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Many hands make light work: Experiences from a shared resource WLCG Tier-2 computing site

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The Edinburgh (UK) Tier-2 computing site has provided CPU and storage resources to the Worldwide LHC Computing Grid (WLCG) for close to 10 years. Unlike other sites, resources are shared amongst members of the hosting institute rather than being exclusively provisioned for Grid computing. Although this unconventional approach has posed challenges for troubleshooting and service delivery there are unique advantages, such as being able to run above baseline expectations through opportunistic use of the cluster during quiet periods. Furthermore, the economy of scale of a larger shared facility enables access to niche equipment without additional cost (e.g. large-scale GPU processing). This operational model has recently been expanded to incorporate access to national supercomputing and data storage facilities.

This presentation will describe the steps taken to consolidate disparate computing and storage resources into a coherent Grid site endpoint. This effort includes: cloud provisioning and workload management using Openstack and Cloud Scheduler; enabling container technologies to ease workload management on HPC systems; connecting remote data facilities to grid storage middleware. We will reflect upon our experiences fostering links between stakeholders and consider how this model could be adopted at other institutes.

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