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CERNBox as the hyper-converged storage space at CERN: integrating DFS use-cases and home directories

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CERN IT is reviewing its portfolio of applications, with the aim to incorporate open-source solutions wherever possible. In particular, the Windows-centric DFS file system is replaced by CERNBox for certain use-cases.

Access to storage from Windows managed devices for end-users is largely covered by synchronization clients. However, online access using standard CIFS/SMB protocol is required in certain cases such as central login services (Terminal Services) and visitor desktop computers. We present recent work to introduce a set of Samba gateways running in High Availability cluster mode to enable direct access to the backend storage (EOS). This work covers all phases of the project: from a first prototype to a fully monitored service that can be scaled out according to needs, integrated in a central storage platform for the CERN users community, with an ever-growing user base of CERNBox that is now beyond 16K users.

We will also describe the testing infrastructure that was put in place to benchmark and validate the protocol stack, emulating Windows application workloads such as Office suite and to support workflows with mixed online and sync traffic. In addition we will also reference technical components necessary for a successful integration of CIFS/SMB protocol, including the mapping of the Windows permissions model to EOS ACLs.

In this paper we also describe the ongoing effort to migrate DFS home directories to this new infrastructure.

Consider for promotion

No

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