

Evaluation of lightweight site setups within WLCG infrastructure

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The Worldwide LHC Computing Grid (WLCG) infrastructure allows the use of resources from more than 150 sites. Until recently the setup of the resources and the middleware at a site were typically dictated by the partner grid project (EGI, OSG, NorduGrid) to which the site is affiliated.

Since a few years, however, changes in hardware, software, funding and experiment computing requirements have increasingly affected the way resources are shared and supported. At the WLCG level this implies a need for more flexible and lightweight methods of resource provisioning.

In the WLCG cost optimisation survey presented at CHEP 2015 the concept of lightweight sites was introduced, viz. sites essentially providing only computing resources and aggregating around core sites that provide also storage. The efficient use of lightweight sites requires a fundamental reorganisation not only in the way jobs run, but also in the topology of the infrastructure and the consolidation or elimination of some established site services.

This contribution gives an overview of the solutions being investigated through “demonstrators” of a variety of lightweight site setups, either already in use or planned to be tested in experiment frameworks.

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