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National Data Storage's synergies with sync & share systems

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Sync & share services are nowadays a natural component of the cloud computing and storage services. This is also the case of the services and applications provided to academic and research environment in Poland by Poznan Supercomputing and Networking Centre (PSNC), a Polish NREN and HPC center. Since 2015 PSNC provides a country-wide sync & share service based on Seafile software and GPFS storage back-end. In The solution serves long tail users and scientists addressing typical sync & share scenarios and use-cases as well as a provides high-performance, scalable data storage platform for PSNC cloud computing and HPC systems.

In 2021 PSNC will start implementing the Polish government funded R&D National Data Storage (NDS) project that focuses on designing, building and deploying the large scale data infrastructure (200+PBs of tapes, 200+PB of disk storage and 10+PB of SSD/NVMe storage) across 4 HPC centres in Poznan, Kraków, Gdańsk and Wrocław and 4 MAN centers in Łódź, Białystok, Częstochowa and Kielce. Based on this infrastructure and the PIONIER broadband network PSNC and partners will develop and integrate set of data management services for data storage and access, long-term preservation, data exploration, analysis, and processing. Natural part of the project is development and integration of scalable and feature-full sync & share services.

In our presentation we will discuss the next stage of the sync & share development at PSNC that will be achieved in synergy with the National Data Storage project. First of all, NDS project will both provide infrastructure and services that will be used as the back-end of the sync & share service, including large-scale Ceph-based disk servers clusters along with the SSD/NVMe pools for data storage and access acceleration. In additional NDS project has dedicated tasks on integrating the sync & share services into the data management hardware and software stack of the national cloud computing, HPC and storage infrastructure. NDS project includes also activities related to implementing the extended scenarios for sync & share such as using sync & share systems in the data collection and processing workflows, agile deployment of dedicated and secure sync & share environments - per user group or project as well as combining sync & share systems with long-term storage systems and data repositories.

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