I3D:bio OMERO user training slides

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- This work is funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) – 462231789 (Information Infrastructure for BioImage Data, I3D:bio)

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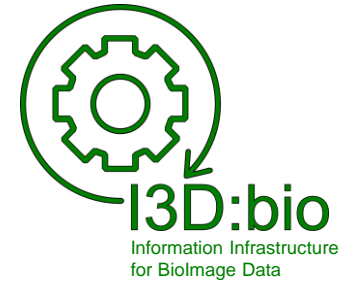
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I3D:bio
Information Infrastructure
for BioImage Data

https://www.i3dbio.de

I3D:bio
Information Infrastructure
for BioImage Data

Research Data Management for Bioimage Data at the ADD INSTITUTE HERE

OMERO explained: How does the platform work in more detail?
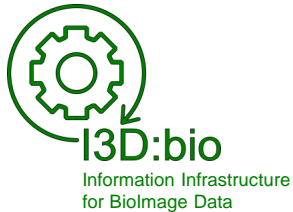
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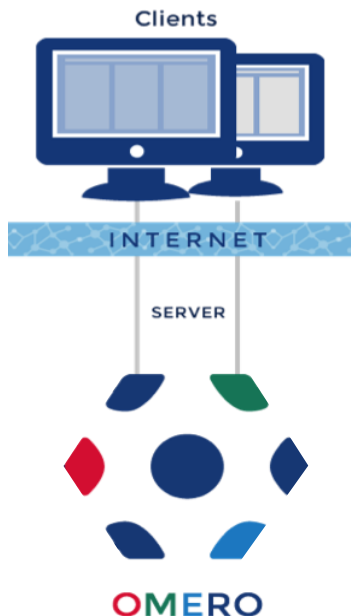
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OMERO – a platform consisting of a server with clients

In this chapter, we explain features of OMERO that are handled by the IT staff and by the OMERO administrator.

For OMERO users, this content is background information. However, no detailled knowledge is required on the user side.

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More details about the structure of the OMERO platform

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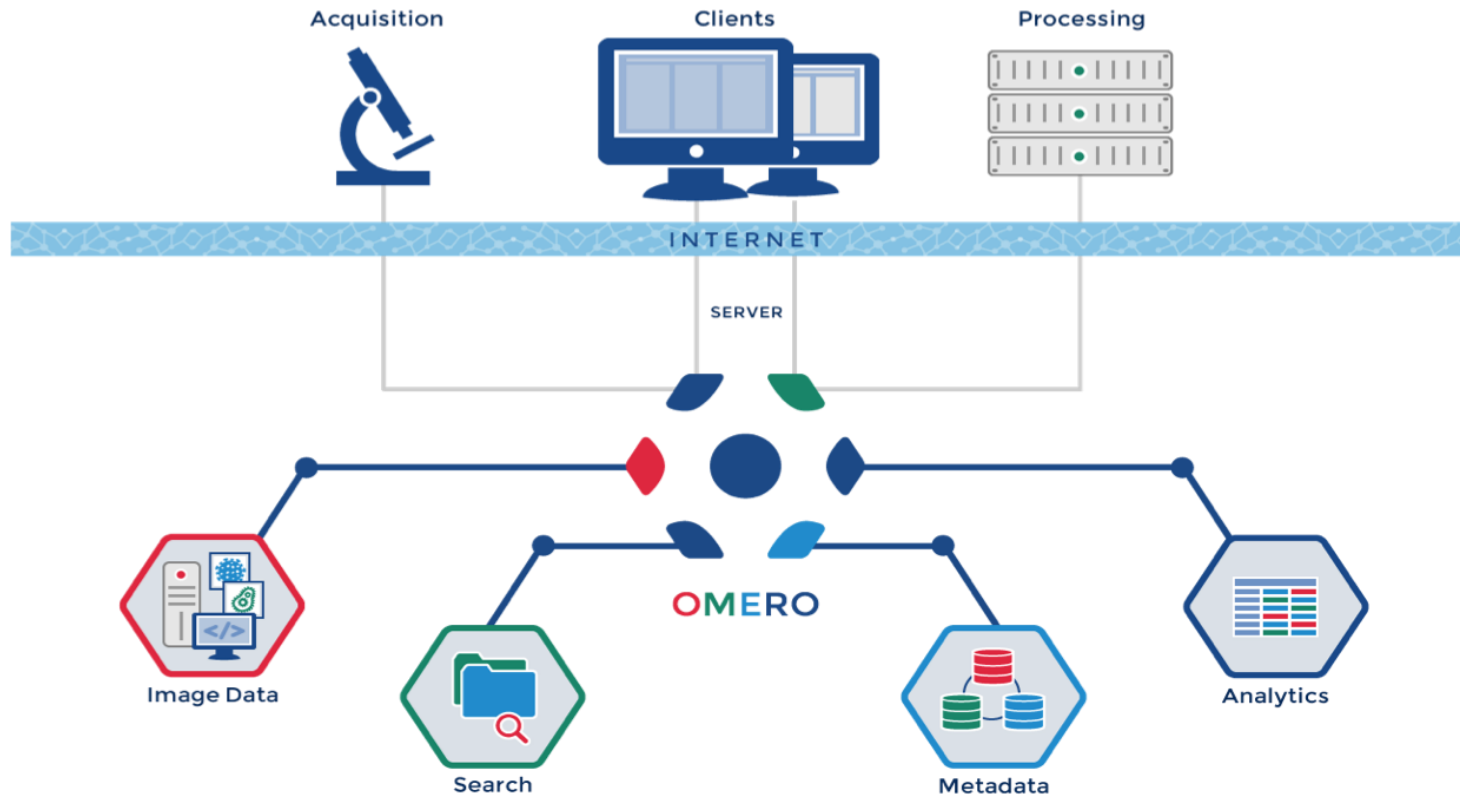
Four OMERO components in focus

These components have been set up / implemented by the responsible IT administrator. Together, they provide the OMERO platform functionality.

	OMERO.server		PostgreSQL Database
	OMERO.web		File Storage Location

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OMERO.server

The core component of OMERO

OMERO.server

- Middleware software
- Amalgamates all tasks that the system has to fulfill
- Communicates with the other OMERO components via their IP addresses and ports

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OMERO.web

The front-end application faced to the users

- Allows users to access and interact with their data in OMERO using a web-browser
  - Generates the HTML code behind the browser frontend based on its interaction with OMERO.server (via IP address and port)

OMERO.web

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OMERO's relational database

A relational database* that holds all necessary information about the users and the data

PostgreSQL
Database**

Keeps track of & allows linking between
- Data locations
- Users
- Projects
- Annotations
- Attachments
- Metadata
- …

* A relational database is a specific type of database in which related data points are referenced to one another in a table.
** PostgreSQL is an example of a relational database management software.

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The data storage location

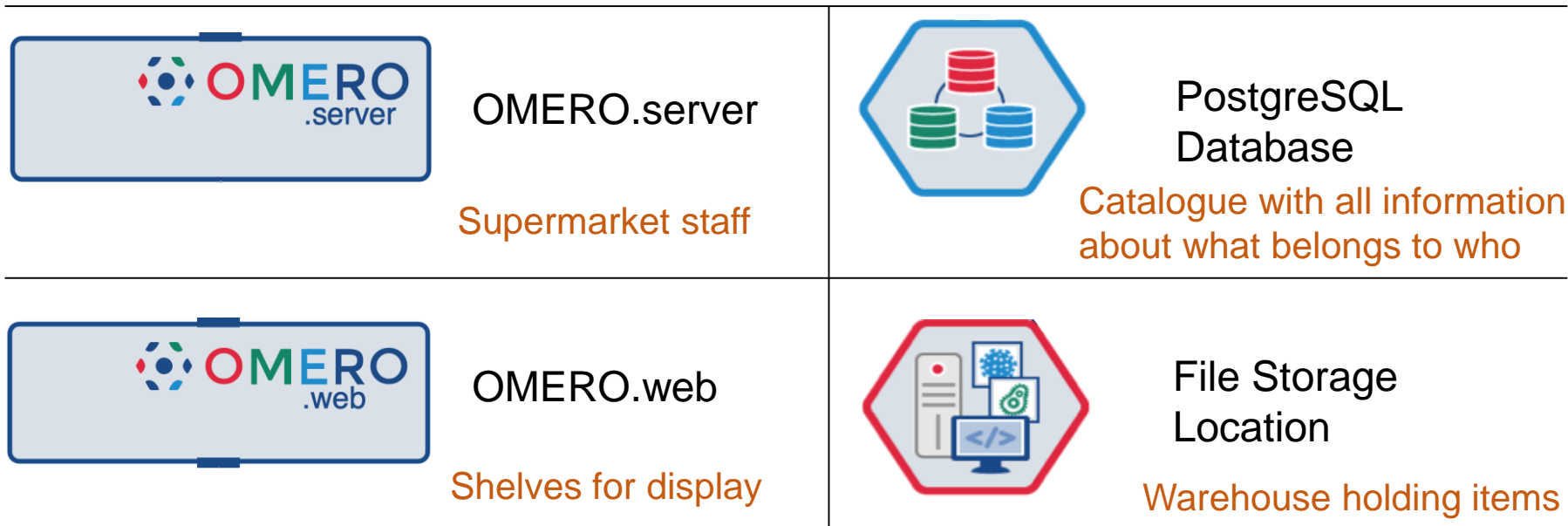The location where the original imaging data files are physically stored and accessed from

- File storage system located in the ==central IT department==
- Backed-up data storage for secure data deposition
- Scalable storage space
- (==Free==) storage space for researchers
- Access by users via client software, not with a file explorer
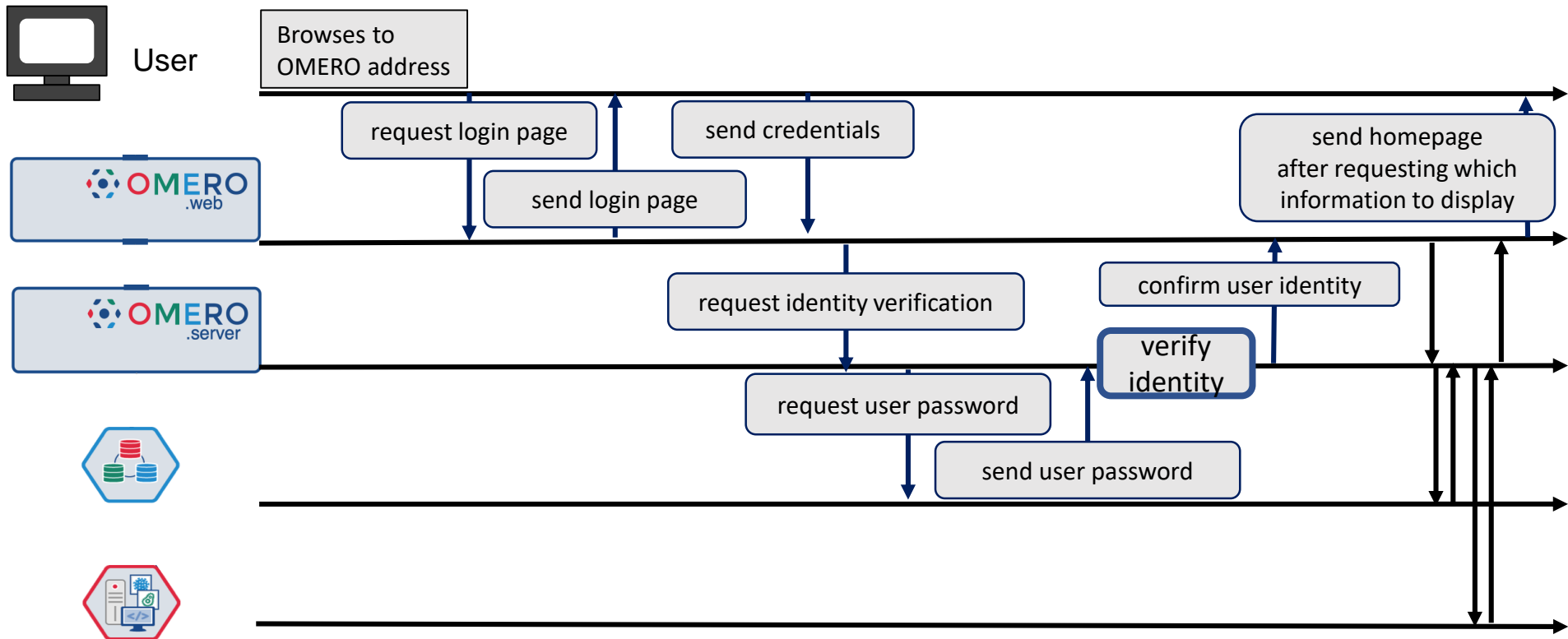- Original raw data is not changed!

File Storage Location

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Analogy: OMERO as a custom supermarket

Think of the platform as a custom supermarket where the staff arranges custom shelves from items in the warehouse for each customer.

	OMERO.server Supermarket staff		**PostgreSQL Database** Catalogue with all information about what belongs to who
	OMERO.web Shelves for display		**File Storage Location** Warehouse holding items

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Simplified example - How it works: Login to OMERO

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Simplified example – How it works: Display an image in OMERO.iviewer

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