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Large Scale Access Tests and Online Interfaces to ATLAS Conditions Databases

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The ATLAS Trigger and Data Acquisition systems (TDAQ) to the Conditions databases has strong requirements on reliability and performance. Several applications were developed to support the integration of Condition database access with the online services in TDAQ like the interface to the Information Services and to the TDAQ configuration..

The DBStressor was developed to test and stress the access to the Conditions database using the LCG/COOL interface while operating in an integrated way as a TDAQ application. The performance of simultaneous Conditions database read accesses was studied in the context of the ATLAS High Level Trigger large computing farms. A large set of tests were performed involving up to 1000 computing nodes that accessed simultaneously the LCG central database server infrastructure at CERN. Most of the general figures of the results can be explained assuming a simple (model involving) described by a number of threads in the database servers that were providing data at near constant rate.

The information storage requirements were the motivation for the ONline ASynchronous Interface form the Information Service (IS) with LCG/COOL databases. It avoids the backpressure from Online Database servers by managing a local cache. In parallel the OKS2COOL application was developed to store Configuration Databases into an Offline Database with history record.

Submitted on behalf of Collaboration (ex, BaBar, ATLAS)

ATLAS - TDAQ

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