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Integration of the Goettingen HPC cluster Emmy to the WLCG Tier-2 centre GoeGrid and performance tests

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The German university-based Tier-2 centres successfully contributed a significant fraction of the computing power required for Runs 1-3 of the LHC. But for the upcoming Run 4, with its increased need for both storage and computing power for the various HEP computing tasks, a transition to a new model becomes a necessity. In this context, the German community under the FIDIUM project is making interdisciplinary resources of the National High Performance Computing (NHR) usable within the WLCG and centralising mass storage at the Helmholtz centres.

The Goettingen campus hosts both a WLCG Tier-2 site, GoeGrid, and the HPC cluster Emmy that is part of the National High-Performance Computing (NHR) center NHR-Nord@Göttingen. The integration is done by virtually extending the GoeGrid batch system with containers, turning the HPC nodes into virtual worker nodes with their own partitionable job scheduling in order to run GoeGrid HEP jobs for the ATLAS collaboration. Submission and management of these containers are automated using COBalD (the Opportunistic Balancing Daemon) and TARDIS (The Transparent Adaptive Resource Dynamic Integration System). Data are provided via the GoeGrid mass storage for which a dedicated network connection has been established. Continuous production of ATLAS jobs is currently being tested in a one-year pilot phase. The setup, experience, performance tests and outlook are presented.

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