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Storage operations at CERN: EOS and CERNBox

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EOS is the high-performance CERN IT distributed storage for High-Energy Physics. Originally used for analysis, it now supports part of the data-taking and reconstruction workflows, notably for the LHC Run2.

EOS currently holds about 200PB of raw disks and takes advantage from its wide-area scheduling capability exploiting both CERN's computing facilities (Geneva-Meyrin and Budapest-Wigner) about 1,000 km apart (~20-ms latency).

In collaboration with the Australia's Academic and Research Network (AARNET) and Academia Sinica Grid Computing (ASGC) in Taiwan, CERN-IT Storage Group set up an R&D project to explore even more the EOS potential for geo-scheduling running a distributed storage system between Europe (Geneva, Budapest), Australia (Melbourne) and Asia (ASGC Taipei), allowing different type of data placement and data access across these four sites with latency higher than 300ms (16,500 km apart).

EOS is the storage system for CERNBox (the CERN cloud synchronisation service for end-users) to provide as well sync and share capabilities to users and for scientific and engineering use-cases. The success of EOS/CERNBox has been demonstrated by the high demand in the community for such easily accessible cloud storage solution which recently crossed 5000 users.

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