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Monitoring of computing resource utilization of the ATLAS experiment

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Due to the good performance of the LHC accelerator, the ATLAS experiment has seen higher than anticipated levels for both the event rate and the average number of interactions per bunch crossing. In order to respond to these changing requirements, the current and future usage of CPU, memory and disk resources has to be monitored, understood and acted upon. This requires data collection at a fairly fine level of granularity: the performance of each object written and each algorithm run, as well as a dozen per-job variables, are gathered for the different processing steps of Monte Carlo generation and simulation and the reconstruction of both data and Monte Carlo. We present a system to collect and visualize the data from both the online Tier-0 system and distributed grid production jobs. Around 40 GB of performance data are expected from up to 200k jobs per day, thus making performance optimization of the underlying Oracle database of utmost importance.

Author: ATLAS, Collaboration (Atlas)

Co-authors: ROUSSEAU, David (Laboratoire de l'Accelerateur Lineaire (LAL)-Universite de Paris); DIMITROV, Gancho (Brookhaven National Laboratory (US)); VUKOTIC, Ilija (Universite de Paris-Sud 11 (FR)); AIDEL, Osman (Unknown); Dr ALBRAND, Solveig (Universite Joseph Fourier (FR))

Presenter: VUKOTIC, Ilija (Universite de Paris-Sud 11 (FR))

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