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Enabling Object Storage via shims for Grid Middleware

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The *Object Store* model has quickly become the de-facto basis of most commercially successful mass storage infrastructure, backing so-called "Cloud" storage such as Amazon S3, but also underlying the implementation of most parallel distributed storage systems.
Many of the assumptions in object store design are similar, but not identical, to concepts in the design of Grid Storage Elements, although the requirement for "POSIX-like" filesystem structures on top of SEs makes the disjunction seem larger.
As modern object stores provide many features that most Grid SEs do not (block level striping, parallel access, automatic file repair, etc), it is of interest to see how easily we can provide interfaces to typical object stores via plugins and shims for Grid tools, and how well experiments can adapt their data models to them.

We present the experience of developing plugins for the currently-popular *ceph* parallel distributed filesystem, for GFAL2 and also other Grid file access and data management tools.

Additionally, we present evaluation of, and first-deployment experiences with, (for example) Xrootd-Ceph interfaces for direct object-store access, for ATLAS at RAL.

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