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ESCAPE prototypes a Data Infrastructure for Open Science

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The European-funded ESCAPE project will prototype a shared solution to computing challenges in the context of the European Open Science Cloud. It targets Astronomy and Particle Physics facilities and research infrastructures and focuses on developing solutions for handling Exabyte scale datasets.

The DIOS work package aims at delivering a Data Infrastructure for Open Science. Such an infrastructure would be a non HEP specific implementation of the data lake concept elaborated in the HSF Community White Paper and endorsed in the WLCG Strategy Document for HL-LHC.

The science projects in ESCAPE are in different phases of evolution. While HL-LHC can leverage 15 years of experience of distributed computing in WLCG, other sciences are building now their computing models. This contribution describes the architecture of a shared ecosystem of services fulfilling the needs in terms of data organisation, management and access for the ESCAPE community. The backbone of such a data lake will consist of several storage services operated by the partner institutes and connected through reliable networks. Data management and organisation will be orchestrated through Rucio. A layer of caching and latency hiding services, supporting various access protocols will serve the data to heterogeneous facilities, from conventional Grid sites to HPC centres and Cloud providers. The authentication and authorisation system will be based on tokens.

For the success of the project, DIOS will integrate open source solutions which demonstrated reliability and scalability as at the multi petabyte scale. Such services will be configured, deployed and complemented to cover the use cases of the ESCAPE sciences which will be further developed during the project.

Consider for promotion

No

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