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Lightweight WLCG Sites

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The WLCG unites resources from over 169 sites spread across the world and the number is expected to grow in the coming years. However, setting up and configuring new sites to support WLCG workloads is still no straightforward task and often requires significant assistance from WLCG experts. A survey presented in CHEP 2016 revealed a strong wish among site admins for reduction of overheads through the use of prefab Docker containers or OpenStack VM images, along with the adoption of popular tools like Puppet for configuration. In 2017, the Lightweight Sites project was initiated to construct shared community repositories providing such building blocks. In this contribution, we present the first sets of components made available and discuss the technical design choices and the subsequent roadmap. We describe a modular and extensible core system that abstracts low-level details through a YAML based site-wide configuration file which is used to configure all distributed components through a single command. To accommodate the diverse scenarios at different sites, the system will enable site admins to cherry pick their background technologies and methodologies for orchestration (Puppet, Ansible, ...), clustering (Docker Swarm, Kubernetes, ...) and networking (dedicated networks, custom overlay networks or a combination of both). As an alternative to setting up classic grid sites using the aforementioned technologies, we also discuss a different approach altogether to provide lightweight computing resources, featuring HTCondor and BOINC.

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