



Contribution ID: 236

Type: Oral

The ATLAS EventIndex: data flow and inclusion of other metadata

Thursday 21 January 2016 17:00 (25 minutes)

The ATLAS EventIndex is the catalogue of the event-related metadata for the information obtained from the ATLAS detector. The basic unit of this information is event record, containing the event identification parameters, pointers to the files containing this event as well as trigger decision information. The main use case for the EventIndex are the event picking, providing information for the Event Service and data consistency checks for large production campaigns. The EventIndex employs the Hadoop platform for data storage and handling, as well as a messaging system for the collection of information. The information for the EventIndex is collected both at Tier-0, when the data are first produced, and from the GRID, when various types of derived data are produced. The EventIndex uses various types of auxiliary information from other ATLAS sources for data collection and processing: trigger tables from the condition metadata database (COMA), dataset information from the data catalog AMI and the Rucio data management system and information on production jobs from the ATLAS production system. The ATLAS production system is also used for the collection of event information from the grid jobs. EventIndex developments started in 2013 and in the middle of 2015 the system was commissioned and started collecting event metadata, as a part of ATLAS Distributed Computing operations.

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Session Classification: Track 1

Track Classification: Computing Technology for Physics Research