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EuroScienceGateway: leveraging the European compute infrastructures for data-intensive research guided by FAIR principles

Description

In the past decade, many scientific domains have been transformed into data-driven disciplines relying on the exchange and integration of internationally distributed data. Exploiting this data is still a laborious and largely manual task, prone to losses and errors, and increasingly specialised beyond most users technical capabilities. FAIR practices are encouraged but their adoption curve is steep. The needs for compute and data resources, tools, and application platforms are often domain-specific. Many scientists struggle to navigate this intricate ecosystem. Generally, researchers do not possess the computing skills to effectively use the HPC or Cloud platforms they need.

New approaches are needed to enable all researchers, with widely ranging digital skills, to efficiently use the diverse computational infrastructures available across Europe, for asynchronous and for interactive applications. EuroScienceGateway will leverage a distributed computing network across 13 European countries, accessible via 6 national, userfriendly web portals, facilitating access to compute and storage infrastructures across Europe as well as to data, tools, workflows and services that can be customized to suit researchers' needs. At the heart of the proposal workflows will integrate with the EOSC-Core. Adoption, development and implementation of technologies to interoperate across services, will allow researchers to produce highquality FAIR data, available to all in EOSC.

Communities across disciplines - Life Sciences, Climate and Biodiversity, Astrophysics, Materials science - will demonstrate the bridge from EOSC's technical services to scientific analysis. EuroScienceGateway will deliver a robust, scalable, seamlessly integrated open infrastructure for data-driven research, contributing an innovative and customizable service for EOSC that enables operational open and FAIR data and data processing, empowering European researchers to embrace the new digital age of science.

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

Source URL (retrieved on *16 set 2024 - 02:56*): https://www.bsc.es/ca/research-and-development/projects/eurosciencegateway-leveraging-the-european-compute-infrastructures