Contribution ID: **291** Type: **Poster**

A new era for central processing and production in CMS

Tuesday, May 22, 2012 1:30 PM (4h 45m)

The goal for CMS computing is to maximise the throughput of simulated event generation while also processing the real data events as quickly and reliably as possible. To maintain this achievement as the quantity of events increases, since the beginning of 2011 CMS computing has migrated at the Tier 1 level from its old production framework, ProdAgent, to a new one, WMAgent. The WMAgent framework offers improved processing efficiency and increased resource usage as well as a reduction in manpower.

In addition to the challenges encountered during the design of the WMAgent framework, several operational issues have arisen during its commissioning. The largest operational challenges were in the usage and monitoring of resources, mainly a result of a change in the way work is allocated. Instead of work being assigned to operators, all work is centrally injected and managed in the Request Manager system and the task of the operators has changed from running individual workflows to monitoring the global workload.

In this report we present how we tackled some of the operational challenges, and how we benefitted from the lessons learned in the commissioning of the WMAgent framework at the Tier 2 level in late 2011. As case studies, we will show how the WMAgent system performed during some of the large data reprocessing and Monte Carlo simulation campaigns.

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Session Classification: Poster Session

Track Classification: Computer Facilities, Production Grids and Networking (track 4)