EOSC Data Transfer Service (DTS)

Enable transfer of a Research Product (such as a dataset) from its location at the Data Source to a storage Resource accessible by the User

- DTS is a common step in many research workflows.
- **Availability**: Now in Beta (TRL7), Production (TRL8) by M22 (January 2023)
EOSC IF Guidelines for Data Transfer

Service composability

Discover and select
Interoperability

- **Data Transfer Service Interoperability Guidelines** in development
  - Draft: https://github.com/EGI-Federation/eosc-future-data-transfer
  - To be submitted to EOSC IF Registry when finalised.
- Based on a flexible DTS API: https://eosc-data-transfer.vm.fedcloud.eu/q/swagger-ui/#/
- Currently supported sources/transfer systems/destinations:
  - Zenodo records
  - B2SHARE records
  - Any URLs that resolve to Zenodo/ B2SHARE records
  - Signposting URLs <[link]>
  - EGI Data Transfer Service (link to record in EOSC Catalogue)
  - WebDAV with token (=dCache)
  - S3
  - FTP
  - WebDAV with username/pass (EUDAT B2SAFE)

++Other transfer systems to be added into Execution Framework++

Currently based on EGI Check-in, to be extended to work across the EOSC AAI Federation.
Data Transfer Step by Step

- Use EOSC EXPLORE to find a dataset
- Click on Data Transfer Icon
  - Open Data Transfer UI
  - DOI is parsed to retrieve all versions of the dataset are shown
  - Display list of files for selected version
  - Possible enhancement: select individual files for transfer
- Specify destination storage service
  - Browse the destination or select a path
  - Path will be created if it does not exist
  - Possible enhancement: show storage services to which the user already has access.
- Start Transfer
- Planned enhancement: dashboard to monitor transfer progress and success
EOSC Platform adds value through multiple integrations

DTS is available to Research Products in the EOSC Catalogue & Marketplace that comply with the relevant DTS guidelines for source data. DTS is a **Horizontal Service**: a utility for researchers from any discipline. DTS is enabled by compliance with the **EOSC-Interoperability Framework**. In particular DTS is the **first** example of the EOSC Execution Framework:

- Enabling Composability of **Research Product, Data Transfer Service, Storage Service**
- Illustrating how specific services are “abstracted” through the Execution Framework so that they can interoperate with other elements of EOSC Core and EOSC Exchange.
**Data Transfer Service**

**Scenario: EOSC Data Transfer Flow from Research Product Catalogue**


Step 2: **Catalogue and Marketplace**: The Researcher selects the dataset to transfer the source data repository to a computing facility to process.

Step 3: **Catalogue and Marketplace -> EOSC Data Transfer Service**: The Researcher is redirected to the EOSC Data Transfer Service.

Step 4: **Researcher -> EOSC Data Transfer Service**: Researcher provides destination information.

Step 5: **EOSC Data Transfer Service**: Data Transfer Services selects on basis of EOSC IF Data Transfer guidelines appropriate Data Transfer service in the EOSC Exchange.

Step 6: **EOSC Data Transfer Service -> FTS**: The EOSC Data Transfer service initiates data transfer at source location of the dataset.

Step 7: **FTS -> Community Exchange Data Source**: The Data Transfer Service initiates the data transfer from source to destination location.

Step 8: **Community Exchange Data Source -> e-infrastructure Horizontal Service**: Data is transferred from source location to destination location.

Step 9: **FTS -> EOSC Data Transfer Service**: Notify the EOSC Data Transfer Service when data transfer is finished.

Step 10: **EOSC Data Transfer Service -> Researcher**: Notify Researcher that Data Transfer Service is finished.

Step 11: **Researcher -> e-infrastructure Horizontal Service**: The Researcher can access the dataset on the destination location.
Thank you for your attention!