

## HOW TO USE THE SLIDE TEMPLATES

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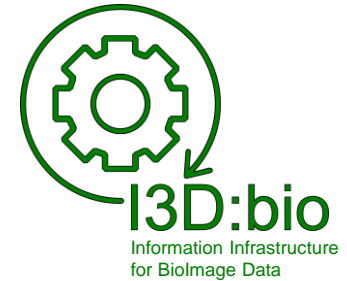
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# Disclaimer



<https://www.i3dbio.de>

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# Research Data Management for Bioimage Data at the **ADD INSTITUTE HERE**

## How to connect to OMERO?

**ADD AUTHOR / RESPONSIBLE PERSON FROM YOUR INSTITUTE**

# Two ways of connecting to the OMERO server as a user

„OMERO.insight“ client

OR

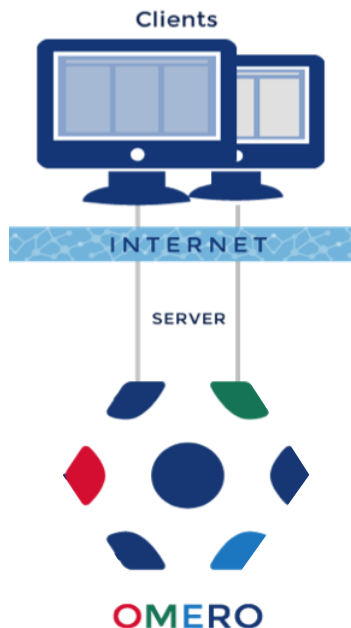
„OMERO.web“ client

both clients offer similar functionalities



## Desktop client

- Installed by the user on a local computer
- *Recommended for:*
  - Importing data into OMERO
  - Importing metadata



## Browser-based web-client

- Installed by the IT department on the server, users access it with a browser
- *Recommended for:*
  - Visualizing data
  - Analyzing and managing data
  - Annotating data (e.g., with tags)
  - Running scripts
  - *It is not used to upload data!*


# Connecting with OMERO.insight 1/3

1. Install the „OMERO.insight“ client:

<https://www.openmicroscopy.org/omero/downloads/>

2. Open „OMERO.insight“ on your computer



3. Click on the wrench icon  to open the server settings list



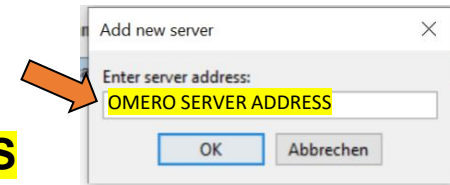
## Connecting with OMERO.insight 2/3

4. Click the  symbol to add a new server to the list



5. Enter your OMERO-server address

At the **INSTITUTE**: **OMERO SERVER ADDRESS**



**NOTE:** When connected via a VPN, the address is: **OMERO SERVER ADDRESS + PORT**

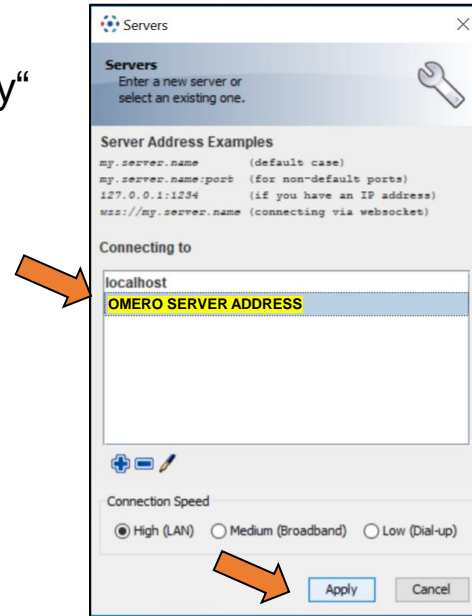
# Connecting with OMERO.insight 3/3

4. Check the server address in the list and click „Apply“

5. Enter your user name and password to login



The login screen for OMERO.insight. At the top is the OMERO.insight logo. Below it, the text "OMERO SERVER ADDRESS" is highlighted in yellow, followed by "[High]" and a key icon. An orange arrow points to the "Username:" field, which contains "myusername". Below that is the "Password:" field with masked characters. At the bottom are "Login" and "Quit" buttons. The footer includes the OME logo and text about the GNU GPL license.



The "Servers" dialog box. It has a title bar with a close button. The main area says "Enter a new server or select an existing one." with a wrench icon. Below is a section "Server Address Examples" with several lines of text. Then, "Connecting to" is followed by a list box containing "localhost" and "OMERO SERVER ADDRESS", with the latter highlighted in blue. An orange arrow points from the login screen to this dialog. At the bottom, there are radio buttons for "Connection Speed" (High (LAN), Medium (Broadband), Low (Dial-up)) and two buttons: "Apply" and "Cancel". An orange arrow points to the "Apply" button.

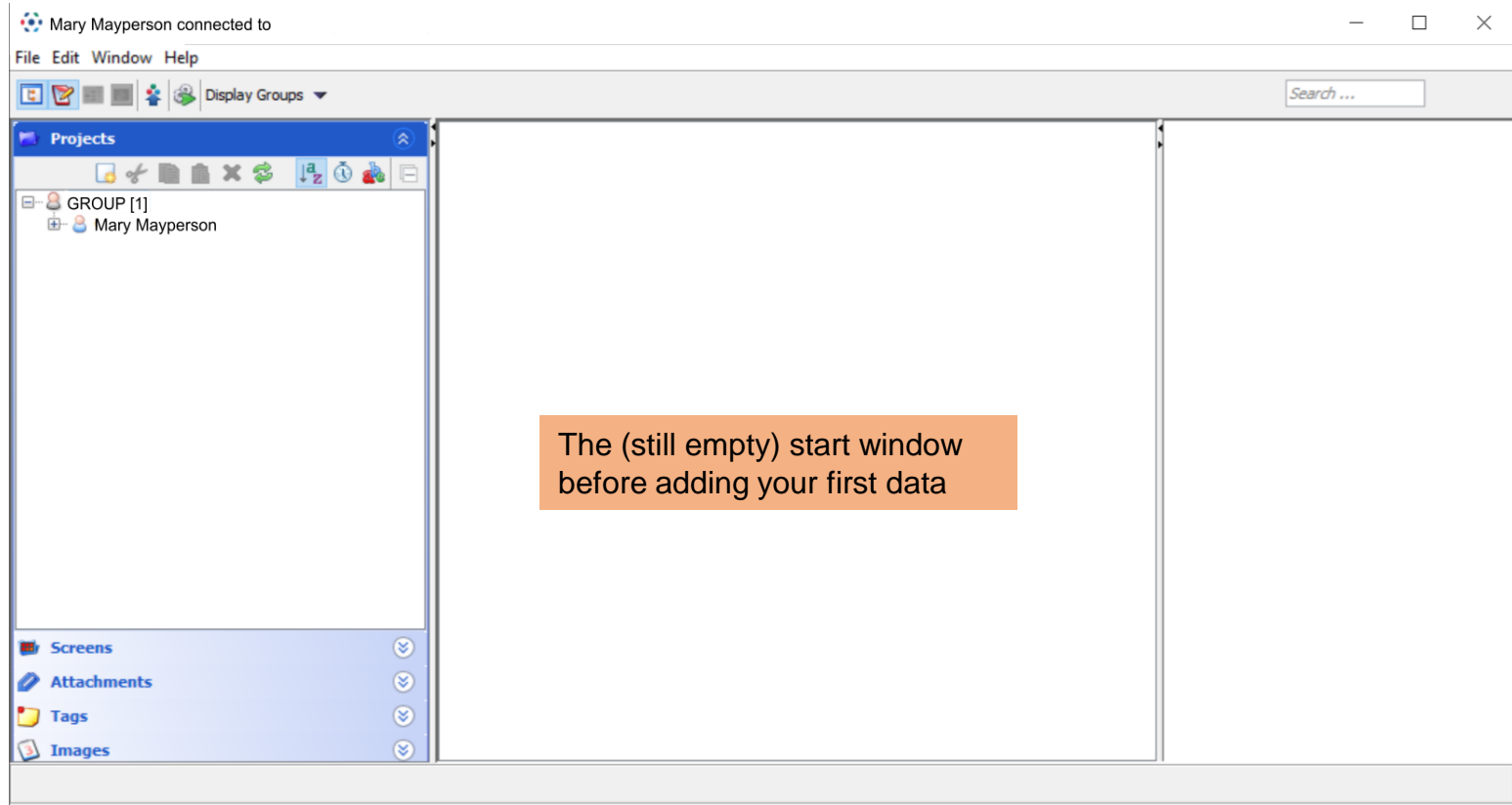
Note:

Username and password can be

- identical to your institute login
- separate for OMERO

Depending on your OMERO instance

# OMERO.insight client: first log-in





# OMERO.insight client: overview

The screenshot shows the OMERO.insight client interface. At the top, a status bar indicates 'Mary Mayperson connected to'. Below it is a menu bar with 'File', 'Edit', 'Window', and 'Help'. A toolbar contains various icons, including a 'Display Groups' dropdown. The main interface is divided into three panes. The left pane, titled 'Projects', shows a hierarchical tree of data. The middle pane, titled 'Workspace: 30 of 30 images', displays a grid of 30 thumbnail images. The right pane, titled 'General', shows details for the selected dataset, including its ID, owner, creation date, and various metadata fields. Annotations with arrows point to specific features: 'Display settings and image import using the integrated OMERO.importer' points to the 'Display Groups' dropdown; 'Data tree' points to the 'Projects' pane; 'Hierarchy: -user/group --project(s) ---dataset(s) ----image(s)' points to the tree structure; 'Thumbnail preview of images in the dataset' points to the image grid; and 'Information on your data(set) and metadata' points to the 'General' pane.

Mary Mayperson connected to

File Edit Window Help

Display Groups

Projects

GROUP [1]

Mary Mayperson

2010\_CMBE\_ExpressionTest [2]

2011\_VTK\_ZyxinConfocal [1]

...\_MPIIMolBio\_CrossSec\_Lymphangio [1]

2017\_Nuc-Intens\_Tcells [6]

20171115\_M33\_tERK [25]

20171123\_M36\_tERK [27]

20171123\_M3\_talERK [14]

20171213\_M33\_talERK [30]

...\_3\_M33\_01\_tERK\_DMSO\_0h.czi

...\_3\_M33\_01\_tERK\_DMSO\_3h.czi

...\_213\_M33\_01\_tERK\_MG\_0h.czi

...\_213\_M33\_01\_tERK\_MG\_3h.czi

...\_712\_M33\_01\_tERK\_X\_0h.czi

...\_712\_M33\_01\_tERK\_X\_3h.czi

...\_3\_M33\_02\_tERK\_DMSO\_0h.czi

...\_3\_M33\_02\_tERK\_DMSO\_3h.czi

...\_213\_M33\_02\_tERK\_MG\_0h.czi

filter images

Workspace: 30 of 30 images

General Acquisition Preview

Full Viewer

20171213\_M33\_talERK

Dataset ID: 122

Owner: Mary Mayperson

Dataset Details

Add Description

Creation Date: 2022-04-08 13:50:54

Tags (0)

Key-Value Pairs (0)

Attachments (0)

Ratings (0)

Comments (0)

Located in

Information on your data(set) and metadata

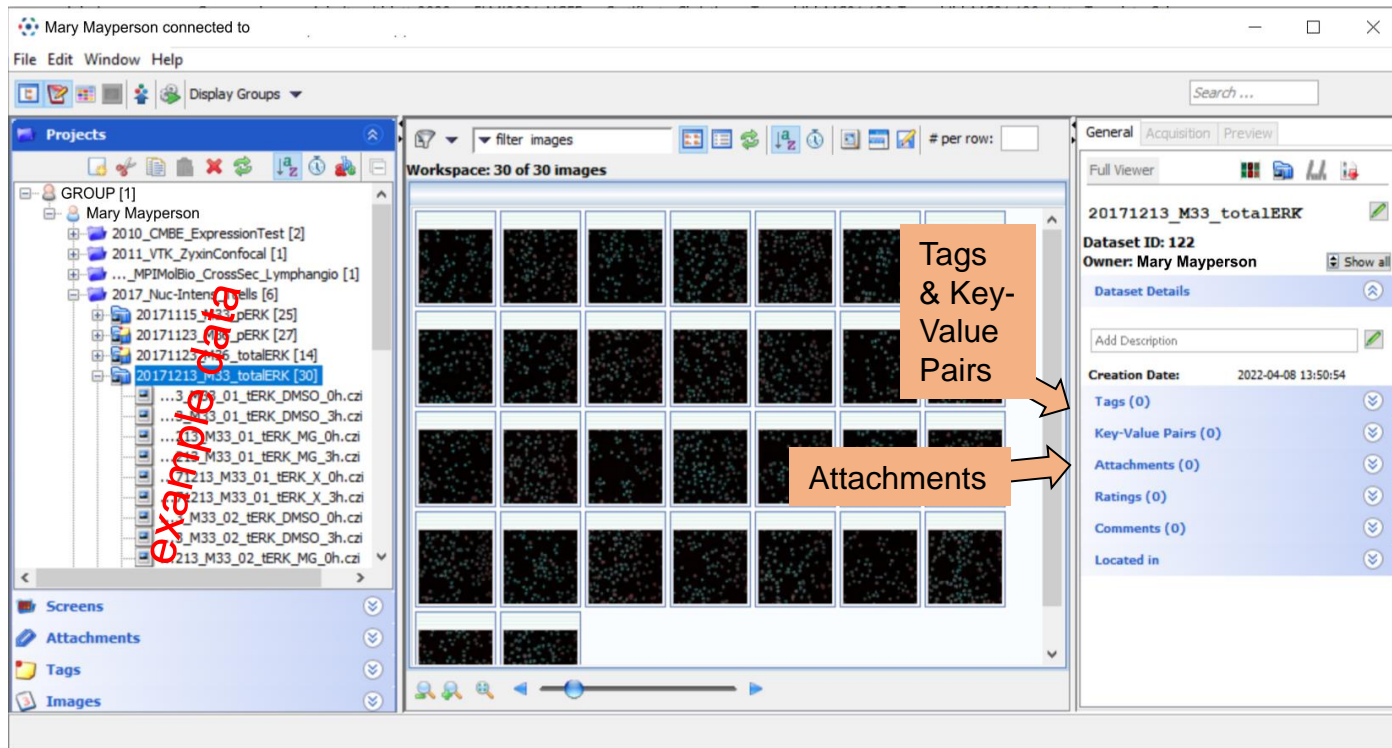
Thumbnail preview of images in the dataset



Display settings and image import using the integrated OMERO.importer

Data tree

Hierarchy:  
-user/group  
--project(s)  
---dataset(s)  
----image(s)

# OMERO.insight client: overview



- Use OMERO.importer 
- Run scripts 
- Annotate with Tags & Key-Value Pairs
  - during import
  - after import
- Organize projects, datasets and images
- Download and export
- Attachments
- Visualization

# Connecting with OMERO.web

1. Open an internet browser and enter the address of your OMERO server

At the **INSTITUTE**: **OMERO WEB SERVER ADDRESS**

2. Enter your username and password  
(usually the student/employee credentials)

Be sure to connect

- from the institute's network
- via a VPN connection



# OMERO.web overview

The screenshot displays the OMERO.web webclient interface. On the left, the 'Data tree' shows a hierarchy of user groups and datasets. The central area features a grid of 'Thumbnail preview of images in the dataset'. On the right, the 'User settings' and 'Information on your data(set) and metadata' panels are visible, including image details and key-value pairs.

**User settings**

**Information on your data(set) and metadata**

**Tags & key value pairs**

**Thumbnail preview of images in the dataset**

**Data tree**

**Hierarchy:**

- user/group
- project
- dataset
- image(s)

**example is a**

**Image Details**

20171115\_0h\_DMSO\_pERK\_01\_D1.czi

Image ID: 58103  
Owner: Mary Mayperson

**Add Description**

**Import Date:** 2022-04-08 13:50:20  
**Dimensions (XY):** 1912 x 1912  
**Pixels Type:** uint16  
**Pixels Size (XYZ) (µm):** 0.07 x 0.07 x -  
**Z-sections/Timepoints:** 1 x 1  
**Channels:** Ch2-T1, Ch1-T2  
**ROI Count:** 0

**Tags** 0

**Key-Value Pairs** 2

Added by: Mary Mayperson

Key	Value
CellType	CD4+ T cell
Organism	Mus musculus
Organ	Spleen
IsolationMethod	MACS negative sort
ActivationMethod	anti-CD3/anti-CD28

# OMERO.web overview – The „Acquisition“ tab

Webclient

OMERO Data History Mapr Figure Help Tag Search Forms Designer

Search: Mary Mayperson

GROUP Mary Mayperson

Explore Tags Shares

20100617\_HUVEC\_Tranfections 1

2010\_CMBE\_ExpressionTest 2

2011\_VTK\_ZyxinConfocal 1

2012\_MPIMolBio\_CrossSec\_Lymphangio 1

2017\_Nuc-Intens\_Tcells 6

20171115\_M33\_pERK 25

20171115\_0h\_DMSO\_pERK\_01\_D1.czi

20171115\_0h\_DMSO\_pERK\_02\_D1.czi

20171115\_0h\_MG\_pERK\_01\_D1.czi

20171115\_0h\_MG\_pERK\_02\_D1.czi

20171115\_0h\_X\_pERK\_01\_D1.czi

20171115\_0h\_X\_pERK\_02\_D1.czi

20171115\_3h\_DMSO\_pERK\_01\_D1.czi

20171115\_3h\_DMSO\_pERK\_02\_D1.czi

20171115\_3h\_DMSO\_pERK\_02\_D2.czi

20171115\_3h\_DMSO\_pERK\_03\_D2.czi

20171115\_3h\_MG\_pERK\_01\_D1.czi

20171115\_3h\_MG\_pERK\_02\_D1.czi

20171115\_3h\_MG\_pERK\_02\_D2.czi

20171115\_3h\_MG\_pERK\_03\_D1.czi

20171115\_3h\_MG\_pERK\_03\_D2.czi

20171115\_3h\_X\_pERK\_01\_D1.czi

20171115\_3h\_X\_pERK\_02\_D1.czi

20171115\_3h\_X\_pERK\_02\_D2.czi

Zoom: 100%

Acquisition metadata

Original Metadata

Global Metadata

Download

|BeamSplitterServoPosition #4 0

|BeamSplitterServoPosition #5 0

|BeamSplitterServoPosition #6 0

|BeamSplitterServoPosition #7 0

|BeamSplitterServoPosition #8 0

|Filter #1 MBS 488/561/633

|Filter #2 Plate

|Filter #3 Mirror

|Filter #4 Rear

|Filter #5 Plate

|Filter #6 MBS -405

|Filter #7 Mirror

|Filter #8 Rear

|Identifier #1 MainBeamSplitterDe

|Identifier #2 MainBeamSplitterDe

Microscope

Type: Unknown

Show unset fields

Objective:

Model: i Plan-Apochromat 63x/1.40 Oil Di

Nominal magnification: 63.0

Lens NA: 1.4000000000000004

Immersion: Oil

Correction: Unknown

Show unset fields

Detector:

Information is extracted from the original file by the Bio-Formats reader library automatically

Essential information is transformed to a user-friendly, readable format



# OMERO.web overview – the „Preview“ tab

Take a preview at your images!

Switch to Full Viewer (iviewer) for more functions

Your rendering settings are shown live

Adjust rendering settings, and copy or save them to other images.

OMERO Data History Mapr Figure Help Tag Search Forms Designer

GROUP Mary Mayperson

Explore Tags Shares

Mary Mayperson

- 20100617\_HUVEC\_Tranfections 1
- 2010\_CMBE\_ExpressionTest 2
- 2011\_VTK\_ZyxinConfocal 1
- 2012\_MPIMolBio\_CrossSec\_Lymphangio 1
- 2017\_Nuc-Intens\_Tcells 6
  - 20171115\_M33\_pERK 25
    - 20171115\_0h\_DMSO\_pERK\_01\_D1.czi
    - 20171115\_0h\_DMSO\_pERK\_02\_D1.czi
    - 20171115\_0h\_MG\_pERK\_01\_D1.czi
    - 20171115\_0h\_MG\_pERK\_02\_D1.czi
    - 20171115\_0h\_X\_pERK\_01\_D1.czi
    - 20171115\_0h\_X\_pERK\_02\_D1.czi
    - 20171115\_3h\_DMSO\_pERK\_01\_D1.czi
    - 20171115\_3h\_DMSO\_pERK\_02\_D1.czi
    - 20171115\_3h\_DMSO\_pERK\_02\_D2.czi
    - 20171115\_3h\_DMSO\_pERK\_03\_D1.czi
    - 20171115\_3h\_DMSO\_pERK\_03\_D2.czi
    - 20171115\_3h\_MG\_pERK\_01\_D1.czi
    - 20171115\_3h\_MG\_pERK\_01\_D2.czi
    - 20171115\_3h\_MG\_pERK\_02\_D1.czi
    - 20171115\_3h\_MG\_pERK\_02\_D2.czi
    - 20171115\_3h\_MG\_pERK\_03\_D1.czi
    - 20171115\_3h\_MG\_pERK\_03\_D2.czi
    - 20171115\_3h\_X\_pERK\_01\_D1.czi
    - 20171115\_3h\_X\_pERK\_01\_D2.czi

Thumbnails

Add filter

General Acquisition Preview

Full viewer

Zoom: 1/1 T: 1/1

Save Save to All Undo Redo Copy Paste

☐ Grayscale ☐ Active ☐ Show Histogram

Ch0:01 554 32262

Ch1:T2 329 46988

Min/Max Full Range Imported

User Settings:

# OMERO.web – customization with extensions (admin side)

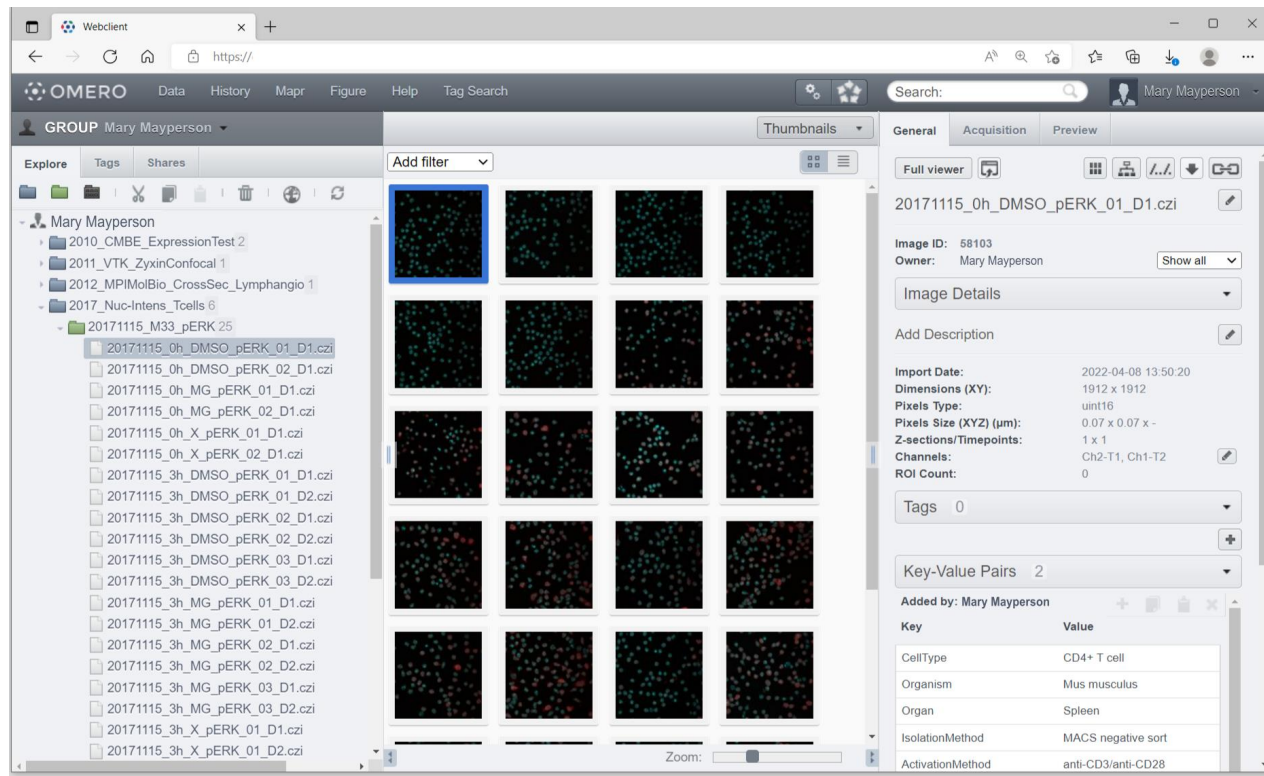
OMERO.web can look different between instances, depending on what your admin has installed.

Examples are OMERO.figure and OMERO.iviewer

Follow the link below to learn more about extensions  
(See also Chapter 9)

The screenshot displays the OMERO.web web client interface. The top navigation bar includes links for Data, History, Maps, Figure, Help, and Tag Search. The main content area is divided into three panels. The left panel shows a file explorer for the user 'Mary Mayperson', listing various image files. The middle panel displays a grid of image thumbnails, with one thumbnail highlighted by a blue border. The right panel shows the 'Image Details' for the selected image, including metadata such as 'Image ID: 58103', 'Owner: Mary Mayperson', 'Import Date: 2022-04-08 13:50:20', 'Dimensions (XY): 1912 x 1912', 'Pixels Type: uint16', 'Pixels Size (XYZ) (µm): 0.07 x 0.07 x -', 'Z-sections/Timepoints: 1 x 1', 'Channels: Ch2-T1, Ch1-T2', 'ROI Count: 0', 'Tags: 0', and 'Key-Value Pairs: 2'. The 'Key-Value Pairs' section lists metadata: CellType (CD4+ T cell), Organism (Mus musculus), Organ (Spleen), IsolationMethod (MACS negative sort), and ActivationMethod (anti-CD3/anti-CD28). Two orange callout boxes with arrows point to the 'Figure' and 'iviewer' tabs in the top navigation bar, labeled 'OMERO.figure' and 'OMERO.iviewer' respectively. A red diagonal watermark reading 'example only' is overlaid on the image grid.

# OMERO.web client: functions overview



- *Manage data, i.e.:  
Organize projects, datasets,  
and images*
- *Annotate metadata with tags  
and Key-Value Pairs*
- *Download and export*
- *Run scripts*
- *Add attachments*
- *Visualize Data*
- *Share for collaboration*
- *Use OMERO.web extensions  
(e.g., OMERO.figure)*