

Grid services in a box - container management in ALICE

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Virtualization and containers have become the go-to solutions for simplified deployment, elasticity and workflow isolation. These benefits are especially advantageous in containers, which dispense with the resources overhead associated with VMs, applicable in all cases where virtualization of the full hardware stack is not considered necessary. Containers are also simpler to setup and maintain in production systems which should be minimally disrupted.

This contribution focuses on container configuration and deployment to run central and site services on the ALICE Grid system, for example the VO-boxes at all sites. We describe the methods through which we minimize the manual interaction, while retaining the simplicity and scalability associated with container deployment, the so-called 'service in a box'. Furthermore, we explore ways to increase fault tolerance, aimed at reducing the risk of service downtime, and identify possible performance bottlenecks. We also describe the management schema allowing for these features and its future application within the context of Singularity, a container platform originally optimized for HPC use, and today rapidly gaining popularity within Grid systems.

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