

# Adopting Infrastructure as Code to run HEP applications

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GSI is a German national laboratory for heavy-ion beams, planning to build the new accelerator complex “Facility for Antiproton and Ion Research” (FAIR). In preparation for the Tier-0 computing center for FAIR different Infrastructure as a Service (IaaS) cloud technologies have been compared, to construct a private cloud. Simultaneously, effort has been taken to learn how to efficiently execute HEP applications in a virtual environment. The result is a private cloud testbed, called SCLab, build with the help of the OpenNebula toolkit. The concept Infrastructure as Code (IaC), based on the Chef configuration management system, has been adopted for the deployment and operation of HEP applications in clouds. Tools have been developed to start virtual clusters in any IaaS cloud on demand. The first successful applications are a completely virtual AliEn grid site for the ALICE experiment at LHC and simulations for radiation protection studies for FAIR. The talk will present the design decisions and the experience in running HEP applications in IaaS clouds

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