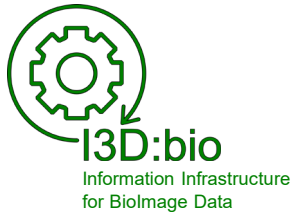


Research Data Management for Bioimage Data at the HHU

Uploading Data to OMERO



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Adapted from: Schmidt C., Bortolomeazzi M., Boissonnet T., Fortmann-Grote C. *et al.* (2023). I3D:bio's OMERO training material: Re-usable, adjustable, multi-purpose slides for local user training. Zenodo. DOI: 10.5281/zenodo.8323588
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(Main) options to upload data into OMERO

Upload using **OMERO.importer**

- Is integrated into the **OMERO.insight** client
- Easy, graphical user interface

→ *Recommended for most users*

Persons with restricted admin rights can upload data for other users, too.

Upload using the **Command Line Interface (CLI)**

- See the OMERO guide for details: <https://omero-guides.readthedocs.io/en/latest/upload/docs/import-cli.html>
- *Good to know:*
There is an option called „*in-place import*“ (by an admin), which allows to use OMERO with non-central storage locations. Discuss this option with your admin if required.
<https://omero-guides.readthedocs.io/projects/upload/en/stable/import-cli.html?highlight=in%20place#in-place-import-cli>

Upload data to OMERO using OMERO.importer 1/7


- 1) Open *OMERO.insight* on your computer
- 2) Connect to OMERO using your login credentials



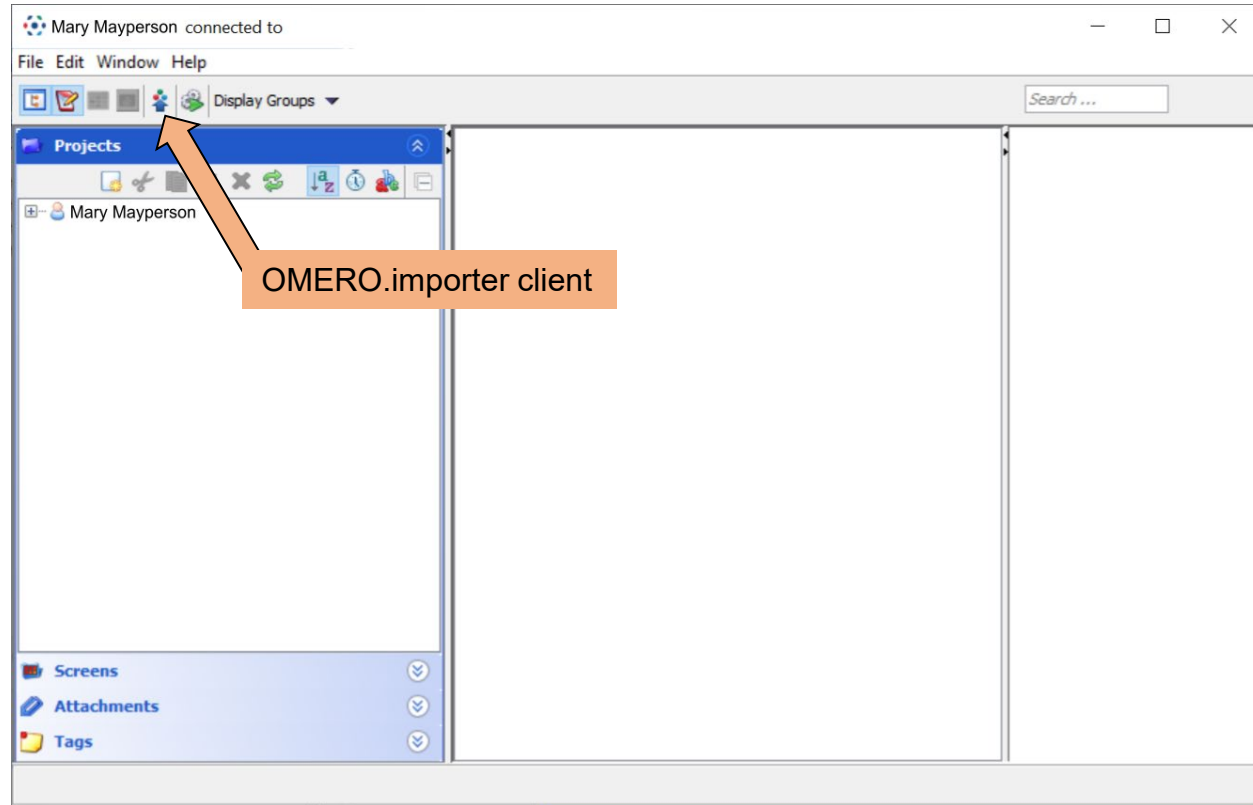
(Note: If you haven't previously adjusted the settings, make sure to set the server settings correctly using the wrench icon)



Upload data to OMERO using OMERO.importer 2/7

3) Open
OMERO.importer
client by clicking on
the  icon

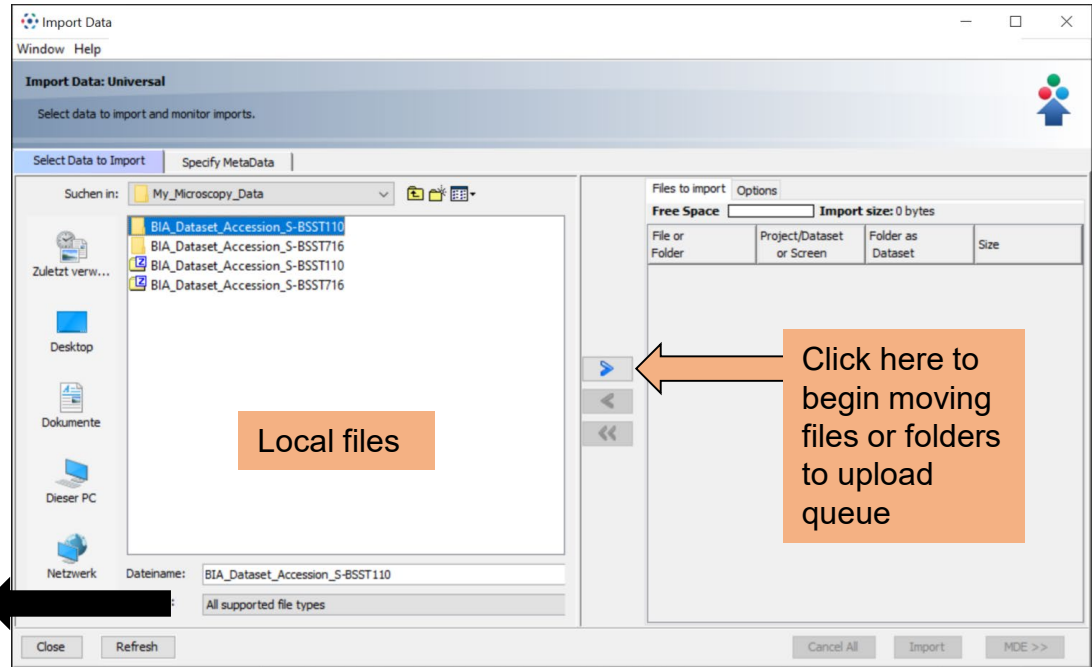
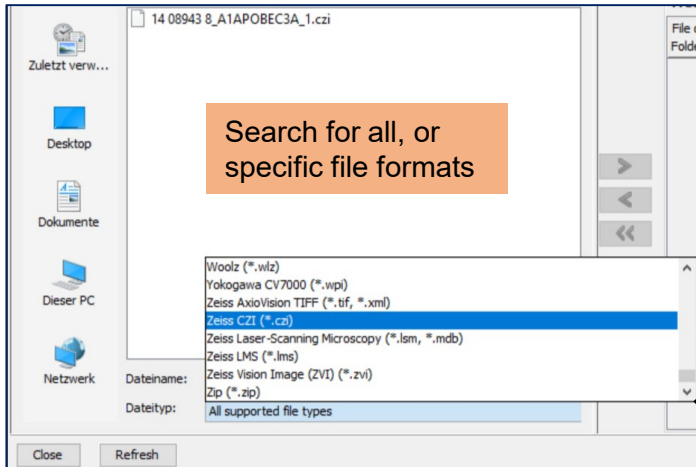
(OMERO importer is
integrated into
OMERO.insight)




Upload data to OMERO using OMERO.importer 3/7

4) Navigate through the file browser, which shows your local file organization, to find the data for upload

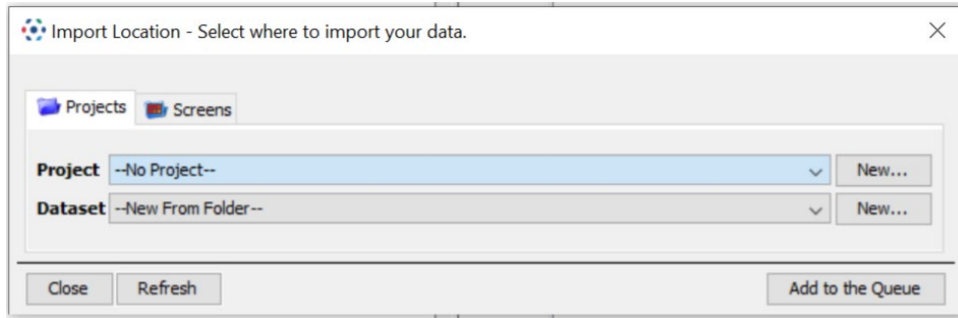
- individual files
- folders



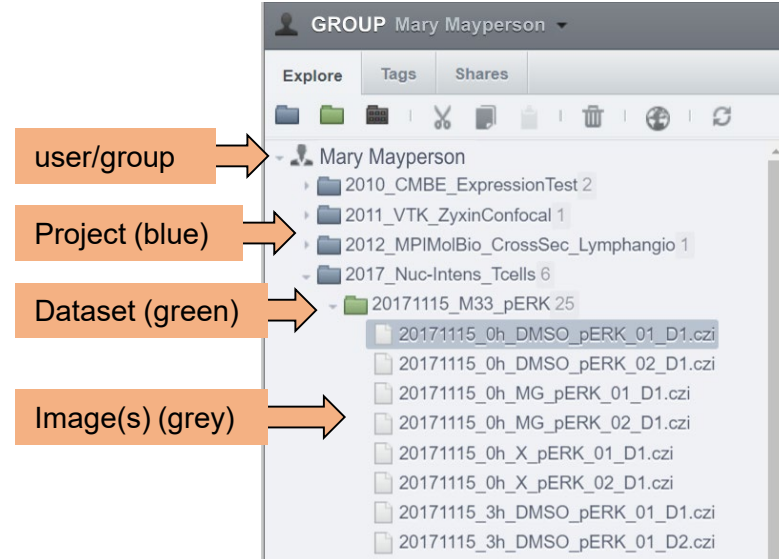
Upload data to OMERO using OMERO.importer 4/7

5) After you have clicked  , choose the upload destination (or create „New“)

- Project
- Dataset



Reminder: This is how the data tree is organized in OMERO.web (this screenshot is not part of the upload process)

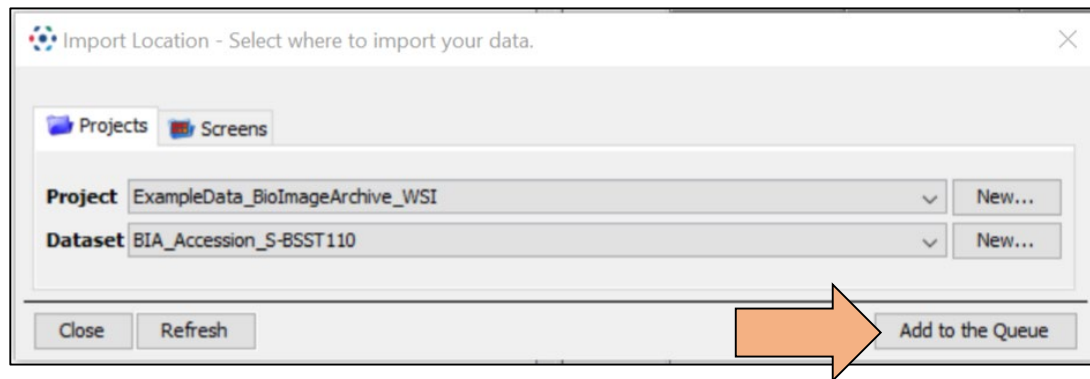
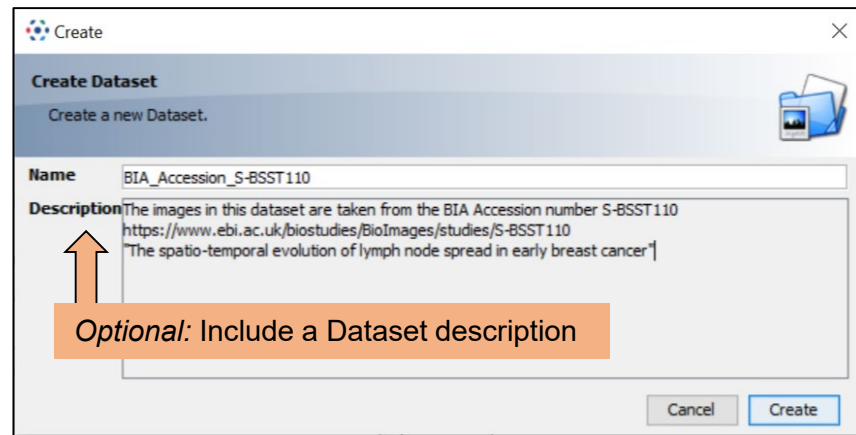


Upload data to OMERO using OMERO.importer 5/7

Example: Upload of data with the creation of a new Project and a new Dataset

(This example data was downloaded from the BioImage Archive)

Click **Add to the Queue** to finish this step.



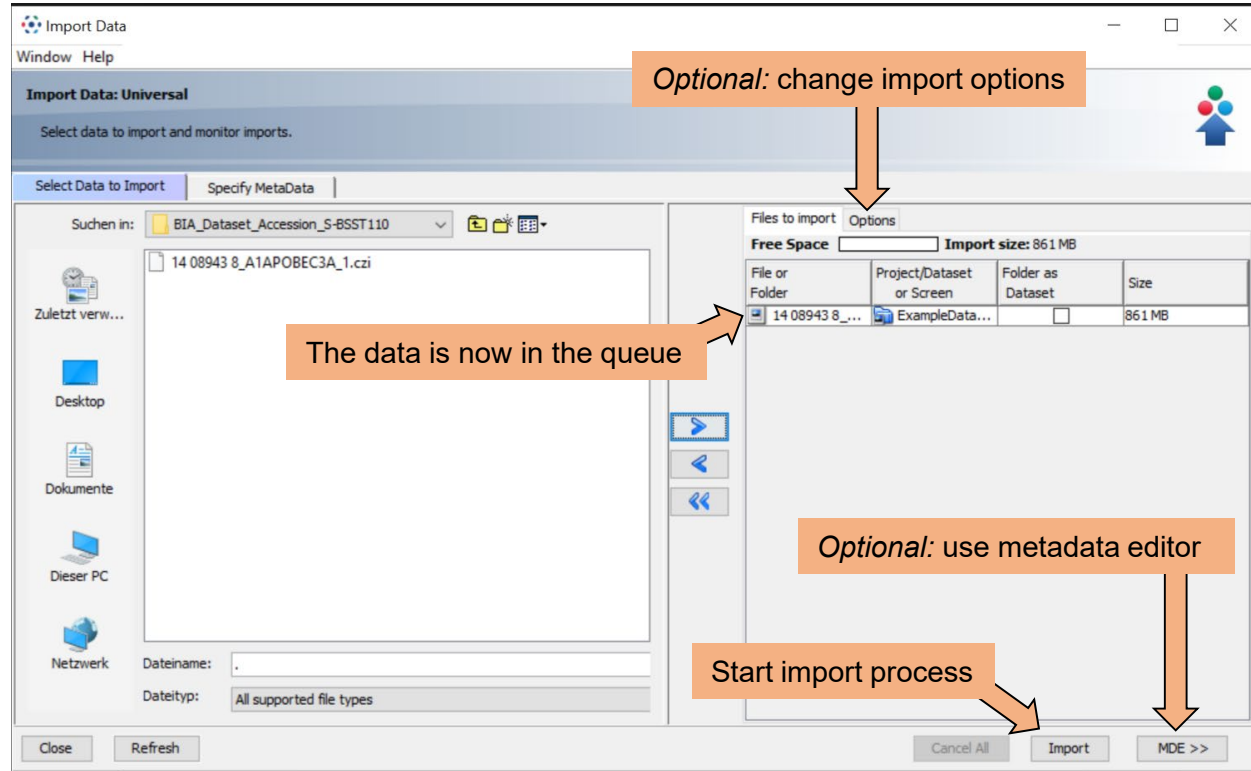
Upload data to OMERO using OMERO.importer 6/7

6) The dataset or file is now in the import queue;

Optional:

- Change import options
- Use metadata editor

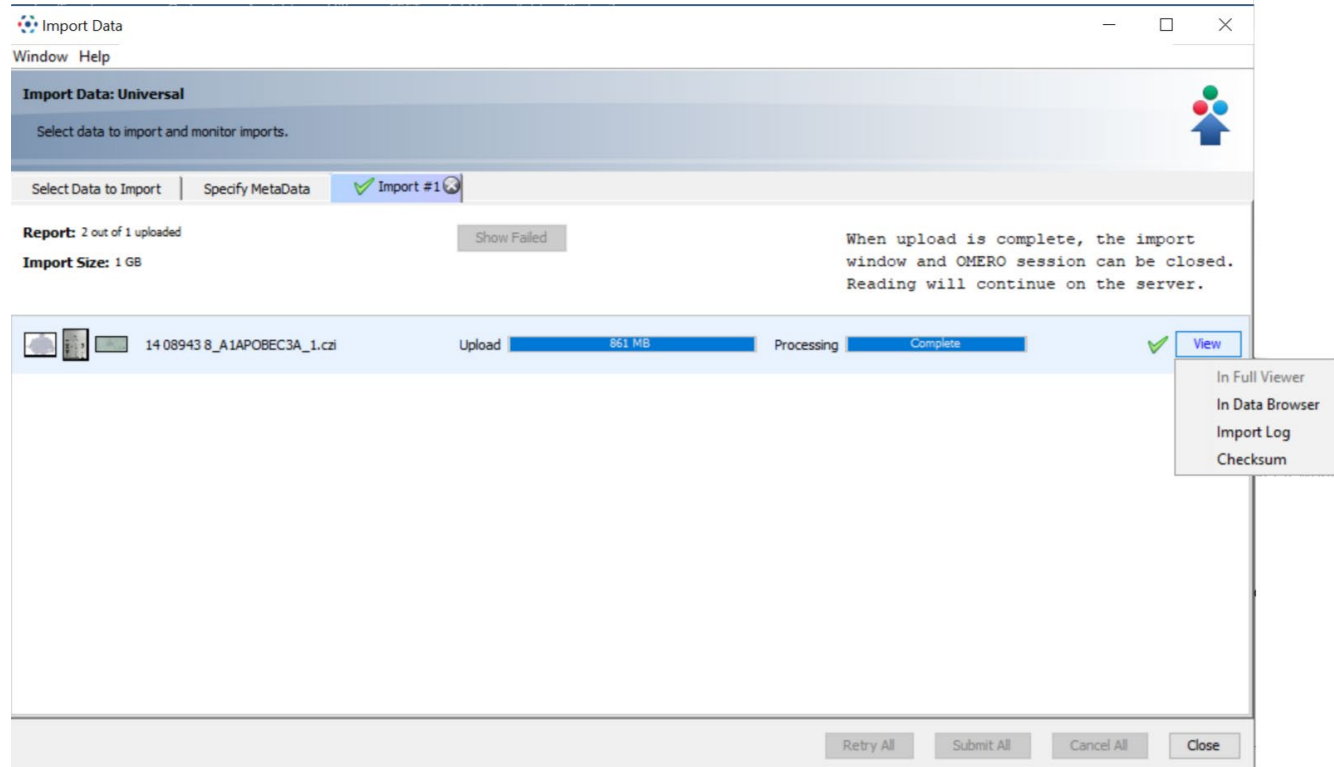
You can start the import



Upload data to OMERO using OMERO.importer 7/7

6) Monitor the upload status and success

Close OMERO.importer and inspect the files with OMERO.insight or OMERO.web



Inspect the uploaded files in OMERO (here: using OMERO.web)

Data remains in the original file format but is presented to you by the software!

A multi-scene image

The original file is never changed by OMERO, even when you change rendering settings or metadata in OMERO.

The screenshot shows the OMERO web client interface. The browser address bar displays `https://my-local-omero.server`. The main content area shows a file explorer on the left with a tree view containing a folder named "BIA_Accession_S-BSST1103" and three files: "14 08943 8_A1APOBEC3A_1.czi [0]", "14 08943 8_A1APOBEC3A_1.czi [label image]", and "14 08943 8_A1APOBEC3A_1.czi [macro image]". The central area displays three preview thumbnails of the selected image. The right-hand panel shows the metadata for the selected image, including fields for "Full viewer", "Image ID", "Owner", "Acquisition Date", "Import Date", "Dimensions (XY)", "Pixels Type", "Pixels Size (XYZ)", "Z-sections/Timepoints", "Channels", "ROI Count", "Tags", "Key-Value Pairs", "MDE", "Tables", "Attachments", "Comments", "Ratings", and "Others".

Preview thumbnails

Metadata

This would be a result of the optional usage of MDE before the Import

Important notes about Data Upload to OMERO

- Data is stored in *the original file formats* (raw data is conserved!)
- The storage location is not directly accessible for users via file explorers, only via OMERO (exception: „in-place import“)
- The uploaded data is never changed or corrupted by OMERO
- The original data can be retrieved from OMERO if desired
- The storage location is on a backed-up server
- The available storage can be increased if necessary
- *Very large data* (e.g., whole slide images, light-sheet images) might require extra care – contact your facility/OMERO admin.

Upload data to OMERO using OMERO.importer - metadata

Optional, intermediate step during the import:

Review and annotate metadata using **OMERO.mde**, a metadata editor based on MDE.mic (Kunis et al., 2021, Nat. Meth.). Allows to edit:

- metadata of individual files,
- metadata the import queue in batch,
- and is supported by standardized, but configurable metadata fields

See also:

- Chapter 7 (Metadata Curation)
- OMERO.mde user guide:

<https://omero-guides.readthedocs.io/en/latest/mde/docs/index.html>

