

ATLAS configuration database evolution

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We introduce a first working implementation of a distributed object store along with a network cache for distribution of information in the ATLAS Trigger and Data Acquisition (TDAQ) system primarily during system online configuration. The TDAQ system of the ATLAS detector at the Large Hadron Collider at CERN is a large distributed system at a range of a few tens thousand processes and servers providing data-taking functionality. During data taking runs, the different components of this distributed system need to be configured by accessing the configuration database. The latter is a middleware client based federated object oriented distributed database with XML persistent representation. We are planning to replace the latter with google-protobuf based representation and a simple network cache mechanism based on memcached. This greatly simplifies maintenance, operational system design, while augmenting flexibility of data representation, and extensibility to other data formats. Compatibility with existing code using the TDAQ configuration database is ensured by providing a legacy plugin and tools to transition the data. The current status of development is presented along with system performance evaluation in a controlled environment.

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