

Production Experience with the ATLAS Event Service

Tuesday, October 11, 2016 3:00 PM (15 minutes)

The ATLAS Event Service (ES) has been designed and implemented for efficient running of ATLAS production workflows on a variety of computing platforms, ranging from conventional Grid sites to opportunistic, often short-lived resources, such as spot market commercial clouds, supercomputers and volunteer computing. The Event Service architecture allows real time delivery of fine grained workloads to running payload applications which process dispatched events or event ranges and immediately stream the outputs to highly scalable Object Stores. Thanks to its agile and flexible architecture the ES is currently being used by grid sites for assigning low priority workloads to otherwise idle computing resources; similarly harvesting HPC resources in an efficient back-fill mode; and massively scaling out to the 50-100k concurrent core level on the Amazon spot market to efficiently utilize those transient resources for peak production needs. Platform ports in development include ATLAS@Home (BOINC) and the Goggle Compute Engine, and a growing number of HPC platforms.

After briefly reviewing the concept and the architecture of the Event Service, we will report the status and experience gained in ES commissioning and production operations on various computing platforms, and our plans for extending ES application beyond Geant4 simulation to other workflows, such as reconstruction and data analysis.

Tertiary Keyword (Optional)

Distributed data handling

Primary Keyword (Mandatory)

Data processing workflows and frameworks/pipelines

Secondary Keyword (Optional)

Distributed workload management

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