality of service, which resulted from the increase of in robustness of the experiment distributed computing tools, and the continuous middleware improvements.

Keywords

ATLAS, wLCG, LHC, Grid, PIC, Tier-1, IFAE, UAM, IFIC, LIP

URL for further information

http://lhcatpic.blogspot.com/

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