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User Centric Job Monitoring – a redesign and novel approach in the STAR experiment

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User Centric Monitoring (or UCM) has been a long awaited feature in STAR, whereas programs, workflows and system “events” could be logged, broadcast and later analyzed. UCM allows to collect and filter available job monitoring information from various resources and present it to users in a user-centric view rather than an administrative-centric point of view. The first attempt and implementation of “a” UCM approach was made in STAR 2004 using a log4cxx plug-in back-end and then further evolved with an attempt to push toward a scalable database back-end (2006) and finally using a Web-Service approach (2010, CSW4DB SBIR). The latest showed to be incomplete and not addressing the general (evolving) needs of the experiment where streamlined messages for online (data acquisition) purposes as well as the continuous support for the data mining needs and event analysis need to coexist and unified in a seamless approach. The code also revealed to be hardly maintainable.

This work will present the next evolutionary step of the UCM toolkit, a redesign and redirection of our latest attempt acknowledging and integrating recent technologies and a simpler, maintainable and yet scalable manner. The extended version of the job logging package is built upon a three-tier approach based on Task, Job and Event, and features a Web-Service based logging API, responsive AJAX-powered user interface, and database back-end relying on MongoDB, which seems to be uniquely suited for STAR needs. In addition, we present details on integration of this logging package with STAR offline and online software frameworks. Leveraging on the reported experience and work from the ATLAS and CMS experience on using the ESPER engine, we will discuss and show how such an approach has been implemented in STAR for meta-data event triggering stream processing and filtering. An ESPER based solution seems to fit well into the online data acquisition system where many systems are monitored.

Summary

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