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Third-Party-Copy transfer alternatives to GridFTP

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The "Third Party Copy" (TPC) is crucial mechanism necessary to build distributed storage systems with efficient data transfers. TPC allows client to initiate direct transfer from one storage endpoint to the other party and majority of these transfers are currently done with GridFTP protocol. Uncertain future of Globus Toolkit which provides commonly used GridFTP implementation and new approaches for authorization mechanisms lead to the demand to look for viable alternatives. This effort to bring new alternative protocols supporting TPC is organized as a part of WLCG "Data Organization, Management and Access" (DOMA) group.

Storage software commonly used within grid deployments support mainly WebDAV and XRootD protocols and they were both included to be evaluated for TPC support. This include documentation of the on-wire protocol, development on storage software side, functional and interoperability tests for different implementations and last but not least salability tests with production storage endpoints provided mostly by sites / VOs involved in distributed LHC data storage infrastructure.

We will provide overview of current status for non-GridFTP TPC support in major storage implementation as well as status of their adoption and future plans. Currently it is also necessary to do development on the side of storage data management systems to provide proper support for multiple TPC protocols within one distributed grid storage systems. All this effort can make GridFTP protocol optional in the future once majority of storage endpoints support alternative protocol and especially with WebDAV this can make much easier integration of the industry standard storage solutions.

Summary

Distributed data storage and new protocols with Third-Party-Copy transfers.

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