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ENES Climate Analytics Service (ECAS)

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Client-side computing dealing with large amount of data requires huge processing and storage power at local site. In order to prevent data- and compute intensive workflows to fail due to lack of resources, server-side computing capabilities are required.

Within the scope of the EOSC-hub project, we are developing the ENES Climate Analytics Service (ECAS), which aims at enabling scientific end-users mainly from the climate domain to perform data analysis experiments on large volumes of climate data, by exploiting a PID-enabled, server-side, and parallel approach. ECAS is part of the service catalogue that will constitute the hub of the future European Open Science Cloud (EOSC).

The features provided by ECAS will be the result of the integration of services, frameworks and tools from the three major infrastructure initiatives: EGI federation [1], EUDAT CDI [2] and services [3] and INDIGO-DataCloud [4]. The integration will cover the most different aspects of scientific workflow lifecycle: workflow composition, workflow execution and data/results sharing. The processing of data intensive workflows will be performed by Ophidia big data analytics service [5].

Ophidia is a mature, complete and stable service for data analytics, as a result of a long internal validation phase with end-users at Fondazione CMCC [6]. Concerning data accessing and sharing data, users will be able to access data output of ECAS either through B2DROP [7] or B2SHARE [8]. Tracking data/workflow provenance is a significant feature of ECAS and will be guaranteed by the integration of the B2HANDLE service [9].

The integrated data analytics service will enable basic data provenance tracking by establishing PID support through the whole chain, and thereby improving reusability, traceability, and reproducibility.

Based on experiences within the climate data community, ECAS will open up processing capabilities also for use by other disciplines.
Therefore, user training workshops will be conducted to expand ECAS usability outside the climate community.

[1] https://www.egi.eu/federation/
[2] https://www.eudat.eu/eudat-collaborative-data-infrastructure-cdi
[3] http://sp.eudat.eu
[4] https://www.indigo-datacloud.eu/
[5] ophidia.cmcc.it
[6] www.cmcc.it
[7] https://b2drop.eudat.eu
[8] https://b2share.eudat.eu
[9] https://b2handle.eudat.eu