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Turning CephFS into a collaborative cloud storage with CERNBox

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CERNBox is an innovative scientific collaboration platform, built using solely open-source components to meet the unique requirements of scientific workflows. Used at CERN for the last decade, the service satisfies the 35K users at CERN and seamlessly integrates with batch farms and Jupyter-based services. Powered by Reva, an open-source HTTP and gRPC server written in Go, CERNBox has demonstrated the provision of Sync&Share capabilities on top of multiple storage systems such as EOS and CephFS, as well as enabling federated sharing with other institutions.

In this contribution, we present the evolution of CERNBox in supporting CephFS, which has been chosen as the storage system to address the Windows applications use-cases at CERN. As we are migrating out of DFS, the legacy Windows storage provided by Microsoft, and commissioning Windows Workspaces powered by CephFS, we show how CERNBox provides a flexible software stack to seamlessly integrate the Windows-based community, which includes the Engineering sector of the Organization.

We conclude by emphasizing the multiple synergies enabled by this approach. On one hand, Windows-based data-centric workflows can leverage the multi-protocol accesses (sync, web, SMB) provided by CERNBox. On the other hand, the widespread adoption of CephFS within the scientific community positions CERNBox as an out-of-the-box solution for implementing a scalable collaborative cloud storage service.

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