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Production Experience with Distributed Deployment of Databases for the LHC Computing Grid

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Relational database services are a key component of the computing models for the Large Hadron Collider (LHC). A
large proportion of non-event data including detector conditions, calibration, geometry and production bookkeeping metadata require reliable storage and query services in the LHC Computing Grid (LCG). Also core grid
services to catalogue and distribute data cannot operate without a database infrastructure at CERN and the LCG
sites. The Distributed Deployment of Databases (3D) project is a joint activity between CERN's IT department, the
LHC experiments and LCG sites to implement database services that are coherent, scalable and highly available.

This contribution describes the LCG 3D service architecture based on database clusters and data replication and
caching techniques, which is now implemented at CERN and ten LCG Tier-1 sites. The experience gained with
this infrastructure throughout several experiment conditions data challenges and the LCG dress rehearsal is summarised and an overview of the remaining steps to prepare for full LHC production will be given.

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

LCG 3D Project

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