

EOS Developments

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CERN has been developing and operating EOS as a disk storage solution successfully for 5 years. The CERN deployment provides 135 PB and stores 1.2 billion replicas distributed over two computer centres. Deployment includes four LHC instances, a shared instance for smaller experiments and since last year an instance for individual user data as well. The user instance represents the backbone of the CERNBOX service for file sharing. New use cases like synchronisation and sharing, the planned migration to reduce AFS usage at CERN and the continuous growth has brought EOS to new challenges.

Recent developments include the integration and evaluation of various technologies to do the transition from a single active in-memory namespace to a scale-out implementation distributed over many meta-data servers. The new architecture aims to separate the data from the application logic and user interface code, thus providing flexibility and scalability to the namespace component.

Another important goal is to provide EOS as a CERN-wide mounted filesystem with strong authentication making it a single storage repository accessible via various services and front-ends (/eos initiative). This required new developments in the security infrastructure of the EOS Fuse implementation. Furthermore, there were a series of improvements targeting the end-user experience like tighter consistency and latency optimisations.

In collaboration with SEAGATE as openlab partner, EOS has a complete integration of OpenKinetic object drive cluster as a high-throughput, high-availability, low-cost storage solution.

This contribution will discuss these three main development projects and present new performance metrics.

Primary Keyword (Mandatory)

Storage systems

Secondary Keyword (Optional)

Object stores

Tertiary Keyword (Optional)

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