

Monitoring of Computing Resource Use of Active Software Releases at ATLAS

Tuesday 11 October 2016 14:00 (15 minutes)

The LHC is the world's most powerful particle accelerator, colliding protons at centre of mass energy of 13 TeV. As the energy and frequency of collisions has grown in the search for new physics, so too has demand for computing resources needed for event reconstruction. We will report on the evolution of resource usage in terms of CPU and RAM in key ATLAS offline reconstruction workflows at the Tier0 at CERN and on the WLCG. Monitoring of workflows is achieved using the ATLAS PerfMon package, which is the standard ATLAS performance monitoring system running inside Athena jobs. Systematic daily monitoring has recently been expanded to include all workflows beginning at Monte Carlo generation through to end user physics analysis, beyond that of event reconstruction. Moreover, the move to a multiprocessor mode in production jobs has facilitated the use of tools, such as "MemoryMonitor", to measure the memory shared across processors in jobs. Resource consumption is broken down into software domains and displayed in plots generated using Python visualization libraries and collected into pre-formatted auto-generated Web pages, which allow ATLAS' developer community to track the performance of their algorithms. This information is however preferentially filtered to domain leaders and developers through the use of JIRA and via reports given at ATLAS software meetings. Finally, we take a glimpse of the future by reporting on the expected CPU and RAM usage in benchmark workflows associated with the High Luminosity LHC and anticipate the ways performance monitoring will evolve to understand and benchmark future workflows.

Secondary Keyword (Optional)

Data processing workflows and frameworks/pipelines

Primary Keyword (Mandatory)

Monitoring

Tertiary Keyword (Optional)

Author: LIMOSANI, Antonio (University of Sydney (AU))

Presenter: LIMOSANI, Antonio (University of Sydney (AU))

Session Classification: Track 7: Middleware, Monitoring and Accounting

Track Classification: Track 7: Middleware, Monitoring and Accounting