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Storageless and caching Tier-2 models in the UK context

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Operational and other pressures have lead to WLCG experiments moving increasingly to a stratified model for Tier-2 resources, where "fat" Tier-2s ("T2Ds") and "thin" Tier-2s ("T2Cs") provide different levels of service. In the UK, this distinction is also encouraged by the terms of the current GridPP5 funding model. In anticipation of this, testing has been performed on the implications, and potential implementation, of such a distinction in our resources.
In particular, this presentation presents the results of testing of storage T2Cs, where the "thin" nature is expressed by the site having either no local data storage, or only a thin caching layer; data is streamed or copied from a "nearby" T2D when needed by jobs.

In OSG, this model has been adopted successfully for CMS AAA sites; but the network topology and capacity in the USA is significantly different to that in the UK (and much of Europe).

We present the result of several operational tests: the in-production University College London (UCL) site, which runs ATLAS workloads using storage at the Queen Mary University of London (QMUL) site; the Oxford site, which has had scaling tests performed against T2Ds in various locations in the UK (to test network effects); and the Durham site, which has been testing the specific ATLAS caching solution of "Rucio Cache" integration with ARC's caching layer.

We provide suggestions and future implementation models from this data, along with the results of CMS Tier-3 use of the Glasgow and QMUL sites.

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