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Building cloud-based data services to enable earth-science workflows across HPC centres

Weather forecasts, climate reanalyses and air quality information produced by ECMWF act as a vital input for many downstream simulations and applications. Transferring, storing and locally modifying large volumes of such data before integration currently presents a significant challenge to users. The key aim for ECMWF within the H2020 HiDALGO project (https://hidalgo-project.eu/) is to migrate these tasks to the cloud, thereby facilitating fast and seamless application integration.

ECMWF and its partners in the HiDALGO project aim to implement a set of services that enable the simulation of complex global challenges. The pre-/post processing tasks of HiDALGO use-case workflows generally demand no more than a few cores to compute and are therefore good candidates to run in a cloud environment. Enabling, managing, and orchestrating the integration of both HPC and cloud environments to improve overall performance is the key goal of HiDALGO.

This poster will present two HiDALGO Pilot Applications that use ECMWF data as well as ECMWF's role in the project. Particular focus will be given to how cloud data and services will couple with the test pilot applications to improve overall workflow performance and enable easier access to the data for the pilot users.

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