Destination Earth

EARTHDATAHUB

The fastest route to access and analyse Earth data

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What is Earth Data Hub?

EARTH DATA HUB

Earth Data Hub is a **gateway** to access **earth data** in the most easy and efficient way. We provide pre-processed, **analysis-ready** data, optimised for **cloud computing**.

Our solutions are specifically aimed at simplifying the day-to-day work of **developers**, **scientists** and all other **intensive earth data users.**

Problems you have probably faced as an earth data scientist

Whether you're a scientist, a developer or a data analyst, you probably have faced some of these problems in the past:

1. You needed to analyze a **relatively small piece of data** (e.g. a city or small region) but the data provider **forced you to download way bigger regions**. Alternatively, the data provider performs a crop and merge operation for you (server side), but still needs to access larger pieces of data internally, resulting in a slow service.

2. You needed to download some data via a **proprietary API** that has **specific mechanisms** and **dialects** that **you** initially **don't know**. Downloading the data feels like a **preliminary job** that you don't want to do, but still heave to do before you start using the data.

3. You needed to use some data which is only provided in **unusual formats** or **coordinate systems**. These formats are optimized for storage and production, but do not go along well with other datasets and scientific tools

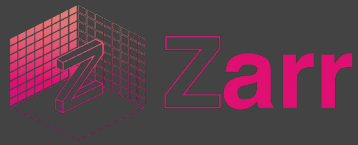
4. You needed to do a **long time-series analysis** on a point location, but quickly realize that this is not possible as it would require access to the whole dataset due to the way the data is stored.

Don’t worry

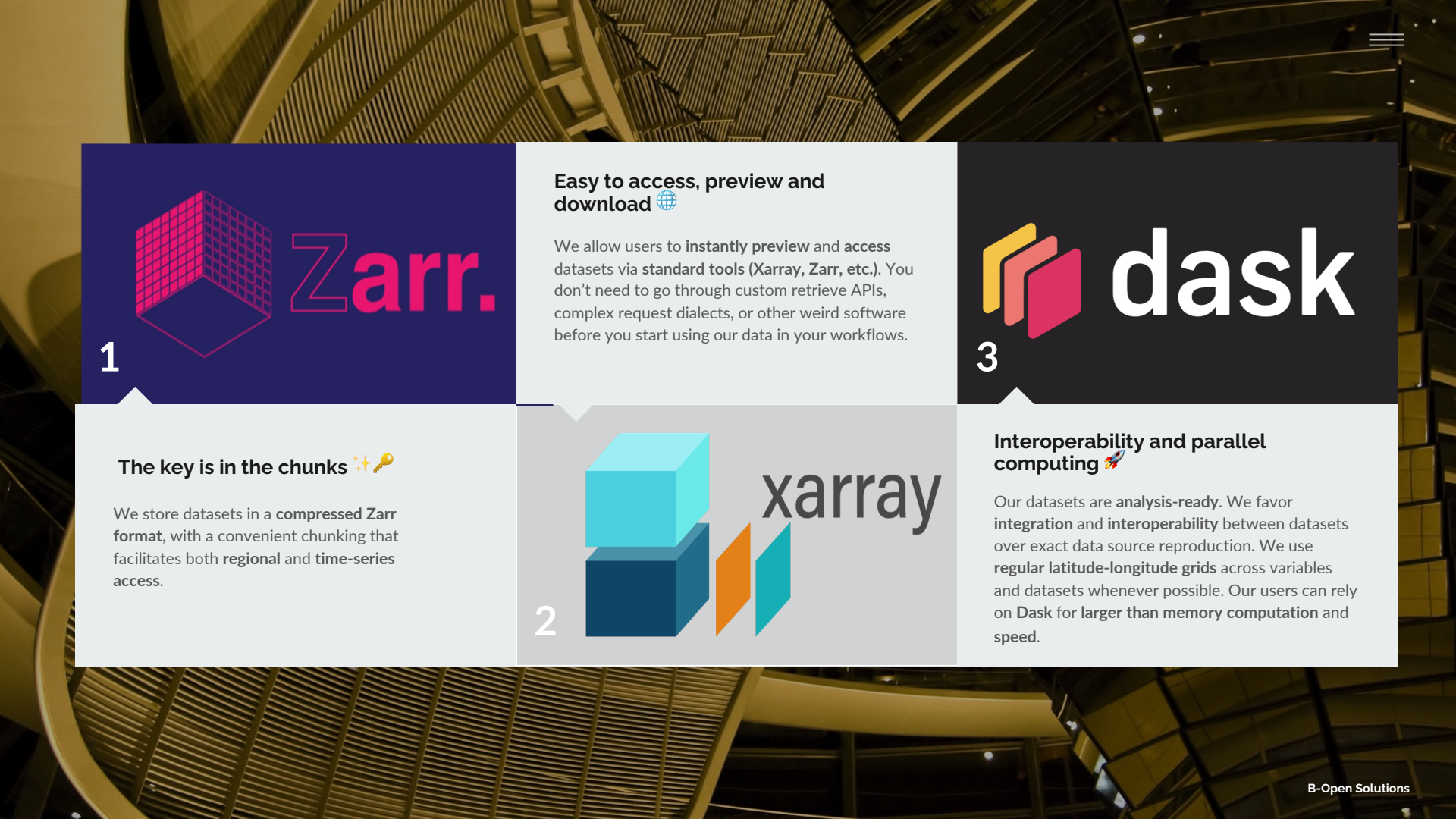
The Hub is here to help!

Our catalogue includes petabytes of earth related data, stored in an easy to access, analysis-ready format.

If you are familiar with Zarr, Xarray and Dask, this is the place for you!



How does it work?



1

The key is in the chunks ✨🔑

We store datasets in a **compressed Zarr format**, with a convenient chunking that facilitates both **regional** and **time-series access**.

Easy to access, preview and download 🌐

We allow users to **instantly preview** and **access** datasets via **standard tools (Xarray, Zarr, etc.)**. You don't need to go through custom retrieve APIs, complex request dialects, or other weird software before you start using our data in your workflows.

2

3

Interoperability and parallel computing 🚀

Our datasets are **analysis-ready**. We favor **integration** and **interoperability** between datasets over exact data source reproduction. We use **regular latitude-longitude grids** across variables and datasets whenever possible. Our users can rely on **Dask** for **larger than memory computation** and **speed**.

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The Catalogue

Our catalogue is easy to search, **STAC compliant**, and provides helpful information on each dataset.

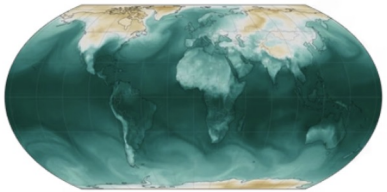
We have 4 main **collections** available right now:

- Climate Adaptation Digital Twin
- ERA5 atmospheric reanalysis
- Copernicus DEM (Digital Elevation Model)
- Hybrid gridded demographic data for the world

...but stay tuned, many others are coming!

STAC

EARTHDATAHUB



Climate DT, ScenarioMIP, SSP3-7.0, IFS-NEMO, hourly data on single-levels, HR

This dataset contains a selection of the variables available from the DestinE Climate DT future projection simulation (activity ScenarioMIP, experiment SSP3-7.0) from the IFS-NEMO model at high resolution on surface levels

Climate DT, ScenarioMIP, SSP3-7.0, IFS-NEMO, hourly data on single-levels, HR

This dataset contains a selection of surface and single level fields derived from the DestinE Climate Change Adaptation Digital Twin according to the output of the IFS-NEMO model coupled with the Shared Socioeconomic Pathway 3-7.0 (experiment: SSP3-7.0) as defined in the Scenario Model Intercomparison Project (activity: ScenarioMIP). Fields are regridded from the original HEALPix grid to a regular latitude-longitude grid and distributed with 0.044° spatial resolution and hourly temporal resolution. The chunking is optimised for time based and regional analysis.

Access to restricted datasets is available via the Data Cache Management service.

Variables

Short Name	Units	Description
sd	m of water equivalent	Snow depth
d2m	K	2 metre dewpoint temperature
ssr	J m^{-2}	Surface net short-wave (solar) radiation
str	J m^{-2}	Surface net long-wave (thermal) radiation
t2m	K	2 metre temperature
u10	m s^{-1}	10 metre U wind component
v10	m s^{-1}	10 metre V wind component
tprate	kg m^{-2} s^{-1}	Total precipitation rate

Derived from
Destination Earth

Licence
Licence to use Copernicus products

Spatial extent
180.0°W, 90.0°S, 180.0°E, 90.0°N

Spatial resolution
latitude: 0.044; longitude: 0.044

Temporal extent
2020-01-01 / 2040-01-01

Last update
2024-08-30 11:15:57 AM

Total size
188.3 TB

Providers
European Union (licensor)
ECMWF (producer)
B-Open (processor)
DestinE Platform (host)

hands on

https://earthdatahub.destine.eu/

Thank you!

for your attention

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Questions?

earthdatahub@bopen.eu

n.masotti@bopen.eu

https://earthdatahub.destine.eu/tutorials