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Development, Deployment and Operations of ATLAS Databases

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In preparation for ATLAS data taking in ATLAS database activities a coordinated shift from development towards operations has occurred. In addition to development and commissioning activities in databases, ATLAS is active in the development and deployment (in collaboration with the WLCG 3D project) of the tools that allow the worldwide distribution and installation of databases and related datasets, as well as the actual operation of this system on ATLAS multi-grid infrastructure.

We describe development and commissioning of major ATLAS database applications for online and offline: Trigger DB, Luminosity DB, Geometry DB, Conditions DB, Metadata DB, and Tag DB. We present the ramp-up schedule over the initial LHC years of operations towards the nominal year of ATLAS running, when the database storage volumes are expected to reach 6.1 TB for the Tag DB and 0.8 TB for the Conditions DB.

ATLAS database applications require robust operational infrastructure for data replication between online and offline at Tier-0, and for the distribution of the offline data to Tier-1 and Tier-2 computing centers. We describe ATLAS experience with Oracle Streams and other technologies for coordinated replication of databases in the framework of the WLCG 3D services.

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

ATLAS

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